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August 28, 2000

VIA HAND DELIVERY

Ms. Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
Room TW-A324
445 Twelfth Street, SW
Washington, D.C. 20554

Re: In the Matter of Amendment of the U.S. Table of Frequency Allocations to Designate the 2500-2520/2670-2690 MHz Frequency Bands for the Mobile Satellite Service Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Implementation of WRC-2000: Review of Spectrum and Regulatory Requirements for IMT-2000, RM-9911 & RM-9920

Dear Ms. Salas:

Enclosed please find an electronic original of the Comments of Globalstar, L.P. in the above-captioned proceeding. These Comments are being filed via the Federal Communications Commission's Electronic Comment Filing System ("ECFS").

If you have any questions regarding this filing, please do not hesitate to call me at (202) 857-2550.

Sincerely,

S. Rosen

Stephen J. Rosen

COPY

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

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	)	
Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Implementation of WRC-2000: Review of Spectrum and Regulatory Requirements for IMT-2000	)	RM-9920

COMMENTS OF GLOBALSTAR, L.P.

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COMMENTS OF GLOBALSTAR, L.P.

Globalstar, L.P., operator of the Globalstar™ System, hereby respectfully submits its comments in support of the Petition for Rulemaking filed in the above-captioned proceeding by the Satellite Industry Association ("SIA") on April 28, 2000.[1] As described in greater detail below, Globalstar joins SIA in asking the Commission to allocate the 2500-2520 and 2670-2690 MHz bands for Mobile Satellite Service ("MSS") use for third generation wireless services.[2]

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[1] *See* "Amendment of the U.S. Table of Frequency Allocations to Designate the 2500-2520/2670-2690 MHz Frequency Bands for the Mobile Satellite Service," Petition for Rulemaking of the Satellite Industry Association (filed April 28, 2000) ("SIA Petition"); *Public Notice*, "Comment Invited on Third Generation Wireless/IMT-2000 Petitions," RM-9911 and RM-9920 (rel. July 28, 2000).

[2] Throughout these comments, "third generation wireless" and "IMT-2000" (International Mobile Telecommunications 2000) are used interchangeably.

I. INTRODUCTION AND SUMMARY

At the 1992 World Administrative Radio Conference ("WARC-92"), the International Telecommunications Union ("ITU") adopted an allocation for MSS at 2500-2520 MHz (space-to-earth) and 2670-2690 MHz (earth-to-space) ("2.5 GHz bands").[3] Similarly, at the World Radio Conference 2000 ("WRC-2000"), the 2500-2520 MHz and 2670-2690 MHz bands were again identified for use by the satellite component of IMT-2000 on an international basis.[4] While this allocation is scheduled to take effect internationally on January 1, 2005, the FCC has yet to take any action to adopt the allotment in the United States.

In its Petition, SIA requests that the Commission conform the United States Table of Frequency Allocations to the allocations made at WARC-92 and WRC-2000. In particular, SIA notes that: (1) allocation of these 2.5 GHz bands for MSS use has been made in many other countries and a United States allocation will facilitate seamless global roaming; (2) MSS providers are in need of more spectrum in order to provide an increased level of service to rural and insular areas and new third generation services; and (3) the 2.5 GHz bands are well suited to the satellite component of IMT-2000 because these bands are close to the frequencies used by the current generation of MSS. Finally, SIA points out that the Commission should act quickly on its request because it takes

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[3] *See Addendum and Corrigendum to the Final Acts of the World Administrative Radio Conference* (Malaga-Torremolinos 1992).

[4] Provisional Final Acts World Radiocommunication Conference 2000, Article S5 (Istanbul 2000).

four to six years to build out an MSS system and the effective date of the global allocation is January 1, 2005.[5]

Globalstar currently offers MSS through the use of 48 low-earth-orbiting ("LEO") satellites, which route calls to or from a customer's wireless mobile phone or a wireless fixed phone station[6] to a terrestrial gateway, where they are passed on to or from existing fixed and cellular telephone networks in more than 100 countries on six continents. Currently, Globalstar offers voice service and low speed data service, and in the next few months will begin the rollout of higher speed asynchronous data, packet data and facsimile services. The Globalstar system allows its customers to use a single phone to communicate virtually anywhere and everywhere around the globe, simply, dependably, and affordably.

As a major provider of MSS service, Globalstar is committed to offering its customers the most advanced voice and data services possible, including IMT-2000 services. Therefore Globalstar is vitally concerned that the Commission grant SIA's petition to allocate the 2.5 GHz band for such advanced MSS services. Further, because there is only a small overlap in the frequencies that SIA wishes to see set aside for MSS third generation services and those that CTIA wishes to see set aside for terrestrial third generation services,[7] a decision

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5 SIA Petition at i-ii.

6 Customers may purchase tri-mode (Globalstar CDMA/CDMA cellular/analog cellular) or dual-mode (Globalstar CDMA/GSM) mobile phones or single-mode (Globalstar CDMA) fixed phones.

7 *See* "Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Implementation of WRC-2000: Review of Spectrum and Regulatory Requirements for IMT-2000," RM-9920 (filed July 12, 2000) ("CTIA Petition").

granting the SIA Petition will not preclude the Commission from providing CTIA with the bulk of the relief it seeks.

II. THE FCC SHOULD PROMPTLY ADOPT AN ALLOCATION FOR MSS AT 2500-2520 AND 2670-2690 MHz

Virtually all of the spectrum that the Commission has designated for MSS has been assigned or will soon be assigned. In particular, AMSC Subsidiary Corporation has been licensed in the upper L-band,[8] and the Commission is considering allowing AMSC to use spectrum in the lower L-band.[9] Further, in addition to Globalstar,[10] there are three other licensees at 1610-1626.5 MHz and 2483.5-2500 MHz,[11] and the Commission is considering nine applications for MSS systems at 1990-2025 MHz and 2165-2200 MHz.[12]

Over the next few years, MSS providers will need additional spectrum in order to meet their business plans and provide their customers with a richer

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[8] *See 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*, (Memorandum Order and Authorization) 4 FCC Rcd 6041 (1989) (licensing the upper L-band, or 1544-1559 MHz and 1645.5-1660.5 MHz).

[9] *See Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L Band*, (Notice of Proposed Rulemaking) 11 FCC Rcd 11675 (1996) (considering AMSC's request to use 1525-1544 MHz and 1626.5-1645.5 MHz).

[10] *See Loral/Qualcomm Partnership, LP*, (Order and Authorization) 10 FCC Rcd 2333 (1995).

[11] *See Motorola Satellite Communications, Inc.*, (Order and Authorization) 10 FCC Rcd 2268 (1995) ("Iridium" service); *Mobile Communications Holdings, Inc.*, (Order and Authorization) 12 FCC Rcd 9663 (1997) ("ELLIPSO" service); *Constellation Communications, Inc.*, (Order and Authorization) 12 FCC Rcd 9651 (1997) ("the ARIES satellite system"). Iridium is in bankruptcy, and the other two licensees have not yet constructed their systems; however, this spectrum remains available for sharing among CDMA systems.

[12] *See Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band*, (Notice of Proposed Rulemaking) 14 FCC Rcd 4843 (1999).

variety of seamlessly available nationwide and global voice and data services. In particular, as pointed out by SIA, MSS is one of the best technologies for providing broadband service to rural and insular areas because satellite technology is a cheaper and more efficient means of reaching such areas than deploying landline infrastructure.[13] In this respect, the Commission is quite correct that, "Satellite technology ... represents a potentially cost-effective alternative in serving unserved communities, especially those in remote areas."[14] These benefits to rural and insular subscribers will only increase as MSS using third generation wireless technologies are deployed.

MSS providers will, however, need additional spectrum in order to deliver third generation services to their subscribers. Third generation services are anticipated to be much more "data intensive" than voice services, and therefore will require greater throughput bandwidth. For example, as pointed out by SIA, high speed Internet access, videoconferencing, and other interactive data services all require bandwidths of approximately 10 to 15 MHz.[15] Further, the forecasted spectrum requirements for MSS providers offering IMT-2000 services are 2 x 31.5 MHz by 2005 and 2 x 67 MHz by 2010.[16] At present, Globalstar has access to only 27.85 MHz of shared, bi-directional spectrum for its entire

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13 SIA Petition at 3-4.

14 *Extending Wireless Telecommunications Services to Tribal Lands*, (Notice of Proposed Rulemaking) 14 FCC Rcd 13679, ¶ 12 (1999). Globalstar service is already in use in remote areas of Canada, Alaska and the Western Continental United States. Globalstar intends to serve tribal lands and is co-sponsoring and participating in the Commission's Indian Telecom Training Initiative in September.

15 SIA Petition at 7.

16 Conference Preparatory Meeting Report on Technical, Operational and Regulatory/Procedural Matters to be Considered by the 2000 World Radiocommunication Conference, Section 1.1; Part B.2, Table1-2 (Geneva 1999) ("CPM Report").

package of services. It would be contrary to the public interest for the Commission to foreclose Globalstar and other MSS providers from expanding their service offerings in parallel with those of terrestrial wireless operators by failing to allocate additional, globally available spectrum for third generation services.

Against this background, there are two reasons why the 2.5 GHz bands are ideal for the next MSS allocation. First, the spectrum has been adopted internationally for MSS for almost ten years and is the *only* internationally-allocated MSS frequency band that is likely to be available for global satellite service in the foreseeable future. The 2500-2520 MHz portion, in particular, is relatively lightly used in the United States. Therefore, if the FCC allocates these bands for IMT-2000 satellite component services, MSS customers will be able to access services offered on this band throughout the world. As the Commission said in allocating Globalstar's spectrum six years ago:

> This new mobile satellite service ... has the potential to provide not only a variety of new services to users in the United States, but to provide integrated communications services to all parts of the world, including those that are now grossly underserved.[17]

Such an allocation is consistent with the Commission's long-standing and oft-repeated support for United States-based global satellite communications services.

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[17] *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, 5938 (1994) ("Big LEO Proceeding "). *See also, Big LEO Proceeding* (Memorandum Opinion and Order), 11 FCC Rcd 12861 (1996).

Second, because the 2.5 GHz bands are close to both the 2483.5-2500 MHz band already in use by MSS and the bands that the Commission is considering allocating for use by third generation terrestrial services, the costs of upgrading MSS satellites and handsets for IMT-2000 should be significantly reduced. Assigning a frequency band for use by the satellite component of IMT-2000 that is similar to the bands already used by MSS will reduce the technical challenges and the cost of modifying transponders for second-generation, multiband satellites and the cost of handsets to provide new third generation services. Likewise, by assigning a frequency band to the satellite component of IMT-2000 that is proximate to the band assigned to third generation terrestrial services, the Commission will permit equipment manufacturers to develop analogous handset and transmission technologies for both services. The use of such similar technologies should create economies of scope and scale that will lower the manufacturing and distribution costs for both terrestrial and MSS IMT-2000 equipment.

The Commission should act quickly in allocating the 2500-2520 and 2670-2690 MHz bands for MSS use. Because it takes four to six years to construct, launch, and operate MSS systems, and the effective date of the global allocation is January 1, 2005, the FCC should license the 2.5 GHz systems in the United States between 2000 and 2002. Under such circumstances, the Commission should promptly amend the United States Table of Allocations to allocate the bands in question for MSS use.

III. THE COMMISSION CAN GRANT THE BULK OF THE RELIEF SOUGHT BY BOTH SIA AND CTIA

The Commission can resolve both the SIA Petition and the CTIA Petition in a manner that provides both parties with the relief they seek. Specifically, the Petitions are mutually exclusive only to the extent that both parties seek access to the 2500-2520 MHz and 2670-2690 MHz bands. SIA, however, does not seek any other spectrum for use by IMT-2000 satellite component services. CTIA, on the other hand, requests access to much more spectrum for use by IMT-2000 terrestrial services. As described below, the Commission can, and should, satisfy SIA's request without materially compromising CTIA's needs.

In its Petition for Rulemaking, CTIA noted that third generation wireless services will have the following features: (1) a high degree of commonality of design throughout the world; (2) compatibility of IMT-2000 services with landline services; (3) toll quality voice services; (4) data speeds of up to 2 Mbps; (5) small terminals for worldwide use; and (6) worldwide roaming capability.[18] By incorporating these features, third generation wireless services will satisfy a global demand for anytime, anywhere high bandwidth services. CTIA therefore asked the Commission to initiate a proceeding to allocate additional spectrum for third generation wireless services in a manner consistent with the decisions adopted at WARC-1992 and WRC-2000. In particular, CTIA requested that the Commission, "initiate a proceeding to examine the implications of, and impediments to," allocating the following bands for IMT-2000 *terrestrial*

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[18] CTIA Petition at 3.

implementation: 1710-1885 MHz, 1885-2025 MHz, 2110-2200 MHz, and 2500-2690 MHz.[19]

As noted above, Globalstar agrees with CTIA that there is a growing consumer demand for worldwide access to third generation wireless services, and, that the Commission should ensure that its spectrum allocation rules allow American carriers to meet this demand. In allocating spectrum for third generation wireless services, the Commission must, however, take into account the realistic spectrum needs of satellite-based services and terrestrial services, and the technical characteristics of these services.

In its Petition, SIA requested that the Commission set aside 40 MHz of spectrum for MSS systems providing third generation wireless applications. Given that MSS providers will need up to 134 MHz of spectrum by 2010 in order to serve their entire customer base and comply with IMT-2000 standards,[20] this 40 MHz represents a conservative estimate of the spectrum needs of the MSS industry. Further, the particular slices of spectrum requested by SIA—2500-2520 MHz and 2670-2690 MHz—are extremely close to the frequencies on which MSS systems currently operate. Therefore, as noted above, by allocating this 2.5 GHz spectrum for use by the satellite component of IMT-2000, the Commission will decrease the cost of rolling out this service. As such, SIA's request is both spectrally efficient and technically sound.

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19 CTIA Petition at 5-6.

20 CPM Report, Section 1.1; Part B.2, Table1-2.

CTIA, on the other hand, requests that the Commission consider setting aside all of the spectrum—595 MHz—designated for third generation wireless use at WARC-92 and WRC-2000 for use by terrestrial IMT-2000 systems. Under Commission precedent, there is no plausible argument to be made that such an action is reasonable and in the public interest. Specifically, it is longstanding Commission policy to: (1) accommodate *bona fide* requests for scarce spectrum allocations in a balanced manner; and (2) try to preserve regional or global spectrum allocations for services that are regional or global. CTIA's request is not consistent with either of these policies. On the other hand, SIA's relatively modest request for 40 MHz of spectrum is consistent with the *bona fide* needs of MSS providers and preserves global allocations for MSS. Further, the SIA Petition still leaves 555 MHz potentially available for third generation terrestrial wireless services. The availability of such a great quantity of spectrum can hardly serve as a constraint on the future growth of those services.

IV. CONCLUSION

The Commission should grant the SIA Petition and allocate the 2500-2520 and 2670-2690 MHz bands for MSS providers to offer IMT-2000 services. Such FCC action will allow MSS providers to offer, in an economically and technically efficient fashion, third generation wireless services worldwide and to rural and insular areas within the United States.

Respectfully submitted,
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By S. Rosen

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CERTIFICATE OF SERVICE

I, Anthony J. Mangino, hereby certify that true and correct copies of the preceding Comments of Globalstar, L.P. were served this April 3, 2000 via hand delivery upon the following:

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August 28, 2000