

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of

Amendment of Parts 2 and 25 to Implement the  
Global Mobile Personal Communications by  
Satellite (GMPCS) Memorandum of  
Understanding and Arrangements

IB Docket No. 99-67

DA 00-2826

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

RM No. 9165

**REPLY COMMENTS OF ICO SERVICES LIMITED**

ICO Services Limited (“ICO”)<sup>1</sup> submits the following reply comments in response to the Federal Communications Commission’s (“FCC” or “Commission”) *Public Notice* (DA 00-2826) inviting further comment concerning the adoption of basic and enhanced 911 requirements for satellite services.<sup>2</sup>

**INTRODUCTION**

The MSS industry remains unanimously opposed to applying the terrestrial commercial mobile radio service (“CMRS”) basic and enhanced 911 requirements (collectively “E/911 requirements”) to MSS at this time.<sup>3</sup> As the MSS commenters

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<sup>1</sup> ICO, a wholly owned subsidiary of ICO-Teledesic Holdings Limited, is an applicant to provide 2 GHz MSS services in the United States. *See* Letter of Intent to Access 2 GHz MSS Frequency Bands at 1990-2025/2165-2200 MHz; SAT-LOI-19970926-00163 (as amended).

<sup>2</sup> FCC Public Notice, *International Bureau Invites further Comment Regarding Adoption of 911 Requirements for Satellite Service*, DA 00-2826 (rel. Dec. 15, 2000) (“*Public Notice*”).

<sup>3</sup> *See* Motient Services Inc. (“Motient”) Comments at 5; Boeing Company Comments at 2; Globalstar Comments at 3; Inmarsat Comments at 5; Final Analysis/Orbital Communications Joint Comments at 2.

showed in some detail, there are fundamental technical and operational differences between MSS and terrestrial CMRS systems. Consequently, no MSS system can meet even the basic 911 requirements that apply to terrestrial CMRS without extensive modifications to its user and network equipment. Some MSS services currently provide a limited emergency calling capability in the form of an operator-assisted emergency calling service, and it is conceivable that such a service could be implemented at the national level. Ultimately, harmonized emergency calling requirements for global systems such as MSS should be developed in the international arena.

**I. MSS COMMENTERS UNIVERSALLY AGREE THAT THE E/911 REQUIREMENTS ADOPTED FOR TERRESTRIAL CMRS SYSTEMS CANNOT BE IMPLEMENTED FOR MSS SYSTEMS**

MSS commenters made clear that there is no “quick fix” that will allow MSS systems to comply with terrestrial CMRS E/911 requirements in the near term. The MSS commenters agree that E/911 compliance based upon the CMRS requirements would require substantial and costly modifications to both the user handset and network components of their MSS systems, which cannot be reasonably achieved by the MSS industry anytime soon. The substantial costs that MSS systems would incur to meet the CMRS E/911 requirements are triggered by the nature of MSS coverage and operations. Unlike terrestrial CMRS systems, MSS systems typically provide coverage to the continental United States (“CONUS”) with a constellation of satellites. To meet even the basic 911 requirements, the system must be able to identify where the caller is located in order to route the call to the appropriate public safety access point (“PSAP”).<sup>4</sup> Similarly, the MSS system must know where all of the PSAPs are located in order to match the

emergency MSS call with the proper PSAP. In contrast, terrestrial CMRS systems typically route an emergency call to the local PSAP nearest the cell-site.

The MSS comments demonstrate that current location identification technology required for meeting basic (and enhanced) 911 requirements cannot be implemented in MSS systems without making substantial system modifications that would place an unreasonable burden on MSS operators. As Inmarsat and Globalstar pointed out, obtaining the user's location coordinates with sufficient accuracy is not achievable using triangulation methods.<sup>5</sup> Alternatively, although Global Positioning System ("GPS") technology, when functioning properly, provides a means for pinpointing a caller's location with the requisite degree of accuracy, its incorporation into MSS handsets presents substantial obstacles -- such as cost and effectiveness -- and may not work at all in some systems. Globalstar, for example, notes that spectrum interference issues prevent its handsets from transmitting voice communications at the same time as the handset's GPS receiver is performing position location determination or update functions.<sup>6</sup>

Moreover, as ICO has pointed out, even if the caller's location coordinates are known, there are substantial difficulties on the network side of the MSS call process. Specifically, ensuring passage of Automatic Location Identification ("ALI") digits and other enhanced 911 information from the gateway earth station to the PSAP would require retrofitting the numerous international, tandem and central office switches throughout the public switched telephone network ("PSTN") which carry these calls.

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<sup>4</sup> Motient, for example, indicates that its system uses five slightly overlapping beams to provide CONUS coverage, while Inmarsat utilizes four. *See* Motient Comments at 3; Inmarsat Comments at 3.

<sup>5</sup> *See* Motient Comments at 3; Inmarsat Comments at 3; Globalstar Comments at 11.

<sup>6</sup> Globalstar Comments at 19.

Private trunking arrangements to link the satellite earth station directly to the PSAP are equally problematic. As Globalstar notes, “in order for [Globalstar] to provide ANI, it would require an American National Standards Institute ISDN User Part (“ANSI ISUP”) connection to the PSTN, which would also require significant distance-sensitive trunking costs.”<sup>7</sup>

The handful of public safety entities that provided comments do not appear to appreciate the technical and economic factors that make it economically and technically infeasible for MSS systems to comply with the CMRS E/911 requirements. SCC Communications Corp. (“SCC”), for example, asserts that “technological advances necessary for implementing E911 for satellite systems have sufficiently developed” to bring MSS E/911 requirements in line with terrestrial CMRS E/911 requirements.<sup>8</sup> In particular, the public safety entities point to GPS technology and Doppler-based methods as appropriate technologies for MSS systems.<sup>9</sup> As detailed above, however, these technologies cannot be implemented without substantial modification to both the handset and network components of the MSS systems.

Further, as explained above, in addition to accessing the caller’s location coordinates, the MSS system must have the location coordinates of the PSAPs to match the caller with the appropriate PSAP for the caller’s location. However, despite Washington State E911 Program’s (“WSP”) assertion that “all that is needed to determine the correct 911 call routing is a readily accessible electronic map that provides for

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<sup>7</sup> *Id.* at 17 (citation omitted).

<sup>8</sup> SCC Comments at 3-4.

<sup>9</sup> *See* National Emergency Numbering Association Comments at 2; SCC Comments at 4; Washington State E911 Program Comments at 1.

polygon based access to PSAP information,”<sup>10</sup> it is clear from the public safety entity comments that no satisfactory “electronic map” exists. The National Emergency Numbering Association (“NENA”) asserts, for example, that existing national PSAP databases “have differing degrees of accuracy, and are compiled with varying data formats for various contemplated end uses.”<sup>11</sup> Accordingly, based on NENA’s own comments, its assertion that basic 911 can be “achieved immediately” is simply incorrect.<sup>12</sup> MSS service is national and international in scope and MSS operators cannot implement technical solutions to these issues on a piecemeal, state-by-state, locality-by-locality basis. Rather, the PSAPs must engage in a coordinated effort to provide a unified “national” solution covering not just all PSAP locations, but also a single harmonized interconnection standard that will accommodate all MSS systems.

Finally, the public safety entities also do not recognize the substantial costs that would be imposed upon MSS operators in order to comply with the terrestrial CMRS E/911 requirements. These costs include revamping not just the MSS handsets, but also adjusting every link in the routing of the call from the satellite to the PSAP, and cannot be assumed by MSS operators and their subscribers alone. Globalstar estimates the costs for incorporating the ANSI ISUP capability alone -- exclusive of trunking costs -- at over \$1,000,000.<sup>13</sup> Based on figures provided in Globalstar’s comments, the *monthly* trunking costs for interconnecting with the thousands of PSAP jurisdictions would likely amount

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<sup>10</sup> WSP Comments at 2.

<sup>11</sup> NENA Comments at 2.

<sup>12</sup> *Id.* at 4.

<sup>13</sup> *Id.* at 18.

to several hundred thousand dollars.<sup>14</sup> Motient estimates the costs of retrofitting its system would amount to several hundred million dollars.<sup>15</sup> NENA asserts that because MSS services are not rate-regulated, they “should recover their own 9-1-1 costs” unless a given state or local jurisdiction wishes to reimburse them.<sup>16</sup> However, as Globalstar notes, whereas terrestrial CMRS subscribership was at 44 million at the time E/911 requirements were adopted in 1996, and doubled to over 86 million by 1999, MSS subscribership in the United States stands at less than 500,000.<sup>17</sup> Recovery of these substantial costs cannot reasonably be assumed by such a small base of subscribers.

## **II. MSS OPERATORS MAY BE ABLE TO PROVIDE A LIMITED EMERGENCY CALLING CAPABILITY**

MSS operators are working to provide a limited emergency calling capability. Motient and Globalstar, for example, have implemented operator-assisted emergency response capabilities in their systems.<sup>18</sup> Motient’s emergency response system utilizes trained emergency operators which, “[u]pon receiving a call from a subscriber, [] request the caller’s location and phone number and conference the caller in with the appropriate emergency contact, who is also supplied with this key information.”<sup>19</sup> Globalstar routes 911 emergency calls to a central service bureau, which in turn routes the call to the PSAP based on the information provided by the caller.<sup>20</sup> It is possible that Globalstar’s central service bureau approach could be converted into a national service bureau approach,

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<sup>14</sup> *Id.* at 17, n.45.

<sup>15</sup> Motient Comments at 3.

<sup>16</sup> NENA Comments at 4.

<sup>17</sup> Globalstar Comments at 6-7, nn. 20-22.

<sup>18</sup> *See* Motient Comments at 2; Globalstar Comments at 2.

<sup>19</sup> Motient Comments at 2.

where operators could forward incoming MSS emergency calls to the proper PSAP based on the information provided to them by the caller. Implementation of such approach would not present substantial difficulties with respect to the MSS network because each MSS operator's 911 calls would be connected through a single trunk to the central PSAP facility. The costs of such system (which include monthly trunking fees), however, would need to be addressed further.

Although this approach might not provide as extensive capabilities as those required under the Commission's E/911 rules, it may be a reasonable interim measure until a globally harmonized solution has been developed to address these issues. As the MSS commenters showed, because MSS operators can provide communications service in areas and at times where no other communications alternative exists -- such as the use of Globalstar MSS service to assist earthquake relief operations in El Salvador<sup>21</sup> -- they already provide a valuable public safety benefit. Pricing MSS service out of the United States wireless services market altogether through the imposition of excessive and unrecoverable compliance costs does not advance public safety concerns.

Finally, the mandatory equipment labeling suggested by WSP to indicate that 911 dialing is not available is not necessary to achieve its intended purpose. WSP asserts that MSS customers will have the expectation and assumption that 911 dialing will be available through their MSS handsets and, thus, must be apprised before purchasing the service that such 911 dialing will not be available. As described above, MSS operators are looking at ways to provide emergency calling capability. Further, as Globalstar notes, "MSS providers have ample incentive to make appropriate disclosures in their customer

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<sup>20</sup> Globalstar Comments at 3.

service agreements.”<sup>22</sup> Mandatory labeling on the handset -- in addition to adding more production costs -- could give the erroneous impression that the handset is defective. There is no reason to believe that notification through customer service agreements would be insufficient to advise any potential customer of its 911 dialing capabilities.

### **III. EMERGENCY CALLING REQUIREMENTS FOR MSS SHOULD BE ADDRESSED AT THE INTERNATIONAL LEVEL**

As discussed above, MSS systems employ a “one-size-fits-all” design to provide global and national service. The inherent nature of MSS systems demand uniformity among the national and international requirements, including public safety requirements that may be imposed upon the individual systems. Because MSS systems operate on a global basis, they are subject to emergency calling requirements in multiple countries. As Inmarsat indicated, “[t]he more detailed any one set or sets of domestic requirements, the more difficult it becomes for international service providers to ensure that their equipment is compliant with all such requirements.”<sup>23</sup> While, at a minimum, this requires the PSAPs to provide a unified solution to interconnection and PSAP location issues before automatic routing of MSS emergency calls to them can be contemplated, it also means that the preferable approach to fully addressing MSS issues would be to develop a harmonized global solution. As Inmarsat suggests, “the development of emergency-calling standards for international service providers would be far more appropriately left to international standards bodies.”<sup>24</sup>

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<sup>21</sup> *See id.* at 9.

<sup>22</sup> *Id.* at 24.

<sup>23</sup> Inmarsat Comments at 2.

<sup>24</sup> *Id.*

## CONCLUSION

Mandatory imposition of the Commission's E/911 requirements on MSS services is not appropriate at this time, given the enormous technical obstacles and the immense costs that would be imposed on new entrant MSS operators. As an interim measure, it might be possible to implement a national service bureau to which all MSS 911 calls would be routed and trained operators would forward the call to the proper emergency contact based on the information provided by the caller. Accordingly, ICO urges the Commission to continue the MSS exemption from mandatory E/911 requirements, and to consider instead pursuing a harmonized solution that would address emergency call requirements for MSS on a global basis.

Respectfully submitted,

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## CERTIFICATE OF SERVICE

I, Theresa Pringleton, do hereby certify that copies of the foregoing **REPLY COMMENT OF ICO SERVICES LIMITED** were delivered on this 6th day of March, 2001, to the following:

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