

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

In the Matter of	)	
	)	
Revision of Commission's Rules to	)	
Ensure Compatibility With Enhanced 911	)	CC Docket No. 94-102
Emergency Calling Systems	)	
	)	
Amendment of Part 2 and 25 to Implement the	)	
Global Mobile Personal Communications by	)	
Satellite (GMPCS) Memorandum of	)	
Understanding and Arrangements; Petition of	)	
the National Telecommunications and	)	IB Docket No. 99-67
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	)	

**COMMENTS OF INMARSAT VENTURES PLC**

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Inmarsat Ventures plc ("Inmarsat"), hereby comments on the Further Notice of Proposed Rulemaking in the above-captioned proceedings.<sup>1</sup> Inmarsat welcomes the opportunity to comment on the Commission's basic 911 and enhanced 911 ("E911") proposals for mobile satellite service ("MSS") providers.

**INTRODUCTION AND SUMMARY**

The Commission has recognized that its 911 requirements should not be uniformly applied to all MSS providers. Instead, the Commission has proposed that each MSS service or product be analyzed separately to determine whether the provider of such service

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<sup>1</sup> See *In re Revision of Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems; Amendment of Parts 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements; Petition of National Telecommunications and Information Administration to Amend Part 25 of the Commission's Rules to Establish Emission Limits for Mobile and Portable Earth Stations Operating in the 1610-1660.5 MHz Band*, CC Docket No. 94-102 and IB Docket No. 99-67, Further Notice of Proposed Rule Making (rel. December 20, 2002) ("FNPRM").

should be required to comply with the Commission's basic 911 and E911 requirements.<sup>2</sup>

Inmarsat endorses the Commission's proposed four-part threshold test. Such a test will ensure that burdensome obligations are not imposed on MSS providers where basic 911 and E911 capabilities are not expected, necessary, or practical.

Under the test proposed by the Commission, Inmarsat's services should not be required to implement 911 functionality. As described below, Inmarsat provides a diverse range of services, but none of these services competes with those of CMRS providers, and end-users of the Inmarsat system do not expect the 911 functionality that one expects from a handheld wireless phone.

It also is impractical for Inmarsat to establish a call center because Inmarsat currently is not involved in the routing of calls to the public switched network. Inmarsat provides, on a wholesale basis, capacity on its satellite system to land earth station operators ("LESOs") in the United States. Those LESOs, in turn, establish and maintain customer relationships, provide service directly to end-users, and own and operate the earth stations that connect end-users to the public switched telecommunications network. Because Inmarsat is not involved in the routing of customers' calls, it simply is not possible for Inmarsat itself to process emergency calls through a call center. Moreover, the current Inmarsat system has no ability to locate the position of a caller with any meaningful specificity. Inmarsat is unable to provide E911 functionality such as automatic location information or automatic routing of emergency calls to public safety answering points ("PSAPs"). Even if the LESOs were able to operate the call centers, Inmarsat believes that such operations would be burdensome and outside the range of services expected by end-users of the Inmarsat system.

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<sup>2</sup> See *FNPRM* at ¶ 13.

## DISCUSSION

### I. OVERVIEW OF INMARSAT'S CURRENT SATELLITE SYSTEM

Inmarsat provides communications services to users such as the U.S. Navy, U.S. Coast Guard and commercial vessels at sea, corporations, news organizations and humanitarian relief organizations on land, and almost every major commercial airline. Inmarsat's terminals are used primarily to transmit data and digitally compressed video, and to access the Internet, and can also be used for voice communications. For example, ships at sea are able to transmit manifests and order supplies before entering port; planes use Inmarsat terminals to aid in navigation and contact air traffic control stations; and land-based users are able to transmit news reports, conduct remote monitoring of plant facilities, and maintain contact with their headquarters from remote locations.

Inmarsat terminals used for maritime and aeronautical purposes are highly specialized devices that generally are mounted on ships and planes. In comparison, Inmarsat's terrestrial terminals are transportable (although not handheld) devices typically used as communications base stations. The smallest transportable Inmarsat terrestrial terminal is approximately the size of a laptop computer. In order to establish communications, the terminal must be set up outdoors or next to a window and its antenna directed towards an Inmarsat satellite. Direct line of sight must be maintained with the satellite at all times, and the terminals generally cannot be operated while moving.<sup>3</sup>

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<sup>3</sup> The Inmarsat C terminals may be mounted on vehicles and used while in motion. These terminals, however, are designed for a data-only, short message service. Trucking fleets use such terminals to relay data between trucks and dispatch stations. This service is not competitive with CMRS. Moreover, because of the data-only nature of the terminals, Inmarsat customers using Inmarsat C terminals have no expectation of 911 capability.

Inmarsat operates by wholesaling satellite capacity to its LESOs who, in turn, market and provide service to terrestrial customers. Inmarsat operates and maintains satellites in orbit, and relies upon its LESOs to establish and maintain the operational and business relationship with land-based users. LESOs purchase terminals that meet Inmarsat specifications from third-party manufacturers and provide those terminals to their own customers. The LESOs are also responsible for operating gateway earth stations (“GES”) through which signals from their customers’ terminals are routed and also connected to the public switched network. Thus, a typical call originating from an Inmarsat terminal is transmitted to an Inmarsat satellite, which then relays the signal to the appropriate LESO GES. From there, the call is connected to the public switched network. Calls from the public switched network work in reverse.

## **II. INMARSAT SERVICES ARE NOT WITHIN THE AMBIT OF THE COMMISSION’S 911 CRITERIA**

The Commission has proposed that basic 911 and E911 requirements be imposed only where an MSS service meets each of the following criteria: (i) real-time, two-way voice service that is interconnected to the public switched network; (ii) customers using the service have a reasonable expectation of access to 911 and E911 service; (iii) the service competes with traditional CMRS or wireline local exchange services; and (iv) it is technically and operationally feasible for the service or device to support 911 functionality.<sup>4</sup> These criteria acknowledge that MSS service providers operating today do not offer the same types of service. While some companies market their services as an alternative to a cellular or PCS phone, Inmarsat does not do so.

Inmarsat supports the Commission’s use of threshold criteria that recognize the diversity of services offered by MSS providers and the difficulties that would result from the

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<sup>4</sup> See *FNPRM* at ¶¶ 12 and 13.

indiscriminate imposition of basic 911 and E911 obligations. The proposed criteria will enable the Commission to impose 911 obligations where appropriate, while allowing certain MSS service providers to continue operations using standards that take into consideration both the practicalities of their system designs and their customers' expectations. For the reasons set forth below, Inmarsat's services do not meet the Commission's threshold criteria. Therefore, no 911 obligations should be imposed upon Inmarsat services.

As the Commission has noted, the application of 911 requirements to maritime and aeronautical services is not necessary or appropriate.<sup>5</sup> Traditional 911 facilities are not designed to address emergencies at sea or in the air. Instead, the Commission and the international community have established specific emergency systems for just such events. In particular, the GMDSS provides essential safety services at sea and the Inmarsat system is a vital part of this system. Similarly, the aeronautical industry has established procedures and standards to handle emergencies in the air. Thus, application of E911 to maritime and aeronautical MSS services would be redundant and potentially harmful if such rules interfered with or hampered the use of existing emergency systems.

As discussed below, Inmarsat's terrestrial services are not competitive with wireline telephone or CMRS services and implementation of certain 911 functionality would be impossible using the Inmarsat satellite network.

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<sup>5</sup> *See Id.* at ¶ 13 (the Commission excluded air-to-ground and public coast stations from basic 911 and E911 requirements, because their customers would not expect access to 911 services in the event of an emergency); *see also Id.* at ¶ 25 (“we note that vessels at sea already have access to the Global Maritime Distress and Safety System (“GMDSS”) for distress and safety needs, and therefore persons at sea may not have an expectation of 911 services with satellite handset phones.”).

1. Inmarsat Terrestrial Services Are Not Competitive With CMRS Or Wireline Services

Use of wireless phones has become ubiquitous in the United States. Consumers keep wireless phones in their pockets wherever they go, and, in a growing number of cases, individuals have replaced their wireline phones with one or more wireless phones. CMRS service has become, in the consumer's mind, synonymous with local wireline phone service.

In contrast, Inmarsat terrestrial service caters to a highly specialized clientele and offers a range of communications services of which voice communications is but one facet. No one could mistake an Inmarsat terminal for a wireless phone, nor would one think to use it interchangeably. The smallest Inmarsat terrestrial terminal is approximately the size of a laptop computer. It must be set up with a direct line of site to an Inmarsat satellite and antenna deployed in order to establish a communications link. Simply put, an Inmarsat terminal is not a device that can be pulled from a pocket and used quickly.

Customers use Inmarsat terrestrial service to establish links to their office, to transmit video or data from the field, and to monitor remote business facilities. They understand that the terminal is not a wireless phone and do not expect it to operate as such. The procedures to operate an Inmarsat terminal are more involved than a cell phone, but the Inmarsat system offers an extended area of operation and, depending on the type of terminal, a wide range of voice and non-voice capabilities. For these services, Inmarsat's users are willing to pay a premium. The cost of an Inmarsat terrestrial terminal ranges from \$2,500 to over \$8,000 depending on the model<sup>6</sup> and service is charged at a rate of over \$2 per minute.<sup>7</sup> In comparison,

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<sup>6</sup> See Stratos website at [www.stratosglobal.com/solutions/product/mobileSatelliteServices/inmarsat/](http://www.stratosglobal.com/solutions/product/mobileSatelliteServices/inmarsat/) (web page listing of Inmarsat terminals and links to prices for such terminals).

a cell phone can be purchased for less than \$50 and cellular providers generally offer monthly calling plans that provide hundreds of minutes of domestic service for under \$50 but limited or no international calling options. The uses of and purpose for Inmarsat terrestrial service are fundamentally different than that of CMRS services and the two simply are not competitive with one another.

In contrast, other MSS providers market their services as an alternative to a cell or PCS phone. And, to the extent those entities deploy ancillary terrestrial components (“ATCs”) along with their MSS systems,<sup>8</sup> their service offerings may be indistinguishable from CMRS. ATC advocates have asserted that they will offer services from small handsets that will be able to operate in urban settings where there is no direct line of sight with their satellites and while the user is in motion. Even if the Commission identifies ATC as competitive with CMRS for purposes of basic 911 and E911 requirements, Inmarsat urges the Commission to distinguish ATC services from “traditional” MSS services such as Inmarsat service. Because Inmarsat services are not competitive with wireline or CMRS services and end-users of the Inmarsat system do not have an expectation of either basic 911 or E911 service, the Commission’s 911 requirements should not apply to Inmarsat services.

2. Provision Of Basic 911 In The Form Of A Call Center Is Technically Infeasible

As a type of basic 911, the Commission has proposed that MSS providers who meet the Commission’s 911 threshold requirements establish national call centers to which all

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<sup>7</sup> See Telenor website at [www.telenor.com/satellite/sales/end\\_users/](http://www.telenor.com/satellite/sales/end_users/) (web page listing charges for end-users without any agreement with a service provider).

<sup>8</sup> See *FNPRM* at ¶ 55 (the Commission has sought comment on the impact of the integration of ATC to MSS services on E911 requirements).

subscriber emergency calls are routed.<sup>9</sup> Because of the design of Inmarsat's network and its existing business relationships with the entities who actually provide service to end-users, Inmarsat does not have the operational control of U.S. customers' terminals and calls necessary to establish or operate an emergency call center.

As described above, Inmarsat relies on LESOs to service the needs of end-users and to route individual calls to the public switched network. Inmarsat's spacecraft simply act as a "bent pipe" between user terminals and LESO GESs. From there, the LESO identifies where the call should be directed and connects the call with the public switched network. In addition to routing calls, LESOs determine what equipment their customers use and whether those terminals are manufactured and operate with a particular functionality. Finally, LESOs also determine where their gateway stations are located, including whether or not the gateway is located in the United States. Inmarsat has very limited influence on these fundamental aspects of the service provided to the end-user. Because Inmarsat is not involved in the routing of the calls or the connection of the call to the public switched network, Inmarsat simply is not operationally able to implement the emergency call center proposed by the Commission.

To the extent that the Commission seeks to impose a call center obligation on LESOs using Inmarsat's network, Inmarsat cannot comment on all the problems that each LESO would face. Inmarsat notes, however, that its current generation of terminals and the Inmarsat satellite system has no ability to locate an emergency caller. At best, it would be possible able to identify which satellite beam a caller is using. Such as beam, however, could cover an area as large as the entire east coast of the United States. The LESOs would have to rely completely on

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<sup>9</sup> See *FNPRM* at ¶ 22.

the caller to identify his own location. Inmarsat's current terminals do not have even the limited locator abilities of Globalstar's terminals, which provide the latitude and longitude to a caller.<sup>10</sup>

Inmarsat is also concerned about the potential liability that would arise from the Commission's imposition of 911 requirements. As the Commission noted, the Wireless Communications and Public Safety Act of 1999 (the "911 Act") affords limited liability protection to wireless carriers providing 911 service who meet certain criteria.<sup>11</sup> Providing users access to emergency services through numbers other than "911," however, may not be protected under the 911 Act. Thus, if a LESO using the Inmarsat system decides to provide emergency calling services using foreign emergency codes or is unable to meet the criteria under the 911 Act, Inmarsat may find itself subject to lawsuits and open to liability. Similarly, if the Commission requires Inmarsat to offer 911 functionality, the 911 Act as currently drafted may not fully protect Inmarsat. The 911 Act was not drafted with MSS services in mind. Until Congress adequately protects providers of 911 services over MSS, Inmarsat urges the Commission to defer the imposition of 911 requirements.

Users of Inmarsat terminals purchased the service knowing that it did not have "911" capabilities. The cost of implementing emergency call centers for each of Inmarsat's LESO would ultimately be passed on to a customer who did not ask for or expect to pay for such services. Because of the difficulties associated with establishing a call center and the lack of expectation of such service by subscribers, Inmarsat urges the Commission not to impose an emergency call center requirement on providers of Inmarsat service.

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<sup>10</sup> See *FNPRM* at ¶ 21.

<sup>11</sup> See *FNPRM* at ¶ 53.

### **III. FUTURE INMARSAT SERVICES DO NOT FALL WITH THE AMBIT OF SERVICES SUBJECT TO FCC 911 RULES**

Inmarsat is currently designing a new service called B-GAN based on the improved capabilities of Inmarsat's next generation satellite design, called Inmarsat-4. Users of B-GAN will be able to transmit data and digital video at higher speeds, maintain virtual private networks, access the Internet and provide voice communications. In sum, the B-GAN system will enable a user to establish a virtual office in remote locations.

Inmarsat intends to operate the B-GAN system in a significantly different manner than its existing services. Instead of relying on LESOs to route calls from subscribers, Inmarsat plans to provide two overseas GESs through which all B-GAN signals will be processed. Thus, a call from a user in New Mexico to a person in New York City would be transmitted as follows: the signal would uplink to an Inmarsat-4 satellite and be sent down to Inmarsat's GES in Burum, Holland; from there the call would be connected to the public switched network in Holland and completed as an international call to the individual in New York City. Inmarsat also anticipates incorporating GPS technology into standard B-GAN terrestrial terminals.

The increased flexibility of B-GAN, however, does not change the fundamental nature of Inmarsat's service – a data intensive service, with voice capability that does not compete with wireline telephone or CMRS services. Under the criteria proposed by the Commission, the Commission's basic 911 and E911 requirements should not apply to B-GAN. As with existing Inmarsat terrestrial services, terrestrial B-GAN service will not compete with CMRS or wireline services. Inmarsat anticipates that terrestrial B-GAN terminals (i) will be no smaller than the size of small laptops, (ii) will need to be used with a direct line of sight to an Inmarsat satellite, and (iii) as a general matter, will need the antenna manually oriented towards the satellite and will not be usable while the terminal is in motion. Finally, Inmarsat anticipates

that the price point of B-GAN equipment and services will be significantly higher than that of CMRS equipment services. Therefore, as with Inmarsat's current services, B-GAN will not meet the Commission's 911 threshold criteria that a service be competitive with CMRS or wireline services.

### CONCLUSION

Inmarsat urges the Commission to adopt its proposed four-part threshold test to determine which MSS systems should be subject to the Commission's basic 911 and E911 obligations. Inmarsat's services should not be subject to 911 functionality or call center requirements because (i) Inmarsat does not offer a CMRS competitive service, (ii) its customers do not expect 911 capabilities, and (iii) it is technically infeasible to implement 911 under the Inmarsat network architecture.

Respectfully submitted,



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