Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems	)	CC Docket No. 94-102
	)	
Amendment of Parts 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements; Petition of the National Telecommunications and Information Administration to Amend Part 25 of the Commission's Rules to Establish Emissions Limits for Mobile and Portable Earth Stations Operating in the 1610-1660.5 MHz Band	)	IB Docket No. 99-67

COMMENTS OF MOBILE SATELLITE VENTURES SUBSIDIARY LLC

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Summary

Mobile Satellite Ventures Subsidiary LLC ("MSV") is committed to providing its customers with reliable access to emergency services personnel. Under its Emergency Referral Service ("ERS") system, MSV has a group of trained emergency operators on call at all times at its network operations center. When a U.S. subscriber dials 9-1-1, that call is routed to an emergency operator at MSV's operations center who asks for the caller's location, phone number, and the nature of the emergency, and then forwards the call to the appropriate Public Safety Answering Point ("PSAP") or local emergency center.

In this proceeding, the Commission proposes to require Mobile Satellite Service ("MSS") providers to implement exactly this type of call center approach for providing U.S. MSS subscribers with access to emergency services. MSV supports this proposal and believes that it should be economically and technically feasible for any MSS provider to implement a call center approach. MSV also supports the Commission's view that it should refrain from mandating call center answering protocols and procedures. Given its experience with its ERS, MSV also believes that its commercially available PSAP database is sufficiently accurate and complete to ensure that its emergency call center serves as reliable means of access to emergency services.

To the extent the Commission adopts a call center or any other 9-1-1 requirements, MSV urges the Commission to ensure that its rules apply to the entity providing MSS to end user customers and not the entity merely providing MSS space segment capacity. To do otherwise would place an MSS space segment provider in the difficult position of having to monitor its service providers' compliance with the Commission's 9-1-1 rules. The Commission should also continue its exemption of aeronautical, maritime, and non-voice MSS from any call center, basic 9-1-1, and enhanced 9-1-1 ("E9-1-1") obligations.

Requiring MSV's current-generation MSS system to comply with E9-1-1 requirements is not technologically and economically feasible. MSV's current-generation satellite system was developed without a Commission requirement that it provide any 9-1-1 service. To comply with E9-1-1 requirements, MSV would need to retrofit its existing mobile terminals to include a location capability, such as Global Positioning System ("GPS"), as well as to upgrade its gateway earth station and network switch. MSV estimates the costs of such upgrades to be several hundred million dollars. The costs of requiring MSV to upgrade its current-generation system far outweigh the public interest benefits. In 2002, all of MSV's subscribers generated a total of ten (10) emergency calls. Requiring MSV to spend hundreds of millions of dollars to upgrade its current system to become E9-1-1 compliant for this limited number of emergency calls cannot be justified. More importantly, MSV's current voice terminal manufacturers have indicated they will not support any upgrades to their MSV mobile terminal product lines, making it impossible, regardless of the cost, to retrofit the terminals with any form of location-determination capability.

For next-generation MSS systems that are expected to begin operations in the coming years, MSV believes that it may be technologically and economically feasible for such future systems to comply with E9-1-1 obligations, provided any such requirements are clear and reasonable, uniformly applied among all MSS providers, and established before it is too late to retrofit operational systems. As the Commission recognizes, compliance with E9-1-1 is a far more difficult task for MSS providers than for terrestrial providers. With this in mind, MSV urges the Commission to form an advisory committee of public safety representatives, MSS providers, equipment manufacturers, local exchange carriers, representatives of the GPS industry, and other interested parties to assess the requirements for MSS E9-1-1. Among the

issues the committee would need to address are (i) whether terrestrial E9-1-1 location accuracy requirements are needed for MSS and, if not, what requirements should apply; (ii) how MSS providers can achieve recommended location accuracy requirements; (iii) if MSS providers can only meet location accuracy requirements with GPS technology embedded in mobile terminals, would the effect on the cost, size, weight, and battery life of a mobile terminal adversely impact the attractiveness of MSS to consumers; (iv) whether GPS can perform reliably given that L-band and Big LEO mobile terminals transmit close in frequency to the GPS band; (v) how MSS providers should interconnect their gateways to the thousand of PSAPs throughout the United States; (vi) what standard should be adopted for interconnection of voice and data signaling; (vii) how to allocate the enormous costs to interconnect MSS gateways to the thousands of PSAPs throughout the country; (viii) for those MSS providers incorporating an Ancillary Terrestrial Component ("ATC"), how the hand-off of calls between the satellite and terrestrial components of an integrated MSS/ATC system will impact E9-1-1 compliance; and (ix) how international emergency calling requirements will impact domestic requirements.

Assuming the Commission requires next-generation MSS systems to comply with E9-1-1 requirements, MSV urges the Commission to exempt all current-generation mobile terminals operating on next-generation systems from any E9-1-1 requirements. Retrofitting such terminals would be extremely costly and is further complicated by the fact that the manufacturers of these terminals are either no longer in business or no longer support terminal upgrades.

MSV does not support a requirement that existing MSS terminals be labeled to indicate the extent to which the terminal can be used to access emergency services. Requiring MSV to recall existing terminals for labeling would be an extremely difficult and costly process and is

unnecessary considering that MSV has already disclosed to its customers the extent to which its terminals are capable of providing access to emergency services.

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COMMENTS OF MOBILE SATELLITE VENTURES SUBSIDIARY LLC

Mobile Satellite Ventures Subsidiary LLC ("MSV") herby files these Comments in the above-captioned proceeding in which the Commission is considering extending emergency call center, basic 9-1-1, and enhanced 9-1-1 ("E9-1-1") requirements to mobile satellite service ("MSS") providers.[1] As discussed herein, MSV supports the Commission's proposal to require every MSS licensee that provides real-time, two-way, switched voice service that is interconnected with the Public Switched Telephone Network ("PSTN") to implement an emergency call center that will route 9-1-1 calls to the appropriate public safety answering point

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[1] *Revision of the Commission's Rules to Ensure Compatibility With Enhanced 9-1-1 Emergency Calling Systems, Further Notice of Proposed Rulemaking*, CC Docket No. 94-102, IB Docket 99-67, FCC 02-326 (rel. December 20, 2002) ("*FNPRM*"). Although Comments were due in this proceeding on February 18, 2003 (*see* DA 03-209, rel. Jan. 27, 2003), the Commission was closed on February 18, 2003 due to inclement weather. Thus, these Comments are timely filed on February 19, 2003. *See* 47 C.F.R. § 1.4(e)(1); *see also FCC Public Notice, "FCC Closed February 18, 2003"* (rel. Feb. 19, 2003).

("PSAP") or local emergency center. Due to the financial and technological infeasibility of implementing E9-1-1 for MSV's current satellite system, as well as the lack of any demonstrated need by MSV's current customers for E9-1-1, MSV urges the Commission to continue to exempt MSV's current-generation MSS system from any E9-1-1 requirements. As for MSV's next generation satellite system, MSV urges the Commission to first form an advisory committee to address the technological and financial issues involved in implementing E9-1-1 for future MSS systems.

Background

MSV is the successor to Motient Services Inc. (f/k/a AMSC Subsidiary Corporation) ("MSI"), the entity authorized by the Commission in 1989 to construct, launch, and operate a U.S. mobile satellite service ("MSS") system in the L-band.[2] MSV's licensed satellite (MSAT-2, also known as AMSC-1) was launched in 1995, and MSV began offering service in 1996. MSV is also the successor to TMI Communications and Company, Limited Partnership ("TMI"), formerly Telesat Mobile Inc., with respect to TMI's provision of L-band MSS in the United States and TMI's L-band mobile earth terminal authorizations granted by the Commission. TMI was licensed by the Canadian government in 1988 to provide L-band MSS to Canadian customers and launched its satellite, MSAT-1, in 1996. In November 1999, the Commission granted TMI the first of two blanket earth station licenses to provide MSS with MSAT-1 to mobile terminals located in the United States.[3] The second followed in September 2000.[4] On

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2 *Memorandum Opinion, Order and Authorization*, 4 FCC Rcd 6041 (1989); *Final Decision on Remand,* 7 FCC Rcd 266 (1992); *aff'd sub nom. Aeronautical Radio, Inc. v. FCC*, 983 F.2d 275 (D.C. Cir. 1993) ("*Licensing Order*").

3 *TMI Communications and Company, L.P., Order and Authorization*, 14 FCC Rcd 20798 (November 30, 1999).

4 *TMI Communications and Company, L.P., Order and Authorization*, 15 FCC Rcd 18117 (September 25, 2000).

November 21, 2001, the Commission granted the assignment of MSI's and TMI's Commission authorizations to provide MSS in the L-band to a wholly owned subsidiary of a limited partnership formed by and between Motient Corporation (the parent of MSI), TMI, and a group of investors.[5] MSV is now the U.S. licensee of MSAT-2 and Mobile Satellite Ventures (Canada) Inc. ("MSV Canada"), whose controlling shareholder is TMI, is now the Canadian licensee of the L-band MSS satellite MSAT-1.

Today, MSV is both an MSS service provider and a provider of MSS space segment. As an MSS service provider, MSV offers a full range of land, maritime, and aeronautical mobile satellite services, including voice and data, using both MSAT-1 and MSAT-2 throughout the contiguous United States, Alaska, Hawaii, the Virgin Islands, and coastal areas up to 200 miles offshore. MSV's customers include hundreds of federal, state, and local governmental agencies, including critical public safety organizations like the Federal Emergency Management Agency, U.S. Coast Guard, and local fire and police departments. In addition, MSV serves many private sector customers in critical industries such as interstate transportation and oil and natural gas exploration and drilling. MSV also offers a unique dispatch radio, or "push-to-talk," service which allows communications to be broadcast to a large group of users simultaneously, thereby allowing for coordination of rescue efforts. As a provider of MSS space segment, MSV sells satellite capacity to service providers who in turn offer MSS to end user customers.

MSV's Commitment to Emergency Communications. MSV has recognized the importance of providing its subscribers with a means of emergency communications. MSV's system has facilitated the provision of emergency services in areas presently unserved by any terrestrial mobile communications facilities and, in some cases, by any communications facilities

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5 *See Motient Services Inc., TMI Communications and Company, LP, and Mobile Satellite Ventures Subsidiary LLC, Order and Authorization*, 16 FCC Rcd 20469 (Nov. 21, 2001).

whatsoever. Moreover, MSV has invested significant resources in the development of an emergency communications capability. Under its Emergency Referral Service ("ERS") system, MSV has a group of trained emergency operators on call at all times at its Network Operation Center ("NOC") in Ottawa, Ontario, Canada. Upon receiving a 9-1-1 call from a subscriber, these operators ask for the caller's location, phone number, and the type of emergency. Using the information provided by the caller, the operator will then access MSV's PSAP database and dial the ten-digit phone number of the appropriate PSAP or local emergency center. The MSV operator conferences the identified emergency operator with the caller and provides the emergency operator with the caller's location and phone number as well as the nature of the emergency. The MSV operator will stay on the conference until the call is terminated, thereby avoiding an accidental disconnection and ensuring the emergency operator has all the information from the MSV operator.

The Commission's Approach to E9-1-1 for MSS. In 1996, the Commission exempted MSS providers from its E9-1-1 requirements.[6] In adopting this exemption, the Commission recognized that there are serious technological obstacles to MSS operators' compliance with the E9-1-1 rules and that MSS operators would have to overcome more obstacles to provide E9-1-1 than their terrestrial counterparts. *E9-1-1 Order* at ¶ 83. In that proceeding, MSI explained that due to the technical limitations of its MSS system, it could not satisfy a number of the Commission's E9-1-1 requirements, particularly those relating to the provision of automatic location identification ("ALI") and automatic number identification ("ANI").[7] MSI explained

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6 *See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 9-1-1 Emergency Calling Systems, Report and Order and Further Notice of Proposed Rule Making*, CC Docket No. 94-102, 11 FCC Rcd 18676 (1996) ("*E9-1-1 Order*").

7 Comments of Motient Services Inc. (f/k/a AMSC Subsidiary Corporation), CC Docket No. 94-102, at 7-9 (March 4, 1996) ("*MSI E9-1-1 Comments*").

that its licensed satellite, MSAT-2, uses five slightly overlapping satellite beams that generally cover North America. While MSI can tell which beam is being utilized on a particular call, each of these beams covers thousands of square miles, and MSI therefore cannot autonomously determine a user's location sufficiently to be of use in an emergency. *MSI E9-1-1 Comments* at 7-9. As MSI indicated in the E9-1-1 proceeding, the modifications required to comply with the proposed E9-1-1 requirements, especially those pertaining to ALI, would require several hundred million dollars of changes to MSI's system design. *Id.* This would include significant modifications to MSI's earth station and switch, as well as to its mobile terminals. *Id.* at 8-9.

In March 1999, the Commission issued a Notice of Proposed Rulemaking proposing domestic implementation of the International Telecommunication Union ("ITU") Global Mobile Personal Communications by Satellite ("GMPCS") framework.[8] In the *GMPCS NPRM*, the Commission requested comment as to whether, in light of technological developments, it should require GMPCS systems to implement E9-1-1 capabilities. *GMPCS NPRM* at ¶ 98. In response, MSI and TMI demonstrated that there was no basis for eliminating or narrowing the E9-1-1 exemption granted to MSS providers.[9] While the Commission referred to unidentified "technological developments" in the MSS industry possibly justifying elimination of the E9-1-1 exemption, MSI noted that its MSS technology had remained the same, and that it still did not have the ability to comply with the Commission's E9-1-1 requirements. *MSI GMPCS Comments*

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8 *Amendment of Parts 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements; Petition of the National Telecommunications and Information Administration to Amend Part 25 of the Commission's Rules to Establish Emissions Limits for Mobile and Portable Earth Stations Operating in the 1610-1660.5 MHz Band, Notice of Proposed Rulemaking*, 14 FCC Rcd 5871 (1999) ("*GMPCS NPRM*").

9 Comments of Motient Services Inc. (f/k/a AMSC Subsidiary Corporation), IB Docket No. 99-67, at 17 (June 21, 1999) ("*MSI GMPCS Comments*"); Reply Comments of TMI Communications and Company, Limited Partnership, IB Docket No. 99-67, at 6-7 (July 21, 1999) ("*TMI GMPCS Reply Comments*").

at 17. In addition, given the enormous cost of complying with E9-1-1 requirements, MSI explained that it was simply not economically feasible for its current-generation system to be E9-1-1 compliant. *Id.* TMI noted that the very limited market penetration of MSS did not justify extending E9-1-1 obligations to MSS providers. *TMI GMPCS Reply Comments* at 7.

In December 2000, the International Bureau released a *Public Notice* seeking comment on whether to require MSS providers to implement basic 9-1-1 and E9-1-1 capabilities.[10] In response, MSI argued that its current-generation MSS system should continue to be exempt from any E9-1-1 requirements that the Commission may impose.[11] For future MSS systems, MSI urged the Commission to first form an advisory committee to assess the need for and the technological and financial feasibility of such an E9-1-1 requirement for the MSS industry. *MSI Comments on Public Notice* at 5-6.

FNPRM. In the above-captioned *FNPRM*, the Commission seeks comment on whether it should extend basic 9-1-1 and E9-1-1 requirements to various wireline and mobile wireless voice services, including MSS. The Commission recognizes that MSS providers cannot currently provide even basic 9-1-1 service and concludes that "emergency call centers would be an appropriate first step for satellite carriers." *FNPRM* at ¶ 22. Under the Commission's emergency call center proposal, MSS licensees that provide real-time, two-way, switched voice service that is interconnected with the PSTN would establish one or more national call centers to which all subscriber emergency calls can be routed. *Id.* at ¶ 23.

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10 *"International Bureau Invites Further Comment Regarding Adoption of 9-1-1 Requirements for Satellite Services," Public Notice*, IB Docket No. 99-67, DA 00-2826 (rel. December 15, 2000) ("*Public Notice*").

11 *Comments of Motient Services Inc.*, IB Docket No. 99-67, at 4-5 ("*MSI Comments on IB Public Notice*").

The Commission also seeks comment on extending E9-1-1 obligations to MSS providers, which would entail the transmission of ANI and ALI from a caller to a PSAP. *Id.* at ¶¶ 28-48. The Commission seeks to further develop the record on issues relating to E9-1-1 requirements for MSS and states that it expects to eventually adopt such requirements for MSS providers. *Id.* at ¶ 28. The Commission seeks input on any specific issues regarding interconnection with local exchange carriers ("LECs") and PSAPs that must be addressed before MSS providers can implement E9-1-1. *Id.* at ¶ 29. The Commission asks whether PSAPs are capable of receiving E9-1-1 data from satellite operators and whether there is a need for MSS operators to establish private trunking arrangements for transporting E9-1-1 calls from their gateway earth stations to PSAPs. *Id.* at ¶ 32. The Commission also seeks comment on technical and operational issues involved in requiring MSS providers to transmit ANI and ALI to PSAPs. *Id.* at ¶¶ 35-40. With respect to ALI, the Commission asks whether it should allow an MSS operator to provide ALI through the inherent location capabilities of its satellites or whether it should require all MSS providers to implement a handset-based solution that incorporates Global Positioning System ("GPS") capabilities. *Id.* at ¶ 38. If a handset-based solution is adopted, the Commission asks whether pre-existing mobile terminals in use at the time any rules are adopted should be grandfathered. *Id.* at ¶ 44. The Commission also seeks comment on whether allowing MSS operators to deploy an ancillary terrestrial component ("ATC") will affect the ability of MSS operators to comply with basic and E9-1-1 requirements. *Id.* at ¶ 55.

The Commission also seeks input on whether it should require MSS terminals to be labeled to provide consumers with notice regarding the ability of the terminal to access 9-1-1 services. *Id.* at ¶ 56. Finally, the Commission asks whether it should limit MSS 9-1-1 obligations to providers offering real-time, two-way switched voice service and whether MSS

aeronautical, maritime, and non-voice services should be exempt from 9-1-1 requirements as they are for terrestrial wireless providers. *Id.* at ¶ 47.

Discussion

I. MSV SUPPORTS THE COMMISSION'S PROPOSAL TO REQUIRE MSS PROVIDERS TO ESTABLISH EMERGENCY CALL CENTERS TO RECEIVE AND ROUTE 9-1-1 CALLS TO PSAPS

A. Call Centers Should Be Technically and Economically Feasible for All MSS Providers

MSV supports the Commission's proposal to require MSS providers that offer real-time, two-way, switched voice MSS that is interconnected with the PSTN to route 9-1-1 calls of U.S. subscribers through an emergency call center at which an operator will ask for the caller's location, phone number, and the nature of the emergency, and then forward the call to an appropriate PSAP or local emergency center. *FNPRM* at ¶¶ 19-27. This is how MSV currently provides its U.S. customers with access to emergency services personnel. Such a requirement will serve the public interest by providing U.S. MSS subscribers with access to emergency services they would not otherwise have. Given the relatively minimal cost of training operators to handle emergency calls and purchasing a license to a PSAP database, it should be economically and technically feasible for any MSS provider to implement a call center approach within one year after the effective date of an *Order* adopting this requirement, as the Commission proposes. *Id.* at ¶ 22. Requiring MSS carriers to implement call centers will be an important interim step as MSS carriers develop next-generation satellite systems that may be E9-1-1 compliant.

B. The Commission Should Not Regulate MSS Emergency Call Centers

MSV also supports the Commission's view that it should refrain from mandating call center answering protocols and procedures. *FNPRM* at ¶ 24. As the Commission explains,

"MSV's method of having live operators ask the caller for his or her location and callback number" is a sound approach. *Id.* at ¶ 24. The Commission should refrain from interjecting itself between an MSS provider and its customer by dictating the procedures to be used in handling emergency calls. MSV is not aware of any customer complaints regarding its ERS. Any Commission oversight with respect to how an MSS emergency call center operator handles emergency calls is unwarranted.

The Commission also expresses concern about delays that may result in forwarding calls from call centers to PSAPs. *FNRPM* at ¶ 26. MSV believes such concerns are also unwarranted. Under MSV's ERS, an emergency operator will contact the appropriate PSAP or local emergency center over the PSTN by dialing a ten-digit number. While MSV does not have direct trunking arrangements from its call center to each of the several thousand PSAPs in the United States today (as such arrangements would be prohibitively expensive), MSV's ERS has nonetheless proven reliable and MSV has not experienced any delays or call routing difficulties in accessing PSAPs.

C. Commercially Available PSAP Databases Are Sufficiently Reliable and Complete to Ensure the Success of Emergency Call Centers

The Commission asks whether there are any issues or concerns with the availability or accuracy of PSAP databases. *FNPRM* at ¶ 24. As the Commission explains in the *FNPRM*, "the success of an emergency call center is dependent on complete PSAP information" and MSS carriers "have an obligation to obtain or create a PSAP database that covers the United States, including Puerto Rico and the U.S. Virgin Islands." *Id.* For its ERS, MSV has purchased a license to a PSAP database established by a private vendor that is updated monthly and covers all

fifty states. MSV believes its database is accurate and complete,[12] especially given that it has not experienced any instances to date where it has been unable to complete an emergency call due to inaccuracies in the database.

While the Commission states that MSS providers will be obligated to obtain or create a nationwide PSAP database, MSV agrees with the National Telecommunications and Information Administration ("NTIA") which has explained that "since there is currently no coordinated nationwide PSAP database, the MSS network operators would have to work with PSAPs on a state-by-state, or even locality-by-locality basis, resulting in an enormous administrative cost."[13] MSV agrees that requiring MSS providers to create their own PSAP database for their nationwide coverage area would be unreasonably burdensome, especially given that MSS providers do not have a local presence anywhere except the immediate area surrounding their gateways. In addition, given the current financial state of the MSS industry, providers simply do not have the resources to complete this task. Rather, MSS providers should be able to rely on commercially available PSAP databases to meet their call center requirements until an official nationwide PSAP database is established. In the interim, the Commission can play an important role in facilitating the establishment of a nationwide PSAP database on which MSS providers can rely in forwarding emergency calls.

In areas without PSAPs, the Commission asks whether MSS providers should deliver 9-1-1 calls to a statewide established default point. *FNPRM* at ¶ 25. If such a default point does

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12 MSV's current PSAP database does not include information for the U.S. Virgin Islands or Puerto Rico. MSV is working with its PSAP database vendor to determine if it is possible for its PSAP database to be updated to include information for the U.S. Virgin Islands and Puerto Rico.

13 Supplemental Reply Comments of National Telecommunications and Information Administration ("NTIA"), IB Docket No. 99-67 (April 11, 2001), at 7 ("*NTIA April 2001 Comments*").

not exist, then the Commission proposes that MSS providers deliver 9-1-1 calls to an appropriate local emergency authority selected by an authorized state or local entity. *Id.* As a matter of last resort, the Commission proposes that providers route such calls to an appropriate local emergency authority, based on the MSS carrier's reasonable judgment. *Id.* MSV supports this proposal assuming that MSS providers can rely on commercially available PSAP databases to meet this requirement. MSS providers do not have the local presence or the resources necessary to ascertain the appropriate public safety personnel in areas without PSAPs. MSV's believes that its current PSAP database, which includes sheriff offices and other non-PSAP emergency personnel, is sufficiently complete and accurate to provide subscribers with access to appropriate emergency personnel.

The Commission also asks whether calls from coastal waters and certain other waterways should be routed to the Coast Guard instead of a PSAP. *FNPRM* at ¶ 25. MSV's current PSAP database does not include Coast Guard information. Rather, when MSV receives an emergency call from a maritime user, MSV's operator asks for the user's latitude and longitude and then conferences the closest PSAP which then transfers the user to the appropriate Coast Guard office. MSV does not oppose a requirement that MSS providers route emergency calls from maritime users to the Coast Guard rather than a PSAP, provided that the Coast Guard gives MSS providers an up-to-date list of the appropriate emergency contacts.

D. Given the Limitations of MSV's Current Satellite, Requiring MSV to Automatically Transmit Location Information Will Serve No Useful Purpose

The Commission asks whether MSS systems that are capable of determining a caller's location should automatically transmit that information to the call center, at which an operator would in turn verbally relay the information to the PSAP. *FNPRM* at ¶ 27. For MSV, such a requirement would serve no useful purpose. MSV's licensed satellite, MSAT-2, as well as the

Canadian L-band MSS satellite licensed to MSV Canada, MSAT-1, use five slightly overlapping satellite beams that generally cover the North American region. While MSV can tell which beam is being utilized on a particular call, each of these beams covers thousands of square miles, and MSV therefore cannot determine a user's exact location. As described above, given the distance the beams of MSAT-1 and MSAT-2 cover, it would serve no purpose for an MSV call center operator to relay this information to a PSAP.

II. 9-1-1 REQUIREMENTS, CALL CENTER OR OTHERWISE, SHOULD APPLY TO MSS SERVICE PROVIDERS AND SHOULD APPLY ONLY TO INTERCONNECTED VOICE SERVICES

A. Call Center and Any Other 9-1-1 Obligations Should Extend to MSS Service Providers, Not MSS Space Station Licensees

MSV urges the Commission to clarify that any 9-1-1 requirements it may adopt will apply to the entity providing MSS to end user customers and not the entity providing MSS space segment to the service provider. MSV is both an MSS service provider and a provider of MSS space segment. As an MSS service provider, MSV provides MSS to end user customers pursuant to blanket mobile earth station licenses using its licensed satellite or the satellite licensed to MSV Canada. As a space station licensee, MSV sells satellite capacity to service providers who in turn offer MSS to end user customers. Some of these service providers have their own blanket mobile earth station licenses, some have their own network switches, and some merely resell the services MSV offers.

To the extent the Commission adopts MSS 9-1-1 requirements, call center or otherwise, MSV urges the Commission to apply these rules only to those entities that provide MSS to end user customers. If the Commission's rules were to require MSS space station licensees to comply with 9-1-1 obligations, MSV as a space station operator would be in the difficult position of having to monitor its service providers' compliance with the 9-1-1 rules and to enforce these

rules. MSV as a space station licensee would thus be liable if one of its service providers did not comply with Commission rules. A better approach would be for the Commission to require MSS service providers, and not the MSS space segment provider, to comply with 9-1-1 rules.[14] (Given that MSV acts as both a service provider and a space station operator, it would be required to comply with 9-1-1 requirements in its role as a service provider.)

MSV recognizes that the ability of its service providers who do not have their own gateway earth stations to comply with 9-1-1 obligations is in large part dependent upon the capabilities of MSV's system and MSV's ability to facilitate its service providers' compliance with the rules. MSS space segment providers will have an economic incentive to cooperate with its bulk capacity customers to ensure full compliance with the rules, otherwise the service provider will contract with an alternate space segment provider whose system can comply with 9-1-1 requirements. For those MSV service providers who buy wholesale voice services, MSV currently routes those calls through MSV's Ottawa NOC and provides its service providers with access to its emergency call center when a service provider's customer dials 9-1-1. MSV will continue this practice after the Commission adopts a call center requirement to ensure that its service providers are in compliance with the Commission's rules. It is possible that some service providers in the future, however, may choose not to route calls through MSV's Ottawa NOC and will implement a call center or other 9-1-1 requirement using their own approach. By obligating MSS service providers rather than the space station licensee to comply with 9-1-1 requirements,

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[14] The Commission asks a similar question regarding extending E9-1-1 requirements to resellers of terrestrial wireless service. *See FNPRM* at ¶ 95 ("We seek comment on whether we should require the reseller of cellular and PCS service to ensure compliance with our basic and enhanced 911 rules should we decide to extend our rules to these providers. Alternatively, we could require the underlying facilities-based licensee to ensure that its resellers offer basic and E911 service compatible with its method of providing these services.").

the Commission will afford MSS service providers the flexibility to implement their own innovative approaches to 9-1-1 compliance rather than mandating that they use the same approach used by their space segment provider.

B. The Commission Should Continue to Exempt Aeronautical, Maritime, and Non-Voice Services from Call Center, Basic 9-1-1, and E9-1-1 Obligations

For both current- and next-generation MSS systems, the Commission should continue to exempt aeronautical, maritime, and non-voice MSS services from any call center, basic 9-1-1, and E9-1-1 obligations. These services are exempt from terrestrial 9-1-1 requirements and should be treated similarly with respect to any requirements imposed on MSS providers. Rather, the Commission should continue to extend 9-1-1 requirements only to real-time, two-way, switched voice MSS that is interconnected with the PSTN.[15]

The Commission explains that it exempted aeronautical and maritime services from the terrestrial 9-1-1 rules because users of these services rely on other means for emergency assistance. *FNPRM* at ¶ 45. The same is true for customers of MSV's maritime and aeronautical services and, thus, such services should be exempted from any call center, basic 9-1-1, and E9-1-1 obligations.

Regarding data and other non-voice services, MSV agrees with NTIA and the National Emergency Number Association ("NENA") that by using the term "telephone service" in Section 3 of the Wireless Communications and Public Safety Act of 1999, Congress did not intend for 9-1-1 rules and regulations to apply to non-voice services.[16] In addition, one criteria the

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15 MSV notes that it currently offers a voice dispatch service that is not typically interconnected with the PSTN and, therefore, should not be subject to any 9-1-1 requirements.

16 *NTIA April 2001 Comments* at 11-12; Reply Comments of National Emergency Number Association ("NENA"), IB Docket No. 99-67, at 4 (March 6, 2001).

Commission has proposed to consider in assessing whether a service should comply with E9-1-1 requirements is whether "customers using the service or device have a reasonable expectation of access to 9-1-1 and E9-1-1 services." *FNPRM* at ¶ 13. MSV does not believe that customers of its data services have any expectation of access to emergency services. Given that customers of terrestrial wireless data services do not have access to emergency services, customers of satellite data services have come to expect the same.

III. THE COMMISSION SHOULD CONTINUE TO EXEMPT MSV'S CURRENT-GENERATION MSS SYSTEM FROM E9-1-1 REQUIREMENTS

A. It Is Not Technologically or Economically Feasible for MSV to Provide E9-1-1 With Its Current-Generation System

One criterion the Commission has proposed to consider in assessing whether a service should comply with E9-1-1 requirements is whether it is "technically and operationally feasible for the service or device to support E9-1-1." *FNPRM* at ¶ 13. MSV has explained previously that requiring its current-generation MSS system to comply with the ALI and ANI requirements of E9-1-1 is technologically and economically infeasible.[17] MSV's MSS technology simply does not allow it to comply with the Commission's E9-1-1 ALI requirement. The current-generation satellites of MSV and MSV Canada were developed without any Commission requirement regarding 9-1-1 service. The technology of these satellites has not changed since their launch, nor will it until the launch of next-generation satellites. At most, MSV is currently able to determine which satellite beam a caller is using, each of which covers thousands of square miles. As discussed, relaying this information to a PSAP serves no useful purpose.

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[17] *See generally MSI E9-1-1 Comments, MSI GMPCS Comments, MSI Comments on IB Public Notice.*

To comply with ALI requirements, MSV would need somehow to retrofit its existing mobile terminals to include a location capability, such as GPS, as well as to upgrade its gateway earth station and network switch. MSV has estimated the costs of such upgrades to be several hundred million dollars.[18] Further complicating matters is the fact that the manufacturers of MSV's mobile terminals are either no longer in business or have stated that they no longer support terminal upgrades. Thus, even if MSV's existing customers were willing to have their terminals retrofitted, it is unclear who would have the necessary expertise to upgrade the terminals. For these reasons, MSV urges the Commission to continue to exempt its current-generation system from ALI requirements.

MSV also believes that it may be possible to modify its network to receive ANI from its subscribers, but at a significant cost. More importantly, however, requiring MSV to upgrade its network to receive ANI from subscribers serves no purpose. Even if MSV were able to receive ANI from subscribers, MSV would still have no way of knowing the location of the user to route the call to the appropriate PSAP. Rather, as MSV currently does under its ERS, a call center operator would have to ask the caller for his or her location and then route the call to the appropriate PSAP. As the Commission explains, "unlike terrestrial wireless, where implementation of ANI preceded implementation of ALI, we do not believe that ANI can be implemented prior to ALI for MSS." *FNPRM* at ¶ 42. For these reasons, MSV urges the Commission to exempt its current system from ANI requirements.

B. The Costs of Requiring MSV's Current-Generation System to Comply with E9-1-1 Requirements Far Outweigh the Benefits

The costs of requiring MSV to upgrade its current-generation satellite system to comply with any E9-1-1 requirements far outweigh the public interest benefits of such a requirement.

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[18] *See MSI E9-1-1 Comments* at 8.

MSV's current equipment simply does not work outdoors in urban areas or indoors in all areas because the satellite signal path is typically blocked. The inability of MSV's current system to provide service in urban and indoor environments has prevented MSV from developing a critical mass of customers. This lack of critical mass has in turn resulted in expensive equipment and higher rates than would be the case for a service with more customers. For example, MSV customers must pay hundreds or thousands of dollars for equipment as well as airtime charges are typically in the range of a dollar a minute. These limitations of MSV's current satellite system have resulted in a limited subscriber base. In 2002, MSV's subscribers generated a total of ten (10) emergency calls. Requiring MSV to expend hundreds of millions of dollars to upgrade its current system to become E9-1-1 compliant for this limited number of emergency calls cannot be justified. In addition, the costs MSV would incur in upgrading its system to comply with E9-1-1 would have to be spread over MSV's currently limited subscriber base, resulting in significant increase in costs for what is already an expensive service.

C. The Commission Should Not Require MSV's Current-Generation System to Comply with E9-1-1 Requirements Because MSV Does Not Currently Compete with Terrestrial Wireless Providers

One factor the Commission has proposed to consider in assessing whether a service should comply with E9-1-1 requirements is whether the "service competes with traditional CMRS or wireline local exchange services." *FNPRM* at ¶ 13. MSV's service offerings with its current-generation satellite system cannot be considered as competitive with traditional terrestrial mobile service. Whereas current MSS user terminals are expensive and airtime costs are typically in the range of a dollar per minute, terrestrial mobile customers typically pay nothing for equipment and enjoy airtime charges that are often less than a tenth of those assessed to MSS customers. In addition, MSV's current end user equipment is large, often the size of a briefcase, whereas terrestrial mobile phones can fit comfortably in a shirt pocket. Because current-

generation MSS cannot be considered as competitive with terrestrial mobile service, it fails an important criteria in the Commission's assessment of whether to impose E9-1-1 obligations on new services.

IV. REQUIRING NEXT-GENERATION MSS SYSTEMS TO COMPLY WITH E9-1-1 OBLIGATIONS MAY BE FEASIBLE, PROVIDED THE REQUIREMENTS ARE CLEAR AND REASONABLE, UNIFORMLY APPLIED, AND ESTABLISHED BEFORE IT IS TOO LATE TO RETROFIT OPERATIONAL SYSTEMS

A. The Commission Should Facilitate the Formation of an Advisory Committee to Address the Technological, Operational, and Financial Issues Involved in Implementing E9-1-1 for Next-Generation MSS Systems

While extending E9-1-1 obligations to current-generation MSS system cannot be justified, the situation may be different for next-generation systems. MSV, Inmarsat, as well as the 2 GHz MSS licensees all have plans to launch and operate new MSS systems in the near future. These operators expect significantly greater levels of subscribers with their future systems. MSV believes that it may be technologically and economically feasible for future systems to comply with E9-1-1-like obligations, provided the ground rules for such a requirement are clear and reasonable, uniformly applied among all MSS providers, and established before it is too late to retrofit operational systems.

It is unlikely that any MSS operator can unconditionally commit to implementing E9-1-1 unless the ground rules take into account the unique aspects of MSS. Blindly applying terrestrial E9-1-1 requirements to MSS is not feasible. As the Commission recognizes, compliance with E9-1-1 is a far more difficult task for MSS providers than for terrestrial providers.[19] It is unlikely that the Commission can adequately address the complex technical issues involved in

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[19] *FNPRM* at ¶ 22 ("We recognize that satellite carriers face unique technical difficulties (vis a vis terrestrial carriers) in implementing both basic and enhanced 9-1-1 features.").

applying E9-1-1 requirements to MSS providers through its rulemaking procedures. Rather, only through a broad-based, cross-industry effort will the Commission and affected parties be able to assess what is technologically and economically feasible for MSS carriers to implement and what is essential from a public safety perspective for MSS carriers to implement. As advocated by NTIA,[20] MSV urges the Commission to form an advisory committee of public safety representatives, MSS providers, equipment manufacturers, local exchange carriers, representatives of the GPS industry, and other interested parties to assess the requirements for MSS E9-1-1. As the Commission mentions in the *FNPRM*, it relied on a "Consensus Agreement" between wireless industry representatives and public safety groups in adopting technical and operational requirements for terrestrial E9-1-1.[21] The need for such an agreement prior to the Commission adopting specific E9-1-1 requirements is even more pressing for MSS providers.

An advisory committee would need to address a number of factors that distinguish MSS from terrestrial wireless technology. In order to route a call from an MSS gateway to the appropriate PSAP, an MSS operator will need to know the caller's specific location. Unlike terrestrial E9-1-1, where a carrier could meet Phase I E9-1-1 requirements by providing the location of the cell site or base station receiving a 9-1-1 call, an MSS provider would need to begin with Phase II E9-1-1, which requires the provider to identify the caller's longitude and latitude in conformance with certain accuracy requirements. An advisory committee would need to consider whether the same accuracy requirements that are applied to terrestrial CMRS are needed for MSS and, if so, whether and how MSS providers could can achieve these standards.

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20 *NTIA April 2001 Comments* at 3-4.

21 *FNPRM* at ¶ 29.

If MSS providers conclude that they can only meet accuracy standards with GPS technology in mobile terminals, the committee would need to address any potential interference issues. As NTIA has explained, the bands in which Big LEO and L-band terminals transmit (1610-1660.5 MHz) are adjacent to the band where GPS receivers operate (1559-1610 MHz).[22] NTIA has expressed concern that a GPS receiver incorporated in an MSS terminal would not be able to function properly when the terminal is transmitting.[23] NTIA and MSS providers have also expressed concern about the cost and weight of a filter that can achieve a sufficient level of attenuation to protect GPS.[24] Another issue that would need to be addressed is what effect incorporating GPS functionality in an MSS terminal would have on battery life. In general, the advisory committee would need to address how GPS technology embedded in MSS mobile terminals would effect the cost, size, weight, and battery life of a mobile terminal and whether these effects would adversely impact the market for MSS. An advisory committee would benefit from the expertise of equipment manufacturers and the GPS community to address these issues.

MSS providers offer nationwide coverage but only have a local presence in the immediate areas surrounding their gateway earth stations. This lack of a local presence in most areas makes it extremely difficult, if not impossible, for MSS providers to coordinate with the several thousand PSAPs, local emergency centers, and multiple LECs throughout the country. An E9-1-1 committee would need to address how MSS providers should interconnect their gateways to PSAPs and establish a standard for interconnection for voice and data signaling. As NTIA has explained, "a dialogue between MSS system operators and the developers [of a

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22 *NTIA April 2001 Comments* at 10.

23 *See id.*

24 *See id*; Comments of ICO Global Communications, IB Docket No. 99-67, at 4-5 (February 20, 2001).

nationwide PSAP database] must be established to address the issues related to handling the PSAP information."[25]

Another critical issue is who will bear the cost to interconnect MSS gateways to the thousands of PSAPs throughout the country. Recently, the Commission affirmed that under the terrestrial E9-1-1 requirements, the demarcation point for allocating costs between the wireless carriers and PSAPs is the input to the 9-1-1 Selective Router maintained by the LECs.[26] The Commission affirmed a Wireless Bureau ruling that wireless carriers are "responsible for the costs of all hardware and software components and functionalities that precede the 9-1-1 Selective Router, including the trunk from the carrier's Mobile Switching Center (MSC) to the 9-1-1 Selective Router."[27] If a similar policy were to extend to MSS providers, they would face an enormous cost in establishing trunking arrangements from their one or two gateways to each 9-1-1 Selective Router serving a PSAP throughout the entire nation. Given the financial state of the MSS industry, it is highly doubtful that any MSS provider could bear these costs.

MSV believes that allowing MSS providers to deploy ATC can facilitate the provision of E9-1-1 because providers will have additional points of interconnection in many markets, thus facilitating coordination with appropriate PSAPs. In addition, MSV notes that if MSS providers conclude that they can only meet ALI accuracy standards with GPS technology, then a similar handset-based ALI solution would also be appropriate for terminals operating in terrestrial mode. One potential issue that the advisory committee may want to address is how the hand-off of calls

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25 *See id.* at 7.

26 *Revision of the Commission's Rules To Ensure Compatibility with Enhanced 9-1-1 Emergency Calling Systems, Order on Reconsideration*, 17 FCC Rcd 14789, ¶ 4 (July 24, 2002) (citing Letter from Thomas J. Sugrue, Chief, Wireless Telecommunications Bureau, to Marlys R. Davis, E9-1-1 Program Manager, Department of Information and Administrative Services, King County, Washington (May 7, 2001)).

27 *See id.*

between the satellite and terrestrial components of an integrated MSS/ATC system will impact E9-1-1 compliance. It should be noted, however, that ATC base stations will cover only a small geographic area and the vast majority of the U.S. land mass will receive only satellite coverage. Because customers of an integrated MSS/ATC system may expect E9-1-1 capabilities whether operating in satellite or terrestrial mode, the Commission should require the satellite and the terrestrial piece of an integrated MSS/ATC system to be E9-1-1 compliant simultaneously rather than imposing E9-1-1 obligations on the terrestrial segment prior to the satellite segment, or *vice versa*.

Finally, MSV believes an advisory committee can play an influential role in establishing international emergency calling standards. MSS providers offer service on either a regional or international basis. As a result, MSS providers may be subject to differing emergency calling requirements in several countries. The advisory committee would need to consider this potential for differing emergency calling requirements among the many countries MSS providers serve and strive to implement a solution that will work internationally.

B. If the Commission Imposes E9-1-1 Obligations on Next-Generation MSS Systems, It Should Grandfather Current-Generation Mobile Terminals

Assuming the Commission requires next-generation MSS systems to comply with E9-1-1 requirements, MSV urges the Commission to exempt current-generation mobile terminals operating on next-generation systems from any E9-1-1 requirements. While MSV plans to launch a next-generation system in the near future, its new satellite will likely have an "emulation mode" feature which will allow current customers to use their current terminals on the next-generation system. To comply with ALI requirements, these terminals would need to be retrofitted to include a location capability, such as GPS. As discussed above, such retrofitting

would be extremely costly and is further complicated by the fact that the manufacturers of these terminals are either no longer in business or are no longer supporting terminal upgrades.

V. THE COMMISSION SHOULD NOT REQUIRE EXISTING MSS TERMINALS TO BE LABELED TO INDICATE THEIR 9-1-1 CAPABILITIES

The Commission asks whether existing MSS terminals should be labeled to indicate the extent to which the terminal can be used to access emergency services. *FNPRM* at ¶ 56. MSV does not support such a requirement for its existing mobile terminals. Several thousand MSV voice terminals are used by customers today with several thousand more in inventory. Requiring MSV to recall existing terminals for labeling would be an extremely difficult and costly process and would inconvenience thousands of customers. In addition, MSV's customers have already been made sufficiently aware of the limited 9-1-1 capabilities MSV offers for interconnected voice services through information provided on MSV's ERS in customer service agreements.

Conclusion

For the reasons stated above, MSV requests that the Commission act consistently with the views expressed herein.

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