

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

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

COMMENTS OF LIGADO NETWORKS SUBSIDIARY LLC

Ligado Networks Subsidiary LLC (“Ligado”) submits these comments in response to the Public Notice issued by the International Bureau on October 30, 2017 in this proceeding (the “Public Notice”).¹ The Public Notice solicits feedback on the draft recommendations from the World Radiocommunication Conference Advisory Committee (the “WAC”) in anticipation of the World Radiocommunication Conference to be convened in 2019 (“WRC-19”). Among other items, the Public Notice requests comment on WAC outputs relating to WRC-19 Agenda Item 1.8, which urges consideration of “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, in accordance with Resolution 359 (Rev.WRC-15).”² Ligado limits the scope of these comments to those WAC outputs.

As the Public Notice observes, the WAC did not endorse a single draft proposal with respect to Agenda Item 1.8, because the members of the informal working group considering this

¹ See *International Bureau Seeks Comment on Recommendations Approved by World Radiocommunication Conference Advisory Committee*, Public Notice, IB Docket No. 16-185, DA 17-1059 (Oct. 30, 2017) (“*Public Notice*”).

² See generally WAC/039 (included in Attachment A to the *Public Notice*).

agenda item failed to reach consensus.³ Instead, the WAC forwarded for consideration by the Commission two draft proposals (with accompanying narrative justifications)—referred to as “View A” and “View B”⁴—which are appended to the Public Notice.

Both draft proposals agree that the United States position under Agenda Item 1.8 should:

- (i) seek to facilitate the introduction of new GMDSS satellite systems in the Big LEO band; and
- (ii) preserve the existing interference environment and the relative rights and obligations of spectrum users in the Big LEO band and adjacent bands.⁵

The two draft proposals differ principally in how—and, consequently, how effectively—they would achieve these objectives.

In particular, View A proposes changes to the ITU Radio Regulations but omits language necessary to make the intended impact of those changes clear with respect to portions of the Big LEO band. Consequently, the View A approach creates uncertainty and invites future disputes. In contrast, View B proposes changes that achieve similar objectives, but does so in a manner that appropriately limits the impact of those changes with respect to the Big LEO band, avoiding unnecessary ambiguities in the application of the relevant rules. Because this approach would achieve the stated objectives of both draft proposals more precisely and more effectively, Ligado urges the Commission to endorse View B.

³ *Id.* at 1 (taking note of “differing views” reflected in WAC/039, the document contained IWG-1 inputs with respect to Agenda Item 1.8).

⁴ View A is supported by Iridium and its counsel and consultants, Boeing, and Aviation Spectrum Resources Inc. View B is supported by Ligado, Inmarsat and Globalstar.

⁵ Specifically, both draft proposals seek to facilitate the introduction of new GMDSS satellite systems through changes to the same provisions of the ITU Radio Regulations, and would: (i) add a new footnote “5.GMDSS” to the International Table of Frequency Allocations to allow GMDSS operations to be conducted in portions of the Big LEO band; (ii) add language to existing footnote 5.368 to the International Table of Frequency Allocations to apply ITU Radio Regulation No. 4.10 to GMDSS operations; and (iii) add language to Table 15-2 of Appendix 15 to confirm that GMDSS operations may be conducted in portions of the Big LEO band.

I. BACKGROUND: AGENDA ITEM 1.8 AND RESOLUTION 359

Action under Agenda Item 1.8 should be guided, first and foremost, by the language of that agenda item. As noted above, Agenda Item 1.8 invites consideration at WRC-19 of possible regulatory actions to support GMDSS modernization “in accordance with Resolution 359 (Rev. WRC-15).” Therefore, the intended scope of Agenda Item 1.8 can only be understood with reference to that Resolution.

Among other things, Resolution 359 explicitly recognizes the importance of ensuring that any new GMDSS system should be compatible with adjacent spectrum uses. More specifically, the operative sections of Resolution 359 invite WRC-19 to consider “appropriate” regulatory changes to facilitate the introduction of additional GMDSS satellite systems “while ensuring the protection of all incumbent services, including those in adjacent frequency bands, from harmful interference” Similarly, the introductory portions of the Resolution make clear that a potential regulatory change is “appropriate” if—and only if—the potential change:

- i. Ensures that any new GMDSS satellite system fully protects existing services (“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
- ii. Ensures that any new GMDSS satellite system is capable of operating within the known interference environment, without any need to claim special protection from existing systems (“GMDSS communications systems . . . must be resilient to interference” and “should operate within the interference environment of existing systems”).⁶

Both of these conditions are designed to ensure that potential regulatory actions under Agenda Item 1.8 achieve GMDSS-related benefits without adversely impacting adjacent spectrum uses.

⁶ See generally ITU Resolution 359 (Rev. WRC-15).

Critically, Resolution 359 calls for action under Agenda Item 1.8 to be guided by the results of technical studies to be completed under the auspices of the ITU. Such studies must evaluate “the potential impact of possible modifications to the provisions of the Radio Regulations on sharing and compatibility with other services and systems in the frequency band and adjacent frequency bands.”⁷ However, no such studies have been completed to date. As such, there is no basis for assuming that a new GMDSS satellite network could operate without adversely impacting adjacent services and systems.⁸ Nevertheless, it may still be possible to implement changes to the ITU Radio Regulations to facilitate the introduction of a new GMDSS satellite network—provided it is clear that GMDSS traffic carried over such a network would have no priority vis-a-vis traffic carried through services and systems operating in adjacent bands.

II. VIEW B PROPOSES CHANGES TO THE ITU RADIO REGULATIONS THAT WOULD FACILITATE GMDSS MODERNIZATION WHILE PRESERVING THE CURRENT RELATIVE RIGHTS AND OBLIGATIONS OF ADJACENT SPECTRUM USERS AND SERVICES

The introduction of new GMDSS satellite systems should not be allowed to alter the relative rights or obligations of spectrum users outside the spectrum band in which those systems would operate. This is particularly important in the absence of the technical studies contemplated by Resolution 359, since there is no basis for assuming that new GMDSS satellite

⁷ *Id.*

⁸ The View A proponents have argued that no studies are necessary because they claim that the addition of GMDSS to the Big LEO band would not change the technical and operational aspects of the Iridium system and would be consistent with Iridium’s existing and authorized MSS operations. But this claim ignores the changing nature of systems and operations in the relevant band and adjacent bands; there is no reason to assume that this situation will remain static following the introduction of GMDSS and as the other services offered by both Iridium and its neighbors evolve. Moreover, as discussed below, View A actually proposes to accommodate GMDSS operations *outside of* the band segment Iridium plans to use in connection with its GMDSS network.

networks would be compatible with adjacent operations (as required by the Resolution). And if such an assumption could be validated, the relative priority of GMDSS services vis-à-vis other satellite networks would be largely academic. Under such circumstances, it is critical to have clear language establishing in unambiguous fashion that GMDSS operations must protect, and may not claim protection from, adjacent spectrum operations.

View A appears to recognize the need to ensure that the introduction of new GMDSS operations does not alter the relative rights and obligations of the underlying satellite networks vis-à-vis adjacent spectrum users, services, and systems.⁹ Unfortunately, this sentiment is not reflected in the specific changes to the language of the ITU Radio Regulations proposed under View A. Instead, View A proposes vague language that is susceptible to multiple interpretations.

View B would avoid such ambiguity and the resulting uncertainty by including clarifying language within the ITU Radio Regulations.¹⁰ The distinctions between View A and View B—and the appropriateness of the additional, clarifying language proposed under View B—are clearly seen in the following examples:

⁹ Although View A does not discuss or reference Resolution 359 with specificity, it does express the intention that the changes it proposes: (i) would not alter existing interference relationships between the Big LEO band and adjacent MSS L band; (ii) would not alter the secondary status of MSS downlinks in the 1613.8-1626.5 MHz band segment; (iii) would preserve the relative regulatory and interference “position” of Iridium relative to systems operating in the same, or upper and lower adjacent bands; and (iv) would not impact the relative priority of different types of network traffic.

¹⁰ View A proponents suggest that the additional language included in View B is somehow calculated to impose “new restrictions on Iridium operations, and also to limit flexibility in providing GMDSS – a critical safety of life at sea service.” It is unclear what “new restrictions” are being referenced—particularly as GMDSS operations in the 1610-1626.5 MHz band are currently precluded on a categorical basis. In any event, the language proposed under View B is clearly rooted in Resolution 359, does not suppress Iridium operations and, in any event, is entirely consistent with the stated intent of View A described in footnote 9, above.

Changes to ITU Radio Regulation No. 5.368. View A would apply the provisions of ITU Radio Regulation No. 4.10 to GMDSS operations—without qualification—through revisions to ITU Radio Regulation No. 5.368. No. 4.10 contains broad language directing Member States to “recognize that the safety aspects of radionavigation and other safety services require special measures to ensure their freedom from harmful interference” and suggesting that “it is necessary therefore to take this factor into account in the assignment and use of frequencies.” In the absence of clarifying language, the extension of No. 4.10 in this fashion could easily be interpreted to mean that GMDSS is entitled to certain absolute protections vis-à-vis adjacent spectrum uses and services—notwithstanding actual allocation status and the secondary nature of MSS (and consequently any permitted GMDSS) downlinks in the 1613.8-1626.5 MHz band.

View A acknowledges this concern but does nothing to address it, other than suggesting that “superprimary” (a term not used by View B) is a “made-up term.” As an initial matter, this is not accurate; the Commission itself has used the term “super-primary” in discussing legitimate concerns that Iridium could use the special consideration afforded to safety communications to effectively elevate the status of secondary MSS operations vis-à-vis adjacent spectrum uses.¹¹ More importantly, for the reasons stated above, the substance of these concerns is independent of the label affixed to them.

In contrast, View B would make clear, through additional language incorporated into No. 5.368, that No. 4.10 would apply to the GMDSS only on an *intra-system* basis—*i.e.*, solely with respect to the prioritization of different spectrum uses by that GMDSS satellite system within its own spectrum range (as opposed to on an inter-system basis, and thus with respect to adjacent

¹¹ See *Iridium Constellation LLC*, 28 FCC Rcd 00964, at ¶ 11 (2013).

spectrum uses). This would preserve existing *inter-system* relationships, and the relative rights and obligations of adjacent spectrum users and systems, consistent with Resolution 359 and the stated objectives of both View A and View B.

Changes to Appendix 15 of the ITU Radio Regulations. View A would also modify Table 15-2 to provide that GMDSS communications have priority over non-safety communications “within a satellite system.” This language is ambiguous, and could easily be read to mean that GMDSS traffic on a given network has priority over the non-safety traffic carried over *any* satellite communications network. Such a result would be inconsistent with Resolution 359, which explicitly seeks to ensure that the introduction of GMDSS operations does not adversely impact any other satellite networks.

View B would employ slightly different language to make clear that GMDSS communications have priority over non-safety communications “within the satellite system providing such GMDSS communications.” This language would better convey the *intra-system* nature of any GMDSS priority and make clear that GMDSS traffic does not have priority over any traffic carried over any other system.

III. VIEW B AVOIDS OTHER ISSUES ARISING FROM THE OVERLY BROAD SCOPE OF THE VIEW A APPROACH

A. View A Proposes Changes to the ITU Radio Regulations that Are Outside the Scope of Agenda Item 1.8

View A proposes to modify ITU Radio Regulation No. 5.368 to add language that would make ITU Radio Regulation No. 4.10 applicable to Aeronautical Mobile Satellite (Route) Service (“AMS(R)S”) operations in the 1610-1626.5 MHz band. This proposed language is inconsistent with the express scope of Agenda Item 1.8 and the mandate of WRC-19.

The activities of WRC-19 are governed by the ITU Constitution. Notably, Article 13 of the ITU Constitution empowers the WRC to revise the ITU Radio Regulations but limits this

authority to changes related to the ITU agenda. This limitation serves several functions, including, *inter alia*: (i) guiding discussion at each WRC and increasing the likelihood of meaningful progress on a defined set of issues; (ii) ensuring that the WRC agenda—which is carefully negotiated in advance—has real significance; and (iii) providing stakeholders with notice of the issues to be discussed at each WRC so that they can provide inputs through appropriate domestic consultations (*e.g.*, those occurring through the WAC process in the United States).

Agenda Item 1.8 is carefully worded to invite consideration of “possible regulatory actions to support [GMDSS] modernization and to support the introduction of additional satellite systems into the GMDSS, in accordance with Resolution 359 (Rev.WRC-15).” At the same time, Agenda Item 1.8 does *not* make any mention of the AMS(R)S or propose *any* changes to the ITU Radio Regulations with respect to AMS(R)S. As such, proposing AMS(R)S-related changes to the ITU Radio Regulations would be outside the scope of Agenda Item 1.8 and beyond the WRC-19 mandate. View B excludes the AMS(R)S language and is therefore consistent with both Agenda Item 1.8 and the WRC-19 mandate.

B. View B Would Ensure Consistency with the Scope of Iridium’s Planned GMDSS Operations

Another significant difference between View A and View B is that View A proposes language that would allow GMDSS operations in the entire 1616-1626.5 MHz band segment, whereas View B would restrict such operations to the 1618.725-1626.5 MHz band segment that Iridium plans to use in connection with its GMDSS network. As an initial matter, View A does not explain why it is appropriate to permit GMDSS operations in the 1616-1618.725 MHz band segment when there are no proposals before the IMO or elsewhere with respect to such operations. The closest View A comes to such an explanation is the suggestion that Iridium—

one of the parties supporting View A—initially supported measures to permit GMDSS operations in the entire 1610-1626.5 MHz band but was obliged to “pare[] back” this proposal due to “concerns raised by the radio astronomy community and others.” But this explanation of how Iridium has scaled back its position does nothing whatsoever to justify that position.¹²

It should be noted that Iridium and other proponents of View A have suggested that it would be appropriate to implement changes to the ITU Radio Regulations to facilitate the introduction of a new GMDSS satellite network—notwithstanding the lack of the technical studies called for by Resolution 359—because planned GMDSS operations would be consistent with Iridium’s existing and authorized MSS operations. To the extent that this argument has any force, it is compelling only with respect to that spectrum in which Iridium is authorized to operate—namely, the 1618.725-1626.5 MHz band segment. There is simply no basis for implementing changes to permit GMDSS operations across a broader range of spectrum. For this reason, any compromise recommendation developed in the absence of the technical studies called for by Resolution 359 should be limited to the 1618.725-1626.5 MHz band segment.

¹² View A incorrectly suggests that “View B proponents appear to concede that No. 4.10 can be applied to GMDSS operations within the 1610-1626.5 MHz band.” No reference is given for this assertion—which is untrue—other than the suggestion that this was “mentioned earlier” in the narrative justification for the draft proposal under View A. The only earlier statement in that View A narrative characterizing View B’s treatment of No. 4.10 indicates the view that View B proponents would “limit[] the application [of No. 4.10] to 1618.725-1626.5 MHz – consistent with their GMDSS band limitation.”

IV. CONCLUSION

For these reasons, Ligado urges the Commission to endorse View B in connection with Agenda Item 1.8.

Respectfully submitted,

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