

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	IB Docket No. 07-253
Spectrum and Service Rules for Ancillary	)	RM-11339
Terrestrial Components in the 1.6/2.4 GHz	)	
Big LEO Bands	)	

**REPLY COMMENTS OF IRIDIUM SATELLITE LLC**

Iridium Satellite LLC (“Iridium”) hereby submits these reply comments in response to the Federal Communications Commission’s *Second Order on Reconsideration, Second Report and Order, and Notice of Proposed Rulemaking* (“*Second Order and Notice*”) in the above-captioned proceeding on whether Globalstar, Inc. (“Globalstar”) should be allowed to expand its ancillary terrestrial component (“ATC”) authority to encompass all of its assigned spectrum.<sup>1</sup> In its opening comments, Globalstar revised its proposal in the face of concerns about potential interference to other users and services from its proposed ATC operations. The revised proposal, however, raises several additional issues that should be recognized by the Commission in its disposition of this proceeding. In particular, Iridium notes that in their initial comments in this proceeding, Globalstar and Open Range Communications, Inc. (“Open Range”) appear to have reached some sort of decision on future ATC technology deployments. Specifically, it seems that Worldwide Standard for Interoperable Microwave Access (“WiMAX”) technologies are

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<sup>1</sup> *Spectrum and Service Rules for Ancillary Terrestrial Components in the 1.6/2.4 GHz Big LEO Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, Second Order on Reconsideration, Second Report and Order, and Notice of Proposed Rulemaking, 22 FCC Rcd 19733 (2007) (“*Second Order and Notice*”).

anticipated for the joint ATC network. Globalstar's ATC authority, however, is limited to Code Division Multiple Access ("CDMA") technology.

As discussed below, Iridium has three basic concerns with the revised Globalstar plan. First, Iridium reserves the right to provide comments on the effects, if any, of any proposed shift to WiMAX on Iridium or other spectrum licensees/users when Globalstar files an application to modify its ATC authorization. Unless and until the modification application is filed, Iridium and others cannot assess whether or not the proposed technology change impacts existing or future MSS satellite systems or services. Second, Iridium strongly opposes any efforts by Globalstar to limit Iridium's flexibility within its exclusive spectrum to provide ATC. The Commission should allow for Iridium to pursue ATC approaches without artificial and unnecessary constraints. Finally, as stated in its comments, Globalstar must fully protect Iridium's adjacent band operations from out of band emissions. The revised proposal, if approved by the Commission, must contain strong and effective conditions and rules providing such protection.

**I. IRIDIUM RESERVES ITS RIGHT TO COMMENT ON THE EFFECTS OF WIMAX TECHNOLOGY WHEN GLOBALSTAR FILES AN AMENDED ATC APPLICATION.**

In its comments in this proceeding, Globalstar highlights its partnership with Open Range and states that it will use "...portable broadband technologies, such as WiMAX..." to provide ATC services.<sup>2</sup> Furthermore, Open Range's comments state that the ATC network to be deployed by Globalstar and Open Range "...will be deployed using WiMAX technology."<sup>3</sup>

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<sup>2</sup> See Globalstar Comments at 7.

<sup>3</sup> See Open Range Comments at 5.

However, Globalstar's ATC authority is strictly limited, by the Bureau Order granting the authority, to CDMA technology.<sup>4</sup> In paragraph 10 of the *ATC Order*, the Bureau noted that the:

**“The Globalstar ATC system will use a cdma2000 air interface protocol, which will support voice communication and data services with speeds up to two million bits per second.”<sup>5</sup>**

Furthermore, the Bureau noted in its ordering clause that:

**“Accordingly, pursuant to Section 309 of the Communications Act, 47 U.S.C. § 309, and Section 0.261 of the Commission's rules, 47 C.F.R. § 0.261, IT IS ORDERED that Application File No. SAT-MOD-20050301-00054 IS GRANTED and GLLC IS AUTHORIZED to operate ATC base stations and mobile terminals in accordance with the terms, conditions, and technical specifications set forth in its application, except as otherwise provided herein, and in compliance with the Commission's rules.”<sup>6</sup>**

In light of the limitations expressed by the Bureau in authorizing Globalstar for ATC authority, Iridium believes that a modification application must be filed by Globalstar for WiMAX authority. Should Globalstar indeed use WiMAX in the 1610-1617.775 MHz band, Iridium expects there could be additional adjacent band interference scenario issues that will need to be addressed. Globalstar has not provided the level of detailed technical analysis necessary for modifying its current ATC authority for Iridium to be comfortable that a WiMAX architecture in the 1610-1617.775 MHz band would produce no greater interference potential than that produced as a result of implementing the current ATC rules as required pursuant to Section 25.254 of the Commission's rules. Accordingly, Iridium reserves the right to provide engineering comments on the interference effects of any proposed shift to WiMAX on Iridium when Globalstar files its application to modify its ATC authorization.

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<sup>4</sup> See *Globalstar LLC, Request for authority to implement an ancillary terrestrial component for the Globalstar Big LEO Mobile Satellite Service (MSS) system (Call Sign ES2115)*, Order and Authorization, 21 FCC Rcd 398 (2006) (“*ATC Order*”).

<sup>5</sup> See *id.* at ¶ 10.

<sup>6</sup> See *id.* at ¶ 43.

## **II. IRIDIUM SHOULD CONTINUE TO HAVE AUTHORITY TO IMPLEMENT ATC IN ITS EXCLUSIVE SPECTRUM.**

Globalstar proposes a modified rule for ATC authority in its proposed comments that eliminates ATC operations from the Iridium spectrum band. The Commission's current rule, Section 25.149(a)(2)(iii), specifically allows ATC operations in the bands 1610-1615.5 MHz, 1621.35-1626.5 MHz, and 2487.5-2493.0 MHz.<sup>7</sup> In Attachment 1 of its comments, Globalstar proposes a modified Section 25.149(a)(2)(iii) that inexplicably eliminates the 1621.35-1626.5 MHz band as available for ATC operations.<sup>8</sup> There is no discussion of this change in the rules within Globalstar's comments and, therefore, no basis for such a change. Elimination of Iridium's license flexibility to develop and deploy ATC operations is not in the public interest and has not been discussed or proposed by the Commission. Indeed, Iridium believes that the only change to this rule should be to add all the exclusive spectrum licensed to Iridium as available for ATC operations.<sup>9</sup> As such, Iridium recommends that its full exclusive licensed spectrum band, 1618.725-1626.5 MHz, be added to Section 25.149(a)(2)(iii) to replace the existing 1621.35-1626.5 MHz spectrum previously identified.

## **III. GLOBALSTAR MUST FULLY PROTECT IRIDIUM FROM OUT OF BAND EMISSIONS.**

Iridium noted in its comments that the current out of channel EIRP limits for ATC mobile terminals in the 1610-1626.5 MHz band is -57.1 dBW/30 kHz at the edge of the licensed MSS frequency assignment.<sup>10</sup> Iridium further asserted that if the Commission expanded the available

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<sup>7</sup> See 47 C.F.R. § 25.149(a)(2)(iii).

<sup>8</sup> See Globalstar Comments at Attachment 1.

<sup>9</sup> Permitting all of Iridium's exclusive licensed spectrum to be used for ATC would be consistent with Globalstar's modified ATC proposal, which no longer seeks ATC authority in the small amount of spectrum shared with Iridium.

<sup>10</sup> See 47 C.F.R. § 25.254 (b) (3).

spectrum for ATC from 1610- 1615.5 MHz to be nearer to the TDMA band, the Commission must maintain the -57.1 dBW/30 kHz limit for out of channel emissions from ATC Mobile terminals at the edge of the licensed CDMA MSS frequency assignment.<sup>11</sup> Globalstar states in its comments that its ATC terminals will include the same emission masks that its MSS terminals include<sup>12</sup> and cites to Section 25.254 of the Commission's rules in highlighting its out of band restrictions. Iridium reiterates that the out of band emission limitations of Section 25.254(b)(3), as measured at the edge of the licensed CDMA MSS frequency assignment, is the absolute value that must be met to protect Iridium's exclusive licensed spectrum.

The emission mask Globalstar's MSS terminals are subject to in the Section 25.202(f) emission mask cannot adequately protect adjacent TDMA channels, unless it is combined with the -57.1 dBW/30 kHz out of channel emission ("OOCE") limit at band edge for ATC mobile terminals that is set forth in Section 25.254(b)(3). According to Globalstar, the bandwidth for its ATC mobile terminal broadband communications will be 1.25 MHz, 3.5 MHz, 5 MHz or even 10 MHz.<sup>13</sup> Depending upon how close the assigned frequency for a Globalstar ATC terminal is to the edge of Globalstar's band, the OOCE from the ATC terminal easily could overlap the adjacent TDMA band at levels higher than those permitted by Section 25.254(b)(3). Accordingly, the emission mask does not by itself provide sufficient protection for adjacent TDMA channels.

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<sup>11</sup> The band edge for exclusive CDMA use in the Big LEO band is 1617.775 MHz.

<sup>12</sup> See Globalstar Comments at 20.

<sup>13</sup> See Globalstar Comments at 8.

The Commission adopted the Section 25.254(b)(3) OOCE limit because it recognized that, particularly in urban areas, there would be more terminals operating in ATC mode than in MSS mode. This greater density of ATC emissions increases the overall potential interference into adjacent channels. Consequently, and as stated in Iridium's comments on the NPRM, if ATC is permitted within the 1610-1617.775 MHz band, then the OOCE limit of Section 25.254(b)(3) should be maintained to protect adjacent TDMA channels.

#### **IV. CONCLUSION.**

Iridium reserves its right to comment on the interference effects of WiMAX technology on its exclusive licensed spectrum until Globalstar files a modification application seeking authority for this technology. Additionally, the Commission should reject Globalstar's attempts to preclude Iridium from pursuing its own ATC authority, but instead the rules should ensure that Iridium is permitted to pursue ATC authority in the future for all of Iridium's exclusive licensed spectrum. Finally, the Commission must clearly require Globalstar to protect Iridium's exclusive spectrum from harmful out of band interference in accordance with the existing Commission rules.

Respectfully submitted,

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