

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

In the Matter of)
)
Review of the Spectrum Sharing Plan Among) IB Docket No. 02-364
Non-Geostationary Satellite Orbit Mobile)
Satellite Service Systems in the 1.6/2.4 GHz)
Bands)

To: The Commission

**COMMENTS OF
THE OFFICIAL CREDITORS' COMMITTEE OF GLOBALSTAR, L.P.**

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EXECUTIVE SUMMARY

The Commission only should consider modifying the band split between CDMA and TDMA/FDMA Big LEO MSS spectrum upon a clear showing that the public interest benefits that will accrue as a result of any such Commission action clearly outweigh any adverse impact that such a spectrum assignment modification would have on operating Big LEO systems. The record does not support reconfiguration of the existing spectrum-sharing plan. First, the current record does not contain information regarding the Iridium system's capacity and spectrum constraints sufficient to justify a decision by the Commission to redistribute the Big LEO MSS spectrum. Given Iridium's failure to make such a showing, it would appear that Iridium's goal is to hamper its primary competitor's access to spectrum. Second, to the extent that Iridium may be experiencing system performance difficulties, the record demonstrates that such problems are a function of Iridium's decision to deploy a TDMA/FDMA system. The FCC should not reward Iridium's poor business decisions by redistributing the 5.85 MHz that Iridium requests, or even 3.1 MHz as proposed by the Commission, especially at the expense of Globalstar's much more spectrally efficient operations.

In addition to refraining from altering the Big LEO MSS spectrum-sharing plan, the Commission should address two critical issues bearing on the integration of an Ancillary Terrestrial Component ("ATC") into MSS networks in the Big LEO band. First, the Commission must confirm that to the extent Iridium wishes to deploy ATC in conjunction with its MSS system, it must provide ATC on an *integrated* basis – not as a complementary, stand alone terrestrial service utilizing Big LEO spectrum. Second, the Commission must lift the existing restriction preventing Globalstar from deploying ATC in the full range of spectrum allocated to Globalstar's MSS operations so as to eliminate Globalstar's competitive disadvantage vis-à-vis

other MSS operators, such as Mobile Satellite Ventures Subsidiary LLC (“MSV”) or the 2 GHz MSS licensees, which are authorized to utilize all of its MSS allocation to deploy ATC in the L-band.

Finally, given the limited amount of MSS spectrum available and the unique characteristics of MSS services, the Commission should not reallocate any MSS spectrum to other uses.

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Pursuant to Section 1.415 of the Commission's Rules¹, the Official Creditors' Committee (the "Committee") of Globalstar, L.P. ("Globalstar"), hereby submits these comments on the Notice of Proposed Rulemaking ("NPRM") in IB Docket No. 02-364.²

I. Introduction

In 1994, the Commission adopted the existing spectrum-sharing plan for providers of Mobile Satellite Service ("MSS") in the "Big LEO" band.³ The existing plan authorizes time division multiple access/frequency division multiple access ("TDMA/FDMA") operations in the 1621.35-1626.5 MHz portion of the Big LEO band and code division multiple access ("CDMA") operations in the 1610-1621.35 MHz and 2483.5-2500 MHz bands.⁴ The Commission stated in conjunction with the plan's adoption that it would consider redistributing 3.1 MHz of the Big

¹ 47 C.F.R. § 1.415 (2003).

² *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, Report and Order and Notice of Proposed Rulemaking, FCC 03-15, 18 FCC Rcd 1962 (2003) (*MSS Flexibility Decision*).

³ The term "Big LEO band" refers to the 1.6/2.4 GHz bands.

⁴ *See Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands*, Report and Order, 9 FCC Rcd 5936 at 5954-5965, ¶¶43-63 (1994) (*Big LEO Service Rules Order*). Globalstar is licensed to operate its MSS system in the 1610-1621.35/2483.5-2500 MHz bands and Iridium is licensed to operate its MSS system in the 1621.35-1626.5 MHz band.

LEO MSS spectrum allocated to CDMA operators “in the context of a rulemaking, based on the circumstances that have developed at that time.”⁵

Globalstar and Iridium subsequently built their MSS systems and developed their MSS applications in reliance on the existing spectrum-sharing plan, which was heavily debated during the Negotiated Rulemaking (“Big LEO NRM”) in CC Docket No. 92-166 in 1993 and ultimately accepted by all parties following the Big LEO Service Rules Order.⁶ Both parties now provide telecommunications services to an array of customers, including mission critical services to public safety and national defense personnel who operate in regions with damaged or non-existent communications infrastructures.

In response to an Iridium Satellite LLC (“Iridium”) petition seeking redistribution of the Big LEO MSS spectrum,⁷ the Commission issued the NPRM to seek comment on (i) the original spectrum-sharing plan, (ii) Iridium’s proposal to make 5.85 MHz of MSS spectrum currently allocated to CDMA operations available to Iridium, which uses TDMA/FDMA technology, and (iii) other possible uses of the Big LEO band.

The Commission only should consider modifying the band split between CDMA and TDMA/FDMA Big LEO MSS spectrum upon a clear showing that the public interest benefits that will accrue as a result of any such Commission action clearly outweigh any adverse impact that such a spectrum assignment modification would have on operating Big LEO systems. As discussed in greater detail below, the record does not support reconfiguration of the existing spectrum-sharing plan. First, the current record does not contain information regarding the

⁵ See *Big LEO Service Rules Order* at ¶55.

⁶ *Id.* at ¶¶ 9, 43.

⁷ Petition for Rulemaking of Iridium Satellite LLC (filed, July 26, 2002) (*Iridium Petition*) (included in the record of IB Docket No. 02-364).

Iridium system's capacity and spectrum constraints sufficient to justify a decision by the Commission to redistribute the Big LEO MSS spectrum. Second, to the extent that Iridium may be experiencing system performance difficulties, the record demonstrates that such problems are a function of Iridium's decision to deploy a TDMA/FDMA system. The FCC should not reward Iridium's poor business decisions by redistributing the 5.85 MHz that Iridium requests, or even 3.1 MHz as proposed by the Commission, especially at the expense of Globalstar's much more spectrally efficient operations.⁸

In addition to refraining from altering the Big LEO MSS spectrum-sharing plan, the Commission should address two critical issues bearing on the integration of an Ancillary Terrestrial Component ("ATC") into MSS networks in the Big LEO band. First, the Commission must confirm that to the extent Iridium wishes to deploy ATC in conjunction with its MSS system, it must provide ATC on an *integrated* basis – not as a complementary, stand alone terrestrial service utilizing Big LEO spectrum. Second, the Commission must lift the existing restriction preventing Globalstar from deploying ATC in the full range of spectrum allocated to Globalstar's MSS operations so as to eliminate Globalstar's competitive disadvantage vis-à-vis other MSS operators, such as Mobile Satellite Ventures Subsidiary LLC ("MSV") or the 2 GHz MSS licensees, which are authorized to utilize all of its MSS allocation to deploy ATC in the L-band.

Finally, given the limited amount of MSS spectrum available and the unique characteristics of MSS services, the Commission should not reallocate any MSS spectrum to other uses.

⁸ See Globalstar Comments (concurrently filed).

II. The Commission should not modify the Big LEO spectrum-sharing plan.

Given the success both Iridium and Globalstar have experienced under the existing Big LEO MSS spectrum-sharing plan, the Commission must carefully consider whether a redistribution of the Big LEO MSS spectrum is in fact warranted in light of any new information regarding Big LEO MSS operations set forth in the record of this proceeding. The Commission has requested that Iridium submit detailed information describing its system performance, subscriber base and spectral efficiency⁹ so that the Commission can “base its final judgment on the record established in this proceeding.”¹⁰ While Iridium has consistently argued that the Big LEO spectrum-sharing plan should be reconfigured as a matter of “fairness,” the fact remains that Iridium has simply failed to demonstrate that it faces capacity constraints which justify such a reconfiguration, especially in light of Globalstar’s full and efficient use of its spectrum allocation. Further, to the extent that Iridium is experiencing difficulties with its system, such difficulties appear to be largely a function of Iridium’s decision to implement a TDMA/FDMA system that is inherently inefficient. The FCC should not reward Iridium’s bad business decision by awarding it additional spectrum. Similarly, the Commission should summarily dismiss any arguments raised by Iridium that the Commission should redistribute spectrum merely to benefit Iridium competitively. Notions of “fairness” do not require the Commission to assist Iridium to overcome technological shortcomings of its system by hampering Iridium’s competitors. In the absence of a clear and substantive showing by Iridium that its capacity to serve subscribers is

⁹ See, e.g., *MSS Flexibility Decision* at ¶ 267 (“While Iridium provides anecdotal evidence of its potential need for additional spectrum, we seek detailed comment regarding its actual current spectrum use and substantiated projections of its future spectrum requirements. Specifically, we seek additional information on the number of customers Iridium can support using its current spectrum, the demand of Iridium customers for spectrum in the United States versus other regions of the world. We also seek comment concerning how many subscribers Iridium plans to support and what type of services it plans to offer as a function of Iridium’s projected spectrum requirements.”); ¶ 268 (“We seek comment on how efficiently Iridium is using its current spectrum and, if we were to make more Big LEO spectrum available, exactly how much additional spectrum would be appropriate.”)

¹⁰ *Id.* at ¶ 266

spectrally constrained, Iridium's requested spectrum redistribution, which would impose adverse consequences on Globalstar, represents little more than an attempt to game the regulatory system for competitive advantage.

A. *Iridium has made no showing that it faces capacity constraints.*

Iridium has manifestly failed to substantiate its claims that it faces capacity constraints in its existing 5.15 MHz spectrum allocation – in fact, to date, despite its repeated pleadings seeking additional spectrum, Iridium has never submitted to the FCC *any* information regarding its current subscriber count or technical information that would support its unsubstantiated assertions that its system is reaching the limits of its capacity.¹¹ Further, Iridium's claims that its implementation of ATC will overwhelm its system's capacity are belied by the fact that Iridium has studiously avoided submitting any significant technical information to the FCC explaining how it might actually utilize additional spectrum to deploy ATC in light of its MSS system's use of TDMA/FDMA technology.¹² This is likely due to the fact that, as both the Commission and Iridium have recognized, Iridium faces severe technical hurdles that may make it impossible for Iridium to implement a commercially viable ATC system, regardless of how much spectrum it is authorized.¹³

¹¹ See, e.g., Iridium Satellite LLC Spectrum Report attached to letter from Richard E. Wiley, Counsel to Iridium Satellite LLC, to Michael K. Powell, Chairman, Federal Communications Commission, IB Docket No. 01-185 at 5 (filed January 13, 2003) (discussion of capacity limited to bare assertions that usage is approaching "80% or greater *peak* utilization") (emphasis in original) (*Iridium Spectrum Report*).

¹² *Id.* at 8.

¹³ See *MSS Flexibility Decision* at n. 172 ("Iridium is unlikely to prove able to integrate terrestrial operations into its licensed MSS frequencies as a result of its historical choice to deploy time division multiplex analysis (TDMA) coding in its MSS system."); See also Comments of Iridium LLC, IB Docket No. 01-185 at 4 (filed October 22, 2001) ("New Iridium has no doubt that, as a purely technical matter, it can operate a terrestrial signal within the existing TDMA allocation without causing interference to its satellite signal. The larger question is whether this can be accomplished in a commercially viable manner.")

By comparison, Globalstar has developed a MSS system that accommodates the inter-service protection constraints emplaced on Globalstar's portion of the 1.6 GHz band Big LEO spectrum during the Big LEO NRM and takes full advantage of all of the spectrum assigned to it. Reducing the spectrum available to Globalstar would severely hinder Globalstar's ability to offer competitive MSS services on a going forward basis and will hamper Globalstar's efforts to deploy an ATC platform that will enable truly ubiquitous network coverage.

Given the negative impact a redistribution of Big LEO MSS spectrum would have on Globalstar and the absence of any detailed information from Iridium regarding its alleged capacity constraints and the impact that a reconfiguration of the Big LEO band plan would have on those alleged constraints, the Commission can not reallocate any Big LEO spectrum to Iridium, let alone the 5.85 MHz that Iridium has requested. As such, Iridium's request for the redistribution of Big LEO spectrum should be denied.

B. Iridium's poor business decision should not be rewarded with additional spectrum.

In addition to failing to demonstrate that Iridium faces capacity constraints which might justify a redistribution of the Big LEO MSS spectrum, Iridium has failed to demonstrate that it is using its currently allocated spectrum in an efficient manner.

During the Big LEO NRM, Iridium submitted descriptions of its system that indicate Iridium should be capable of providing service to at least 500,000 subscribers in the continental United States utilizing its existing allocation of 5.15 MHz.¹⁴ While Iridium has not, to the Committee's knowledge, at any point published its current subscriber base, the general level of MSS subscription strongly indicates that Iridium's current subscriber base amounts to a small

¹⁴ See Globalstar Comments (concurrently filed).

fraction of that number—almost certainly less than 10%.¹⁵ If Iridium is experiencing capacity constraints in serving this small number of customers, Iridium’s MSS system is clearly unable to efficiently utilize its current spectrum allocation.

In addition, Globalstar has monitored the operation of Iridium’s system during Iridium’s special temporary operations on channels allocated to Globalstar in the Middle East region.¹⁶ On the basis of these observations, Globalstar has concluded that Iridium’s choice to modify its frequency reuse factor and dedicate portions of its allocated spectrum to system overhead, beam-to-beam frequency restrictions and reserve capacity cause it to be able to utilize only a fraction of its theoretical capacity – on the order of 10%.¹⁷ Iridium’s business decision to deploy a TDMA/FDMA MSS system appears to be directly responsible for the problems and inefficiencies Iridium currently faces in its MSS operations

The Commission is charged with promoting the efficient use of the radio spectrum in the public interest.¹⁸ To grant Iridium’s request to reallocate 3.1 MHz of Big LEO spectrum to Iridium, let alone the 5.85 MHz that Iridium has requested, would in essence be rewarding Iridium for its choice to deploy inefficient MSS technology – a reward that would be at the expense of competing MSS providers and not in the public interest. In fact, the public interest is diametrically opposed to reallocating spectrum from an operating MSS system that efficiently utilizes spectrum to another MSS system that is not capable of doing so and has not demonstrated a need for additional spectrum. The record does not support any MSS reallocation in the Big LEO band.

¹⁵ Globalstar’s current subscriber base is 93,000 worldwide. *See* Globalstar Comments (concurrently filed).

¹⁶ *See* Application File No. SAT-MS-C-20030414-00066.

¹⁷ *See* Globalstar Comments (concurrently filed).

¹⁸ 47 U.S.C. § 303(g) (2003).

III. The Commission should address two critical issues bearing on the deployment of ATC in the Big LEO band.

While the record does not support reconfiguration of the Big LEO MSS spectrum-sharing plan, the Commission should take this opportunity to address two issues of critical importance to the deployment of ATC in the Big LEO band. As discussed more fully below, the Commission should once again confirm that, to the extent Iridium chooses to integrate ATC into its existing MSS system, it must do so on an integrated basis. Further, given that this proceeding will result in the resolution of the spectrum distribution issues in the Big LEO band plan, the Commission should remove its present restriction on Globalstar's ability to use all Big LEO MSS spectrum allocated to CDMA operations for ATC. The Commission should expressly hold in any order issued in this proceeding that Globalstar may utilize for the provision of ATC services, consistent with the Commission's ATC rules, all Big LEO spectrum to which it has access.

A. *Iridium must be required to operate any ATC system on an integrated basis.*

As discussed above, Iridium must overcome severe technical hurdles before it can implement a commercially viable ATC component to its MSS system.¹⁹ In light of that fact, it is not surprising that, to the limited extent Iridium has described its potential deployment of a terrestrial system, Iridium has not committed to deploying such terrestrial system on a fully integrated basis with Iridium's MSS system as is required by the Commission's rules.²⁰

The Commission must take this opportunity to make clear to Iridium that any plan utilizing spectrum segments partitioned nationally for ATC services is not an acceptable implementation of ATC. In fact, it is not an implementation of ATC at all. The Commission has

¹⁹ See note 13, *supra*.

²⁰ See 47 C.F.R. 25.147(b)(4) ("MSS licensees shall offer an integrated service of MSS and MSS ATC."); See, e.g., *Iridium Spectrum Report* at 8 ("Iridium's constellation flexibility can be leveraged to provide for highly efficient ATC operation *in conjunction* with the Iridium network."; "While there are several approaches involving *varying levels of system integration . . .*")

clearly stated that ATC is, by definition, an offering that “reuses” spectrum already employed to provide MSS. Repeated references to ATC’s reuse of spectrum throughout the MSS Flexibility Decision could not be clearer.²¹ Further, the Commission rejected proposals for “separate-band, separate-operator” spectrum-sharing on the basis that such an approach “would, in essence, reallocate spectrum from MSS to other uses.”²² Iridium’s establishment of a stand-alone terrestrial network utilizing MSS spectrum would be the ultimate reallocation of MSS to other uses.

The Commission previously stated that “within the spectrum currently allocated for MSS, some MSS licensees may find that they can achieve greater spectrum efficiency, greater capacity and more robust service by using MSS in combination with MSS ATC than through MSS alone.”²³ The technical characteristics of Iridium’s TDMA/FDMA architecture would appear to preclude it from that class of MSS licenses. In order to forestall a possible attempt by Iridium to bypass the Commission’s rules, the Commission must take this opportunity to reconfirm that the spectrum allocated to Big LEO MSS operations is to be used exclusively for MSS operations and, to the extent technically feasible, *integrated* ATC.

²¹ See, e.g., *MSS Flexibility Decision* at: ¶ 1 (“We believe that permitting MSS ATCs in this manner should: (1) increase the efficiency of spectrum use through MSS network integration and terrestrial *reuse* and permit better coverage in areas that MSS providers could not otherwise serve”); ¶ 21 (“Using frequency-*reuse* techniques, MSS ATC has the potential to transmit more information to more individual users within a given amount of spectrum than MSS alone.”); ¶ 20 (“As such, the potential efficiency gains of ATC – whether obtained through increased frequency *reuse* within a satellite beam or through improved MSS reception in urban areas – are real.”); ¶ 21 (“In either case, the MSS licensee would make more efficient use of its licensed satellite spectrum by incorporating greater frequency *reuse* into its system.”); ¶ 23 (“First, MSS ATC will use more intensive and more efficient frequency *reuse* techniques to allow MSS licensees to conduct terrestrial mobile operations.”); ¶ 36 (“We recognize that, even with a satellite constellation operating at full capacity, terrestrial operations can *reuse* communications channels more intensively than satellite operations”); ¶ 97 (“While we find that the ability to dynamically control the basic components of an integrated MSS ATC system is necessary for MSS ATC to achieve the maximum frequency *reuse* possible through the combination of satellite and terrestrial infrastructure”); ¶ 208 (“Our decision today grants limited flexibility by permitting the *reuse* of already licensed spectrum.”); ¶ 209 (“ATC will enable MSS providers to *reuse* their licensed spectrum to improve signal reliability.”) (emphasis added).

²² See *MSS Flexibility Decision* at ¶ 58.

²³ *Id.*

- B. *The Commission must authorize Globalstar to deploy ATC in the full range of Big LEO MSS spectrum allocated to CDMA.*

In order not to prejudice the outcome of the instant deliberations, in its MSS Flexibility Decision, the commission limited deployment of ATC in the Big LEO band to the 1610-1615.5 MHz portion of the 1.6 GHz band and the 2492.5-2498 MHz portion of the 2.4 GHz band, reserving disposition of the remaining Big LEO spectrum from 1615.5-1621.35 MHz for possible ATC use to the current rulemaking.²⁴

This restriction on Globalstar's deployment of ATC has hindered Globalstar's ability to access the capital markets due to the competitive disadvantage Globalstar faces with respect to other MSS operators such as MSV, which is authorized to deploy ATC in the full 34 MHz of its authorized L-Band spectrum, and the 2 GHz licensees, which are permitted to deploy ATC across all of their assigned spectrum.²⁵ By providing a final determination with respect to Big LEO spectrum distribution, the Commission's decision in this proceeding should eliminate the possibility that ATC deployment by Globalstar would prejudice future Commission action with respect to Big LEO spectrum. Therefore, in this proceeding the FCC should authorize Globalstar to deploy ATC across the entire portion of the Big LEO MSS band that is allocated to CDMA operators. To do otherwise would force Globalstar to continue to operate at a competitive disadvantage without reason, significantly hampering Globalstar's ability to upgrade and deploy improved services, including ATC services, to serve the public interest.

²⁴ See *MSS Flexibility Decision* at ¶ 192.

²⁵ The Commission has licensed MSV for 34 MHz of spectrum both on the uplink (1626.5-1660.5 MHz) and downlink (1525-1559 MHz). See *Establishing Rules and Policies for Use of Spectrum for Mobile Satellite Services in the Upper and Lower L-Band*, 17 FCC Rcd 2703 (2002); *Amendment of Parts 2, 22 and 25 of the Commission's Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service*, 4 FCC Rcd 6041 (1989); See also *MSS Flexibility Decision* at ¶ 109.

IV. The Commission should not reallocate MSS spectrum to other uses.

MSS operators provide critical telecommunications services that can not be replicated by any other type of service. Only MSS allows customers to instantly establish communications virtually anywhere in the world without the need to establish a terrestrial infrastructure. As a result, MSS is the first and best choice of individuals and organizations that must operate in regions in which no communications infrastructure exists (e.g., Afghanistan or wilderness areas in the United States) or the existing infrastructure is badly damaged (e.g., Iraq or areas that have suffered a natural or man-made disaster.) At this time, there is no additional spectrum available in the U.S. for MSS, and the Commission has no plans to consider making additional spectrum available to MSS in the foreseeable future. In light of the critical role MSS operators play in providing mission critical communications services in remote and underserved areas, and the already limited amount of spectrum available in which to operate these services, the Commission must not allocate any of the Big LEO spectrum for other purposes.

V. Conclusion.

For the reasons set forth above, the Commission should not modify the existing spectrum-sharing plan for providers of MSS in the Big LEO band. The Commission should also take this opportunity to reconfirm that all ATC deployments must operate on an integrated basis and to eliminate the existing restriction on Globalstar's ability to deploy ATC across the entire portion of the Big LEO MSS band that is allocated to CDMA operators. Finally, in light of the importance and unique nature of MSS services, the Commission should not reallocate existing MSS spectrum for other purposes.

Respectfully submitted,

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