

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

In the Matter of)
)
Amendment of Parts 2, 25 and 97 of the)
Commission's Rules with Regard to the) ET Docket No. 98-142
Mobile-Satellite Service Above 1 GHz)

MEMORANDUM OPINION AND ORDER

Adopted: March 27, 2003

Released: April 2, 2003

By the Commission:

I. INTRODUCTION

1. By this action, we generally deny two petitions for reconsideration of the *Report and Order* (“*R&O*”) in this proceeding, which, among other things, allocated spectrum for certain satellite “feeder links”¹ and provided rules for sharing these feeder links with certain incumbent terrestrial operations.² These petitions, filed by Globalstar, L.P. and Globalstar USA, LLC (“Globalstar”) and by the Society of Broadcast Engineers, Inc. (“SBE”) request reconsideration of the Commission’s decisions in the *R&O* with respect to the 6700-7075 MHz (“7 GHz”) band. Globalstar requests that the 6700-7025 MHz Non-Geostationary Satellite Orbit Mobile-Satellite Service (“NGSO MSS”) feeder downlink band in the Fixed Satellite Service (“FSS”) be extended from 6700-7025 MHz to 6700-7075 MHz, and SBE requests various rule changes pertaining to shared use of the 7 GHz band between television broadcast auxiliary service³ (“TV BAS”) and NGSO MSS. As discussed below, we find the Commission’s decisions in the *R&O* generally appropriate and, with the partial exception of one rule change requested by SBE, affirm those decisions.

II. BACKGROUND

2. At the 1992 World Administrative Radio Conference, the 1610-1626.5 MHz band was allocated for NGSO MSS “service uplinks” and the 2483.5-2500 MHz band was allocated for NGSO

¹ A feeder link is a transmission path between a satellite and an earth station at a fixed point. In the NGSO MSS, feeder link earth stations are needed to complete the transmission paths, process the information being transmitted, and interconnect the NGSO MSS system with terrestrial communications networks or with other user transceivers. A feeder downlink is the path from the satellite to the fixed earth station, whereas a feeder uplink is the path from the fixed earth station to the satellite. Feeder link earth stations that distribute information to, and receive information from, terrestrial telecommunication networks, *e.g.*, the public switched telephone network and the Internet, are known as gateways. *See* 47 C.F.R. § 2.1.

² *See Amendment of Parts 2, 25, and 97 of the Commission's Rules with Regard to the Mobile-Satellite Service Above 1 GHz*, ET Docket No. 98-142, *Report and Order*, 17 FCC Rcd 2658 (2002) (*R&O*).

³ TV BAS stations include TV pickup stations, TV studio-transmitter-link stations, TV relay stations, TV translator relay stations, TV broadcast licensees, and TV microwave booster stations. *See* 47 C.F.R. § 74.601.

MSS “service downlinks.”⁴ In December 1993, the Commission allocated these bands domestically in what came to be known as the “Big LEO” proceeding (for low-earth orbit/NGSO MSS satellite service above 1 GHz),⁵ and in October 1994, the Commission adopted rules and policies to govern this new service.⁶ At the time of these decisions, however, adequate feeder link spectrum was not yet allocated internationally or domestically, and the Commission was unable to satisfy the collective feeder link requirements of the Big LEO applicants. Accordingly, until the feeder link requirements of all qualified applicants could be met, the Commission could only conditionally license Big LEO systems,⁷ permitting qualified applicants to construct satellites with provisions for feeder links on unallocated frequencies at the applicants' risk.

3. Pursuant to this allocation, between 1995-1997, the Commission licensed Globalstar's L/Q Licensee, Inc.,⁸ Constellation Communications, Inc. (“Constellation”),⁹ and Mobile Communications Holdings, Inc. (“MCHI”)¹⁰ to construct, launch, and operate Big LEO systems with feeder downlinks in the 7 GHz band. In doing so, the Commission waived the United States Table of Frequency Allocations (“U.S. Table”),¹¹ in order to provide these three licensees with feeder link spectrum, but conditioned that decision on the outcome of the instant allocation proceeding. Subsequently, however, the licenses of MCHI and Constellation were cancelled due to non-compliance with construction milestones.¹² Accordingly, Globalstar is now the only Big LEO licensee authorized to operate feeder links in the 7 GHz band.

⁴ A service link is a transmission path between a satellite and a subscriber mobile terminal. In the NGSO MSS, a service uplink is the path from the mobile terminal to the satellite, whereas a service downlink is the path from the satellite to the mobile terminal.

⁵ See *Amendment of Section 2.106 of the Commission's Rules to Allocate the 1610-1626.5 MHz and the 2483.5-2500 MHz Bands for Use by the Mobile-Satellite Service, Including Non-geostationary Satellites*, ET Docket No. 92-28, Report and Order, 9 FCC Rcd 536 (1994).

⁶ 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*, CC Docket No. 92-166, Report and Order, 9 FCC Rcd 5936 (1994).

⁷ *Id.* at 5998.

⁸ See *Application of LORAL/QUALCOMM PARTNERSHIP, L.P. for Authority to Construct, Launch, and Operate Globalstar, a Low Earth Orbit Satellite System to Provide Mobile Satellite Services in the 1610-1626.5 MHz/2483.5-2500 MHz Bands*, File Nos. 19-DSS-P-91 (48), CSS-91-014 and 21-SAT-MISC-95, Order and Authorization, 10 FCC Rcd 2333 (1995), *Erratum*, 10 FCC Rcd 3926. See also *L/Q LICENSEE, INC. Application for modification of license to construct, launch, and operate low-Earth-orbit satellites and request for waiver of Table of Allocations*, File Nos. 88-SAT-WAIV-96 and 90-SAT-ML-96, Order and Authorization, 11 FCC Rcd 16410 (1996) (*Globalstar Big LEO Feeder Link Order*). L/Q's Big LEO system is owned and operated by Globalstar.

⁹ See *Application of CONSTELLATION COMMUNICATIONS, INC. For authority to construct, launch, and operate a low earth orbit Mobile Satellite System*, File Nos. 17-DSS-P-91(48), CSS-91-013, 9-SAT-LA-95, 10-SAT-AMEND-95, 159-SAT-AMEND-96, Order and Authorization, 12 FCC Rcd 9651 (1997).

¹⁰ See *Application of MOBILE COMMUNICATIONS HOLDINGS, INC. For authority to construct, launch, and operate an elliptical low earth orbit Mobile Satellite System*, File Nos. 11-DSS-P-91(6), 18-DSS-P-91(18), 11-SAT-LA-95, 12-SAT-AMEND-95, 158-SAT-AMEND-96, Order and Authorization, 12 FCC Rcd 9663 (1997).

¹¹ 47 C.F.R. §§ 2.105, 2.106.

¹² See *Application of MOBILE COMMUNICATIONS HOLDINGS, INC. For authority to construct, launch, and operate an elliptical low earth orbit Mobile Satellite System*, File Nos. 11-DSS-P-91(6), 18-DSS-P-91(18), 11-SAT-LA-95, 12-SAT-AMEND-95, 158-SAT-AMEND-96, *Memorandum Opinion and Order*, 16 FCC Rcd 11766 (Int'l Bur. 2001), *recon. denied*, 17 FCC Rcd 11898 (Int'l Bur. 2002), *app. for review pending*; *CONSTELLATION COMMUNICATIONS HOLDINGS, INC. Request for Limited Waiver and Extension of Time And Application For Amendment of its Pending Application for Modification of the Milestone Schedule Established for its Above 1 GHz*

4. During this time, in March 1997, the Commission also allocated additional spectrum for both GSO and NGSO MSS service links in the 2 GHz range, effective January 1, 2000. Specifically, the Commission allocated the 1990-2025 MHz band for service uplinks and the 2165-2200 MHz band for service downlinks.¹³ In August 2000, the Commission established policies and rules for this new 2 GHz MSS¹⁴ and, in July 2001, it granted 2 GHz MSS licenses to eight companies, including Globalstar, Constellation, MCHI, and ICO Global Communications (Holdings) Ltd. (“ICO”).¹⁵ In doing so, the Commission again waived the U.S. Table in order to provide these four of the new 2 GHz MSS licensees with 7 GHz feeder link spectrum and conditioned that decision on the outcome of the instant allocation proceeding.¹⁶ In January 2003, however, the licenses of Globalstar, Constellation, and MCHI were cancelled due to non-compliance with construction milestones.¹⁷ Accordingly, ICO is now the only 2 GHz licensee that is authorized to use 7 GHz feeder downlink spectrum.

5. In this allocation proceeding, we ultimately allocated the bands 5091-5250 MHz and 15.43-15.63 GHz for feeder uplinks and the 6700-7025 MHz band for feeder downlinks in the FSS to support Big LEO and 2 GHz MSS systems.¹⁸ In addition, we grandfathered two existing gateway earth stations of Globalstar and one existing gateway earth station of ICO that use some or all of the 7025-7075 MHz

Low-Earth Orbit Mobile Satellite System, File No. 17-DSS-P-91(48), CSS-91-013; 10-SAT-AMEND-96; SAT-MOD-20000907-00131, File No. SAT-AMEND-20010829-00081; *Memorandum Opinion and Order*, 17 FCC Rcd 22584 (Int’l Bur. 2002), *recon. pending*.

¹³ See *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service*, ET Docket No. 95-18, *First Report and Order and Further Notice of Proposed Rule Making*, 12 FCC Rcd 7388 (1997). These NGSO MSS allocations were subsequently reaffirmed. See *Memorandum Opinion and Order and Third Notice of Proposed Rule Making and Order*, 13 FCC Rcd 23949 (1998); *Second Report and Order and Second Memorandum Opinion and Order*, 15 FCC Rcd 12315.

¹⁴ See *The Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band*, IB Docket No. 99-81, *Notice of Proposed Rule Making*, 14 FCC Rcd 4843 (1999); *Report and Order*, 15 FCC Rcd 16127 (2000).

¹⁵ *The Boeing Company*, Order and Authorization, 16 FCC Rcd 13691 (Int’l Bur. 2001); *Celsat America, Inc.*, Order and Authorization, 16 FCC Rcd 13712 (Int’l Bur. 2001); *Constellation Communications Holdings, Inc.*, Order and Authorization, 16 FCC Rcd 13724 (Int’l Bur./OET 2001) (*Constellation 2 GHz MSS Order*); *Globalstar, L.P.*, Order and Authorization, 16 FCC Rcd 13739 (Int’l Bur./OET 2001) (*Globalstar 2 GHz MSS Order*); *ICO Services Limited*, Order, 16 FCC Rcd 13762 (Int’l Bur./OET 2001) (*ICO 2 GHz MSS Order*); *Iridium LLC*, Order and Authorization, 16 FCC Rcd 13778 (Int’l Bur. 2001); *Mobile Communications Holdings, Inc.*, Order and Authorization, 16 FCC Rcd 13794 (Int’l Bur./OET 2001) (*MCHI 2 GHz MSS Order*); *TMI Communications and Company, Limited Partnership*, Order, 16 FCC Rcd 13808 (Int’l Bur. 2001). Boeing, Celsat, Iridium, and TMI did not request 7 GHz feeder link spectrum.

¹⁶ *Globalstar 2 GHz MSS Order*, 16 FCC Rcd at 13758; *Constellation 2 GHz MSS License*, 16 FCC Rcd at 13735-36; *MCHI 2 GHz MSS License*, 16 FCC Rcd at 13804-05; *ICO 2 GHz MSS Order*, 16 FCC Rcd at 13775.

¹⁷ See *Globalstar, L.P. For Modification of License for a Mobile-Satellite Service System in the 2 GHz Band*, File Nos. 183/184/185/186-SAT-P/LA-97; 182-SAT-P/LA-97(64); IBFS Nos. SAT-LOA-19970926-00151/52/53/54; SAT-LOA-19970926-00156; SAT-AMD-20001103-00154; SAT-MOD-20020717-00119; SAT-MOD-20020722-00110; Call Signs S2320, S2321, S2322, S2323, S2324; *Memorandum Opinion and Order*, DA 03-328 (Int’l Bur. released January 30, 2003); *Mobile Communications Holdings, Inc. and ICO Global Communications (Holdings) Limited for Transfer of Control*, File No. SAT-T/C-20020719-00104, *Constellation Communications Holdings, Inc. and ICO Global Communications (Holdings) Limited for Transfer of Control*, File No. SAT-T/C-20020718-00114, *Mobile Communications Holdings, Inc. for Modification of 2 GHz MSS License*, File No. SAT-MOD-20020719-00105, and *Constellation Communications Holdings, Inc. for Modification of 2 GHz MSS License*, File No. SAT-MOD-20020719-00103, *Memorandum Opinion and Order*, DA 03-285 (Int’l Bur. released January 30, 2003).

¹⁸ *R&O*, 17 FCC Rcd at 2659.

downlink band.¹⁹ Finally, we adopted coordination procedures to enable NGSO MSS systems to use the feeder downlink spectrum while adequately protecting incumbent terrestrial services.²⁰

6. The allocation *R&O* noted that internationally the 7 GHz band is allocated on a co-primary basis to the fixed service, the FSS (for both uplinks and downlinks), and the mobile service.²¹ It also noted that international FSS downlink use of this band is limited to NGSO MSS feeder links and that most of the FSS uplink allocation – at 6725-7025 MHz – is designated as an internationally planned band and is currently lightly used. Finally, the *R&O* noted that GSO FSS uplink use of the 7025-7075 MHz band must be coordinated with NGSO FSS use.²²

7. The *R&O* further noted that domestically the band is allocated to the fixed service and to the FSS for uplinks on a co-primary basis.²³ It also recognized that the 6875-7125 MHz portion of this band is also used by the TV BAS and Cable Television Relay Service ("CARS"), including mobile television pickup ("TVPU") stations, and that this sub-band is divided into ten 25-megahertz channels that are used for electronic newsgathering ("ENG"), intercity relay (ICR), studio-to-transmitter links ("STLs"), and remote event coverage.²⁴ Finally, the *R&O* noted that the Commission, in accordance with the international plan for 6725-7025 MHz band, has authorized limited commercial FSS uplink use of this band, and that the Commission has specified that FSS uplink spectrum within the 7025-7075 MHz band is available for feeder links in the Satellite Digital Audio Radio Service ("DARS").²⁵ The following Table summarizes the allocation of the 7 GHz band prior to and after the *R&O*.

Table: Allocation of the 7 GHz Band			
Band	Allocation Prior to <i>R&O</i>	Allocation After <i>R&O</i>	Summary of Major Changes
6700-6875 MHz	FSS (uplinks; the sub-band 6725-6875 MHz is part of the internationally planned band that extends from 6725-7025 MHz) FIXED (half of the band 6525-6875 MHz that is used by common carrier & private operational fixed point-to-point microwave licensees)	FSS (uplinks) (downlinks, limited to NGSO MSS feeder links) FIXED	Additional 175 megahertz for commercial NGSO MSS feeder downlinks; require coordination using Part 25 and Part 101 rules.
6875-7025 MHz	FSS (uplinks; remainder of the internationally planned band that extends from 6725-7025 MHz; the sub-band 7025-7075 MHz is available for SDARS feeder	FSS (uplinks) (downlinks, limited to NGSO MSS feeder links) FIXED & MOBILE	Additional 150 megahertz for commercial NGSO MSS feeder downlinks; case-by-case coordination required on interim basis.

¹⁹ *Id.* at 2675. Globalstar's Clifton, TX earth station uses the 6875-7055 MHz band, Globalstar's Finca Pascual, PR earth station uses the 6900-7055 MHz band, and ICO's Brewster, WA earth station uses the 6975-7075 MHz band.

²⁰ *Id.* at 2659.

²¹ The fixed service is a radiocommunication service between fixed points. The mobile service is a radiocommunication service between mobile and land stations, or between mobile stations. *See* 47 C.F.R. § 2.1.

²² *R&O*, 17 FCC Rcd at 2669.

²³ *Id.* Federal agencies and non-Federal Government licensees may also use the 7 GHz band to carry out passive microwave sensor measurements over the oceans.

²⁴ *Id.* at 2670.

²⁵ *Id.*

7025-7075 MHz	links) FIXED & MOBILE (used by BAS and CARS licensees for ENG, ICR, STLs, & remote event coverage)	FSS (uplinks) (downlinks, limited to grandfathered NGSO MSS feeder links) FIXED & MOBILE	Additional 50 megahertz for commercial NGSO MSS feeder downlinks, limited to 2 grandfathered systems and 3 sites.
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III. DISCUSSION

A. Globalstar Petition for Reconsideration

8. In its petition for reconsideration, Globalstar, concerned about a shortage of feeder link spectrum for NGSO MSS which it argues would constrain operational capacity, requests that the Commission reverse its decision to not allocate the 7025-7075 MHz band for NGSO MSS feeder downlinks.²⁶ Alternatively, Globalstar requests that, if the Commission does not extend the allocation for NGSO MSS feeder downlinks to 7075 MHz, it permit Globalstar's and ICO's existing NGSO MSS systems that have grandfathered use of the 7025-7075 band to add gateway earth stations in that band. Globalstar contends that the extensive record in this proceeding demonstrates that the addition of a few gateway earth stations to the two existing systems will serve the public interest by not forcing Globalstar and ICO to redesign their existing systems at substantial cost when they need to improve service and add capacity.²⁷ No oppositions or other comments were filed regarding Globalstar's petition.

9. We find Globalstar's concerns regarding the possibility of NGSO MSS systems being constrained by a shortage of feeder downlink spectrum to be unfounded for the reasonably foreseeable future. Globalstar's Big LEO system is authorized to use the 6875-7055 MHz band for feeder downlinks.²⁸ At the time Globalstar filed its petition, its allocated band was potentially subject to significant sharing with other NGSO MSS systems that were authorized overlapping feeder downlink spectrum.²⁹ The need to share the majority of that band with those NGSO MSS systems in the foreseeable future has been reduced as a result of license cancellations.³⁰ Thus, Globalstar's Big LEO system, which previously faced the immediate need to share the 6875-6975 MHz band with three competing NGSO MSS systems, is currently the only feeder downlink user of that 100 megahertz of spectrum. In addition, it will have the option of using the 6975-7025 MHz band on a shared basis with

²⁶ Globalstar Petition for Reconsideration, Docket No. 98-142, filed May 10, 2002, at i.

²⁷ *Id.* at 12.

²⁸ Globalstar's 2 GHz MSS system was not authorized to use feeder downlink spectrum in the 6875-7055 MHz band. Rather, that system was authorized to use the 6700-6800 MHz band for feeder downlinks. *See Globalstar 2 GHz MSS Order*, 16 FCC Red at 13758.

²⁹ Specifically, at the time Globalstar filed its petition, its Big LEO system faced the prospect of sharing 180 megahertz of spectrum at 6875-7055 MHz band with up to 4 other NGSO MSS systems in each portion of that band, giving Globalstar the equivalent of only 50 megahertz of exclusive feeder downlink spectrum, had Globalstar's instant petition been granted. That is, the 6875-6975 MHz portion of the band would have been shared with Constellation's Big LEO system and the 2 GHz systems of Constellation and MCHI, which would have given each of the four systems the equivalent of 25 megahertz of exclusive spectrum; the 6975-7025 MHz portion of the band would have been shared with Constellation's Big LEO system and the 2 GHz MSS systems of Constellation, MCHI, and ICO, which would have given each of the five systems the equivalent of 10 megahertz of exclusive spectrum; and the 7025-7055 MHz portion of the band would have been shared with ICO's 2 GHz MSS system, which would have given each of the systems the equivalent of 15 megahertz of exclusive spectrum. Under those circumstances, Globalstar's Big LEO equivalent exclusive feeder downlink spectrum would have been the sum of 25 megahertz, 10 megahertz, and 15 megahertz.

³⁰ *See supra* paragraphs 3-4 and accompanying footnotes.

ICO's 2 GHz MSS system, along with its grandfathered use of the 7025-7055 MHz band from its two currently-operational gateways. Under these circumstances, we affirm our statement in the *R&O* that "325 megahertz of primary spectrum, along with 50 megahertz of primary spectrum limited to grandfathered systems, will accommodate the existing need for feeder downlink spectrum."³¹

10. Thus, we deny Globalstar's reconsideration petition to allocate the 7025-7075 MHz band to FSS downlink operations and its request for use of the 7025-7075 MHz band for any purpose other than gateway use by Globalstar's two existing earth stations, particularly given the availability of spectrum allocated for gateway use below 7025 MHz. We further find no need to permit ICO's 2 GHz MSS system to use the 7025-7075 MHz band for any purpose other than gateway use by its one existing earth station.

B. SBE Petition for Reconsideration

11. In the *R&O*, we concluded that NGSO MSS gateway earth stations could share part of the 7 GHz band with TV BAS operations because such earth stations would be limited in number and because coordination between those co-primary operations should ensure successful spectrum sharing. The *R&O* noted that Parts 74 and 78 of the Commission's Rules, which govern TV BAS, do not have coordination procedures for sharing with satellite operations, but concluded that Parts 25 and 101 coordination procedures would serve to protect such earth stations from fixed BAS operations as an interim measure until uniform coordination procedures could be adopted in a separate proceeding. The *R&O* further noted that, while existing coordination procedures are inadequate to address NGSO MSS gateway earth station sharing with mobile TVPU BAS operations, sharing is nonetheless possible because gateway earth station and TVPU use of the 7 GHz band are both limited, and because TVPU stations can use two BAS channels that are not overlapped by the new NGSO MSS allocation. Therefore, the *R&O* placed *ad hoc* coordination requirements on NGSO MSS gateway earth stations with both fixed and mobile TV BAS operations, until completion of a Commission proceeding to establish coordination rules specific to TV BAS/gateway sharing.³²

12. In seeking reconsideration, SBE requests that the Commission: (1) require use of the Part 101 frequency coordination protocol by a 7 GHz TV BAS fixed station with an NGSO MSS gateway earth station only if that TV BAS station is located within 145 kilometers ("km") of the earth station; (2) require 7 GHz TV BAS stations to protect only the portion of the 7 GHz feeder downlink band that is being used by an NGSO MSS provider at the time of frequency coordination; and (3) establish the release date of the *R&O* (February 7, 2002) as the benchmark date to grandfather 7 GHz TVPU stations; *i.e.*, provide that TVPU stations authorized by February 7, 2002 would not be required to protect the three incumbent NGSO MSS gateway earth stations.³³ SBE also challenges the *R&O*'s Final Regulatory Flexibility Certification ("Certification").³⁴

13. Globalstar and ICO each submitted an opposition to SBE's petition for reconsideration.³⁵ Globalstar challenges all three of SBE's requests and ICO challenges SBE's first two requests. Neither

³¹ *R&O*, 17 FCC Rcd at 2676. At the time the Commission made this statement, only one of the systems authorized to operate 7 GHz feeder downlinks had been cancelled. *Id.* at 2677 n.105. Thus, even though the license cancellation decisions referenced above are not "final," *see, e.g.*, 47 C.F.R. § 1.102, the possibility of decision reversal does not change the fact that there is adequate feeder downlink spectrum for Globalstar to share in the 6875-7025 MHz band.

³² *R&O*, 17 FCC Rcd at 2679-83.

³³ SBE Petition for Reconsideration, Docket No. 98-142, filed May 10, 2002, at 2-4.

³⁴ *Id.* at 4-5.

³⁵ *See* "Opposition to Petition for Reconsideration," ET Docket No. 98-142, filed by Globalstar, July 8, 2002; and "Opposition of ICO Global Communications," ET Docket No. 98-142, filed by ICO, July 8, 2002.

party commented on SBE's analysis of the Certification. SBE did not file a response to either opposition.

14. Coordination Distance. SBE concedes that it can accept as an interim measure the use of Part 101 frequency coordination for 7 GHz TV BAS fixed coordination with NGSO MSS licensees. However, SBE proposes that the Commission "clarify" that the "burdensome" Part 101 requirements should apply only to 7 GHz TV BAS fixed stations within 145 km of the gateway earth station. It asserts that requiring frequency coordination beyond 145 km has nothing to do with protecting NGSO MSS gateway earth stations from harmful interference from 7 GHz TV BAS fixed operations and is beyond the scope of this proceeding. SBE states that the 145 km coordination distance is appropriate based on a May 2000 Comsearch frequency coordination study of Globalstar's Clifton, TX earth station, which showed that distance to be the maximum necessary to protect the Clifton earth station from harmful interference from 7 GHz TV BAS stations. SBE argues that extending the expensive and time-consuming Part 101 requirements beyond this distance would unnecessarily burden broadcasters.³⁶

15. Globalstar and ICO each oppose SBE's request. Globalstar asserts that a 145-km radius is inadequate to protect Globalstar's Finca Pascual, PR earth station from harmful interference caused by 7 GHz TV BAS operations³⁷ and ICO cites frequency coordination studies conducted by Comsearch for both Globalstar's Finca Pascual earth station and ICO's Brewster, WA earth station that determined that much greater coordination distances are required to protect those earth stations from harmful interference caused by 7 GHz TV BAS operations. Specifically, ICO contends that Comsearch's studies found that the maximum coordination distance is 519 km in Finca Pascual and 319 km in Brewster.³⁸

16. The record indicates that different coordination distances are required to protect each existing NGSO MSS gateway earth station from harmful interference caused by 7 GHz TV BAS fixed stations.³⁹ Further, we agree with ICO's assertion that the necessary coordination distance between TV BAS stations and earth stations depends on a number of parameters particular to each earth station. According to ICO, these include rain climatic zone, the gain of the earth station antenna toward the horizon, and the maximum permissible interference that the earth station will tolerate for a given percentage of the time.⁴⁰ To specify in this proceeding the same coordination distance for existing and future earth stations without examining the particulars of each earth station would be arbitrary and could lead to instances of inadequate interference protection or unnecessarily large coordination distances. Indeed, we intend to explore further issues relating to the appropriate coordination distances and procedures for TV BAS stations and NGSO MSS gateway earth stations in a forthcoming Notice of Proposed Rule Making in ET Docket No. 98-206. Accordingly, only as an interim measure pending a final decision in our forthcoming proceeding, we are specifying for 7 GHz TV BAS fixed stations coordination with the three existing NGSO MSS gateway earth stations, but do so using the maximum coordination distances found to be required by the Comsearch studies presented in the record of this proceeding; *i.e.*, we specify a maximum coordination distance of 145 km from Globalstar's Clifton, TX

³⁶ SBE Petition at 1-2.

³⁷ Globalstar Opposition at 3.

³⁸ ICO Opposition at 2-3.

³⁹ We note that coordination between mobile BAS stations and NGSO MSS gateway earth station is currently done on an *ad hoc* basis, but that the basic process that is used to coordinate operations between fixed BAS stations and NGSO MSS gateway earth station is applicable; *see R&O*, 17 FCC Rcd at 2682. We also note that we will consider how to protect incumbent mobile BAS operations in their normal operating areas and how to protect gateways from later-licensed mobile BAS stations in a forthcoming Notice of Proposed Rule Making in ET Docket No. 98-206; *see id.* and paragraph 16, *infra*.

⁴⁰ ICO Opposition at 2-3.

earth station, a maximum coordination distance of 519 km from Globalstar's Finca Pascual PR earth station, and a maximum coordination distance of 319 km from ICO's Brewster, WA earth station.

17. Frequencies Protected. SBE argues that the Commission's decision to require 7 GHz TV BAS stations to protect the entire portion of the 7 GHz NGSO MSS feeder downlink allocation without requiring NGSO MSS entities to demonstrate that they are using the entire block of frequencies has the effect of granting NGSO MSS feeder downlinks "super primary" status. SBE claims that this would be akin to the Commission requiring the protection of an existing TV BAS station, not just on one 7 GHz TV BAS channel, but over all ten TV BAS channels. SBE maintains that it is inconsistent for the Commission to say that TV BAS stations and NGSO MSS gateway earth stations will be regulated on a co-primary basis, but then require TV BAS stations to protect NGSO MSS gateway earth stations on all possible operational frequencies – whether the NGOS MSS licensee is operating there or not – yet protect TV BAS stations only on occupied frequencies. SBE argues that if, at some future date, additional feeder downlink spectrum is needed by an NGSO MSS system, that system could attempt to coordinate use of additional spectrum at that time. SBE acknowledges that additional spectrum might not be available at a future date, but argues that broadcasters and other commercial applicants have had to live with that possibility for a long time and NGSO MSS entities should be treated in the same manner.⁴¹

18. We find that fixed TV BAS and mobile TV BAS (TVPU) require distinct considerations. As pointed out by ICO, the Commission recently addressed the issue of protecting earth stations from potential harmful interference caused by fixed TV BAS use by deciding that such protection should be based on the earth station spectrum assignment, rather than the spectrum actually used by earth stations. In IB Docket No. 00-203, the Fixed Wireless Communications Coalition ("FWCC") argued that the Commission was according FSS earth stations preferential access to several bands, including 6425-7125 MHz, that are shared with terrestrial fixed services. Specifically, FWCC argued that interference protection to FSS earth stations should be based upon FSS spectrum use, just as interference protection to fixed services is based upon fixed spectrum use. However, the Commission denied FWCC's petition, finding that fixed and satellite services have significantly different requirements for access to the spectrum in order to meet their business needs, and further finding that there was insufficient evidence that terrestrial fixed users have been harmed by frequency sharing with the FSS.⁴² We find no need to revisit that recent decision, as we see no evidence that circumstances have changed since that time. Accordingly, regarding fixed TV BAS use, we deny SBE's request that coordination and protection of NGSO MSS gateway earth stations be based upon current spectrum use.

19. With regard to protecting the entire NGSO MSS gateway earth station spectrum assignment from potential harmful interference caused by mobile TV BAS use, rather than the spectrum actually used by the earth stations, we find it necessary that mobile TV BAS users protect the entire NGSO MSS gateway earth station spectrum assignment as an interim measure, pending the outcome of the forthcoming Notice of Proposed Rule Making referenced in paragraph 16, *supra*. We note that certain characteristics of mobile TV BAS may permit some flexibility in coordination and interference protection. Specifically, we note that mobile TV BAS is often used to cover "breaking news" on a short-term, temporary basis. While a NGSO MSS gateway earth station licensee may resist giving up a portion of its authorized spectrum for a new permanent TV BAS operation, we expect that the NGSO MSS gateway earth station licensee will be able to accommodate a temporary mobile TV BAS operation if it is not operating across the whole authorized bandwidth at the time of the request. As long as the temporary mobile TV BAS does not cause interference to the gateway earth station, TV

⁴¹ *Id.*

⁴² See *FWCC Request for Declaratory Ruling on Partial-Band Licensing of Earth Stations in the Fixed-Satellite Service That Share Terrestrial Spectrum, et al.*, IB Docket No. 00-203, *Second Report and Order*, 17 FCC Rcd 2002, 2006-08 (2002).

BAS use would not constrain the growth and long-term functionality of the gateway earth station. Accordingly, regarding mobile BAS use, we deny here SBE's request that coordination and protection of NGSO MSS gateway earth stations be based on current spectrum use, but we will explore whether, and under what circumstances, temporary mobile TV BAS use of the 7 GHz band within interference range of such earth stations could be permitted in the Notice of Proposed Rulemaking referenced in paragraph 16, *supra*.

20. Grandfathered TVPU. SBE contends that the *R&O* effectively created two classes of TVPU stations that can operate in the vicinity of Globalstar's and ICO's existing NGSO MSS gateway earth stations, even though TVPU stations and NGSO MSS gateway earth stations have co-primary status. Specifically, SBE contends that TVPU stations authorized before the authorization of Globalstar's and ICO's existing earth stations can potentially cause interference to those earth stations because such TVPU stations have first-in-time rights, whereas TVPU stations authorized after those earth stations were authorized cannot cause interference to them because the earth stations have first-in-time rights. SBE maintains that this disparity creates a competitive disadvantage between TV stations covering a breaking news event because some of those stations may have the ability to immediately use an existing TVPU station while others would not have that ability. Therefore, SBE requests that the Commission establish the release date of the *R&O* as the cutoff date for "grandfathered" TVPU stations located in the vicinity of Globalstar's and ICO's existing gateway earth stations, so that newer TVPU stations would have the same status as earlier authorized TVPU stations; *i.e.*, such stations would not have to protect NGSO MSS gateway earth stations from harmful interference. SBE acknowledges that two of the ten 7 GHz TV BAS channels do not overlap the new NGSO MSS feeder downlink allocation and could be used to satisfy TVPU requirements, but notes that there are five networks that cover news and sporting events on a national basis. Therefore, SBE contends, TVPU use of only two of the ten 7 GHz TV BAS channels may be insufficient to meet TVPU requirements.⁴³

21. Grant of SBE's request to permit TVPU stations authorized after Globalstar's and ICO's three existing NGSO MSS gateway earth stations to operate without regard to harmful interference to those earth stations would disregard the Commission's long-standing policy that authorized and coordinated stations have rights to protection from subsequently authorized stations of the same status (primary or secondary).⁴⁴ SBE's request appears to be based on the premise that, because Globalstar's and ICO's NGSO MSS feeder downlink spectrum assignments were conditioned on the outcome of the allocation decision in this proceeding, their earth stations' interference protection rights do not commence until the date of release of the *R&O*. However, the waiver grants to Globalstar and ICO authorized primary feeder downlink use of the 6875-7055 MHz and 6975-7075 MHz bands, respectively, as of the dates of the waivers, which are November 18, 1996 and July 17, 2001, respectively.⁴⁵ Subsequently, Globalstar's and ICO's earth stations were individually authorized.⁴⁶ The

⁴³ SBE Petition at 2-3.

⁴⁴ This policy is not generally stated in the Commission's rules with respect to stations in primary services, but is generally stated with respect to stations in secondary services. See 47 CFR § 2.105(c)(2)(iii), which states that stations in secondary services "can claim protection, however, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned at a later date." Further, this policy is specifically stated with respect to primary satellite earth station applicants. See 47 CFR §§ 25.203(a), (b), (c), (h), and (k).

⁴⁵ See *Globalstar Big LEO Feeder Link Order*, 11 FCC Rcd at 16413; *ICO 2 GHz MSS Order*, 16 FCC Rcd at 13766-67. The *Globalstar Big LEO Feeder Link Order* was adopted on November 18, 1996 and released on November 19, 1996; the *ICO 2 GHz MSS Order* was adopted and released on July 17, 2001.

⁴⁶ Globalstar's Clifton, TX earth station was authorized to use the 6875-7055 MHz band on February 27, 1998; see call sign E970199, authorized for the 6875-6878 MHz (mistakenly specified as 6873-6878 MHz initially) and 6900-7055 MHz bands to Globalstar USA, LLC on February 27, 1998. While this spectrum does not include the 6878-6900 MHz portion of the 6875-7055 MHz band authorized by the November 1996 waiver, because 7 GHz TV BAS (including TVPU) and CARS channels begin at 6875 MHz and are each 25 megahertz in bandwidth, for purposes of

R&O allocated the 6700-7025 MHz band for NGSO MSS feeder downlinks and grandfathered the three existing Globalstar and ICO earth stations in the 7025-7075 MHz band, including facilities in the process of being built, but did not modify the waiver grants or earth station authorizations.⁴⁷ Accordingly, those earth stations have maintained primary status since the grant of the waivers.⁴⁸ Therefore, we deny SBE's petition for reconsideration with respect to this issue.

22. Final Regulatory Flexibility Certification. SBE notes that the Final Regulatory Flexibility Certification in the *R&O* concluded that the Commission's decisions in the *R&O* "will not have a significant economic impact on a substantial number of small entities."⁴⁹ SBE contends that the *R&O*'s requirement that 7 GHz TV BAS stations undertake burdensome Part 101 frequency coordination will be costly and will fall most heavily on small market TV and TV translator stations. SBE contends that such stations are more likely to have 7 GHz TV BAS links in areas close enough to NGSO MSS gateway earth stations to require frequency coordination. As examples, SBE states that within 145 km of Globalstar's Clifton, TX earth station, Globalstar's Finca Pascual, PR earth station, and ICO's Brewster, WA earth station, the Commission database shows, respectively, 156, 186, and 147 TV translator, LPTV, Class A TV, or full-service TV stations. Accordingly, SBE concludes that the Certification was too optimistic in assuming that imposition of Part 101 frequency coordination on 7 GHz TV BAS licensees will not have a significant economic impact on a substantial number of small entities.⁵⁰

23. We find that, conjecture aside, SBE has presented no evidence to contradict our finding that there would be a *de minimis* burden on TV BAS stations in the 7 GHz band.⁵¹ SBE simply cites the number of TV translator, LPTV, Class A TV, and full service TV stations within 145 km of Globalstar's and ICO's three existing NGSO MSS gateway earth stations that *might* use 7 GHz TV BAS stations that *might* be subject to protecting the three earth stations from harmful interference. However, SBE fails to recognize that only those 7 GHz TV BAS stations located in relatively close

protecting an NGSO MSS gateway earth station from harmful interference caused by TV BAS and CARS operation, the band authorized by the waiver and the bands authorized for use by the Clifton earth station are one and the same.

Globalstar's Finca Pascual, PR earth station was authorized to use the 6900-7055 MHz band on June 23, 2000; *see* call signs E990335, E990336, and E990337, authorized for the 6900-7055 MHz band to Globalstar Caribbean, Ltd on June 23, 2000.

ICO's Brewster, WA earth station was authorized to use the 6975-7075 MHz band on a secondary basis effective on May 10, 2001 – *see Verestar, Inc. Request for Expedited Special Temporary Authority for the Brewster Earth Station to Support In-Orbit and Integration System Tests with the ICO F-2 Satellite, Order and Authorization*, 16 FCC Rcd 9575 (2001). In this *Order and Authorization*, released and effective on May 10, 2001 (*Id.*, 16 FCC Rcd at 9580), Verestar, Inc. – the licensee of ICO's gateway earth station – was authorized to use the 6975-7075 MHz band in Brewster and "agreed to accept interference, if any, that it may receive from authorized stations in this band." *Id.*, 16 FCC Rcd at 9578. ICO was authorized to use the 6975-7075 MHz band segment on a primary basis on July 17, 2001 – *see ICO 2 GHz MSS Order*, 16 FCC Rcd 13767 – though ICO's use of the 7025-7075 MHz band on a primary basis was delayed until May 10, 2002 – *see R&O*, 17 FCC Rcd at 2675, 2688. The *R&O* was published in the Federal Register on April 10, 2002 (67 FR 17288), and the rules became effective 30 days after such publication (*Id.*, 17 FCC Rcd at 2688); *i.e.*, on May 10, 2002.

⁴⁷ *R&O*, 17 FCC Rcd at 2675.

⁴⁸ We note that those earth stations achieved coordination with TVPU and other primary users of the band prior to initiating operation. We observe that the purpose of coordination is to establish a reasonable assurance that the new entrant's operations can commence without instances of harmful interference to either existing or new operations.

⁴⁹ *R&O*, 17 FCC Rcd at 2701.

⁵⁰ SBE Petition at 4-5.

⁵¹ *R&O*, 17 FCC Rcd at 2701-02.

proximity to an NGSO MSS gateway earth station and that were authorized after the earth station would have to bear the cost of frequency coordination with the earth station, nor does SBE recognize that new TV BAS stations must coordinate with *all* existing primary licensees in the band, including other TV BAS stations and FSS uplinks. SBE does not estimate the number of 7 GHz TV BAS stations likely to be affected by coordination with existing or future NGSO MSS downlinks, nor does it estimate the cost burden on the affected TV BAS stations attributable to such coordination.

24. Because the 7 GHz FSS downlink allocation is limited to serving the feeder link needs of NGSO MSS systems, the number of gateway earth stations constructed will be very small and most likely will be deployed away from major populated areas where the 7 GHz TV BAS band is used most.⁵² Further, it is incumbent upon the new entrant in any shared band to perform coordination, so that a coordination burden on TV BAS stations located in the vicinity of an existing NGSO MSS gateway earth station would affect only new TV BAS stations, and SBE has not demonstrated that we should expect a substantial number of small entities to have new TV BAS stations. Moreover, because of the existing co-primary FSS uplink allocation in the 7 GHz band, any new TV BAS station would already have to coordinate with FSS operations and bear the associated costs. Therefore, new 7 GHz TV BAS stations locating near an NGSO MSS gateway earth station will not be confronted with an unprecedented satellite coordination requirement.

25. We also note that, typically, a frequency coordinator will charge a fee to a new TV BAS station based on the number of existing station links that must be coordinated. It is unclear how much coordination with an NGSO MSS gateway earth station would add to that cost, but in reply comments in a recent Commission proceeding, Viacom, Inc. indicates that a single coordination costs no more than \$1,000 per frequency to a BAS station.⁵³ This relatively low cost combined with the limiting factors discussed above leads us to affirm our conclusions that the impact of our action is *de minimis* on TV BAS operations as a whole.

26. In summary, we find that only a relatively small number of TV BAS stations in the 7 GHz band will be affected by the *R&O*'s decision to authorize NGSO MSS feeder downlink use of that band because only a new 7 GHz TV BAS station locating in the vicinity of an NGSO MSS gateway earth station will have to protect the earth station from harmful interference attributable to the operation of the new TV BAS station. A 7 GHz TV BAS station authorized prior to the authorization of an NGSO MSS gateway earth station will not be affected. The majority of TV BAS stations are, or will be, located at a sufficient distance from the small number of NGSO MSS gateway earth stations to have no additional burden. Even with respect to the relatively limited number of 7 GHz TV BAS stations in the vicinity of an NGSO MSS gateway earth station authorized, or that will be authorized, subsequent to the authorization of that earth station, it is unclear whether coordination costs attributable to the existence of the earth station will be significant relative to coordination costs attributable to the existence of other authorized 7 GHz stations. Finally, new BAS stations locating in an NGSO MSS gateway earth station area will not be confronted with an unprecedented satellite coordination requirement. Taking into account all of these factors, we find that the *R&O*'s decision authorizing NGSO MSS gateway earth stations in the 7 GHz band does not impose on TV BAS stations as a whole a coordination burden that will be more than *de minimis*, as stated in the Certification.

⁵² We note that the three existing NGSO MSS gateway earth stations are not located in major population centers – where a greater proportion of 7 GHz TV BAS stations are located – and that any future such earth stations will also likely be located away from major population centers in order to obtain access to sufficient unused spectrum.

⁵³ Reply Comments of Viacom, Inc., ET Docket No. 01-75, August 7, 2001, at 2. Viacom states that it is the licensee of 37 full-service TV stations and the parent licensee of 185 radio stations – *id.* at 1 – and the \$1,000 cost maximum per frequency presumably applies to both aural and TV BAS coordination. Viacom states: “A single frequency coordination can cost as much as one thousand dollars (\$1,000) per frequency. If Part 101 procedures were in affect (*sic*) today, Viacom would have spent forty thousand dollars (\$40,000) in frequency coordination fees for the first six months of this year.” *Id.* at 2.

27. Accordingly, we are persuaded by only one of SBE's contentions set forth in its petition for reconsideration – namely, that 7 GHz TV BAS licensees located in the vicinity of Globalstar's Clifton, TX NGSO MSS gateway earth station need to coordinate with that earth station only if they are located within 145-km of it. That coordination distance, and the other coordination distances specified in paragraph 16, *supra*, will be used as an interim measure pending a final decision in our forthcoming proceeding referenced in that paragraph. In all other respects, we deny SBE's petition for reconsideration.

IV. ORDERING CLAUSES

28. Accordingly, IT IS ORDERED that, pursuant to Sections 1, 4(i), 303(f), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(f), 303(g), and 303(r), this *Memorandum Opinion and Order* IS ADOPTED.

29. IT IS FURTHER ORDERED that the petitions for reconsideration of the *Report and Order* in this proceeding, filed by Globalstar, L.P. and Globalstar USA, LLC and by the Society of Broadcast Engineers, Inc., ARE DENIED, except to the extent that SBE's petition is granted with respect to the issue discussed in paragraph 16, *supra*.

30. IT IS FURTHER ORDERED that the Commission's Consumer Information Bureau, Reference Information Center, SHALL SEND a copy of this *Memorandum Opinion and Order* to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary