

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

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In the Matter of	)	
	)	
International Bureau Seeks Comment on	)	IB Docket No. 16-185
Recommendations Approved by World	)	
Radiocommunication Conference Advisory	)	
Committee	)	

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**COMMENTS OF IRIDIUM COMMUNICATIONS INC.**

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**INTRODUCTION**

On October 30, 2017, the Commission issued a Public Notice<sup>1</sup> seeking comment on the draft recommendations provided by its WRC-19 Advisory Committee. The FCC also seeks comment on draft proposals from the National Telecommunications and Information Administration (NTIA). These comments focus on Document WAC/039 (30.10.17) (WAC/039) concerning WRC-19 Agenda Item 1.8: “to consider possible regulatory actions to support Global Maritime Distress and Safety Systems (GMDSS) modernization and to support the introduction of additional satellite systems into the GMDSS, under Resolution 359 (Rev.WRC-15).”<sup>2</sup>

Due to compromises made at WRC-15, Agenda Item 1.8 effectively incorporates two separate agenda items. First, *resolves 1* of Resolution 359 (Rev.WRC-15) addresses accommodating advanced maritime communication systems to support the implementation of GMDSS modernization. Second, *resolves 2* of Resolution 359 (Rev.WRC-15) addresses the

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<sup>1</sup> *International Bureau Seeks Comment on Recommendations Approved By World Radiocommunication Conference Advisory Committee*, Public Notice, DA No. 17-1059, IB Docket No. 16-185 (rel. Oct. 30, 2017).

<sup>2</sup> *Document WAC/039 (30.10.17)*, IB Docket No. 16-185 (rel. Oct. 24, 2017).

introduction of an additional satellite system into the GMDSS. Document WAC/039 addresses *resolves 2* only.<sup>3</sup>

**I. The Commission Should Support the Recommendations in WAC/039, “View A”**

Concerning WRC-19 Agenda Item 1.8 dealing with GMDSS in Document WAC/039 the Commission received competing proposals. “View A” of WAC/039 represents the views and Agenda Item 1.8 proposal of Iridium, The Boeing Company, Harris, Wiltshire & Grannis, LLP, Jansky-Barmat Telecommunications, Inc., Access Partnership, LLC, and Aviation Spectrum Resources, Inc. “View B” of WAC/039 represents the views and Agenda Item 1.8 proposal of Ligado Networks, Inmarsat, and Globalstar.

The United States’ and the CITEL’s regional WRC preparatory processes are entering a phase where initial draft WRC proposals are submitted to CITEL, the Americas’ regional telecommunications organization.<sup>4</sup> The purpose is to garner feedback from other delegations in the Americas, then consider refining U.S. proposals, and agree on consensus regional proposals for submission to WRC-19. The United States has already submitted to CITEL a “preliminary view” on Agenda Item 1.8. It is timely for the United States to submit a draft proposal to CITEL. The FCC should recommend to the Department of State the Agenda Item 1.8 “View A” proposal embodied in WAC/039.

WRC-19 Agenda Item 1.8 will consider updates to the Radio Regulations to reflect changes in the GMDSS. Developed and maintained by the International Maritime Organization (IMO), the GMDSS is an internationally agreed set of safety procedures, types of equipment, and

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<sup>3</sup> As explained later, proponents of View B appear to mix elements relating to *resolves 1* with elements relating to *resolves 2*, though these *resolves* address separate matters.

<sup>4</sup> CITEL, *World Radiocommunication Conference (WRC)* (Oct. 5, 2017), <https://www.citel.oas.org/en/Pages/PCCII/WRC.aspx>.

communication protocols used to increase maritime safety and make it easier to rescue vessels in distress. As a “system of systems,” the GMDSS includes several different terrestrial components. However, the GMDSS currently includes just one satellite provider. Coverage and reliability issues mean that this situation leaves areas of the globe without the two-way search-and-rescue satellite communications capability that is compulsory for ships of a certain size, including polar regions.<sup>5</sup>

The IMO is the organization responsible for approving applications of GMDSS providers and which is considering Iridium as an additional GMDSS provider. However, the ITU has a separate but important role in the management of the radiofrequency spectrum, including those spectrum resources and regulatory procedures that enable maritime services and the operation of the GMDSS. The Radio Regulations also include specific operational procedures for maritime services, and for distress and safety communications, including the GMDSS. Thus, the United States is pursuing its objective to introduce Iridium into the GMDSS through both the IMO and the ITU. The organizations’ respective processes are below.

### ***IMO Process***

The IMO has a policy of supporting the incorporation of new satellite service providers into the GMDSS to improve diversity, redundancy, competition, and coverage. To enable new GMDSS providers, the IMO has already taken critical steps to amend its treaty and approved

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<sup>5</sup> For example, geostationary orbit satellite systems are not able to cover polar regions. Non-geostationary orbit satellite systems, such as the Iridium system under consideration by the IMO, travel in orbits circling the globe and thus are able to cover polar regions. With its constellation architecture of 66 low-earth orbit satellites, Iridium’s network can provide reliable coverage on a global scale – including in polar regions that cannot be reached by the only currently recognized GMDSS satellite service provider.

amendments to the Safety of Life at Sea (SOLAS) Convention intended to facilitate the timely incorporation of new satellite systems in the GMDSS.

The IMO is in the process of considering an application from Iridium for recognition as a satellite GMDSS provider. Iridium's system has been operating for twenty years and has progressed substantially through the approval process. At present IMO anticipates recognition of the Iridium system for use in the GMDSS during 2018. Iridium is the only satellite system under consideration by the IMO to become an additional GMDSS provider. Significant past and future milestones in the IMO process are listed below:

Jun 2013	Iridium made its application to the 92 <sup>nd</sup> meeting of the IMO Maritime Safety Committee (MSC 92).
Jul 2014	Iridium submitted a detailed self-analysis to the first meeting of the Navigation, Communications, and Search and Rescue Sub-Committee (NCSR 1).
Mar 2015	International Mobile Satellite Organization (IMSO) conducted evaluation and reported to NCSR 2 that <i>“the level of protection afforded to the use of those frequencies is considered to be sufficient for GMDSS operational purposes.”</i>
Nov 2015	WRC-15 Adopted Resolution 359 addressing GMDSS modernization and the incorporation of new satellite providers into the GMDSS.
Mar 2016	NCSR 3 reviewed IMSO's report and identified specific remaining items for further examination.
Feb 2018	NCSR 5 will review IMSO's second report and decide whether to make a recommendation to MSC 99.
May 2018	MSC 99 anticipated to recognize any recommendations of NCSR 5.

The above table reveals that by May 2018, the IMO Maritime Safety Committee may recognize the recommendation of an additional satellite system for introduction into the GMDSS.

#### **WRC/ITU-R Process**

WRC-15 adopted Agenda Item 1.8, and associated Resolution 359 (Rev.WRC-15), to consider possible regulatory actions to support the modernization of terrestrial elements of the GMDSS (*resolves 1*), and the introduction of additional satellite systems into the GMDSS (*resolves 2*). *Resolves 2* charges the ITU-R with undertaking studies taking into consideration of the activities of IMO and the recognition of additional satellite providers for the GMDSS. To

satisfy the elements of Resolution 359 (Rev.WRC-19), relating to *resolves* 2, in support of Iridium as an additional satellite system carrying GMDSS, the United States has initiated the following studies<sup>6</sup> in ITU-R Working Party 4C (WP 4C):

- Draft Report [GMDSS.SATREG] – this document will report on allocation, technical, and regulatory considerations in process in ITU-R WP 4C.
- Draft Report [RAS.COMPAT] – this document will report on measures being taken to ensure the Iridium system is compatible with radio astronomy operations in the lower adjacent band.
- Draft CPM Text – this document will provide draft text on this matter to include in the draft Conference Preparatory Meeting Report for WRC-19.

The ITU-R WP 4C activities – and subsequent review by ITU-R WP 5B – are expected to conclude in May of 2018, coincident with the expected recognition of Iridium as an additional satellite provider of GMDSS.

The United States has been a leader at the IMO on modernizing and updating GMDSS to take account of new technologies and services and should ensure that the benefits of these U.S. initiatives at both the IMO and the ITU are brought to the maritime community as soon as

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<sup>6</sup> Concerning the introduction of an additional satellite system into the GMDSS, *considering (e)* of Resolution 359 (Rev.WRC-19) states, “*e*) that GMDSS satellite systems need to provide protection of incumbent services in accordance with the Radio Regulations, including those in adjacent frequency bands, from harmful interference, and such GMDSS satellite systems should operate within the interference environment of existing systems.” WRC-19, *Agenda and Relevant Resolutions*, Resolution 359 (WRC-15) *considering (e)* (rel. Dec. 13, 2016). The Iridium satellite system has operated in accordance with the Radio Regulations and within the interference environment of existing systems for the last twenty years. Carriage of GMDSS traffic does not result in any change to the technical or operational characteristics of the Iridium satellite system. Therefore, the introduction of Iridium into the GMDSS presents no new in-band or adjacent band compatibility issues.

possible. Delay in bringing new developments – such as an additional satellite provider – will only result in cost to both to the maritime community as well as U.S. industries supporting that community.

In light of the activities described above and the need to begin proposal discussions with CITEL partners, it is timely for the Commission to adopt the more comprehensive proposal given in View A.

## **II. Though View B Comments Misinterpret Relevant Parts of Resolution 359 (Rev.WRC-19) and the Radio Regulations, View A and View B Recommendations Are Not Far Apart**

As an initial matter, in View B proponents confuse the separate elements (*resolves 1* versus *resolves 2*) of Agenda Item 1.8. That is, View B proponents mix parts of Resolution 359 (Rev. WRC-19) concerning GMDSS modernization with elements of Resolution 359 (Rev.WRC-19) concerning the introduction of an additional satellite system into the GMDSS. Consequently, many of the View B comments on specific aspects of Resolution 359 (Rev.WRC-19) are not applicable to the introduction of an additional satellite into the GMDSS and are not related to the proposal in Document WAC/039. View A of Document WAC/039 provides detailed comments on specific elements of View B comments.

While not repeating View A comments here, it is worth pointing out certain aspects of View B that may be particularly misleading. The View B material is in italics followed by Iridium's responses in standard typeface.

### **Res. 359 Directs WRC-19 To Take Regulatory Actions with Respect to GMDSS Modernization In a Manner that Is Compatible with Adjacent Spectrum Uses**

*Res. 359 (and, by extension, AI 1.8) recognizes that any introduction of new GMDSS systems must be compatible with adjacent spectrum uses. Thus, Res. 359 provides for the introduction of new GMDSS systems if—and only if—two conditions are satisfied:*

1. GMDSS satellite systems must fully protect existing services. *Res. 359 explicitly recognizes that “GMDSS satellite systems need to provide protection of incumbent services in accordance with the Radio Regulations, including those in adjacent frequency bands, from harmful interference.”*
2. GMDSS satellite systems must be capable of operating within the known interference environment, without any need to claim special protection from existing systems. *Res. 359 explicitly recognizes that “GMDSS communications systems . . . must be resilient to interference” and “should operate within the interference environment of existing systems.”*

First, the heading is indicative of View B proponents confusing *resolves 1* on GMDSS modernization with *resolves 2* on the introduction of an additional satellite system into the GMDSS. Second, Resolution 359 (Rev.WRC-19) is a typical WRC study resolution. A WRC Resolution invites the ITU-R to conduct studies related to a Resolution’s associated WRC Agenda Item. A WRC Resolution does not constitute a condition for considering an Agenda Item at a WRC. For example, some studies – particularly for introducing new services or new allocations into a frequency band – may result in proposals for new allocations as well as new technical and operational rules. Conversely, other studies – often in the case of existing operational systems – may determine that no further allocation, technical, or operational changes are needed.

Introduction of Iridium as an additional satellite system into GMDSS falls into the latter category. Iridium has been operating with incumbents, including those in adjacent bands, for twenty years. Carrying GMDSS traffic<sup>7</sup> over a technically and operationally stable satellite system will require no technical or operational changes to the long-existing system. In the case of Iridium’s introduction into the GMDSS, the possible modifications to the Radio Regulations

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<sup>7</sup> GMDSS is not an allocated service. Rather it is a “system of systems” comprised of terrestrial and satellite communication assets integrated in a system to address maritime safety communications.

will be regulatory, designed to record into the Radio Regulations IMO's recognition of the Iridium system as a GMDSS provider.

**Res. 359 Directs ITU-R to Complete Studies to Verify that these Conditions Are Satisfied**

*Requisite studies have not been completed to evaluate the potential impact of GMDSS operations within that band on other services—which is particularly problematic given the evolving nature of systems and operations in that band and adjacent bands.*

Studies invited by Resolution 359 (Rev.WRC-19) are in process and should be complete by the timeline established by ITU-R WP 4C. Agenda Item 1.8 was a United States initiative to WRC-15. Submitting proposals in advance of completing ITU-R studies is standard practice to socialize proposals, receive feedback, and refine and build regional support.

**The Known Interference Environment Includes the Existing Secondary Allocation for MSS Downlinks at 1 613.8-1626.5 MHz**

*The secondary nature of this allocation currently is not qualified in any manner, and does not include any references to the operation of GMDSS systems, their priority vis-à-vis other services or spectrum uses, or the application of No. 4.10 of the ITU RRs to any safety services or systems operated under this secondary allocation.*

The point of the above statement is unclear. However, the Radio Regulations define secondary allocations and their status vis-à-vis other services.<sup>8</sup> Concerning No. 4.10, the application of this provision does not establish a safety service, nor does it confer a particular status upon an allocation. Further, its use is not limited to a specific status of allocation. Through the Radio Regulation articles and provisions, the nature and status of secondary services are “qualified” and defined. Importantly, the Radio Regulation definition of a safety service<sup>9</sup> is not confined to a particular allocation status.

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<sup>8</sup> See ITU Radio Regulations, Article Nos. 5.28–5.31 (ed. Geneva 2016).

<sup>9</sup> *Id.* Article No. 1.59 (“1.59 safety service: Any radiocommunication service used permanently or temporarily for the safeguarding of human life and property.”).

Despite an apparent wide discrepancy in the material comprising View A and View B, the recommended View A and View B proposals are not far apart. The primary difference is that View A proposes the 1616-1626.5 MHz band for GMDSS, tracking Iridium's application before the IMO and the reference band in Resolution 359 (Rev.WRC-15). On the other hand, for a variety of reasons View B proponents would limit GMDSS to the 1618.725-1626.5 MHz band. The other significant difference is that View A applies No. 4.10 to both GMDSS and AMS(R)S (a safety service already allocated in the 1610-1626.5 MHz band), while View B limits No. 4.10's application to GMDSS only. Iridium believes the more comprehensive View A proposal is more suitable for beginning negotiations within CITEL.

### **CONCLUSION**

The Commission should support the recommendations in View A of WAC/039. The View A proposal on WRC-19 Agenda Item 1.8 is more encompassing than the View B proposal, and will provide flexibility in negotiating a regional WRC-19 proposal on this matter with our partners in CITEL.

Respectfully submitted,

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