

FCC MAIL SECTION

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

DIT

In the Matter of)
)
Establishing Rules and Policies for the)
Use of Spectrum for Mobile Satellite)
Service in the Upper and Lower L-band)

IB Docket No. 96-132

NOTICE OF PROPOSED RULE MAKING

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By the Commission:

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Introduction

1. By this action, we propose licensing policies to govern mobile-satellite service ("MSS")¹ in certain portions of the L-band: the 1545-1559 MHz and 1646.5-1660.5 MHz frequency bands ("upper L-band") and the 1525-1530 MHz, 1530-1544 MHz, and 1626.5-1645.5 MHz frequency bands ("lower L-band").² Specifically, we propose to assign all coordinated L-band spectrum as follows: the first 28 MHz of spectrum (14 MHz for Earth-to-space transmissions and 14 MHz for space-to-Earth transmissions) internationally coordinated in the L-band would be assigned to the only U.S. MSS system authorized to operate in the upper L-band, AMSC.³ AMSC is currently authorized to use 28 MHz of spectrum in the upper L-band for MSS service.⁴ If the United States is able to coordinate more than 28 MHz of spectrum in the L-band, we propose to allow other MSS applicants to apply for assignment of those frequencies.⁵

Background

2. In 1983, the National Aeronautical and Space Administration ("NASA") initiated the L-band MSS proceeding by requesting that the Commission allocate spectrum for MSS. We issued an NPRM to allocate spectrum, establish licensing procedures and technical policies, and begin the licensing

¹ MSS is a radio communications service between mobile earth stations and one or more space stations providing voice, data, and other radiocommunication services.

² The L-band is generally understood to include frequencies from 1 to 2 GHz. However, as used in this Notice, the term is limited to those frequency bands for which we propose rules.

³ We will continue to coordinate 2 MHz of spectrum for distress and safety operations that were previously assigned to AMSC in the 1544-1545 MHz and 1645.5-1646.5 MHz frequency bands. See Applications to Modify Space Station Authorization in the Mobile-satellite Service, Memorandum Opinion and Order, 8 F.C.C. Rcd. 4040 ¶ 37 (1993). This spectrum is currently used by COSPAS/SARSAT to provide links from the polar orbiting satellites operating in the 406 MHz band and for accessing the satellite from satellite Emergency Position Indicating Radio Beacons EPIRBs, Inmarsat-E. Both of these systems are components of the Global Maritime Distress and Safety System ("GMDSS"). Mobile-satellite service in the 1544-1545 MHz and 1645.5-1646.5 MHz frequency bands is also limited internationally to distress and safety related communications. See ITU Radio Regulations Nos. 727A and 734B.

⁴ Amendment of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for and Establish Rules Pertaining to the Use of Radio Frequencies in Land Mobile Satellite Service, Memorandum Opinion Order and Authorization, 4 F.C.C. Rcd. 6041 (1989) (authorizing AMSC to construct, launch, and operate an MSS system in the upper L-band); Amendment of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for and Establish Rules Pertaining to the Use of Radio Frequencies in Land Mobile Satellite Service, Final Decision on Remand, 7 F.C.C. Rcd. 266, ¶ 1 (1992) (affirming AMSC as licensee for the upper L-band).

⁵ We reserve judgment as to how to assign any such licenses should it become necessary to decide among competing applicants for these frequencies.

process.⁶ In July 1986, we determined that it was "in the public interest to . . . provide for MSS at L-band."⁷ We allocated the upper L-band for MSS,⁸ to be shared on a co-primary basis with the aeronautical mobile-satellite (R) service ("AMS(R)S").⁹ At that time, we had not allocated the lower L-band for MSS.

3. A few months later, based on the twelve MSS applications, related pleadings, and comments in response to the Notice, the Commission adopted licensing policies to govern this service.¹⁰ The Commission concluded that multiple MSS systems were not feasible in the spectrum available in the upper L-band; that only one MSS system could be licensed for first generation use of the upper L-band; and that eligibility for the MSS license should be limited to a consortium comprising all qualified applicants.¹¹

4. Eight applicants eventually formed American Mobile Satellite Corporation (now AMSC), and submitted a joint technical proposal and operating agreement to the Commission in 1988. In 1989, the Commission issued a license to AMSC to construct, launch, and operate a three-satellite MSS

⁶ Amendment of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for and Establish Rules Pertaining to the Use of Radio Frequencies in Land Mobile Satellite Service, Notice of Proposed Rule Making, Docket No. 84-1234, FCC No. 84-558 (released January 28, 1985).

⁷ Amendment of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for and Establish Rules Pertaining to the Use of Radio Frequencies in Land Mobile Satellite Service, Report and Order, 2 F.C.C. Rcd. 1825, ¶ 153 (1986) ("LMSS Report and Order").

⁸ LMSS Report and Order at ¶¶ 2, 154 (1986). Amendment of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for and Establish Rules Pertaining to the Use of Radio Frequencies in Land Mobile Satellite Service, Memorandum Opinion and Order, 4 F.C.C. Rcd. 6016, ¶¶ 1, 2 (1989).

⁹ AMS(R)S has primary use of the 1545-1555 MHz and 1646.5-1656.5 MHz frequency bands. The 1555-1559 MHz, 1656.5-1660 MHz, and 1660-1660.5 MHz frequency bands are allocated for mobile-satellite service, and AMS(R)S has priority access and immediate availability over all other mobile-satellite communications. The 1660-1660.5 MHz frequency band is also allocated on a co-primary basis to radio astronomy service. See ITU Radio Regulations No. 730C. (The "R" in AMS(R)S indicates that the aeronautical communications concerns the safety and regularity of flights.)

¹⁰ Amendment of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for and Establish Rules Pertaining to the Use of Radio Frequencies in Land Mobile Satellite Service, Second Report and Order, 2 F.C.C. Rcd. 485 (1987) rev'd in part and remanded Aeronautical Radio, Inc. v. FCC, 928 F.2d 428 (D.C. Cir. 1991). See also Amendment of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for and Establish Rules Pertaining to the Use of Radio Frequencies in Land Mobile Satellite Service, Final Decision, 7 F.C.C. Rcd. 266 (1992) aff'd Aeronautical Radio, Inc. v. FCC, 983 F.2d 275 (D.C. Cir. 1993).

¹¹ Id. at ¶¶ 4-10.

system in the upper L-band.¹² This authorization included specific milestones for the construction and launch of all three satellites in AMSC's system.¹³ AMSC launched its first satellite on April 7, 1995.¹⁴

5. Meanwhile, in July 1988, Geostar Messaging Corporation¹⁵ filed a Petition for Rule Making requesting that portions of the lower L-band (1530-1544 MHz and 1626.5-1645.5 MHz) be allocated for a new digital mobile-satellite service. In June 1993, we proposed to allocate another 33 MHz of spectrum for mobile-satellite service. Subsequently, we allocated the 1530-1544 MHz and 1626.5-1645.5 MHz frequency bands for mobile-satellite service and proposed to allocate the 1525-1530 MHz frequency band for mobile-satellite service as well.¹⁶ More recently, we allocated the 1525-1530 MHz frequency band for mobile-satellite service.¹⁷

6. In January 1990, just prior to initiation of the lower L-band allocation proceedings, AMSC filed an application requesting authorization to operate in the lower L-band.¹⁸ When we released the Lower L-band Notice, we stated that we would not accept applications for a permanent MSS system until the allocation proposals were finalized and we would not solicit applications to operate the service until rules and policies were finalized.¹⁹ In July 1993, a month after we released the Lower L-band Order, AMSC filed an amendment to its lower L-band application seeking construction,

¹² Amendment of Part 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for and Establish Rules Pertaining to the Use of Radio Frequencies in Land Mobile Satellite Service, Memorandum Opinion, Order and Authorization, 4 F.C.C. Rcd. 6041 (1989).

¹³ Id., 4 F.C.C. Rcd. at 6058, ¶ 116.

¹⁴ We have authorized AMSC to operate three satellites: AMSC-1 assigned to orbital location 101° W.L.; AMSC-2 assigned to orbital location 62° W.L.; and AMSC-3 assigned to orbital location 139° W.L.

¹⁵ In 1991, Geostar went bankrupt and sold its rights to all FCC licenses, permits, authorizations, and applications to AMSC. See In re: Geostar Corporation, Case No. 91-00212 (June 25, 1992) (Bkrctcy D.C.).

¹⁶ Amendment of Part 2 of the Commission's Rules to Allocate Spectrum for Mobile-Satellite Services in the 1530-1544 MHz and 1626.5-1645.5 MHz Bands, First Report and Order and Further Notice of Proposed Rule Making, 8 F.C.C. Rcd. 4246, (1993) ("Lower L-band Order").

¹⁷ Amendment of Part 2 of the Commission's Rules to Allocate Spectrum for Mobile-Satellite Services in the 1530-1544 MHz and 1626.5-1645.5 MHz Bands, Second Report and Order, 10 F.C.C. Rcd. 7305 (1995) ("Second Lower L-band Order").

¹⁸ AMSC Application to Modify Space Station Authorizations to Operate at 1530-1545 MHz and 1626.5-1646.5 MHz Frequency Bands (filed January 25, 1990).

¹⁹ Amendment of Part 2 of the Commission's Rules to Allocate Spectrum for Mobile-Satellite Services in the 1530-1544 MHz and 1626.5-1645.5 MHz Bands, Notice of Proposed Rule Making, 5 F.C.C. Rcd. 1255, 1262 n.23 and ¶ (1990) ("Lower L-band Notice").

launch, and operating authority and asking that we not accept competing applications.²⁰ In support of its request that we not accept competing applications, AMSC argued that there was a "severe shortage of spectrum in the upper L-band" and that the U.S. faced a "serious problem" in coordinating spectrum in the upper L-band.²¹ We placed AMSC's amendment on Public Notice on November 3, 1993, and requested comments concerning the acceptance of competing applications.²²

Discussion

A. Assignment of Spectrum in the L-band

7. We normally allocate spectrum, establish service rules, and license applicants prior to coordinating spectrum internationally.²³ This is because of the lead time required for satellite construction and international coordination. Furthermore, effective international coordination is not possible without the active assistance of a U.S. licensee. We are in a better position to explain the U.S. claim of need to other countries if we base that claim on a real system backed by actual business plans. Of necessity, therefore, our satellite authorizations are conditioned on the outcome of the coordination process.

8. Currently, in the entire L-band, there is 66 MHz of spectrum available for Earth-to-space and space-to-Earth transmissions for U.S. and non-U.S. licensed MSS systems. At the present time, Inmarsat and four administrations (Canada, Mexico, the Russian Federation, and the United States) are coordinating spectrum for a variety of MSS systems in the vicinity of North America. The U.S. has been at a disadvantage during this coordination because it began coordinating the upper L-band and only later began focusing on the lower L-band while Inmarsat and the other administrations have been coordinating spectrum throughout the entire L-band. The U.S. is the only country that distinguishes between the "upper L-band" and "lower L-band" for MSS.

²⁰ AMSC Amendment to its Application to Modify its Authority to Construct, Launch, and Operate a Mobile Satellite Service System (filed July 12, 1993).

²¹ AMSC Amendment to its Application to Modify its Authority to Construct, Launch, and Operate a Mobile Satellite Service System at 4 (filed July 12, 1993); AMSC Consolidated Opposition and Reply at 12 (filed December 27, 1993).

²² Satellite Communications Services, Public Notice, Report No. DS-1365 (November 3, 1993). Commenters included Loral Qualcomm Satellite Services, Inc., Motorola Satellite Communications, Inc., and COMSAT Corporation.

²³ Spectrum coordination is a three-step process consisting of: (a) advance publication, where a country makes known its plans to implement a satellite system in particular frequencies; (b) coordination, where technical agreements are negotiated and reached among countries to ensure the interference-free operations of the planned satellites; and (c) notification and recording of the frequency assignment in the Master International Frequency Register by the ITU Radiocommunication Bureau. Completion of the coordination process can take five or more years.

9. In the course of international coordination, it has become clear that the U.S. will not be able to secure sufficient spectrum in the upper L-band for its existing licensee, AMSC. Inmarsat, AMSC, and the three other systems have claimed requirements for significantly more than the 66 MHz available. Moreover, the current designs of mobile terminals for MSS systems do not permit them to share frequencies in adjacent or similar geographic areas. Given this demand and the technical restrictions, we do not think it will be possible to secure for AMSC the 28 MHz of spectrum we have authorized it to use in the upper L-band. In fact, it is unlikely that we will be able to coordinate more than 10 to 12 MHz in the upper L-band. Such an amount appears insufficient to operate the satellite system we authorized AMSC to build. In 1985, we estimated that an MSS system would require 20 MHz.²⁴ That prediction is supported by the spectrum demands being made by the other administrations in L-band coordinations. In sum, it appears that the available 10-12 MHz will be insufficient even for the one satellite AMSC has already launched.

10. Never before have we been unable to secure sufficient spectrum to support a satellite system that already has been licensed, partly constructed, and launched. The question now is whether we should permit AMSC to use the adjacent spectrum in the lower L-band to implement its system, or whether instead we should open up the lower L-band for competing applications. Opening the lower L-band for competing applications would present at least a theoretical possibility for a second U.S. licensee to begin providing MSS in the L-band in competition with AMSC. However, our experience in L-band coordinations since 1989 leads us to question whether this theoretical possibility is a realistic one. In particular, we note that it is unlikely that we could coordinate more than 10 MHz in the lower L-band for another U.S. system, and we have previously estimated that 20 MHz is the minimum amount of spectrum necessary for a viable MSS system. We seek comment on whether this estimate is still valid, or whether an economically viable MSS system can be operated in either the upper or lower L-band using a smaller amount of spectrum. In addressing this question, commenters are asked to consider the presence of Inmarsat and three other geostationary MSS systems in the lower L-band and the likelihood that geostationary satellites will continue to occupy this portion of the spectrum for the foreseeable future.

11. Our doubts about whether there is enough spectrum to sustain yet another system in the L-band lead us to propose rules for the lower L-band and modify AMSC's license to assign lower L-band spectrum to AMSC, up to the full 28 MHz for which AMSC is already authorized in the upper L-band. We propose to limit eligibility for the first 14 MHz of spectrum coordinated for Earth-to-space transmissions and the first 14 MHz coordinated for space-to-Earth transmissions in the upper and/or lower L-bands to AMSC. AMSC would have first priority for use of the lower L-band spectrum only as necessary to compensate for the loss of upper L-band spectrum currently assigned to it.

12. There are three reasons for pursuing this policy. First, the public interest reasons to support MSS in the L-band are as valid today as they were in 1986. MSS can serve areas of the country that are too remote or sparsely populated to be served by terrestrial land mobile systems. It can generate

²⁴ Amendments of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for and Establish Rules Pertaining to the Use of Radio Frequencies in Land Mobile Satellite Service, Notice of Proposed Rule Making, Docket No. 84-1234, FCC No. 84-558 (released January 28, 1985).

a host of new services by providing communication between virtually any point in the country, irrespective of distance.²⁵ MSS is uniquely suited for meeting the needs of the transportation, petroleum, and other vital industries. It can meet rural public safety needs and provide emergency communications to any area in times of emergencies and natural disasters.²⁶ Moreover, the L-band is currently the only primary MSS band in which we have licensed geostationary MSS systems. Geostationary and nongeostationary MSS systems each have distinctive service characteristics, and we believe that each type of service should be allowed to demonstrate its advantages. If geostationary MSS is to have that opportunity in the near term, it must be in the L-band.

13. Second, AMSC -- having already constructed and launched one of its three authorized satellites -- is in the best position to provide MSS to the public expeditiously. If AMSC, through no fault of its own, obtains insufficient spectrum for its system, its service will be jeopardized, and no other potential licensee in the lower L-band will be able to provide service for years. AMSC's substantial progress toward full implementation thus figures heavily in our public interest analysis, quite apart from the hardship AMSC would suffer if it were unable to recoup its investment of money, time, and other resources. This is especially true because AMSC's expenditures were actually required by the construction and launch milestones in AMSC's license.

14. Third, while all satellite licenses are granted subject to the uncertainties of international coordinations, the public interest requires that a Commission license carry with it some reasonable expectation that it will permit the holder to implement its system. Otherwise applicants and licensees -- as well as their investors and potential customers -- may be unwilling to commit the significant resources necessary to implement proposed systems, and this will have a chilling effect on the introduction of new services to the public. The Commission naturally does not guarantee that any U.S.-licensed system will be profitable, and it certainly cannot guarantee that other administrations will always accommodate U.S.-licensed systems. We can and should, however, take reasonable and appropriate steps to ensure that our licensees have a fair opportunity to compete.

15. The proposal we make today is a reasonable and appropriate step. Based on our assumptions about the economic viability of MSS systems, it appears that successful coordination of spectrum for one MSS system is possible only if we coordinate spectrum simultaneously in the upper and lower L-bands. Coordinating spectrum for AMSC in the lower L-band is particularly attractive because, with the exception of the United States, the same administrations and systems coordinating spectrum in the upper L-band are currently coordinating spectrum in the lower L-band. Furthermore, the generic MSS allocation²⁷ in the lower L-band allows aeronautical, land, and maritime mobile-satellite services to share spectrum throughout the band for non-safety related communication on an equal basis. Global maritime distress and safety systems ("GMDSS") do have priority access with real-time preemptive capability over all other mobile-satellite communications operating in the 1530-1544 MHz

²⁵ LMSS Report and Order at ¶ 120 (1986).

²⁶ Id. at ¶ 125 (1986).

²⁷ See Lower L-band Order and Second Lower L-band Order (allocating the lower L-band for generic mobile-satellite service).

and the 1626.5-1645.5 MHz portions of the lower L-band.²⁸ However, the generic MSS allocation allows sufficient technical flexibility for the currently authorized system to operate using spectrum in the lower L-band, while maintaining access to the spectrum by maritime safety-related services. AMSC's system operates in geostationary orbit and can be timely coordinated with the other entities who have published in advance with the International Telecommunication Union their plans to implement GSO systems in the lower L-band.²⁹ Finally, the lower L-band can also accommodate both voice and data services which the currently licensed system expects to provide.

16. Even under the proposal we make today, we are pessimistic about coordinating all 28 MHz of spectrum. We do expect, however, to coordinate enough spectrum to permit AMSC to operate at least one of its three satellites in a cost-effective manner. If contrary to our expectation, we are able to coordinate more than 28 MHz of spectrum in the upper and/or lower L-bands, we propose to allow other parties to apply for the additional spectrum.

17. In addition to adopting rules that permit us to assign AMSC spectrum in the upper and lower L-bands different from that which AMSC is currently authorized to use, we also propose to modify AMSC's authorization to include spectrum in the entire L-band, lower and upper. Therefore, this NPRM shall also serve as notice to AMSC of a proposal to modify its current license, and (in accordance with Section 316 of the Communications Act, and Section 1.87 of the Commission's rules) protests may be filed in response to this notice. We now turn to two procedural issues relevant to our proposal.

1. AMSC's Application, Amendment, the Public Notice, and Comments

18. As indicated above, on November 3, 1993, we requested comment on AMSC's application to operate in the lower L-band. In response to our Public Notice,³⁰ a number of parties argued that our acceptance of AMSC's amended application was contrary to language in the Regulatory Flexibility Analysis statement of the Lower L-band Notice.³¹ There we stated that "we w[ould] not solicit applications to operate the service until rules and policies are finalized."³² Elsewhere, in the Lower L-band Notice, we stated that "we do not intend to accept applications for a permanent MSS satellite

²⁸ ITU Radio Regulations No. 726C.

²⁹ Currently, only GSO systems are operating or are authorized to operate in the L-band. Therefore, in order to avoid interference with existing systems, we believe applicants for any additional spectrum in the L-band would need to be GSO systems.

³⁰ Satellite Communications Services, Public Notice, Report No. DS-1365 (November 3, 1993).

³¹ See Loral Qualcomm Satellite Services, Inc. Objection to Procedure and Request for Clarification and Proper Establishment of Cut-off Date at 1 (filed December 1, 1993); TRW Inc., Petition to Defer Action to Deny at 2 (filed December 3, 1993); Motorola Satellite Communications, Inc., Petition to Dismiss and/or Deny at 2 (filed December 3, 1993).

³² Lower L-band Notice at ¶ 30 (emphasis added).

system to use this band . . . until the allocation proposals contained herein are finalized."³³ Similarly, in a subsequent decision, we recommended that AMSC amend its pending application to use the MMSS bands after the finalization of the spectrum allocation proposal.³⁴ In so doing, we again referred to the Notice's statement "that we did not intend to accept applications for an MSS system to use the MMSS bands until the allocations proposals for the band are finalized."³⁵ We also indicated that such an application would "be considered when the Commission determines licensing policies for the MMSS bands."³⁶ Thus, our intention was to "accept" applications after we finalized the allocation proposals in the Lower L-band Notice.

19. On June 11, 1993, we adopted the Lower L-band Order finalizing the allocation proposals in the Lower L-band Notice, and, thereafter, AMSC filed its amended application. Given that AMSC filed its application after we finalized the lower L-band spectrum allocation, our acceptance of its application was proper. In any event, to the extent there may have been any ambiguity in our statements concerning when we would accept applications, no harm has resulted. Moreover, our proposed actions here, if adopted, would largely moot such issues. Under our proposed rules, we will not now accept applications for spectrum coordinated in the lower L-band. Instead, we propose on our own motion, to limit use of the L-band in an amount up to the first 28 MHz of spectrum coordinated, to the existing upper L-band MSS licensee, whose license would be modified pursuant to Section 316 of the Communications Act. The Commission may modify a license if it finds that such action promotes "the public interest, convenience, and necessity."³⁷ As explained above, we believe the public interest requires such modification here to help ensure the continued operation of the already authorized MSS system. Thus, at this juncture we are not proposing the adoption of rules that would permit the filing of applications for open spectrum.³⁸ In the event sufficient spectrum is available to permit the filing of applications in the future, however, we shall ensure that all eligible competing applicants have an opportunity for consideration.

20. Although the rules and policies we proposed here largely moot further consideration of AMSC's pending application, parties have raised concerns in their petitions and comments in response to our Public Notice that may be pertinent to our 28 MHz proposal. Loral Qualcomm Satellite Services, Inc. ("LQSS") claims that a grant to AMSC would give AMSC monopoly use of the L-band

³³ Id. at n. 23 (emphasis added).

³⁴ Applications to Modify Space Station Authorization in the Mobile-satellite Service, Memorandum Opinion and Order, 8 F.C.C. Rcd. 4040 ¶ 41 (1993) (emphasis added).

³⁵ Id. (emphasis added).

³⁶ Id. (emphasis added).

³⁷ 47 U.S.C. § 316.

³⁸ Rainbow Broadcasting Company v. FCC, 949 F.2d 405, 409-411 (D.C. Cir. 1991) (Section 316 modification of a broadcast license under the Commission's "intra-band" exchange policy does not constitute a new application for an "open channel" and thus does not subject licensee to competing applications).

and prevent the licensing of multiple systems in the band, would contradict the Commission's long standing "open skies" policy, and would allow AMSC to operate an inefficient system unable to provide international service.³⁹ As noted above, however, it is international spectrum demands that limit L-band spectrum. We tentatively conclude the 28 MHz proposal does not contravene our "open skies" policy. It would not serve the public interest to license multiple U.S. systems in a frequency band in which there is insufficient available spectrum. Finally, as to LQSS's technical concerns, AMSC's system is not designed to provide worldwide coverage. At the time we granted AMSC authority to operate in the upper L-band we knew it would primarily serve the domestic MSS market.⁴⁰ We believed then, and continue to believe, that AMSC will provide useful services to the U.S. population and will provide competition to other MSS systems serving the domestic market.

21. Motorola Satellite Communications, Inc. argues that the out-of-band emissions from just one AMSC subscriber unit operating at band edge would seriously degrade the service link quality of all IRIDIUM system channels and cause interference to Motorola mobile terminals operating in the 1616-1626.5 MHz band.⁴¹ However, until we complete coordination we do not know if AMSC will be authorized to operate at the lower band edge. If the 28 MHz of spectrum coordinated for AMSC's operation does not include spectrum at the lower band edge, we expect there will be no issue of adjacent band interference. Further, to the extent such issues arise, we believe Motorola and AMSC must first attempt to resolve any problems of adjacent band interference between themselves. We will address these problems only if the parties are unable to reach a resolution. Finally, we note that, Inmarsat, Australia, Mexico, Canada, and the Russian Federation each have or may have in the near future in-orbit L-band MSS systems that may use terminals having out-of-band emissions similar to AMSC mobile earth stations.⁴² If interference at the band edge becomes a problem, then Motorola may need to coordinate, worldwide, with all parties operating at band edge.

22. COMSAT Corporation expressed concern that AMSC's amendment could be read as implicitly requesting exclusive authority to provide maritime services in the lower L-band to vessels in U.S. territorial waters.⁴³ We recognize Comsat's authority to provide maritime services and its authority to have Inmarsat provide maritime MSS services in the lower L-band to vessels in U.S. waters. We do not anticipate granting AMSC exclusive authority to provide such service.

³⁹ LQSS Reply at 12-18 (filed January 12, 1994).

⁴⁰ AMSC is authorized to serve all of the U.S. domestic market, including all fifty states, Puerto Rico, the Virgin Islands, and U.S. coastal areas up to 200 miles. See Amendment of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service. Memorandum Opinion, Order and Authorization, 4 F.C.C. Rcd. 6041 ¶¶ 95-98 (1989).

⁴¹ Motorola Reply at 8 (filed January 12, 1994).

⁴² We note that roaming agreements are being developed with Canada and Mexico to permit roaming of mobile earth terminals between the three countries on a reciprocal basis.

⁴³ Comsat Comments at 2 (filed December 3, 1993); Comsat Reply at 1 (filed January 12, 1994).

2. Legal Authority

23. This proceeding involves the adoption of policies to govern the use of the radio spectrum and the modification of an existing license. Under sections 303(r) and 4(i) of the Act, the Commission has broad authority to adopt regulations to carry out its spectrum management obligations.⁴⁴ It is empowered under section 316 of the Act to modify any license "... if in the judgment of the Commission such action will promote the public interest, convenience, and necessity" In accordance with our broad rulemaking and license modification authority, we have tentatively concluded that the public interest would best be served by allowing an existing satellite licensee to use these frequencies in place of the frequencies that the Commission previously assigned to it, which are unlikely to be available because of the difficulties of international coordination.

24. As we have described above, strong public interest considerations support our proposed actions. U.S. efforts to coordinate MSS spectrum in the L-band have continued for roughly six years. For reasons beyond the control of either AMSC or the Commission, this coordination has not been successful. Even after years of negotiation, spectrum demands of all countries greatly exceed the amount of spectrum available in the L-band. As a result, we face for the first time a real possibility that a U.S. satellite licensee, which has already spent hundreds of millions of dollars for the construction of its system, will be unable to implement its operations due to irreconcilable international spectrum demands. If that happens, users could be deprived of valuable new services and the uncertainty caused by these events may have a lasting and serious impact on investor confidence in the United States satellite industry. In light of these unprecedented circumstances, we tentatively conclude that the policies and license modification proposed herein will better serve the public interest than other possible alternatives, such as opening these frequencies to new applicants. In so concluding, we note that this proceeding does not involve initial applicants and the hearing rights of eligible new applicants under section 309 of the Act.⁴⁵ It is also settled that the Commission need not open each and every frequency for competing applications before assigning it.⁴⁶ Accordingly, we believe that the rules and license modification action proposed in this proceeding are fully consistent with both our broad rulemaking authority and our authority under section 316 of the Act.

B. Priority Access and Preemption

25. In order to protect and maintain the integrity of safety and distress maritime communications

⁴⁴ See generally 47 U.S.C. § 303.

⁴⁵ See Ashbacker Radio Co. v. FCC, 326 U.S. 327 (1946); see also United States v. Storer Broadcasting Co., 351 U.S. 192, 202 (1956) (holding that the Ashbacker hearing requirement does not withdraw "from the Commission its rulemaking authority necessary for the orderly conduct of its business" and "does not require the Commission to hold a hearing . . . in ways contrary to . . . the public interest"); compare Aeronautical Radio, Inc. v. FCC, 928 f.2d 428, 452-53 (D.C.Cir. 1991)(remanded for further proceedings where Commission failed to provide adequate justification in rulemaking for requiring consortium of eligible applicants instead of holding comparative hearings).

⁴⁶ See, e.g., Rainbow Broadcasting Co. v. FCC, 949 F.2d 405, 409-10 (D.C. Cir. 1991).

internationally and domestically, we propose to establish priority access and preemption standards and policies for mobile-satellite service in the 1530-1544 MHz and 1626.5-1645.5 MHz frequency bands and to incorporate these standards into the Commission's service rules.⁴⁷ We also propose placing a maximum limit on the length of time of each data message transmission of a half-duplex mobile earth terminal ("MET"). Thus, we propose to allow U.S.-licensed MSS systems to operate half-duplex Inmarsat "Standard C" type or other technically similar mobile earth terminals ("METs") in the lower L-band if they adhere to the proposed service rules and the maximum time limit to be established for half-duplex data transmissions.

26. On August 1, 1995, we adopted an Order and Authorization⁴⁸ in which we temporarily waived U.S. Footnote 315 of Section 2.106 of our Rules⁴⁹ and allowed AMSC to operate and transfer all of its half-duplex METs in use on Inmarsat space segment on August 1, 1995 in the lower L-band to the AMSC space segment. On September 6, 1995 we again waived U.S. Footnote 312 and authorized Rockwell International Corporation to operate its METs using AMSC-1 space segment.⁵⁰ In accordance with U.S. Footnote 315, maritime mobile-satellite distress and safety communications such as GMDSS operating in the 1530-1544 MHz and 1626.5-1645.5 MHz frequency bands, have priority access with real-time preemptive capabilities. Communications of mobile-satellite system stations not participating in GMDSS must operate on a secondary basis to distress and safety communications.⁵¹

27. We believe our proposal to allow U.S.-licensed MSS systems to operate half-duplex data METs in the lower L-band is consistent with the intent of U.S. Footnote 315. Although full-duplex METs can respond faster to maritime safety and distress communications, we believe that the operation of half-duplex METs in the lower L-band, with appropriate restraints, can provide sufficient

⁴⁷ See Appendix B for the proposed standards.

⁴⁸ AMSC Application for Modification of its Blanket License to Construct and Operate 30,000 L-band Mobile Earth Stations, Order and Authorization, File No. 681-DSE-MP/L-95, DA 95-1701 (released August 1, 1995).

⁴⁹ U.S. Footnote 315 states that "[I]n the frequency bands 1530-1544 MHz and 1626.5-1645.5 MHz maritime mobile-satellite distress and safety communications, e.g., GMDSS, shall have priority access with real-time preemptive capability in the mobile-satellite service. Communications of mobile-satellite system stations not participating in the GMDSS shall operate on a secondary basis to distress and safety communications of stations operating in the GMDSS. Account shall be taken of the priority of safety-related communications in the mobile-satellite service."

⁵⁰ Rockwell International Corporation Application for Modification of Its Blanket License to Construct and Operate 15,000 L-band Mobile Earth Stations, Order and Authorization, File No. 1051-DSE-MP/L-95, DA95-1919 (released September 7, 1995).

⁵¹ U.S. Footnote 315.

distress and safety communication priority to comply with the intent of U.S. Footnote 315.⁵² Maritime distress and safety services in the lower L-band have been operational for years and are sufficiently dynamic and robust to accommodate the operation of half-duplex METs. Furthermore, consistent with the intent of U.S. Footnote 315 and Radio Regulation 726c, Inmarsat and others currently operate half-duplex "Standard C" or other technically similar data METs in the lower L-band without any adverse effects on maritime safety and distress communications. Adopting both a maximum time limit on data message transmissions and the proposed standards in Appendix B will ensure that any additional half-duplex data METs authorized to operate in the lower L-band will not interfere with maritime safety and distress communications. We seek comments generally on our proposal and on whether the operation of half-duplex METs in the lower L-band will affect the operation of maritime safety and distress communications. More specifically, we seek comment on the proposed standards in Appendix B and on the maximum number of seconds to which we should limit half-duplex data MET transmissions in order to ensure the integrity of maritime safety and distress communications in the lower L-band. Although we do not know what the appropriate maximum time limit should be for a transmission, we believe the limit should be a matter of seconds not minutes.

Conclusion

28. In this Notice we have outlined our proposed policies for the provision of mobile-satellite service in the L-band and our proposal to modify AMSC's existing authorization to permit it to operate in the entire L-band. We request comment on the issues and proposals addressed in this Notice and encourage all interested parties to participate in the resolution of this matter.

29. Our initial analysis pursuant to the Regulatory Flexibility Act, Pub. L. 96-354, is presented in Appendix A. Our initial conclusion is that the actions proposed in this proceeding will not have a significant economic impact on a substantial number of small businesses if ultimately adopted.

30. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments on or before September 3, 1996, and reply comments on or before September 23, 1996. To file formally in this proceeding, you must file an original and five copies of all comments, reply comments, and supporting comments. If you want each Commissioner to receive a personal copy of your comments, send additional copies to Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the Federal Communications Commission, Reference Center, Room 239, 1919 M Street, N.W. Washington, D.C. 20554.

31. This is a rulemaking proceeding to develop policies for the assignment of spectrum but because the Commission also proposes to modify a license, this proceeding is also an adjudication. Pursuant to Section 1.1200(a) of the Commission's Rules, Section 1.1208 detailing the *ex parte*

⁵² A full-duplex MET can receive a data message while transmitting one. A half-duplex MET cannot receive and transmit data messages simultaneously. It must finish transmitting its message before it can receive an incoming maritime safety message.

procedures for adjudicatory proceedings is waived. The entire proceeding both, rulemaking and adjudication, shall be treated as "non-restricted" for *ex parte* purposes in order to assist the Commission in developing a more complete record on which a well-reasoned decision can be made. 47 C.F.R. §§ 1.1200(a) and 1.1206. *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 C.F.R. §§ 1.1202, 1.1203, and 1.1206(a). The Sunshine Agenda period is the period of time that commences with the release of public notice that a matter has been placed on the Sunshine Agenda and terminates when the Commission (1) releases the text of a decision or order in the matter; (2) issues a public notice stating that the matter has been deleted from the Sunshine Agenda; or (3) issues a public notice stating that the matter has been returned to the staff for further consideration, whichever occurs first. 47 C.F.R. § 1.1202(f). During the Sunshine Agenda period, no presentations, *ex parte* or otherwise, are permitted unless specifically exempted. 47 C.F.R. § 1.1203.

32. In general, an *ex parte* presentation is any communication directed to the merits or outcome of the proceeding made to decision-making personnel that (1) if written, is not served on the parties to the proceeding, or (2) if oral, is made without advance notice to the parties to the proceeding and without opportunity for them to be present. 47 C.F.R. § 1.1202(b). Any person who makes or submits a written *ex parte* presentation shall provide on the same day it is submitted, two copies of the same under separate cover to the Commission's Secretary for inclusion in the public record. The presentation (as well as any transmittal letter) must clearly indicate on its face the docket number of the particular proceeding and the fact that two copies of it have been submitted to the Secretary, and must be labeled or captioned as an *ex parte* presentation. 47 C.F.R. § 1.1206(a)(1).

33. Any person who is making an oral *ex parte* presentation including data or arguments not already reflected in the person's written comments, memoranda, or other previous filings in that proceeding shall provide on the day of the oral presentation an original and one copy of a written memorandum to the Secretary (with a copy to the Commissioner or staff member involved) that summarizes the data and arguments. The memorandum (as well as any transmittal letter) must clearly indicate on its face the docket number of the particular proceeding and the fact that an original and one copy of it have been submitted to the Secretary, and must be labeled or captioned as an *ex parte* presentation. 47 C.F.R. § 1.1206(a)(2).

34. For further information concerning this rulemaking contact Paula Ford (202) 739-0733 of the International Bureau, Federal Communications Commission, Washington, D.C. 20554.

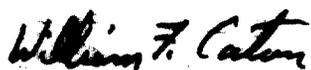
Ordering Clause

35. Accordingly, pursuant to authority contained in Sections 4(i), 4(j), 303, 316 and 403 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 154(j), 303, 316 and 403, we hereby give notice of our intent to adopt the licensing policies set forth herein and to modify, as specified herein, the license currently held by AMSC for the provision of MSS service.

36. IT IS ORDERED that the Secretary shall send a copy of this Notice of Proposed Rule Making to the Chief Counsel for Advocacy of the Small Business Administration in accordance with 5 U.S.C.

§ 601 et. seq. (1981) and pursuant to Section 1.87 of the rules, shall serve a copy of this Notice on AMSC.

FEDERAL COMMUNICATIONS COMMISSION

A handwritten signature in black ink that reads "William F. Caton". The signature is written in a cursive style with a prominent initial "W".

William F. Caton
Acting Secretary

APPENDIX A

INITIAL REGULATORY FLEXIBILITY ANALYSIS

Reason for Action

This rule making and license modification proceeding is initiated to solicit comments and develop a record regarding the types of rules and policies that should govern the provision of mobile-satellite service in the 1525-1530, 1530-1544, 1544-1545, 1545-1559, 1626.5-1645.5, 1645.5-1646.5, and 1646.5-1660.5 MHz frequency bands. The proposed rules are in response to a petition for rule making and the expected results of the international coordination of the above noted spectrum.

Objectives

The objective of this proposal is to continue the United States goal of establishing generic mobile-satellite service in the L-band and ensuring that a licensee authorized to provide mobile-satellite service has sufficient spectrum to do so. Achieving these goals will help to satisfy the growing national demand for communications services.

Legal Basis

The proposed action is authorized under sections 4(i), 303(c), 303(f), 303(g), 303(r), and 316 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(c), 303(f), 303(g), 303(r), and 316. These sections authorize the Commission to make such rules and regulations as may be necessary to encourage more effective use of radio in the public interest and to modify licenses in the public interest.

Reporting, Recordkeeping and Other Compliance Requirements

None.

Federal Rules Which Overlap, Duplicate or Conflict With These Rules

None.

Description, Potential Impact, and Number of Small Entities Involved

This proposed rulemaking establishes policies for use of the L-band by mobile-satellite service systems. Aeronautical, land, and maritime mobile-satellite services currently operate in the L-band and can still be accommodated in the framework proposed here, so no small facilities will be affected. We invite interested parties to submit comments if they perceive an economic impact resulting from the proposed policies. After evaluating the comments in this proceeding, the Commission will further examine the impact of any policy changes on small entities and set forth our findings in a Final Regulatory Flexibility Analysis.

Any Significant Alternatives Minimizing the Impact on Small Entities Consistent with the Stated Objectives

The Notice solicits comments on alternatives.

APPENDIX B

PROPOSED MOBILE SATELLITE SERVICE SYSTEM AND SERVICE CAPABILITIES/FUNCTIONS⁵³

Mobile Earth Stations ("MESs") associated with the Mobile Satellite Service ("MSS") operating in the 1530-1544 MHz and 1626.5-1645.5 MHz bands shall have the following minimum set of capabilities To ensure compliance with Footnote 726C and the priority and real-time preemption requirements imposed by Footnote US315.

1. All MES transmissions shall have a priority assigned to them that preserves the priority and preemptive access given to maritime distress and safety communications sharing the band.
2. Each MES with a requirement to handle maritime distress and safety communications shall be capable of recognizing message and call priority identification when transmitted from its associated Land Earth Station ("LES").⁵⁴
3. Each MES shall be assigned a unique terminal identification number that will be transmitted upon any attempt to gain access to a system.
4. After an MES has gained access to a system , the mobile terminal shall be under control of an LES and shall obtain all channel assignments from it.
5. All MESs that do not continuously monitor a separate signalling channel or signalling within the communications channel shall monitor the signalling channel at the end of each transmission.
6. Each MES shall automatically inhibit its transmissions if it is not correctly receiving separate signalling channel or signalling within the communications channel from its associated LES.

⁵³ In order to assure timely (Priority and preemptive) access to the system for maritime distress and safety-related communications, it is necessary that certain system requirements be satisfied. It is required that certain functions be under direct control of the system management process. These direct control functions (e.g., cessation of transmission under certain conditions) are to be carried out by hardware/software capabilities without operator intervention and are to be performed in a timely fashion with only minimum delay. Additionally, it is required that the priority associated with each transmission and the terminal identification number be provided to the system manager to support the direct control functions.

⁵⁴ An LES is considered to include the functions of radio transmission and reception of signalling information and of communications, and to include the associated system management and control functions necessary for meeting these requirements. Implementations consisting of more than one facility that collectively provide the required capabilities are considered to constitute an LES for purposes of this definition.

7. Each MES shall automatically inhibit its transmissions on any or all channels upon receiving a channel-shut-off command on a signalling or communications channel it is receiving from its associated LES.
8. Each MES with a requirement to handle maritime distress and safety communications shall have the capability within the station to automatically preempt lower precedence traffic.

Land Earth Stations associated with the Mobile Satellite Service ("MSS") operating in the 1530-1544 MHz and 1626.5-1645.5 MHz bands shall have the following minimum set of capabilities to ensure that the MSS system complies with Footnote 726C and the priority and real-time preemption requirements imposed by Footnote US315. It should be noted that the LES operates in the Fixed-Satellite Service ("FSS") as a feeder-link for the MSS (Radio Regulations 71) and that the following capabilities are to facilitate the priority and preemption requirements of the above footnotes. The FSS feeder-link stations fulfilling these MSS requirements shall not have any additional priority with respect to FSS stations operating with other FSS systems.

1. All LES transmissions to Mobile Earth Stations ("MESs") shall have a priority assigned to them that preserves the priority and preemptive access given to maritime distress and safety communications.
2. The LES shall recognize the priority of calls to and from MES and make channel assignments taking into account the priority access that is given to maritime distress and safety communications.
3. The LES shall be capable of receiving the MES identification number when transmitted and verifying that it is an authorized user of the system to prohibit unauthorized access.
4. The LES shall be capable of transmitting channel assignment commands to the MESs.
5. The communications channels used between the LES and the MES shall have provision for signalling within the voice/data channel, for an MES which does not continuously monitor the LES signalling channel during the time of a call.
6. The LES shall transmit periodic control signalling signals to MES which do not continuously monitor the LES signalling channel.
7. The LES shall automatically inhibit all transmissions to MESs to which it is not transmitting a signalling channel or signalling within the communications channel.
8. The LES shall be capable of transmitting channel-shut-off commands to the MESs on signalling or communications channels.
9. An LES with a requirement to handle maritime distress and safety communications shall have the capability within the station to automatically preempt lower precedence traffic.

10. Each LES shall be capable of automatically turning off one or more of its associated channels.