

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

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In the Matter of)
)
Amendment of Section 2.106 of the) ET Docket No. 95-18
Commission's Rules to Allocate)
Spectrum at 2 GHz for Use)
by the Mobile-Satellite Service)

FCC MAIL ROOM

**MEMORANDUM OPINION AND ORDER
AND
THIRD NOTICE OF PROPOSED RULE MAKING
AND
ORDER**

Adopted: November 19, 1998

Released: November 25, 1998

Comment Date: [30 days after publication in the Federal Register]

Reply Comment Date: [60 days after publication in the Federal Register]

By the Commission: Commissioner Ness issuing a statement.

INTRODUCTION

1. By this action, the Commission disposes of two petitions for reconsideration and one petition for clarification of the *First Report and Order and Further Notice of Proposed Rule Making (First R&O/Further Notice)* in this proceeding.¹ In so doing, we affirm our allocation of the 1990-2025 MHz and 2165-2200 MHz bands to the Mobile-Satellite Service (MSS).² In accordance with the requirements of the Balanced Budget Act of 1997 (1997 Budget Act), we propose to reallocate 40 megahertz of spectrum, at 2110-2150 MHz, to the Fixed and Mobile Services, for eventual assignment of licenses by auction.³ In order to meet these requirements, we propose to change the Broadcast Auxiliary Service (BAS) allocations made earlier in this proceeding from the 2025-2130 MHz band to the 2025-

¹ 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).

² See *id.* at ¶ 14.

³ See Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251 § 3002(c) (1997).

2110 MHz band,⁴ and add Government space operations (Earth-to-space and space-to-space), Earth-exploration satellite (Earth-to-space and space-to-space) and space Research (Earth-to-space and space-to-space) to this band. We further propose policies to govern the relocation of BAS and Fixed Service (FS) microwave licensees that are affected by these reallocations. Finally, we deny a request from the ICO Service Group to require the submission by BAS licensees of detailed equipment and operational information.

BACKGROUND

2. The 1992 World Administrative Radio Conference (WARC-92) made international allocations of the 1930-1980 MHz (Earth-to-space or uplink) and 2120-2170 MHz (space-to-Earth or downlink) bands in Region 2 and the 1980-2010 MHz (uplink) and 2170-2200 MHz (downlink) bands worldwide to MSS.⁵ Thus, as it affects the bands addressed in this proceeding, WARC-92 allocated the 1990-2010 MHz and 2170-2200 MHz bands to MSS worldwide, and the 2165-2170 MHz band to MSS in Region 2. WARC-92 also adopted primary allocations for the space operation, space research and Earth exploration-satellite services for Earth-to-space and space-to-space transmissions in the 2025-2110 MHz band on a worldwide basis.

3. In the *Emerging Technologies* proceeding, concluded in 1994,⁶ the Commission reserved 220 megahertz of spectrum in the 2 GHz band, at 1850-1990 MHz, 2110-2150 MHz, and 2160-2200 MHz, for reallocation to services using new and innovative technologies.⁷ The Commission also provided that new technology licensees in these bands would be allowed to clear their spectrum by relocating incumbent FS microwave licensees to bands above 5 GHz.⁸

⁴ BAS spectrum in the 2 GHz band is also authorized for use by the Cable Television Relay Service (CARS) and the Local Television Transmission Service (LTTS). See 47 C.F.R. §§ 74.602, 78.18(a)(7), 21.901(b). As in previous actions in this proceeding, we will refer to these services collectively as BAS, and all proposals and decisions apply to CARS and LTTS in the band, as well as to BAS.

⁵ See Final Acts of the 1992 World Administrative Radio Conference, Malaga-Torremolinos (1992).

⁶ See *Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies (Emerging Technologies)*, ET Docket No. 92-9, *First Report and Order and Third Notice of Proposed Rule Making*, 7 FCC Rcd 6886 (1992); *Second Report and Order*, 8 FCC Rcd 6495 (1993); *Third Report and Order and Memorandum Opinion and Order*, 8 FCC Rcd 6589 (1993); *Memorandum Opinion and Order*, 9 FCC Rcd 1943 (1994); *Second Memorandum Opinion and Order*, 9 FCC Rcd 7797 (1994), *aff'd*, *Association of Public Safety Communications Officials-International, Inc. v. FCC, (APCO v. FCC)*, 76 F. 3d 395 (D.C. Cir. 1996).

⁷ See *Emerging Technologies First Report and Order and Third Notice of Proposed Rule Making*, 7 FCC Rcd 6886, at ¶ 21.

⁸ See *id.* at ¶¶ 23-24.

4. The Commission then allocated the 1850-1990 MHz band to terrestrial broadband Personal Communications Services (PCS) in June of 1994.⁹ The Commission anticipated that PCS would use spectrum intensively, thereby bringing into question the feasibility of MSS in this band. The Commission concluded that it could not make a domestic allocation of 2 GHz spectrum for MSS that would be consistent with the international allocations without jeopardizing the availability of spectrum for PCS. The Commission acknowledged the potential value of MSS in areas that may not be readily or economically served by PCS, such as sparsely-populated rural areas,¹⁰ stating that it would investigate possibilities for allocating additional frequencies for MSS at 2 GHz.¹¹ Further, the Commission stated that it would attempt to accommodate MSS within the internationally allocated bands remaining outside the PCS allocation and would pursue additional international allocations for MSS at the 1995 World Radiocommunication Conference (WRC-95).¹² This proceeding was initiated in 1995 in response to that commitment.

5. WRC-95 adopted additional international allocations for MSS. As a result of the actions taken at WRC-95, effective January 1, 2000, the 1990-2100 MHz (uplink) and 2170-2200 MHz (downlink) bands will remain allocated to MSS worldwide, and the 2165-2170 MHz (downlink) band will remain allocated to MSS in Region 2. Also effective January 1, 2000, the 2010-2025 MHz (uplink) band will be available for MSS in the United States and Canada. Effective January 1, 2005, the 2010-2025 MHz (uplink) band will be allocated to MSS in all of Region 2.¹³

6. In the *First R&O/Further Notice* in this proceeding, the Commission

⁹ See *Amendment of the Commission's Rules to Establish New Personal Communications Services* (PCS Proceeding), GEN Docket No. 90-314, *Memorandum Opinion and Order*, 9 FCC Rcd 5947 (1994).

¹⁰ *Id.*, at ¶ 94.

¹¹ At that time, MSS had been domestically allocated 16.5 megahertz in the 2.4 GHz band, paired with 16.5 megahertz in the 1.6 GHz band. 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 (Big LEOs)*, CC Docket No. 92-166, FCC 94-261, *Report and Order*, 9 FCC Rcd 5936 (1994).

¹² See *PCS Memorandum Opinion and Order* at ¶ 97.

¹³ Generally, WARC-92 allocated the 1930-1980 MHz band to MSS in Region 2, and the 1980-2100 MHz band to MSS worldwide. The 2010-2025 MHz band was not then allocated to MSS. In the upper band, WARC-92 allocated the 2120-2170 MHz band to MSS in Region 2, and the 2170-2200 MHz band to MSS worldwide. WRC-95 retained the allocation of the 1930-1970 MHz band to MSS in Region 2, deleted the allocation of the 1970-1980 MHz band to MSS in Region 2, retained the allocation of the 1980-2100 MHz band to MSS worldwide, and retained the allocation of the 2120-2170 MHz band to MSS in Region 2 and the allocation of the 2170-2200 MHz band worldwide, all changes effective January 1, 2000. Additionally, WRC-95 allocated the 2010-2025 MHz band to MSS in Region 2 effective January 1, 2005. The United States and Canada entered a footnote to this allocation providing that the 2010-2025 MHz band will be usable by MSS in the United States and Canada effective January 1, 2000. See the band plan chart at Appendix A.

reallocated the 1990-2025 MHz and 2165-2200 MHz bands to MSS, effective January 1, 2000.¹⁴ Because this reallocation removed 35 megahertz from the total of 120 megahertz allocated to BAS, the Commission reallocated for BAS use the 2110-2130 MHz band, currently used for FS microwave service. This left BAS with 105 megahertz of spectrum at 2025-2130 MHz. In making this reallocation, the Commission determined that it is technically feasible for BAS to use channels of 15 megahertz width, as opposed to its current channels of 17 or 18 megahertz width.¹⁵ The Commission also stated that new MSS licensees in the band are required to bear the costs of relocation of BAS and FS licensees in the affected spectrum, in accordance with the policies established in the *Emerging Technologies* proceeding.¹⁶ We received two petitions for reconsideration of these decisions. The MSS Coalition asked us to reconsider requiring new MSS licensees to bear the cost of relocating incumbent licensees in the new MSS bands, and to reconsider our reallocation of the 2110-2130 MHz band to BAS.¹⁷ The MSS Coalition also asked us to clarify that the standard by which we would judge interference between MSS systems and incumbent systems would be the "harmful interference" standard defined in our rules. Southwestern Bell Wireless Inc. and SouthWestern Bell Mobile System, Inc. (Southwestern Bell) asked that we reconsider our reallocation of 70 megahertz of spectrum to MSS, and requested that we instead reallocate the 40 megahertz at 1990-2010 MHz and 2180-2200 MHz to MSS. We address these petitions in the *Memorandum Opinion and Order* portion of this document.

7. The 1997 Budget Act directed the Commission to reallocate 55 megahertz of spectrum in the 2 GHz range for reassignment by auction.¹⁸ We are specifically directed to reallocate the 40 megahertz at 2110-2150 MHz for reassignment by auction by September 30, 2002.¹⁹ Only if we determine that auction of other spectrum would better serve the public interest and could reasonably be expected to produce greater receipts, may we reallocate an alternate 40 megahertz. We are also directed to allocate an additional 15 megahertz from spectrum at 1990-2110 MHz for reassignment by auction by September 30, 2002, unless the President determines that such spectrum cannot be reallocated due to the need to protect Federal Government systems and that reallocation of an alternate 15 megahertz better serves

¹⁴ See *First R&O/Further Notice*, 12 FCC Rcd 7388 at ¶ 14.

¹⁵ See *id.* at ¶ 32.

¹⁶ See *id.* at ¶¶ 33, 42.

¹⁷ The MSS Coalition consists of ICO Global Communications, COMSAT Corporation, the Personal Communications Satellite Corporation, Celsat America, Inc., and Hughes Space and Communications International. For this proceeding, these entities have formed a coalition for the purpose of filing jointly.

¹⁸ See 1997 Budget Act, § 3002(c)(1).

¹⁹ See *id.*, § 3002(c)(3).

the public interest and can be reasonably expected to produce comparable receipts.²⁰ On November 17, 1998, the National Telecommunications and Information Administration (NTIA), on behalf of the President, submitted a letter to the Commission, exercising the Presidential option to identify an alternative 15 megahertz of spectrum to satisfy the requirements of the Budget Act.²¹ We will address the matter of this alternate spectrum at a later time.

8. On March 19, 1998, the Commission released a public notice identifying applications and letters of intent for satellite service in the 2 GHz band.²² Upon initial review, the Commission found nine applications and letters of intent from potential 2 GHz MSS licensees acceptable for filing.²³

MEMORANDUM OPINION AND ORDER

A. Spectrum Allocations.

9. Southwestern Bell filed a petition requesting that we reconsider our decision to reallocate 70 megahertz of spectrum to MSS. Southwestern Bell contends that we should reallocate only 40 megahertz of spectrum, at 1990-2010 MHz and 2180-2200 MHz, to MSS. In support of this contention, Southwestern Bell argues that the current use of the 2165-2180 MHz band for interconnection of cell sites in rural areas is more in the public interest than the use of the same spectrum for MSS, and that the reallocation of this spectrum would have a detrimental effect upon rural mobile telephone customers. Southwestern Bell also argues that because only the 1990-2010 MHz and 2180-2200 MHz bands are allocated internationally to MSS on a worldwide basis, its suggested allocation is more consistent with WARC-92 and WRC-95 allocations than our reallocation.²⁴

10. We continue to believe that the spectrum allocation for the MSS is appropriate

²⁰ See *id.*, § 3002(c)(4).

²¹ Letter from L. Irving, NTIA, to William Kennard, Chairman, Federal Communications Commission, November 17, 1998.

²² Public Notice, Report No. SPB-119, Mar. 19, 1998.

²³ The nine applications and letters of intent found acceptable for filing were submitted by Celsat, Inc. (File Nos. 26/27/28-DSS-P/LA-97, 88-SAT-AMEND-98); the Boeing Company (File Nos. 179-SAT-P/LA-97 (16), 90-SAT-AMEND-98); Mobile Communications Holdings, Inc. (File No. 180-SAT-P/LA-97 (26)); Constellation Communications, Inc. (File No. 189-SAT-LOI-97); Globalstar, L.P. (File Nos. 182-SAT-P/LA-97 (64) and 183 through 186-SAT-P/LA-97); Iridium, LLC (File No. 187-SAT-P/LA-97 (96)); ICO Services Limited (File No. 188-SAT-LOI-97); TMI Communications and Company, L.P. (File No. 189-SAT-LOI-97); and Inmarsat Horizons (File No. 190-SAT-LOI-97). See Public Notice, Report No. SPB-119, Mar. 19, 1998.

²⁴ See Southwestern Bell, Petition for Reconsideration at 3-4.

and best serves the public interest. The record contains ample evidence that MSS will need at least 70 megahertz of spectrum to meet demand.²⁵ Although it is true that only the 1990-2010 MHz and 2180-2200 MHz bands are internationally allocated to MSS worldwide, it is also true that the 2010-2025 MHz and 2165-2180 MHz bands are internationally allocated to MSS in Region 2, which includes the United States. In addition, we note that at WRC-95 the United States sought and obtained allocation of the 2010-2025 MHz band for MSS use as of January 1, 2000. Accordingly, this spectrum is usable consistent with WRC allocations by either MSS regional systems, or by worldwide systems using these frequencies in Region 2 only.

11. In 1993 the Commission identified the spectrum at 2165-2180 MHz that Southwestern Bell states is used for interconnection of cell sites in rural areas, as part of the emerging technologies band.²⁶ Also in 1993, the Commission gave notice that it would consider a reallocation of spectrum within the 2 GHz band for MSS, in part in recognition of the potential value of MSS service in rural areas. When the Commission determined in 1997 to reallocate the spectrum at 2165-2180 MHz to MSS it did so consistent with the general policies developed in 1994 for emerging technologies spectrum. Pursuant to these policies, should new MSS systems interfere with Southwestern Bell's systems, or any other incumbent systems, the MSS licensees will share the costs of relocating those incumbents to other spectrum.²⁷ For these reasons, we find that the reallocation of the 1990-2025 MHz and 2165-2180 MHz bands to MSS will not operate to the detriment of rural American mobile communications customers. Quite the contrary, the advent of ubiquitous MSS service will give those same customers another option for mobile communications service, with the attendant benefits of robust competition among service providers.²⁸ We therefore decline to change our reallocation of the 1990-2025 MHz and 2165-2180 MHz bands to the MSS.

B. Relocation of Incumbents.

12. *General Applicability of the Emerging Technologies Relocation Policies.* The MSS Coalition requests reconsideration of the Commission's decision to require MSS licensees in the 1990-2025 MHz and 2165-2200 MHz bands to compensate FS and BAS licensees for relocation costs. The MSS Coalition argues that, for various reasons, these MSS licensees should not be required to bear any relocation costs. The MSS Coalition asserts

²⁵ See MSS Coalition Opposition at 3, *see also In re Preparation for International Telecommunication Union World Radiocommunication Conferences (CPM Report)*, IC Docket No. 94-31, FCC 95-256, 10 FCC Rcd 12783 at ¶ 39 (1995).

²⁶ See *Emerging Technologies, First Report and Order and Third Notice of Proposed Rule Making*, 7 FCC Rcd 6886 at ¶ 21.

²⁷ Relocation cost sharing issues are addressed *infra*.

²⁸ See Iridium, LLC Comments on Petitions at 3.

that the Commission would have had to relocate BAS to avoid causing interference to international MSS systems in the 1990-2025 GHz band offering service outside the United States. Specifically, the MSS Coalition states that relocation of BAS is necessary to satisfy Resolution 46 of the ITU Radio Regulations, which specifies procedures for the coordination and notification of frequency assignments of non-geostationary satellite networks in certain space services and the other services to which the bands are allocated.²⁹ The MSS Coalition further states that relocation expenses are discriminatory against international MSS service providers because the anticipated high relocation costs incurred by MSS providers will render them unable to provide a competitive service in the US market. The MSS Coalition also contends that the Commission does not have jurisdiction over non-U.S. licensed space segments and accordingly cannot create impediments to such service by requiring compensation for relocation of incumbent services.

13. We deny the MSS Coalition's request and affirm the Commission's decision to apply the *Emerging Technologies* relocation compensation policies in this proceeding. The 35 megahertz of spectrum at 2165-2200 MHz allocated for MSS downlinks in this proceeding and affirmed here, was part of the spectrum specifically identified in the *Emerging Technologies* proceeding for reallocation, and subject to the relocation compensation policies established in that very proceeding. We therefore deny the MSS Coalition's attempt to collaterally attack the policies' applicability to the downlink allocation. We further affirm the applicability of the *Emerging Technologies* policies to all of the allocations and reallocations undertaken in this proceeding.

14. We disagree with the MSS Coalition's assertion that the United States would have been required to relocate BAS to meet international obligations to avoid causing interference to MSS systems providing service outside the United States. Resolution 46 states that, in the case of difficulties, the administration responsible for the planned (non-U.S.) system is to explore all possibilities for adjusting its systems to avoid the interference problem. Under Resolution 46, the administration receiving the request for coordination of a MSS system must merely explore possible means of meeting the requirements of the MSS system. If these measures do not resolve the difficulties, the administrations concerned are to work jointly to make adjustments to resolve the interference problems.³⁰ An array of measures are typically available for coordinating different services in order to avoid interference, such as geographic separation, restrictions on signal strength, frequency sharing, etc. Neither Resolution 46 nor any other provision of the International Radio Regulations requires relocation of incumbent services to ensure against interference to MSS. Specifically, footnote S5.388 to the International Table of Frequency Allocations stipulates that the MSS use of the band does not preclude the shared use of the band by other services. Therefore, we find the MSS Coalition's argument that we should reconsider requiring MSS licensees to

²⁹ See MSS Coalition Petition at 27-28 (citing, *inter alia*, ITU Radio Regulations, Resolution 46 (1995)).

³⁰ ITU Radio Regulations, Resolution 46, ¶ 1.5 (1995).

that the Commission would have had to relocate BAS to avoid causing interference to international MSS systems in the 1990-2025 GHz band offering service outside the United States. Specifically, the MSS Coalition states that relocation of BAS is necessary to satisfy Resolution 46 of the ITU Radio Regulations, which specifies procedures for the coordination and notification of frequency assignments of non-geostationary satellite networks in certain space services and the other services to which the bands are allocated.²⁹ The MSS Coalition further states that relocation expenses are discriminatory against international MSS service providers because the anticipated high relocation costs incurred by MSS providers will render them unable to provide a competitive service in the US market. The MSS Coalition also contends that the Commission does not have jurisdiction over non-U.S. licensed space segments and accordingly cannot create impediments to such service by requiring compensation for relocation of incumbent services.

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³⁰ ITU Radio Regulations, Resolution 46, ¶ 1.5 (1995).

operations.³⁴ Were we to accept the MSS Coalition's position that international satellite-based systems should not have to compensate displaced and dislocated incumbent users of the spectrum, all incumbents arguably could be directly, adversely impacted by such a decision. We therefore decline to deviate from established policy. Accordingly, we affirm our decision to impose on MSS licensees authorized by this Commission to operate in the 2 GHz emerging technologies band, whether foreign or domestic, the obligation to relocate those licensees with whom they cannot share spectrum to comparable facilities elsewhere in the spectrum.

17. *BAS Relocation.* The MSS Coalition also argues that BAS would have had to replace existing equipment as a result of the transition to digital television (DTV).³⁵ The MSS Coalition argues that MSS licensees should not have to pay for replacing equipment that would be replaced even absent the allocation of BAS spectrum to MSS. The MSS Coalition states that our *DTV Proceeding*³⁶ recognizes the existence and prevalence of digital technology for transmission of TV signals.³⁷ According to the MSS Coalition, BAS incumbents will incur the costs of replacing their current equipment with digital equipment when the TV industry converts to a digital environment on the schedule mandated by our *DTV Proceeding*,³⁸ regardless of the presence of MSS operations.³⁹ Further, the MSS Coalition argues that the Commission's decision to provide additional spectrum to BAS as compensation for the loss of spectrum to MSS was arbitrary, capricious, and premature because more efficient digital technology exists that can satisfy BAS needs in the 85 megahertz of remaining BAS spectrum.

18. We disagree with the MSS Coalition's interpretation of the *DTV Proceeding*. There is nothing in our *DTV Proceeding* which requires the transition of BAS to a digital format.⁴⁰ Further, a digital TV distribution system does not necessitate digital contribution signals from BAS remote units to the studio. Analog BAS contribution signals can be

³⁴ See generally 47 C.F.R. § 2.106.

³⁵ See MSS Coalition, Petition for Reconsideration at 12.

³⁶ *In re Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service (DTV Proceeding)*, MM Docket No. 87-268, *Fifth Report and Order*, 12 FCC Rcd 12810 (1997) (on reconsideration, FCC 98-23, released February 23, 1998); *Sixth Report and Order*, 12 FCC Rcd 14588 (1997) (on reconsideration, FCC 98-24, released February 23, 1998).

³⁷ See MSS Coalition Petition at 13.

³⁸ *DTV Proceeding*, MM Docket No. 87-268, *Fifth Report and Order*, 12 FCC Rcd 12810 (1997) (on reconsideration, FCC 98-23, released February 23, 1998); *Sixth Report and Order*, 12 FCC Rcd 14588 (1997) (on reconsideration, FCC 98-24, released February 23, 1998).

³⁹ See MSS Coalition Petition at 30.

⁴⁰ See generally n.37 *supra*.

converted to DTV distribution signals, just as digital satellite news gathering signals are currently converted to analog TV distribution signals.

19. However, in view of the overall reduction of spectrum allocated to BAS in the 2 GHz band, existing BAS equipment will most likely need to be modified extensively or replaced with new digital equipment. We acknowledge that when the Commission reallocated 220 MHz for emerging technologies services, the BAS spectrum at 1990-2110 and 2150-2162 MHz was excluded from reallocation for technical reasons of heavy band use and the lack of available relocation bands.⁴¹ Nevertheless, the Commission has subsequently significantly reduced the amount of spectrum allocated to BAS in the 2 GHz band. We find that the goals expressed in the *Emerging Technologies* proceeding of providing for the fair and equitable sharing of 2 GHz spectrum, preventing disruption to incumbent operations and minimizing the economic impact on incumbent licensees are unchanged and apply with equal weight to the present situation facing incumbent BAS licensees.⁴² We therefore affirm the decision to apply the cost recovery policies established in the *Emerging Technologies* proceeding to BAS equipment,⁴³ and seek comment in the *Notice* portion on mechanisms for replacement.

20. Finally, the reallocations required by the 1997 Budget Act necessitate that we revisit the BAS allocation. Accordingly, issues pertaining to accommodating BAS within 85 megahertz of spectrum will be addressed below in the *Notice*.

21. *Fixed Microwave Service Relocation.* The MSS Coalition asserts that the decision to require MSS licensees to compensate incumbent FS licensees for relocation costs was inappropriately premised on the idea that MSS should be subject to the same requirements as was PCS.⁴⁴ The MSS Coalition claims that our decision was inappropriate for two reasons. First, according to the MSS Coalition, PCS is inherently local in nature, where MSS is a national service. Therefore, argues the MSS Coalition, where PCS could negotiate relocation of FS microwave licensees on a link-by-link basis, MSS would be faced with the task of negotiating with every licensee nationwide, which could render the process unworkable. Second, the MSS Coalition states that sharing between MSS and FS microwave licensees may be possible for some time in most areas. For these reasons, the MSS Coalition urges us to reconsider our decision to impose the costs of relocating FS microwave incumbents on MSS.

22. We disagree with the MSS Coalition's suggestion that the Commission based

⁴¹ See *Emerging Technologies First Report and Order and Third Notice of Proposed Rule Making*, 7 FCC Rcd 6886 at ¶ 16.

⁴² See MSS Coalition Petition at 28-30.

⁴³ See *First R&O/Further Notice* at ¶ 65.

⁴⁴ See MSS Coalition Petition at 28.

its relocation policies on its policy in the *PCS* proceeding. As discussed above and in the *First R&O/Further Notice*, our relocation policies were established in 1994 in the *Emerging Technologies* proceeding.⁴⁵ That proceeding was initiated to respond to advances in digital technology and signal processing that enabled the development of a broad range of new radio communications services.⁴⁶ Among the emerging technologies services identified by the Commission were PCS, data PCS, MSS and LEOs.⁴⁷ Consistent with the determinations made there, in the *First R&O/Further Notice*, the Commission applied the *Emerging Technologies* policies to the relocation of incumbent FS microwave licensees in the 2 GHz bands reallocated to MSS.⁴⁸ Similar policies were applied in the *PCS* proceeding,⁴⁹ these policies were intended to apply to all new technology licensees in the identified 2 GHz band.

23. In the *Emerging Technologies* proceeding, the Commission recognized the importance of the functions performed by fixed microwave operations, such as public safety and utility management communications, and indicated its intent to minimize the impact of spectrum redevelopment on those services.⁵⁰ Accordingly, the Commission developed a plan for the orderly transition of FS microwave licensees out of the 2 GHz bands, and the expeditious commencement of emerging technologies services. It stated that FS microwave licensees would be permitted to negotiate voluntary relocation agreements at any time. After an initial transition period, the Commission determined that all existing FS microwave licensees would retain co-primary status. In cases where there was interference between FS microwave and emerging technology licensees, the facility first licensed would be afforded protection from interference. If an emerging technology provider needed an incumbent's frequency, the Commission encouraged the parties to negotiate a voluntary relocation agreement. If the negotiations failed, the emerging technology provider could request involuntary relocation. In such case, the emerging technology provider would guarantee payment of all relocation expenses, including all engineering, equipment, site and FCC fees, and reasonable additional costs the FS microwave licensee might incur in operating in another band. The emerging technology provider would be required to complete all activities necessary for implementing the new facilities, including engineering, frequency coordination, and cost analysis of the complete relocation procedure. The emerging technologies provider

⁴⁵ See *First R&O/Further Notice* at ¶ 42.

⁴⁶ See *Emerging Technologies First Report and Order and Third Notice of Proposed Rule Making*, 7 FCC Rcd 6886 at ¶ 2.

⁴⁷ See *id.* at ¶¶ 14, 39.

⁴⁸ See *First R&O/Further Notice* at ¶ 42.

⁴⁹ See *PCS Proceeding Second Report and Order*, 8 FCC Rcd 7700 at n.34 (1994); *Memorandum Opinion and Order*, 9 FCC Rcd 4957 at ¶ 18 (1995).

⁵⁰ See *Emerging Technologies First Report and Order and Third Notice of Proposed Rule Making*, 7 FCC Rcd 6886 at ¶ 21.

was to build the new microwave system or alternative and test it for comparability to the FS microwave licensee's 2 GHz facility. The FS microwave licensee was not required to relocate until the new facilities were available for enough time to ensure a seamless transition. Finally, if within one year after the new facilities were in operation, they were demonstrated by the FS microwave licensee to be not comparable to the former facilities, the emerging technology provider was to remedy any deficiencies or pay to relocate the FS microwave licensee back to the former 2 GHz frequencies.⁵¹

24. In the *Microwave Relocation Cost-Sharing* proceeding, the Commission changed and clarified certain general rules adopted in the *Emerging Technologies* proceeding. In pertinent part, the Commission required that during mandatory negotiations an incumbent must allow the new entrant access to its facilities to permit an independent third party to prepare relocation cost estimates; clarified that new entrants are under no obligation to pay premiums to relocate incumbents; clarified that during mandatory negotiations parties must share pertinent information; placed time limits on compensation for increased recurring costs; limited reimbursement of transaction costs to a percentage of hard costs; and placed a ten year time limit on the requirement for new entrants to pay for an incumbents relocation.⁵² Pursuant to the involuntary relocation procedures, emerging technologies licensees are also not required to pay for a FS microwave licensee's internal resources devoted to the relocation process, are not required to pay for transaction costs incurred by the FS microwave licensee during the voluntary or mandatory periods once the involuntary period is initiated or for fees that cannot be legitimately tied to the provision of comparable facilities.⁵³ These changes and clarifications were designed to facilitate achievement of the goals established in the *Emerging Technologies* proceeding to provide new technology licensees with expeditious access to 2 GHz frequencies, and at the same time prevent disruption to existing 2 GHz operations and minimize the economic impact on incumbent licensees.⁵⁴

25. The Commission first applied the emerging technologies relocation rules when it established PCS. PCS was allocated the 1850-1990 MHz band, the first segment of the bands identified in the *Emerging Technologies* Proceeding to be allocated to an emerging technology service.⁵⁵ All new PCS licensees in this band were subject to the relocation rules

⁵¹ See *id.* at ¶ 24.

⁵² *Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation*, 11 FCC Rcd 8825, 8827-28 (1996); *Second Report and Order*, 12 FCC Rcd 2705 (1997).

⁵³ 47 C.F.R. Section 101.75(a)(1).

⁵⁴ See *Emerging Technologies Memorandum Opinion and Order*, 9 FCC Rcd 1943 at ¶ 55, 63; *Microwave Relocation Cost-Sharing*, 11 FCC Rcd at 8832 (1996).

⁵⁵ See *PCS Proceeding First Report and Order*, 8 FCC Rcd 7162 (1993).

of the *Emerging Technologies* Proceeding.⁵⁶ The Commission's experience in PCS relocation of microwave incumbents led to refinements in the relocation rules in the *Microwave Cost-Sharing* Proceeding,⁵⁷ but the fundamental soundness of the relocation policies and the value of the goals underlying those policies were not altered.

26. We recognize that the relocation of FS incumbents nationwide would be a large undertaking, but find that this does not constitute a basis for abandoning our *Emerging Technologies* policies. The PCS industry as a whole has been and will continue to be required to negotiate with FS incumbents nationwide. MSS licensees may be able to deal with many incumbents collectively, or use other techniques to minimize the difficulty of negotiating relocation. We find that the scale of the contemplated relocation does not affect the goals of providing for the fair and equitable sharing of 2 GHz spectrum, preventing disruption to incumbent operations, and minimizing the economic impact on incumbent licensees.

27. The MSS Coalition also claims that our relocation policy is inappropriate because MSS may be able to share spectrum with some FS licensees for a considerable time, although no such sharing was possible between PCS and FS. In the *First R&O/Further Notice*, the Commission stated that "MSS cannot begin operations until its spectrum is cleared of all FS licensees who would receive harmful interference from MSS, but MSS will not be required to relocate any FS incumbent with whom it can successfully share spectrum."⁵⁸ We affirm this statement and conclude that this prior decision to require relocation only where incumbent FS licensees receive harmful interference, fully addresses the MSS Coalition's concerns on this matter.

28. Finally, the MSS Coalition filed a "Request for Clarification" requesting a clarification that MSS and FS licensees may share spectrum so long as harmful interference does not result. The MSS Coalition states that, although the Commission specified that new MSS licensees will not be required to relocate incumbent FS licensees unless and until the incumbents receive harmful interference from, or cause harmful interference to, MSS,⁵⁹ we also referred to "unacceptable interference" in the *First R&O/Further Notice*. The MSS

⁵⁶ See generally *PCS Proceeding Second Report and Order*, 8 FCC Rcd 7700 (1993); *Third Report and Order*, 9 FCC Rcd 1337 (1994); *Memorandum Opinion and Order*, 9 FCC Rcd 4957 (1994).

⁵⁷ See *In re Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation*, WT Docket No. 95-157, *First Report and Order and Further Notice of Proposed Rule Making*, 11 FCC Rcd 8825 (1996), *Second Report and Order*, 12 FCC Rcd 2705 (1997).

⁵⁸ *First R&O/Further Notice* at ¶ 42.

⁵⁹ See *First R&O/Further Notice* at ¶ 42.

Coalition points out that "harmful interference" is defined in our rules⁶⁰ but "unacceptable interference" is not.⁶¹ We clarify that the "harmful interference" standard as defined in our rules applies in determining the need to relocate any incumbent licensee in the frequency bands subject to our *Emerging Technologies* policies.

29. For the reasons discussed, we grant the MSS Coalition's Petition for Clarification, dismiss the MSS Coalition's Petition for Partial Reconsideration insofar as it is mooted by subsequent events, and deny the petition on all other grounds. We also deny Southwestern Bell's Petition for Reconsideration.

THIRD NOTICE OF PROPOSED RULE MAKING

A. Spectrum Allocations Required by the Budget Act.

30. The 1997 Budget Act requires the Commission to reallocate the 40 MHz of spectrum at 2110-2150 MHz band for assignment by competitive bidding. We may allocate an alternate 40 megahertz of spectrum only if we determine that auction of such spectrum better serves the public interest, convenience and necessity and can reasonably be expected to produce greater receipts.⁶² The 40 megahertz specified by Congress for reallocation by auction in the 1997 Budget Act is currently allocated to FS microwave operations. This spectrum could, however, be efficiently utilized for a number of services. For example, BAS operators could bid for spectrum in the band to operate additional analog or digital BAS channels. Commercial mobile service providers may wish to bid on this spectrum because of its proximity to PCS spectrum and favorable propagation characteristics for mobile use. Others may seek the spectrum for the provision of fixed wireless access telephone service. Potential providers of International Mobile Telecommunication - 2000 (IMT-2000), a service conceived to provide integrated global mobile communications, may wish to bid for the spectrum.⁶³ Accordingly, we propose to reallocate the 2110-2150 MHz band for Fixed and Mobile Services for assignment by competitive bidding. We solicit comment on this

⁶⁰ See 47 C.F.R. § 2.1.

⁶¹ See MSS Coalition, Request for Clarification at 2-3.

⁶² See 1997 Budget Act, § 3002(c)(3).

⁶³ WARC-92 identified the 2110-2150 MHz band on a global basis for IMT-2000. International footnote S5.388 states: "[t]he bands 1 885 - 2 025 MHz and 2 110 - 2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000). Such use does not preclude the use of these bands by other services to which these bands are allocated...."

proposal.⁶⁴

B. Allocation for BAS.

31. In the *First R&O/Further Notice*, the Commission found that it is necessary to relocate BAS in order to accommodate MSS in the 1990-2025 MHz band, and that BAS and MSS cannot share spectrum without unacceptable mutual interference. Accordingly, the Commission reallocated 20 megahertz of spectrum to BAS, to partially replace the 35 megahertz reallocated to MSS. As a result, the BAS band was reallocated from 120 megahertz at 1990-2110 MHz to 105 megahertz at 2025-2130 MHz. The Commission noted that relocation of BAS would require retuning or retrofitting of BAS equipment to allow improved intermediate frequency bandpass and adjacent-channel rejection. The Commission anticipated that no new facilities would need to be constructed, and that retrofitting or replacement of current equipment would suffice to reduce BAS from seven channels of 17 or 18 megahertz to seven channels of 15 megahertz. The Commission concluded that the cost of this equipment replacement should be borne by MSS licensees in the 1990-2025 MHz band.⁶⁵

32. As noted above, subsequent to the *First R&O/Further Notice*, the 1997 Budget Act was enacted. Consistent with the requirements imposed by the 1997 Budget Act, we herein propose to reallocate the 2110-2150 MHz band for assignment by competitive bidding. As also noted above, we herein affirm the Commission's previous allocation of 70 megahertz of spectrum for MSS at 1990-2025 MHz and 2165-2200 MHz. Together, these actions leave a total of 85 megahertz available for BAS in this region of the spectrum. We note that the current BAS allocation of 120 megahertz of spectrum provides seven channels for analog technology. Studies and information that have become available since the adoption of the *First R&O/Further Notice* indicate that it is possible to transmit FM analog BAS signals in channels as narrow as 12 megahertz and digital BAS signals in channels as narrow as 10 MHz.⁶⁶ An allocation of 85 megahertz for BAS could provide six channels of 12 megahertz, and one of 13 megahertz, for BAS operations. This would appear to satisfy BAS needs for seven distinct channels.⁶⁷ Given the requirements of the 1997 Budget Act and other demands for allocations in this region of the spectrum, we are proposing to reallocate 85 megahertz of spectrum for BAS at 2025-2110 MHz. We invite comment on the feasibility of the proposed

⁶⁴ The Telecommunications Industry Association (TIA) has submitted a Petition for Rule Making, requesting that we allocate the 2110-2150 band to fixed and mobile services limited to broadband PCS use, and suggesting licensing, auction, and service rules. We will address this petition separately. See TIA, Petition for Rulemaking, Oct. 20, 1998.

⁶⁵ See *First R&O/Further NPRM* at ¶¶ 30-33.

⁶⁶ See, e.g., Dr. J. Payne to M. Salas, Federal Communications Commission, February 11, 1998 (including a report entitled Digital Video Microwave Systems for STL and ENG: Applications & Test Results).

⁶⁷ *Id.*

BAS allocation and on any other alternate allocations or measures that would mitigate the impact to BAS of the reallocations of BAS spectrum to other services.

C. Government Operations in the 2025-2110 MHz Band.

33. NTIA has requested that we amend the U.S. Table of Frequency Allocations to reflect a primary allocation for Government space operations, earth exploration satellites, and space research in the 2025-2110 MHz band.⁶⁸ Currently, these services are authorized by four footnotes to the U.S. Table of Frequency Allocations.⁶⁹ NTIA points out that this band is internationally allocated for these services, and that the 1997 World Radiocommunication Conference modified international footnote S5.391 to protect these space services in the 2025-2110 MHz band.⁷⁰ NTIA states that this is an opportune time to modify the U.S. Table of Frequency Allocations in the 2025-2110 MHz band, and to require terrestrial systems in the band to conform with relevant ITU Radio Regulations and ITU-R Recommendations that protect Government space systems.

34. Broadcast Auxiliary Service and Government satellite systems have successfully shared this band for over 30 years. We tentatively conclude that this highly successful sharing of this band by BAS and Government satellites warrants formal confirmation. We therefore propose to grant co-primary status to the Government space operation (Earth-to-space and space-to-space), Earth-exploration satellite (Earth-to-space and space-to-space), and space research (Earth-to-space and space-to-space) services in the 2025-2110 MHz band. Because of the previous exclusive non-Government allocation of this band, we propose to limit Government use of the band to ensure that Government satellite operations do not constrain deployment of BAS licensees operating in conformance with our rules in the 2025-2110 MHz band. Implementation of BAS operations would be effected consistent with coordination procedures specified in Parts 74, 78, and 101 of our rules. We propose to adopt domestically international footnote S5.391, and thus to minimize the likelihood of interference to Government satellite communications from non-Government terrestrial operations. We believe that our proposals for the band are consistent with footnote S5.391, and will limit interference to Government satellite operations from current BAS and any future non-

⁶⁸ See Letter from William T. Hatch, Acting Deputy Associate Administrator, Office of Spectrum Management, NTIA to Richard Smith, Chief, Office of Engineering and Technology, Federal Communications Commission, Feb. 11, 1998.

⁶⁹ See 47 C.F. R. § 2.106, nn. US90, US111, US219, US222.

⁷⁰ The modified international footnote S5.391 reads

In making assignments to the mobile service in the bands 2025-2110 MHz and 2200-2290 MHz, administrations shall not introduce high-density mobile systems, as described in Recommendation ITU-R SA.1154, and shall take this Recommendation into account for the introduction of any other type of mobile system.

Government operations in the band. We further propose to follow the guidelines of Recommendations ITU-R SA.1154 and ITU-R F.1247 in dealing with future BAS systems in the band. We seek comment on this proposal, particularly on whether the proposal will provide adequate protection to Government satellite systems.

D. Relocation of BAS Licensees in the 1990-2110 MHz Band.

35. In the *Memorandum Opinion and Order* presented above, we affirm the decision in the *First R&O/Further Notice* to apply the cost recovery policies established in our *Emerging Technologies* proceeding to the 2 GHz allocations that are the subject of this proceeding. Given the changes necessitated in the allocations in this region due to the 1997 Budget Act, we must, however, now consider the details of how to apply these policies to the relocation of the BAS spectrum. Under our previous allocation plan, where BAS was to be reaccommodated within 105 megahertz of spectrum, we anticipated that it would be possible to rechannelize the BAS spectrum and retune existing equipment. Our revised allocation proposal contemplates an allocation of 85 megahertz of spectrum for BAS based on seven channels of 12 or 13 megahertz.

36. As noted above, the record suggests that existing analog BAS equipment would need to be modified extensively to operate within a 12 megahertz channel or would need to be replaced with digital equipment. The record also suggests that more spectrally efficient digital equipment may be necessary to meet demand for BAS operations within the reduced spectrum band. There is little or no data in the record on whether analog and digital BAS signals could be transmitted on adjacent channels without mutual interference. We further note that innovations and changing technologies may render any decision we make now about appropriate transition technologies outdated before the very first piece of existing BAS equipment is retrofitted or replaced. Thus, we propose to defer to the business decisions made by the affected parties during negotiations as to whether it is most economical and efficient to retune or replace existing BAS equipment.

37. The transition of BAS to new technology is also complicated by the nature of the service. Most BAS uses in the 1990-2110 MHz band are mobile or temporary-fixed. Major events will often draw multiple BAS units for news or sports coverage. BAS licensees would have difficulty coordinating the use of new BAS equipment operating on 12- and 13-megahertz channels with old BAS equipment operating on 17- and 18-megahertz channels within the same spectrum and simultaneously satisfying the demand for channels. Because the new BAS band is contained within a reduced portion of the former BAS band, each of the old BAS channels of 17 megahertz would overlap two or three of the new 12- and 13-megahertz channels if both channelization plans were permitted to exist concurrently. As a result, for example, a BAS licensee using the old BAS channel 1 (1990-2008 MHz) would interfere with a licensee using the new BAS channel 2 (2003-2015 MHz) because of the overlap of channels. Accordingly we do not propose to allow existing BAS systems to continue to operate on 17 megahertz channels within the reduced 85 megahertz band segment.

38. BAS is designed to operate as a contingency-response type system where geographic limitations on licensees tend to be less rigid than in other regulated services. In the past, the broadcasting industry has benefited from the flexible, mobile nature of BAS to provide ad hoc-coordinated operations that facilitate the greatest possible coverage of major and breaking news events. The imposition of rigid geographical boundaries could diminish the flexibility and quality of BAS service.

39. Therefore, we tentatively conclude that we should require simultaneous retuning or replacement of all BAS equipment nationwide on a date certain. We recognize that such an approach poses a number of potential problems. For example, simultaneous replacement of all BAS equipment would require a substantial up-front capital outlay by MSS licensees. In addition, this approach could prematurely lock in BAS to digital technology and equipment before they have adequately matured. We also question whether a sufficient supply of equipment would be available to satisfy the simultaneous conversion of all BAS operations.

40. In light of these considerations, we invite comment on a broad range of alternative approaches. First, we invite comment as to whether it is feasible to allow the MSS and BAS communities to negotiate an appropriate transition plan, or whether the nature and needs of BAS and MSS will require us to mandate a transition plan. We also invite comment as to the feasibility of allowing existing analog BAS equipment to continue to operate in some portion of the old/reallocated BAS spectrum for a period of time. For example, could we take an interim step of rechannelizing the former 120 megahertz BAS band to three 17-megahertz channels (old style) and four 12-megahertz channels (new style)? This would free 21 megahertz of spectrum in the 1990-2025 MHz band for the use of MSS on January 1, 2000, when the reallocation of the band to MSS becomes effective, and may allow a phased transition to the new BAS channel plan. We ask parties to also comment on geographic issues, including for example whether equipment replacement could be done on a market-by-market basis or with a staged deployment within local markets. We further solicit views on the timing of the transition of the BAS spectrum, particularly taking into account MSS licensees' desire to expeditiously begin using the MSS spectrum.

41. In this regard we note that ICO USA Service Group (ICO), in recent *ex parte* filings,⁷¹ and the MSS Coalition, in supplemental comments filed in response to the first NRPM in this proceeding,⁷² recommended a proposal that would require BAS licensees to discontinue use of BAS channel 1 (1990-2008 Mhz) when MSS systems begin service (in the year 2000), and to discontinue use of BAS channel 2 (2008-2025 MHz) as MSS requires additional spectrum or no later than either May 1, 2002, or January 1, 2005, with BAS

⁷¹ See Letter from C. Tritt, Morrison & Foerster, LLP, to M Salas, Secretary, Federal Communications Commission, Oct. 20, 1998.

⁷² *First R&O/Further Notice*, at ¶ 27.

bearing the expense of its relocation. Under this proposal MSS would obtain expeditious access to and use of the 35 megahertz MSS uplink allocation without any obligation to bear BAS' relocation expenses.⁷³ In *ex parte* filings ICO suggests it would provide accommodations such as technical assistance, product development support and operational constraints where required to allow a rapid and inexpensive transition of incumbent users.⁷⁴ As noted above, however, in the *Memorandum Opinion and Order* we affirm the Commission's prior decision to apply the *Emerging Technologies* relocation compensation policies to the MSS allocations in the 2 GHz band. MSS licensees will be required to pay for the retuning or replacement of incumbent BAS systems if it desires expeditious access to the spectrum. Parties are encouraged to submit innovative new ideas, however, with respect to other transition mechanisms that may facilitate expeditious use of the spectrum by MSS while retaining the integrity of BAS operations.

42. Our primary proposal would compensate BAS licensees for equipment costs necessary to implement our allocation plan, consistent with the policies established in the *Emerging Technologies* proceeding and modified in the *Microwave Relocation Cost-Sharing* proceeding. We invite comment on how costs should be apportioned among MSS licensees. We seek comment on whether we should require each MSS licensee to bear this financial responsibility in proportion to the amount of spectrum in the 1990-2025 MHz band for which it is licensed. We also seek comment on whether costs should be shared among all the new MSS licensees on the basis of a cost sharing formula similar to that adopted in the *Microwave Relocation Cost-Sharing* proceeding, whereby the first entrant pays relocation expenses and obtains reimbursement rights from subsequent entrants.⁷⁵ In this context, we note that it may be possible that some systems may employ technologies that would allow them to coexist with BAS in the 1990-2025 MHz band. We seek comment on whether such systems should be exempted from participation in the relocation/retuning of BAS.

43. We also solicit comment on whether we should establish criteria to gauge the acceptability of replacement BAS equipment and, if so, what those criteria should be. We also solicit information to help determine the approximate cost of modification or replacement of all BAS equipment so that MSS licensees can better anticipate and plan for relocation costs. We note that BAS operations are not licensed individually and individual operators

⁷³ The European Commission Directorate-General XIII, Information Society: Telecommunications, Markets, Technologies endorses the ICO plan for BAS transition. See Letter from R. Verrue, Director-General, Directorate-General XIII, European Commission; to W. Kennard, Chairman, Federal Communications Commission, Nov. 12, 1998.

⁷⁴ See Letter from C. Tritt, Morrison & Foerster, LLP, to M Salas, Secretary, Federal Communications Commission, Oct. 20, 1998.

⁷⁵ See *In re Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation (Microwave Cost-Sharing)*, WT Docket No. 95-157, *First Report and Order and Second Notice of Proposed Rule Making*, 11 FCC Rcd 8825, Appx. A, ¶ 3 (1996).

may have multiple sets of equipment. Accordingly, we request as complete information as possible on existing BAS operations, including the number of existing BAS facilities, where they are located or mobile/portable, and whether they communicate with a single or multiple receive site[s]. We also request parties to provide any available information on the approximate costs of new digital equipment, the extent to which 2 GHz ENG equipment currently deployed can be externally tuned to new carrier frequencies and/or bandwidth, the extent to which BAS channels 1 and 2 (1990-2025) are currently used, the particulars of BAS operation with respect to fixed BAS receive sites, the typical hours of operation of ENG systems during the day and night, the average duration of ENG transmissions, and whether there will be any impact on equipment other than the transmission equipment itself. We also seek views as to whether it may be appropriate to identify a single industry organization to coordinate the BAS transition, and if so, which organization.

44. We generally propose to require replacement/retuning of BAS to be conducted in accordance with our *Emerging Technologies* policies, as modified by the decisions in our *Microwave Cost-Sharing* proceeding, as applied in Section E *infra* and as delineated in 47 C.F.R. Part 101.⁷⁶ We also solicit comment on the details of how we should apply these policies, such as a time frame for negotiation and replacement, a "sunset" period, or a good-faith requirement.⁷⁷ In the *Microwave Relocation Cost-Sharing* proceeding, the Commission adjusted the voluntary and mandatory negotiation periods for FS relocation. Specifically, the Commission reduced the voluntary period to one year for non-public safety FS incumbents. Thus, the negotiation period for relocation of non-public safety FS incumbents is now one year for voluntary negotiations and one year for mandatory negotiations, for a total of two years. We propose to adjust the negotiation periods for the 1990-2025 MHz band in the same manner. We began accepting applications for MSS licenses in the affected bands, the usual starting point for negotiations, on July 22, 1997.⁷⁸ If we begin the negotiation period for relocation/retuning of BAS licensees on this date, the voluntary negotiation period will have expired before the release of this document, and the mandatory negotiation period may expire before we finalize the rules under which BAS relocation/retuning will be conducted. At the same time, we note that the reallocation of the 1990-2025 MHz and 2165-2200 MHz bands to MSS will be effective on January 1, 2000. Because of these considerations, we seek comment on whether we should allow longer or shorter negotiation periods for BAS relocation/retuning, and on dates for the start of the negotiation periods.

45. In addressing the question of when the voluntary and mandatory negotiation periods should commence, we ask parties to also consider and comment on whether we should apply the sunset rule of 47 C.F.R. § 101.79, which states that new licensees are no longer

⁷⁶ See *Microwave Cost-Sharing First Report and Order/Further Notice of Proposed Rule Making*, 11 FCC Rcd 8825 (1996).

⁷⁷ See also ¶¶ 49-50, *infra*.

⁷⁸ See *Public Notice*, DA 97-1550, 12 FCC Rcd 10446 (1997).

required to pay relocation expenses after ten years following the start of the voluntary negotiation period for relocation. If so, should the sunset date commence after the beginning of the voluntary negotiation period, as in 47 C.F.R. § 101.79, or some other date.

46. Finally, we expect the parties involved in the replacement or retuning of BAS equipment to negotiate in good faith. We therefore propose to apply the good faith guidelines of 47 C.F.R. § 101.73 to negotiations for replacement of BAS equipment.

E. Relocation of FS Microwave Licensees in the 2110-2150 MHz and 2165-2200 MHz Bands.

47. In the *First R&O/Further Notice*, the Commission concluded that it would provide for MSS sharing with, and any necessary relocation of, FS incumbents in accordance with our *Emerging Technologies* policies. The Commission stated that MSS is under no obligation to relocate FS incumbents with whom sharing is possible, but that where sharing is not feasible, we will allow the MSS operator to relocate the incumbent FS licensee.⁷⁹ The Commission also proposed to modify our *Emerging Technologies* relocation policies to some extent. In the Commission's *Microwave Relocation Cost-Sharing* proceeding, we decided that a fair balance between emerging technologies and FS incumbents is struck by allowing an FS incumbent to retain primary status unless and until an emerging technology licensee who cannot share spectrum with the incumbent without harmful interference requires use of the spectrum, while providing that the emerging technology licensee will no longer be obligated to pay relocation costs ten years after the voluntary negotiation period begins for the first emerging technology licensees in the service.⁸⁰ The Commission stated that once the relocation rules "sunset," an emerging technology licensee may require the incumbent to either cease operations or relocate itself to alternate facilities at its own expense, provided the emerging technology licensee intends to start operation of a system within interference range of the incumbent, as determined by TIA Bulletin 10-F⁸¹ or any standard successor document. The Commission provided that the new technology licensee must notify the FS incumbent in writing, and must provide the incumbent with no less than six months to vacate the spectrum. After the six-month period has expired, the incumbent must surrender its 2 GHz license to the Commission, unless the parties have agreed to allow the incumbent to continue to operate.⁸²

48. In the *Microwave Cost-Sharing* proceeding, the Commission also provided

⁷⁹ See *Microwave Cost-Sharing First R&O/Further Notice of Proposed Rule Making* at ¶¶ 42-43.

⁸⁰ *Microwave Cost-Sharing First R&O/Further Notice of Proposed Rule Making*, 11 FCC Rcd 8825 (1996).

⁸¹ TIA, *Interference Criteria for Microwave Systems*, TSB10-F (1994)(available from the Telecommunications Industry Association).

⁸² See *Microwave Cost-Sharing First R&O/Further Notice of Proposed Rule Making*, 11 FCC Rcd 8825 (1996). at ¶ 65.

guidelines for negotiation in good faith during the mandatory negotiation period. These guidelines stated that the Commission expects incumbent FS licensees to allow inspection of their facilities by the emerging technologies (there, PCS) licensee and to provide any other information needed in order to evaluate the cost of relocating the incumbent to comparable facilities. The Commission stated that it would consider claims that a party has not negotiated in good faith on a case-by-case basis, and that it will consider, *inter alia*, the following factors: (1) whether the new technology licensee has made a *bona fide* offer to relocate the incumbent to comparable facilities; (2) if the microwave (FS) incumbent has demanded a premium, the type of premium requested (*e.g.*, whether the premium is directly related to relocation, such as system-wide relocations and analog-to-digital conversions, versus other types of premiums) and whether the value of the premium as compared to the cost of providing comparable facilities is disproportionate (*i.e.*, whether there is a lack of relation between the two); (3) what steps the parties have taken to determine the actual cost of relocation to comparable facilities; and (4) whether either party has withheld information requested by the other party that is necessary to estimate relocation costs or to facilitate the relocation process. Finally, to ensure that parties do not bring frivolous bad faith claims, the Commission also required any party alleging a violation of our good faith requirement to provide an independent estimate of the relocation costs of the facilities in question. The Commission provided that independent estimates must include specifications for the comparable facility and statements of the costs associated with providing those facilities to the incumbent licensees.⁸³

49. We propose to provide for FS relocation in the 2110-2150 and 2165-2200 MHz bands using the same sunset period and good faith guidelines as those established in the *Microwave Relocation Cost-Sharing* proceeding. Ten years after the beginning of the voluntary negotiation period for the first new licensees, new licensees would no longer be required to pay the costs of relocating FS incumbents, and would be able to require the incumbents to cease operating or relocate at their own expense upon six months written notice. The MSS and FS industries are currently developing interference standards under the auspices of the Telecommunications Industry Association. We propose to adopt these standards, or their successors, in determining whether our sunset rules would apply to a given FS incumbent. At the end of the six-month notice period, the incumbent FS licensees would be required to surrender their 2 GHz licenses to the Commission, unless the incumbent FS licensees arrived at an agreement with the new licensees to allow the incumbent FS licensee to continue operations. During mandatory negotiations, we propose to adhere to the guidelines enumerated above. We request comment on whether we should apply the sunset rule of 47 C.F.R. § 101.79, which states that new licensees are no longer required to pay relocation expenses after ten years following the start of the voluntary negotiation period for relocation. We also inquire whether we should apply the good faith guidelines of 47 C.F.R. § 101.73 for relocation negotiations in the 2110-2150 MHz and 2165-2200 MHz bands. If so, we inquire whether the sunset date should be ten years after the beginning of the voluntary

⁸³ See *id.* at ¶¶ 21-22.

negotiation period for relocation, as in 47 C.F.R. § 101.79, or some other date.

50. In the *Microwave Relocation Cost-Sharing* proceeding, the Commission also adjusted the voluntary and mandatory negotiation periods for FS relocation in the case of the C, D, E, and F spectrum blocks of PCS. Specifically, the Commission reduced the voluntary period to one year, or two years in the case of public safety FS incumbents. Thus, the negotiation period for relocation of FS incumbents is now one year for voluntary negotiations and one year for mandatory negotiations, for a total of two years. For public safety FS incumbents, the voluntary period is three years, and the mandatory period is two years, for a total of five years. We propose to adjust the negotiation periods for the 2110-2150 MHz and 2165-2200 MHz bands in the same manner. We request comment on whether this is appropriate, or whether we should establish some other negotiation periods. We also request comment on the date upon which we should begin the voluntary negotiation period for relocation of incumbent BAS and FS licensees.

51. The expansion of this proceeding to involve the 2110-2150 MHz and 2165-2200 MHz bands requires us to deal also with new licensees who are awarded their licenses at auction. This is of importance because incumbent FS microwave links in the MSS downlink band at 2165-2200 MHz are paired with 35 MHz of spectrum in the 2110-2150 MHz band. It is usually necessary to relocate both links of a two-way FS microwave system. Therefore, when a new MSS or other licensee relocates a pair of FS links in these bands, another new licensee will benefit by having its spectrum in the paired band cleared. We therefore propose to require that, where an MSS or other new licensee (the "Initial Licensee") has relocated an incumbent FS link pair, and an MSS or new licensee subsequently begins service in the paired band that previously was cleared by the Initial Licensee, the subsequently-entering MSS or new licensee (Subsequent Licensee) will be obligated to reimburse the Initial Licensee half of the Initial Licensee's costs incurred in relocating the incumbent FS link pair, prior to the beginning of operations by the Subsequent Licensee. We stress that this proposal applies only to MSS licensees and new licensees in the 2165-2200 MHz band and the 2115-2150 MHz bands. As regards the 2110-2115 MHz portion of the auction band, which is paired with the 2160-2165 MHz band, any auction-winning licensee in the 2110-2115 MHz segment will accomplish any necessary relocation in accordance with our relocation rules in Part 101 of the Commission's rules, without participation by MSS licensees. This proposal is a deviation from the reimbursement rule of the *Microwave Cost-Sharing* proceeding, and we propose this deviation for two reasons. First, the reallocation of the 2110-2150 MHz band for auction and the 2165-2200 MHz band for MSS is the first time that we have applied our *Emerging Technologies* relocation policies in a situation where two paired bands have been allocated to different services. Second, we anticipate that MSS will begin service before the auction of the 2110-2150 MHz band. Therefore, we tentatively conclude that discounting the reimbursement to account for the advantage of early entry to the first licensee is not a relevant consideration in this case, where the licensees will be in different services. We believe that in this situation an even division of the costs of relocation is appropriate. We request comment on this proposal, and especially whether we should apply the cost reimbursement formula of

the *Microwave Cost-Sharing* proceeding, rather than an even division.⁸⁴

D. Summary of Proposed Allocations.

52. We propose the reallocation of various bands in the 1990-2200 MHz range as follows:

1990-2025 MHz	Primary allocation to the MSS
2025-2110 MHz	Primary allocation to the FS and MS for the use of BAS and Government space operation (Earth-to-space and space-to-space), Earth-exploration satellite (Earth-to-space and space-to-space), and space research (Earth-to-space and space-to-space) services
2110-2150 MHz	Primary allocation to the FS and MS for assignment by competitive bidding
2150-2160 MHz	Primary allocation to the FS for the use of MDS/ITFS
2160-2162 MHz	Primary allocation to the FS and MS for the shared use of MDS/ITFS and FS microwave
2162-2165 MHz	Primary allocation to the FS and MS for the use of FS microwave; identified as Emerging Technologies spectrum
2165-2200 MHz	Primary allocation to the MSS

53. We request comment on all aspects of this reallocation plan. Specifically, we request comment on the allocation of 85 megahertz to BAS, other possible allocation plans, and discussion of the pros and cons of any other plan commenters devise. We also solicit comment on the impact that these reallocations will have on BAS service, and on suggestions for measures we could take to guarantee the continuity of high-quality BAS service to the public. Commenters are requested to consider how to accommodate existing licensees and Government satellite operations in any suggested alternative reallocation plans. We also seek comment on the reallocations policies for BAS and FS microwave incumbents in these bands.

ORDER

54. On July 30, 1998, ICO Services Ltd. and six other entities jointly filed a Request for Mandatory Submission of Information.⁸⁵ The petition requests that we require BAS, CARS, LTTS, and FS microwave licensees to provide information on their facilities,

⁸⁴ See *Microwave Cost-Sharing First Report and Order and Second Notice of Proposed Rule Making*, 11 FCC Rcd 8825, Appx. A, ¶ 3 (1996).

⁸⁵ ICO Services Ltd.; TRW Inc.; COMSAT Corporation; C.S. Communications Co., Ltd.; BT North America Inc.; Hughes Telecommunications and Space Company; Telecomunicaciones de Mexico (hereafter, *ICO et al.*), Petition for Mandatory Submission of Information, Jul. 30, 1998.

including location, equipment, and other technical and financial data.⁸⁶ In support of the request, ICO *et al.* note that the Commission has held that BAS licensees and FS microwave licensees with whom MSS could not successfully share spectrum would be relocated in accordance with our *Emerging Technologies* policies.⁸⁷ In order for future MSS licensees to plan business and financial strategies, ICO *et al.* contend that they must have precise information on the actual need for upgrade of current BAS equipment or purchase of new BAS and FS microwave equipment. Because the Commission lacks detailed information on equipment and some technical aspects of licensees' operations, ICO *et al.* request that we gather this information in order to effectuate any necessary relocations and to determine whether BAS and FS microwave operations can be accommodated without the need for relocation.⁸⁸

55. The information ICO requests in its petition is properly a part of the negotiation process. We agree with ICO *et al.* that possession of accurate information is necessary both to us in the formation of our regulatory policies, and to the parties to any relocation negotiation. We have asked herein in the *Third Further Notice of Proposed Rulemaking* for the information we believe is necessary to establish appropriate regulatory policies. We do not believe the formation of regulatory policy requires the level of detail that petitioners request. We note that the Commission is also in the process of gathering data from our licensees as a part of the development and implementation of the Universal Licensing System.⁸⁹ The information we gather in these processes should be sufficient to allow us to establish sound policies.

56. With regard to the contention of ICO *et al.* that the requested information will be needed for negotiations on the accommodation and any necessary relocation/retuning of BAS and FS microwave licensees, we find that we have adequately addressed this issue in the *Third Notice of Proposed Rule Making* portion of this document. We noted there that the *Microwave Cost-Sharing* proceeding provided guidelines for negotiation in good faith during the mandatory relocation negotiation period. The Commission stated there that in disposing of claims that a party had not negotiated in good faith, it would consider, *inter alia*, what steps the parties have taken to determine the actual cost of relocation to comparable facilities, and whether either party has withheld information requested by the other party that is necessary to estimate relocation costs or to facilitate the relocation process.⁹⁰ We propose to

⁸⁶ See *id.* at 8-10.

⁸⁷ See *id.* at 2-3 (citing *First R&O/Further NPRM*, 12 FCC Rcd. 7388 at ¶¶ 30, 33, 42-43).

⁸⁸ See *id.* at 4-6.

⁸⁹ See Public Notice 82639, Mar. 31, 1998.

⁹⁰ See ¶ 45 *supra* (citing *Microwave Cost-Sharing First R&O/Further Notice of Proposed Rule Making*, 11 FCC Rcd 8825 at ¶ 65).

apply the same good faith requirements to any relocation, equipment replacement or retuning negotiations between MSS and BAS or FS microwave licensees. We find that these requirements, if adopted, will assure ICO and other future MSS licensees of access to the information they need to plan and conduct relocation negotiations.

57. For these reasons, we find that the petition of ICO *et al.* premature and we therefore dismiss the petition.

PROCEDURAL MATTERS

Regulatory Flexibility Analysis

58. As required by Section 603 of the Regulatory Flexibility Act, 5 U.S.C. § 603, the Commission has prepared and Initial Regulatory Flexibility Analysis (IRFA) of the expected impact on small entities of the proposals suggested in this document. The IRFA is set forth in Appendix A. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments on the rest of the *Notice of Proposed Rule Making (Notice)*, but they must have a separate and distinct heading designating them as responses to the IRFA. The Secretary shall send a copy of this *Notice*, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with Section 603(a) of the Regulatory Flexibility Act, 5 U.S.C. § 603(a).

Ex Parte Rules - Permit-but-Disclose

59. This is a permit-but-disclose notice and comment rule making proceeding. *Ex parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in the Commission's rules. *See generally* 47 CFR §§ 1.1202, 1.1203, and 1.2306(a).

Comment Period

60. Pursuant to Sections 1.415 and 1.419 of the Commission's Rules, 47 CFR §§ 1.415 and 1.419, interested parties may file comments on or before **[insert date 30 dates from date of publication in the Federal Register]** and reply comments on or before **[insert date 60 days from date of publication in the Federal Register]**. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies. *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 23,121 (1998).

61. Comments filed through the ECFS can be sent as an electronic file via the Internet to <<http://www.fcc.gov/e-file/ecfs.html>>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rule making numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rule making number referenced in the caption. In completing the transmittal

screen, commenters should include their full name, Postal Service mailing address, and the applicable docket or rule making number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should including the following words in the body of the message, "get form <your e-mail address." A sample form and directions will be sent in reply.

62. Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rule making number appear in the caption of this proceeding, commenters must submit two additional copies for each additional docket or rule making number. All filings must be sent to the Commission's Secretary, Magalie Roman Salas, Office of the Secretary, Federal Communications Commission, 445 12th Street, S.W., TW-A325, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center of the Federal Communications Commission, Room 239, 1919 M Street, N.W., Washington, D.C. 20554.

Contact Persons

63. For further information concerning this proceeding, contact Sean White at 202/418-2453, swhite@fcc.gov, Office of Engineering and Technology.

ORDERING CLAUSES

64. Accordingly, pursuant to Sections 4(i), 302, 303(g), 303(r), 309(j), 332(a), and 403 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 302, 303(g), 303(r), 309(j), 332(a), 403; and Section 115(a) of the National Telecommunications and Information Administration Organization Act, 47 U.S.C. § 925(a), IT IS ORDERED that the petitions for reconsideration filed by the MSS Coalition and Southwestern Bell ARE DENIED. IT IS FURTHER ORDERED that this Third Notice of Proposed Rule Making is adopted. IT IS FURTHER ORDERED that the Request for Mandatory Submission of Information filed by ICO Services Limited, *et al.*, IS DISMISSED. IT IS FURTHER ORDERED that the Commission's Office of Public Affairs, Reference Operations Division, SHALL SEND a copy of this *Memorandum Opinion and Order, Third Notice of Proposed Rule Making, and Order*, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION


Magalie Roman Salas
Secretary

APPENDIX A

Initial Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act (RFA),⁹¹ the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities by the policies and rules proposed in this *Memorandum Opinion and Order, Third Notice of Proposed Rule Making, and Order*. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the *Memorandum Opinion and Order, Third Notice of Proposed Rule Making, and Order* provided above in paragraph 60. The Commission will send a copy of the *Memorandum Opinion and Order, Third Notice of Proposed Rule Making, and Order*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration. See 5 U.S.C. § 603(a). In addition, the *Memorandum Opinion and Order, Third Notice of Proposed Rule Making, and Order* and IRFA (or summaries thereof) will be published in the Federal Register. See *id.*

A. Need for and Objectives of the Proposed Rules.

This *Third Notice* proposes rules to govern the relocation of Broadcast Auxiliary Service (BAS), Local Television Transmission Service (LTTS), Cable Television Relay Service (CARS), and Fixed Service (FS) licensees from the 2 GHz spectrum reallocated to the Mobile-Satellite Service (MSS) and for reassignment by competitive bidding. These rules are designed to ensure an orderly and expeditious transition of these licensees from the spectrum so that: (1) MSS operations may be conducted in a designated segment of the spectrum; and (2) the requirements of the 1997 Balanced Budget Act are satisfied in another designated segment of the spectrum. At the same time, the rules are designed to ensure that incumbent BAS, LTTS, CARS, and FS licensees suffer no harm from relocation.

B. Legal Basis.

The Communications Act of 1934, as amended, gives the Commission authority to "make such regulations as it may deem necessary to prevent interference between stations and to carry out the provisions of [the Communications Act]." 47 U.S.C. § 303(f).

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply.

(a) **BAS, LTTS, and CARS Licensees:** This service involves a variety of

⁹¹ See 5 U.S.C. § 603. The RFA, see 5 U.S.C. § 601 et. seq., has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

transmitters, generally used to relay broadcast programming to the public (through translator and booster stations) or within the program distribution chain (from a remote news gathering unit to the studio). The CARS service includes transmitters generally used to relay cable programming within cable television system distribution systems. The Commission has not developed a definition of small entities applicable to Broadcast Auxiliary Service, Local Television Transmission Service or Cable Television Relay Service. Therefore, the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to radiotelephone companies. SBA has defined a small business for Standard Industrial Classification (SIC) category 4812 (Radiotelephone Communications) to be small entities when they have fewer than 1500 employees.⁹²

The Commission estimates that there are approximately 1044 BAS, CARS, and LTTS licensees in the United States. The FCC does not collect financial information on any broadcast facility and the Department of Commerce does not collect financial information on these auxiliary broadcast facilities. We believe, however, that most, if not all, of these auxiliary facilities could be classified as small businesses by themselves. We also recognize that most auxiliary transmitters are owned by a parent station which, in some cases, would be covered by the revenue definition of small business entity discussed below. These stations would likely have annual revenues that exceed the SBA maximum to be designated as a small business (\$10.5 million for a TV station). Furthermore, they do not meet the Small Business Act's definition of a "small business concern" because they are not independently owned and operated.

(b) **Satellite Communications Services:** The Commission has not developed a definition of small entities applicable to satellite communications licensees. Therefore, the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to Communications Services "Not Elsewhere Classified (NEC)." This definition provides that a small entity is one with \$11.0 million or less in annual receipts.⁹³ According to the Census Bureau, there were a total of 848 communications services providers, NEC, in operation in 1992, and a total of 775 had annual receipts of less than \$9.999 million.⁹⁴ The Census report does not provide more precise data. We do not request nor collect annual revenue information, and thus are unable to estimate the number of international satellite licensees that would constitute a small business under the SBA definition.

Satellite systems authorized by the Commission can be divided into the following categories: Mobile-Satellite Service (MSS) non-geostationary satellite orbit (LEO) (low or

⁹² 13 C.F.R. § 121.201 Standard Industrial Classification (SIC) Code 4812.

⁹³ 13 C.F.R. § 121.201, Standard Industrial Classification (SIC) Code 4899.

⁹⁴ 1992 Economic Census Industry and Enterprise Receipts Size Report, Table 2D, SIC code 4899 (U.S. Bureau of the Census data under contract to the Office of Advocacy of the U.S. Small Business Administration).

medium orbit satellites); MSS geostationary; MSS stations; and Fixed-Satellite Service.

(c) **Fixed Service Licensees:** The Commission has not developed a definition of small entities applicable to Fixed Service microwave licensees. Therefore, the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to radiotelephone companies. This definition provides that a small entity is a radiotelephone company employing fewer than 1,500 persons. Census Bureau data indicates that there are 1,164 radiotelephone companies with fewer than 1500 employees, that might qualify as small entities if they are independently owned and operated.

D. Description of Projected Reporting, Recordkeeping and Other Compliance Requirements.

The proposed rules would require all BAS, LTTS, CARS, and FS licensees, as well as MSS operators, to negotiate for relocation (including replacement or retuning of equipment) or rechannelization or both, including negotiating timetables and costs. These negotiations are likely to require the skills of accountants and engineers to evaluate the economic and technical requirements of relocation.

E. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered.

The Commission considered the alternative of requiring current BAS, LTTS, CARS, and FS licensees in the 2 GHz band to relocate or rechannelize or both at their own expense. The Commission rejected this alternative as excessively burdensome on these incumbent licensees, and not in the public interest.

MSS commenters advocate requiring BAS band licensees to finance their own relocation as their equipment depreciates and they purchase new equipment, claiming that the total costs of relocation, added to the high cost of launching satellites, would cripple the nascent MSS industry. MSS commenters also assert, however, that there is a huge, underserved demand for MSS. We believe that MSS licensees will build the cost of relocating BAS band licensees into their financial plans, and still will be able to provide service at a profit. In the alternative, MSS may choose to defer expeditious access to the spectrum currently heavily used by BAS licensees and defer deployment of MSS systems for ten years, in which case no relocation or rechannelization would be required. We propose to rechannelize the BAS band to seven channels of 12 or 13 megahertz width each, as opposed to the current 17- and 18-megahertz channel widths, in order to maintain seven channels in the 2 GHz BAS band, but we also request comment on whether allowing flexibility in channelization would better serve the needs of the BAS, CARS, and LTTS industries. We propose the same negotiation periods as those established in the Emerging Technologies proceeding: a two-year voluntary negotiation period, followed by a one-year mandatory negotiation period, followed by involuntary relocation. In the case of involuntary relocation, we propose to apply the requirements of our *Emerging Technologies* policies: (1) payment of

all relocation expenses by the MSS operator, (2) full comparability of replacement facilities, and (3) the right of the incumbents to return to their original spectrum at MSS expense, should the replacement facilities prove not to be fully comparable within one year after relocation. Finally, we would propose to require subsequently entering MSS operators to compensate earlier operators for a portion of the expenses incurred in clearing the BAS band.

F. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules.

None.

APPENDIX B**Proposed Rules**

Part 2 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

**PART 2 -- FREQUENCY ALLOCATIONS AND RADIO TREATY
MATTERS; GENERAL RULES AND REGULATIONS**

1. The authority citation for part 2 continues to read as follows:

AUTHORITY: Sec. 4, 302, 303, and 307 of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154, 302, 303 and 307, unless otherwise noted.

2. Section 2.106, the Table of Frequency Allocations, is amended as follows:
 - a. Remove the existing entries for 1990-2200 MHz.
 - b. Add entries in numerical order for 1990-2200 MHz.
 - c. Add new footnotes USXXX and USYYY.

The revisions and additions read as follows:

§ 2.106 Table of Frequency Allocations.

* * * * *

International table			United States table		FCC use designators	
Region 1-allocation MHz	Region 2-allocation MHz	Region 2-allocation MHz	Government	Non-government	Rule part(s)	Special use frequencies
(1)	(2)	(3)	Allocation MHz (4)	Allocation MHz (5)	(6)	(7)
1990-2010 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space)	1990-2010 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space)	1990-2010 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space)	1990-2025	1990-2025 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space)	AUXILIARY BROADCASTING (74) CABLE TELEVISION (78) SATELLITE COMMUNICATIONS (25)	
S5.388 S5.389A S5.389F	S5.388 S5.389A	S5.388 S5.389A				
2010-2025 FIXED MOBILE	2010-2025 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space)	2010-2025 FIXED MOBILE				
S5.388	S5.388 S5.389C S5.389D S5.389E	S5.388				

2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE SPACE RESEARCH (Earth-to-spcae) (space-to-space) S5.391 S5.392	2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE SPACE RESEARCH (Earth-to-spcae) (space-to-space) S5.391 S5.392	2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE SPACE RESEARCH (Earth-to-spcae) (space-to-space) S5.391 S5.392	2025-2110 SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) SPACE RESEARCH (Earth-to-spcae) (space-to-space) USXXX USYYY US222 S5.391 S5.392	2025-2110 FIXED MOBILE USXXX USYYY US222 NG23 NG118 S5.391 S5.392	AUXILIARY BROADCASTING (74) CABLE TELEVISION (78)	
International table			United States Table		FCC use designators	
Region 1-allocation MHz	Region 2-allocation MHz	Region 2-allocation MHz	Government	Non-government	Rule part(s)	Special use frequencies
(1)	(2)	(3)	Allocation MHz (4)	Allocation MHz (5)	(6)	(7)
2110-2120 FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) S5.388	2110-2120 FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) S5.388	2110-2120 FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) S5.388	2110-2120 US252	2110-2120 FIXED MOBILE US252 NG23 NG118	FIXED MICROWAVE (101) PUBLIC MOBILE (22)	EMERGING TECHNOLOGIES

Federal Communications Commission

FCC 98-309

2120-2150 FIXED MOBILE	2120-2150 FIXED MOBILE Mobile-Satellite (space-to-Earth)	2120-2150 FIXED MOBILE	2120-2150	2120-2150 FIXED MOBILE	FIXED MICROWAVE (101) PUBLIC MOBILE (22)	EMERGING TECHNOLOGIES
S5.388	S5.388	S5.388		NG23 NG118 NG153		
2150-2160 FIXED MOBILE	2150-2160 FIXED MOBILE Mobile-Satellite (space-to-Earth)	2150-2160 FIXED MOBILE	2150-2160	2150-2160 FIXED MOBILE	DOMESTIC PUBLIC FIXED (21) FIXED MICROWAVE (101)	
S5.388	S5.388	S5.388		NG23		
2160-2165 FIXED MOBILE	2160-2165 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth)	2160-2165 FIXED MOBILE	2160-2165	2160-2165 FIXED MOBILE	DOMESTIC PUBLIC FIXED (21) FIXED MICROWAVE (101) PUBLIC MOBILE (22)	EMERGING TECHNOLOGIES
S5.388	S5.388 S5.389C S5.389D S5.389E	S5.388		NG23 NG153		

International table			United States table		FCC use designators	
Region 1-allocation MHz	Region 2-allocation MHz	Region 2-allocation MHz	Government	Non-government	Rule part(s)	Special use frequencies
(1)	(2)	(3)	Allocation MHz (4)	Allocation MHz (5)	(6)	(7)
2165-2170 FIXED MOBILE	2165-2170 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth)	2165-2170 FIXED MOBILE	2165-2170	2165-2170 FIXED MOBILE-SATELLITE (space-to-Earth)	FIXED MICROWAVE (101) PUBLIC MOBILE (22) SATELLITE COMMUNICATIONS (25)	EMERGING TECHNOLOGIES
S5.388 S5.392A	S5.388 S5.389C S5.389D S5.389E	S5.388		NG23		

Federal Communications Commission

FCC 98-309

2170-2200 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) S5.388 S5.389A S5.389F S5.392A	2170-2200 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) S5.388 S5.389A	2170-2200 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) S5.388 S5.389A	2170-2200	2170-2200 FIXED MOBILE-SATELLITE (space-to-Earth) NG23	FIXED MICROWAVE (101) PUBLIC MOBILE (22) SATELLITE COMMUNICATIONS (25)	EMERGING TECHNOL- OGIES
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* * * * *

USXXX -- The use of the band 2025-2110 MHz by the Government space research (Earth-to-space), space operations (Earth-to-space), and Earth-exploration-satellite services shall not constrain the deployment of Television Broadcast Auxiliary Service under Part 74F, the Cable Television Relay Service under Part 78, and the Local Television Transmission Service under Part 101J. To facilitate compatible operations between non-Government terrestrial receiving stations located at fixed sites and Government earth station transmitters coordination is required. To facilitate compatible operations between non-government terrestrial transmitting stations and Government spacecraft receivers, the terrestrial transmitters shall not be high-density systems (see Recommendations ITU-R SA.1154 and ITU-R F.1247).

USYYY -- In the band 2025-2110 MHz, nonGovernment Earth-to-space and space-to-space transmissions may be authorized in the space research and Earth exploration-satellite services subject to such conditions as may be applied on a case-by-case basis. Such transmissions shall not cause harmful interference to Government and non-Government stations operating in accordance with the Table of Frequency Allocations.

II. Part 74 of Chapter I of Title 47 of the Code of Federal Regulations is amended as follows:

PART 74 -- EXPERIMENTAL RADIO, AUXILIARY, SPECIAL BROADCAST AND OTHER PROGRAM DISTRIBUTION SERVICES

1. The authority citation for Part 74 is revised to read as follows:

AUTHORITY: Sec. 4, 302, 303, and 307 of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154, 302, 303 and 307, unless otherwise noted.

2. Section 74.602 is amended as follows:

a. Add the following subparagraph (a)(3)

(3) Effective January 1, 2000, the first seven channels of Band A will be as follows:

2025-2037 MHz
2037-2049 MHz
2049-2061 MHz
2061-2073 MHz
2073-2085 MHz
2085-2097 MHz
2097-2110 MHz

Broadcast Auxiliary Service, Cable Television Remote Pickup Service, and Local Television

Transmission Service licensees will be required to use this Band A channel plan after completion of relocation by an Emerging Technologies licensee in accordance with § 74.690.

3. Add the new Section 74.690 as follows:

§ 74.690 Transition of the 1990-2025 MHz band from the Broadcast Auxiliary Service to emerging technologies.

(a) Licensees proposing to implement Mobile-Satellite Services using emerging technologies (MSS Licensees) may negotiate with Broadcast Auxiliary Service licensees (Existing Licensees) in the 1990-2110 MHz band for the purpose of agreeing to terms under which the Existing Licensees would relocate their operations to the 2025-2110 MHz band, to other authorized bands, or to other media; or alternatively, would accept a sharing arrangement with the MSS Licensee that may result in an otherwise impermissible level of interference to the Existing Licensee's operations.

(b) Existing Licensees in the 1990-2025 MHz band allocated for licensed emerging technology services will maintain primary status in these bands until an MSS Licensee completes relocation of the Existing Licensee's operations.

(c) The Commission will amend the operating license of the Existing Licensee to secondary status only if the following requirements are met:

(1) The service applicant, provider, licensee, or representative using an emerging technology guarantees payment of all relocation costs, including all engineering, equipment, site and FCC fees, as well as any reasonable additional costs that the relocated Existing Licensee might incur as a result of operation in another authorized band or migration to another medium.

(2) The MSS Licensee completes all activities necessary for implementing the replacement facilities, including engineering and cost analysis of the relocation procedure and, if radio facilities are used, identifying and obtaining, on the incumbents' behalf, new microwave or Local Television Transmission frequencies and frequency coordination; and

(3) The MSS Licensee builds the replacement system and tests it for comparability with the existing system.

(d) The Existing Licensee is not required to relocate until the alternative facilities are available to it for a reasonable time to make adjustments, determine comparability, and ensure a seamless handoff.

(e) If within one year after the relocation to new facilities the Existing Licensee demonstrates that the new facilities are not comparable to the former facilities, the MSS Licensee must remedy the defects or pay to relocate the Existing Licensee back to its former or equivalent frequencies.

III. Part 78 of Chapter I of Title 47 of the Code of Federal Regulations is amended as follows:

PART 78 -- CABLE TELEVISION RELAY SERVICE

1. The authority citation for Part 78 continues to read as follows:

AUTHORITY: Secs. 2, 3, 4, 301, 303, 307, 308, 309, 48 Stat., as amended, 1064, 1066, 1081, 1082, 1083, 1084, 1085; 47 U.S.C. 152, 153, 154, 301, 303, 307, 308, 309.

2. Section 78.11(f) is amended by replacing the text "1990-2110 MHz" with the text "2025-2110 MHz."

3. Section 78.18 is amended as follows:

a. Add the following to the end of subparagraph (a)(7)

(3) After a licensee has been relocated in accordance with the provisions of § 78.40, operations will be in the band 2025-2110 MHz. The following channel plan will apply, subject to the provisions of § 74.604.

Frequency Band (MHz)

2025-2037
2037-2049
2049-2061
2061-2073
2073-2085
2085-2097
2097-2110

4. Add the new Section 78.40 as follows:

§ 78.40 Transition of the 1990-2025 MHz band from the Cable Television Relay Service to Emerging Technologies.

(a) Licensees proposing to implement Mobile-Satellite Services using emerging technologies (MSS Licensees) may negotiate with Cable Television Relay Service licensees (Existing Licensees) in the 1990-2110 MHz band for the purpose of agreeing to terms under which the Existing Licensees would relocate their operations to the 2025-2110 MHz band, to other authorized bands, or to other media; or alternatively, would accept a sharing arrangement with the MSS Licensee that may result in an otherwise impermissible level of interference to the Existing Licensee's operations.

(b) Existing Licensees in the 1990-2025 MHz band allocated for licensed emerging technology services will maintain primary status in these bands until an MSS Licensee

completes relocation of the Existing Licensee's operations.

(c) The Commission will amend the operating license of the Existing Licensee to secondary status only if the following requirements are met:

(1) The service applicant, provider, licensee, or representative using an emerging technology guarantees payment of all relocation costs, including all engineering, equipment, site and FCC fees, as well as any reasonable additional costs that the relocated Existing Licensee might incur as a result of operation in another authorized band or migration to another medium.

(2) The MSS Licensee completes all activities necessary for implementing the replacement facilities, including engineering and cost analysis of the relocation procedure and, if radio facilities are used, identifying and obtaining, on the incumbents' behalf, new microwave or Local Television Transmission frequencies and frequency coordination; and

(3) The MSS Licensee builds the replacement system and tests it for comparability with the existing system.

(d) The Existing Licensee is not required to relocate until the alternative facilities are available to it for a reasonable time to make adjustments, determine comparability, and ensure a seamless handoff.

(e) If within one year after the relocation to new facilities the Existing Licensee demonstrates that the new facilities are not comparable to the former facilities, the MSS Licensee must remedy the defects or pay to relocate the Existing Licensee back to its former or equivalent frequencies.

5. In Section 78.101(a), the table is amended by replacing "1,990 to 2,110" in the first line with "2,025 to 2,110"

6. In Section 78.103(e), replace the table with the following:

Frequency band (MHz)	Maximum authorized bandwidth (MHz)
1,990 to 2,110.....	17 or 18. ¹
6,425 to 6,525.....	8 or 25.
6,875 to 7,125.....	25.
12,700 to 13,250.....	25.
17,700 to 19,700.....	80.
31,000 to 31,300.....	25 or 50.

¹ After a licensee has been relocated in accordance with § 78.40, the maximum authorized bandwidth in the frequency band 2,025 to 2,110 MHz will be 12/13 MHz.

* * * * *

7. In Section 78.111, the table is amended by replacing the first line with the following:

Frequency Band (MHz)	<u>Frequency tolerance</u>	
	Fixed (percent)	Mobile (percent)
1,990 to 2,110,000	0.005
* * * * *		

PART 101 -- FIXED MICROWAVE SERVICES

1. The authority citation for Part 101 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 303.

2. Add a new Section 101.83 as follows:

§ 101.83 Reimbursement of relocation expenses in the 2115-2150 MHz and 2165-2200 MHz bands.

(a) Whenever an ET licensee (including Mobile-Satellite Service licensees) in the 2115-2150 MHz or 2165-2200 MHz bands relocates an incumbent paired microwave link with one path in the 2115-2150 MHz band, and the paired path in the 2165-2200 MHz band, the ET licensee is entitled to reimbursement of 50% of its relocation costs from any subsequently entering ET licensee which would have been required to relocate the same fixed microwave link.

(b) The subsequently entering ET licensee must reimburse the relocating ET licensee before the subsequently entering licensee may begin operations in these bands.

**Separate Statement
of
Commissioner Susan Ness**

Re: Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service

In this Memorandum Opinion and Order, we reaffirm the Commission's prior decision to require all new technology licensees in the 2 GHz band, including mobile-satellite service licensees, to compensate incumbent service providers that must relocate to new spectrum. This action applies equally and non-discriminatorily to all such new entrants in this band regardless of their nationality, and I support this decision.

That said, I write separately to highlight the unique regulatory challenges facing international satellite systems in providing communications services globally. These systems will operate not just in the 2 GHz band but in other frequency bands as well. I would encourage the Commission generally to consider the effect that our spectrum management policies have on international satellite systems seeking to be licensed and begin offering services globally as one of a host of issues that we will explore in the upcoming spectrum management *en banc*.