LAW OFFICES

FISHER, WAYLAND, COOPER AND LEADER

1255 TWENTY-THIRD STREET, N.W.
SUITE 800
WASHINGTON, D. C. 20037-1170
TELEPHONE (202) 659-3494
TELECOPIER (202) 296-6518

WRITER'S DIRECT NUMBER
(202) 775-5677

BEN C. FISHER
GROVER C. COOPER
MARTIN R. LEADER
RICHARD R. ZARAGOZA
CLIFFORD M. HARRINGTON
JOEL R. KASWELL
KATHRYN R. SCHMELTZER
DOUGLAS WOLOSHIN
BRIAN R. MOIR
DAVID D. OXENFORD
BARRY H. GOTTFRIED
ANN K. FORD
BRUCE D. JACOBS
ELIOT J. GREENWALD
CARROLL JOHN YUNG
JOHN JOSEPH MCVEIGH
BARRIE D. BERMAN
JOHN K. HANE III
BRUCE F. HOFFMEISTER
MICHELLE N. PLOTKIN
SCOTT R. FLICK
FRANCISCO R. MONTERO
GREGORY L. MASTERS*
MATTHEW P. ZINN
ROBERT C. FISHER
LAUREN ANN LYNCH*
BRIAN J. CARTER

*NOT ADMITTED IN D.C.

BEN S. FISHER
(1890-1954)

CHARLES V. WAYLAND
(1910-1980)

OF COUNSEL
JOHN Q. HEARNE

MCI MAIL: FWCLDC

November 14, 1991

RECEIVED

NOV 1 4 1991

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Ms. Donna R. Searcy
Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Re: Petition of Constellation Communications, Inc.
RM-7771

Dear Ms. Searcy:

Enclosed on behalf of American Mobile Satellite Corporation ("AMSC") is an original and five copies of its Reply Comments on the above-referenced petition for rulemaking filed by Constellation Communications, Inc. ("Constellation"). AMSC is consolidating its Reply Comments on the Constellation petition with its Reply Comments on three other petitions for rulemaking (RM-7773, RM-7805 and RM-7806) that raise similar issues and have the same filing deadlines. To insure that AMSC's pleading is associated with each of the rulemaking files, under separate cover we also are submitting this same pleading in the other three files.

Please contact the undersigned if there are any questions.

Sincerely,

Gregory L. Masters

GLM:jlm

ORIGINAL

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C.

RECEIVED

NOV 1 4 1991

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of the Petition of AMERICAN MOBILE SATELLITE CORPORATION Amendment of Parts 2, 22 and 25 of the Commission's Rules to Allocate Spectrum for the Mobile Satellite Service	RM-7806
In the Matter of the Petition of CONSTELLATION COMMUNICATIONS, INC. Amendment of Parts 2 and 25 of the Commission's Rules to Implement LEO Satellite Systems in the RDSS Bands and Grant a Pioneer's Preference	RM-7771
In the Matter of the Petition of TRW INC. Amendment of Sections 2.106 and 25.141 of the Commission's Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to Satellite Systems in the RDSS Bands	RM-7773
In the Matter of the Petition of ELLIPSAT CORPORATION To Amend Sections 2.106, 25.141 and 25.201 of the Commission's Rules	RM-7805

REPLY COMMENTS OF AMERICAN MOBILE SATELLITE CORPORATION

Bruce D. Jacobs
Glenn S. Richards
Gregory L. Masters
Fisher, Wayland, Cooper & Leader
1255 23rd Street, N.W.
Suite 800
Washington, D.C. 20037
(202) 659-3494

Lon C. Levin
Vice President and
Regulatory Counsel
American Mobile Satellite
Corporation
1150 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 331-5858

Dated: November 14, 1991

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C.

RECEIVED

NOV 1 4 1991

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of the Petition of AMERICAN MOBILE SATELLITE CORPORATION Amendment of Parts 2, 22 and 25 of the Commission's Rules to Allocate Spectrum for the Mobile Satellite Service	)	RM-7806
In the Matter of the Petition of CONSTELLATION COMMUNICATIONS, INC. Amendment of Parts 2 and 25 of the Commission's Rules to Implement LEO Satellite Systems in the RDSS Bands and Grant a Pioneer's Preference	)	RM-7771
In the Matter of the Petition of TRW INC. Amendment of Sections 2.106 and 25.141 of the Commission's Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to Satellite Systems in the RDSS Bands	)	RM-7773
In the Matter of the Petition of ELLIPSAT CORPORATION To Amend Sections 2.106, 25.141 and 25.201 of the Commission's Rules	)	RM-7805

REPLY COMMENTS OF AMERICAN MOBILE SATELLITE CORPORATION

Bruce D. Jacobs
Glenn S. Richards
Gregory L. Masters
Fisher, Wayland, Cooper & Leader
1255 23rd Street, N.W.
Suite 800
Washington, D.C. 20037
(202) 659-3494

Lon C. Levin
Vice President and
Regulatory Counsel
American Mobile Satellite
Corporation
1150 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 331-5858

Dated: November 14, 1991

SUMMARY

American Mobile Satellite Corporation continues to urge the Commission to reallocate 10 MHz of the RDSS uplink band to MSS, along with a new 10 MHz downlink band. There is a severe international shortage of available MSS spectrum and new allocations are needed in the near future to help relieve this shortage. Before the Commission attempts to license additional MSS systems, such as those proposed by MSCI, Constellation, TRW and Ellipsat, it first should ensure that there is adequate spectrum for the initial MSS system.

AMSC is making considerable progress in developing the U.S. MSS system. Despite the obstacles created by the appeal of the MSS licensing orders, AMSC is investing tens of millions of dollars in its system and continues to construct the necessary space segment. AMSC also is preparing to offer an early service using leased space segment. The full development of a U.S. system, however, is in jeopardy unless there is adequate spectrum.

Several parties contend that the RDSS spectrum is better used for new proposed systems. The evidence, however, demonstrates overwhelmingly that there is not enough spectrum available in the RDSS bands for new systems. The cost of constructing the different systems ranges from the hundreds of millions to several billion dollars, yet none of them would be able to operate with more than a few dozen channels in the RDSS band. In addition, none of the proposed new systems would operate in a manner that is consistent with the existing RDSS

rules. (See table infra at p. 16.) Moreover, even if these and other technical and financial problems did not exist, it is clear that the process of selecting a licensee for any new system would be very time-consuming, during which the spectrum could not be put to good use. By contrast, AMSC can add this new spectrum for its satellites at a nominal cost and thereby provide substantial additional capacity to the U.S. public in the near term.

AMSC has identified several candidate bands for a new 10 MHz MSS downlink. The optimal downlink allocation would be 1515-1525 MHz, because it is adjacent to the existing MSS allocations. In response to concerns raised by existing aeronautical telemetry users of the 1515-1525 MHz band, AMSC presents additional evidence that MSS can share the band with the current users.

TABLE OF CONTENTS

	Page
SUMMARY	i
REPLY COMMENTS OF AMERICAN MOBILE SATELLITE CORPORATION	1
BACKGROUND	2
DISCUSSION	7
I. AMSC Needs Additional Spectrum to Implement the U.S. MSS System	7
II. AMSC Is Best Able to Put the RDSS Spectrum to Use in the Public Interest	12
CONCLUSION	17

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C.

RECEIVED

NOV 1 4 1991

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of the Petition of AMERICAN MOBILE SATELLITE CORPORATION Amendment of Parts 2, 22 and 25 of the Commission's Rules to Allocate Spectrum for the Mobile Satellite Service	)	RM-7806
In the Matter of the Petition of CONSTELLATION COMMUNICATIONS, INC. Amendment of Parts 2 and 25 of the Commission's Rules to Implement LEO Satellite Systems in the RDSS Bands and Grant a Pioneer's Preference	)	RM-7771
In the Matter of the Petition of TRW INC. Amendment of Sections 2.106 and 25.141 of the Commission's Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to Satellite Systems in the RDSS Bands	)	RM-7773
In the Matter of the Petition of ELLIPSAT CORPORATION To Amend Sections 2.106, 25.141 and 25.201 of the Commission's Rules	)	RM-7805

REPLY COMMENTS OF AMERICAN MOBILE SATELLITE CORPORATION

American Mobile Satellite Corporation ("AMSC"), by its attorneys, hereby submits these Reply Comments in connection with the above-referenced petitions of AMSC, Constellation Communications, Inc. ("Constellation"), TRW Inc. ("TRW"), and

Ellipsat Corporation ("Ellipsat").[1/] As demonstrated below, the public interest would be served best by reallocating the Radiodetermination Satellite Service ("RDSS") uplink band to the Mobile Satellite Service ("MSS") and assigning the spectrum to the U.S. MSS system.

Background

On June 3, 1991, AMSC filed a Petition requesting that the Commission: (1) reallocate frequencies from the RDSS uplink band (1616.5-1626.5 MHz) to MSS; (2) allocate a new, matching 10 MHz downlink band to MSS;[2/] (3) assign the new MSS frequencies to the U.S. MSS system; and (4) dismiss or deny the applications of Ellipsat and Motorola Satellite Communications, Inc. ("MSCI") for construction of satellite systems using the RDSS band. Along with its Petition, AMSC also submitted an application demonstrating how it would modify its satellites to implement its proposal.

In its Petition, AMSC pointed out that the U.S. MSS system still faces considerable uncertainty and risk as to the amount of

---

1/ AMSC is the licensee of the U.S. Mobile Satellite Service system. See Memorandum Opinion, Order and Authorization, 4 FCC Rcd 6041 (1989), aff'd in part, rev'd in part, and remanded sub nom. Aeronautical Radio, Inc. v. FCC, 928 F.2d 428 (D.C. Cir. 1991). These Reply Comments are filed pursuant to the Commission's Public Notice of September 13, 1991 and its October 25, 1991 Order Extending Time for Reply Comments, which extended until this date the time for filing reply comments in this proceeding.

2/ AMSC proposes the 1515-1525 MHz band as the most effective downlink band. Alternatively, it proposes a ten megahertz segment of either: the 1850-1990 MHz band, the 2110-2130 MHz band, or the 2160-2180 MHz band.

spectrum available, and that it needs additional spectrum so that it can develop fully. AMSC demonstrated that, in light of the history of RDSS licensing and the bankruptcy of Geostar Corporation, the only remaining RDSS licensee, there is no point in preserving the existing RDSS allocation. AMSC can make the most effective and realistic use of the RDSS band of any potential system operation. Internationally, AMSC will be able to coordinate interference-free access to a portion of the band and is prepared to integrate these new bands into its system as soon as they become available. The new spectrum can be added to the U.S. MSS system satellites at a cost of as little as $1 million per satellite and no more than $10 million per satellite.[3/]

In addition to AMSC's Petition, Constellation, TRW and Ellipsat filed their own requests for rulemaking. The three petitioners seek changes in the Commission's rules for RDSS that would facilitate the licensing of the systems for which they submitted applications. Each of their proposed systems, as well as systems proposed in pending applications by MSCI and Loral Qualcomm Satellite Services, Inc. ("Loral"),[4/] contemplate

---

3/ AMSC also has applied for the 1530-1545 MHz/1626.5-1646.5 MHz bands. That application is being held in abeyance pending the Commission's decision whether to allocate those bands to MSS. In any event, because these bands are dominated by the Inmarsat system, AMSC does not expect that more than one or two MHz of usable spectrum from these bands will be available to the U.S. MSS system.

4/ MSCI and Loral also filed petitions seeking changes in the RDSS rules to accommodate their proposed systems, but those petitions were filed subsequent to the Commission's Public Notice soliciting comment on the AMSC, Constellation, TRW

(continued...)

providing primarily mobile voice and data service in the RDSS band, although they also would offer a form of position location service. At least three of the petitioners (Constellation, TRW and Ellipsat) suggest that the available spectrum is sufficient for the Commission to license several new systems.[5/]

In response to the Constellation, TRW and Ellipsat petitions, AMSC demonstrated that there is not enough spectrum in the RDSS bands for the new systems being proposed, and furthermore, that each of the proposed systems is speculative and technically flawed. See Opposition of AMSC (filed October 16, 1991). Specifically, the systems will have extremely limited capacity, serious reliability problems, and will cause harmful interference to other users of the uplink band. Id. at 8-11. The National Academy of Sciences' Committee on Radio Frequencies ("CORF") filed comments pointing out the severe interference to the Radio Astronomy Service that would result from operation of the proposed new systems. CORF prefers AMSC's proposal, which would create a 2.7 MHz separation between the radio astronomy band and the lower limit of the new MSS uplink band.

4/(...continued)
and Ellipsat petitions. These Reply Comments address the MSCI and Loral petitions to the extent that they raise issues similar to those raised by the Constellation, TRW and Ellipsat petitions. AMSC, however, reserves the right to further discuss the MSCI and Loral proposals in its comments on their applications, which are presently due to be filed on or before December 18, 1991, and to comment further on their petitions if they are placed on public notice.

5/ Petition of Constellation at 7; Petition of TRW at 14; Opposition of Ellipsat to Petitions, and Reply to Comments, at 6-7 (July 3, 1991).

Several parties filed comments opposing AMSC's Petition in whole or in part. Four of those (Constellation, MSCI, TRW, and Loral) are themselves proponents of new systems.[6/] They claim that the Commission should retain the RDSS uplink allocation for their proposed systems. In addition, Satellite CD Radio ("SCDR") filed an opposition to AMSC's Petition combined with a petition to deny AMSC's application to implement its proposal.[7/] The Aerospace and Flight Test Radio Coordinating Council ("AFTRCC") also filed comments in opposition to AMSC's Petition. SCDR and AFTRCC object to AMSC's proposal to utilize the 1515-1525 MHz band as a paired downlink.[8/] The Association of American

---

6/ Constellation also filed separate comments addressing, respectively, the AMSC and TRW Petitions. These Reply Comments primarily address Constellation's comments on the AMSC Petition, and address the comments on the TRW Petition to the extent they raise similar issues.

7/ SCDR complains that AMSC violated the Commission's procedural rules by not serving a copy of its June 3, 1991 Petition on SCDR. This contention should be rejected summarily. Section 1.401 of the Commission's Rules, which governs petitions for rulemaking, does not contain a requirement that a petition for rulemaking be served on any "party" other than the Commission. The only exception is Section 1.401(d), which applies only to petitions to amend the FM and TV tables of allotments. Moreover, SCDR cannot claim to be prejudiced in any way, as the Commission has solicited public comment on AMSC's Petition and SCDR has responded to that invitation.

Insofar as the Commission's September 13, 1991 Public Notice solicited comment on the various petitions for rulemaking, not the pending applications, SCDR's request for denial of AMSC's application is clearly improper and should be rejected summarily.

8/ AFTRCC claims that AMSC's request to allocate the 1515-1525 MHz band to MSS should be dismissed as moot, arguing that this matter was "resolved" in the Commission's Report in Gen. Docket 89-554, 6 FCC Rcd 3900 (1991) ("WARC Report"). This contention is without merit. The report AFTRCC cites

(continued...)

Railroads ("AAR") submitted a Partial Opposition to AMSC's Petition insofar as AMSC requests reallocation of a portion of the 1850-1990 MHz band for an alternative paired downlink.[9/]

Generally, those in opposition to AMSC's Petition contest AMSC's assertion that more spectrum is needed for the U.S. MSS system. They question why AMSC cannot "make do" with the spectrum it thus far has been able to coordinate,[10/] they attempt to diminish the significant progress that AMSC has made toward instituting the U.S. MSS system,[11/] and some even go so far as to accuse AMSC of acting solely to protect a monopoly.[12/] Several commentors allege that AMSC's proposal is deficient because AMSC proposes to provide position location service using the U.S. government's Global Positioning System ("GPS").

As set forth below, all of these contentions should be rejected, and the RDSS band should be reallocated to MSS and

---

8/(...continued)
contains the Commission's recommendations for U.S. proposals at the 1992 WARC. The report does not prejudge the outcome of the conference, nor is it binding with respect to future domestic allocations by the Commission.

9/ Communications Satellite Corporation ("Comsat") submitted comments supporting the commencement of a "comprehensive rulemaking" in the use of the RDSS band, but opposing any reallocation of the band until after the 1992 World Administrative Radio Conference. The Comsat comments are not addressed herein, except to note that AMSC urges the Commission to act expeditiously on the pending petitions.

10/ See Comments of TRW at 6-7; Comments of SCDR at 4; Comments of AFTRCC at 4.

11/ See Comments of Constellation on AMSC Petition at 3; Comments of SCDR at 11; Comments of AFTRCC at 5-6.

12/ See Comments of SCDR at 10-14; Comments of Loral at 4-5.

assigned to the U.S. MSS system. AMSC needs the additional spectrum presently allocated to RDSS, which currently lies dormant. AMSC has made tremendous progress under difficult circumstances in making the U.S. MSS system a reality. AMSC, and not the proponents of unproven and technically questionable systems, is best able to put the RDSS spectrum to use in the public interest.

Discussion

I. AMSC Needs Additional Spectrum to Implement the U.S. MSS System

AMSC has repeatedly demonstrated in this and other proceedings that there is a critical international shortage of much-needed spectrum that is jeopardizing the Commission's policy of licensing a viable U.S. MSS system. See, e.g., AMSC Petition at 15; Comments of AMSC in Gen. Docket No. 89-554 (filed December 3, 1990) at 3-6. Foreign administrations have submitted notices to the International Frequency Registration Board ("IFRB") on behalf of over two dozen foreign systems that seek to use the spectrum that the Commission has assigned to AMSC, and at least two administrations (Inmarsat and the Soviet Union) already are using AMSC's frequencies in North America and vicinity. The recent expansion efforts of Inmarsat, and the plans of Canada, the Soviet Union and Mexico, among others, to build MSS systems, promise to restrict severely the U.S. system's access to the MSS band. The upcoming 1992 World Administrative Radio Conference ("WARC") presents an opportunity to alleviate the current

congestion, but the conference is likely to allocate at most only a small amount of additional spectrum that could be used in the United States in the near future. While AMSC expects that some additional allocation of MSS spectrum will be made at the 1992 WARC, such spectrum is not likely to be available for use for a considerable period of time. AMSC's need for additional MSS spectrum is immediate.

Many of AMSC's opponents make the simplistic argument that additional spectrum should not be assigned to AMSC when the U.S. MSS system has not begun operating yet on its existing spectrum.[13/] This argument merely demonstrates those parties' lack of understanding of the requirements for developing and coordinating a new satellite system. As discussed below, AMSC is making substantial progress in developing its MSS system and the U.S. is making considerable progress on AMSC's behalf in coordinating the U.S. system internationally. The progress made to date amply demonstrates both that AMSC will be in a position to use the spectrum already allocated to MSS and that AMSC is likely to need additional spectrum to develop fully.

Moreover, AMSC's opponents understate the severity of the MSS spectrum shortage in the current MSS bands, and the ramifications of this shortage for the U.S. system. It is already apparent that the limited spectrum currently assigned to AMSC is proving insufficient to support the development of the

---

13/ See, e.g., Comments of Constellation on AMSC Petition at 3; Comments of TRW at 6; Comments of AFTRCC at 4.

proposed U.S. MSS system.[14/] When it allocated spectrum for a U.S. MSS service, the Commission determined that for the system to be economically viable and provide a full range of services, it would require at least 20 MHz of spectrum. See Notice of Proposed Rulemaking in Gen. Docket No. 84-1234, 50 Fed. Reg. 8149, paras. 9-11 (February 28, 1985). While coordination of spectrum for the U.S. MSS system is progressing, it is unlikely that this 20 MHz will be available to the U.S. system from the currently allocated spectrum. The reallocation of the RDSS uplink band and a matching 10 MHz downlink band would do much to ameliorate this shortage and further the development of the U.S. MSS system.

SCDR is wrong in suggesting that additional spectrum is not needed for the U.S. MSS system, because cellular telephone service and what it calls "little" low earth orbit ("LEO") systems have eliminated much of the demand for MSS spectrum. This argument is simply incorrect. Terrestrial cellular

---

14/ Constellation argues in its comments on the AMSC Petition (at p.6) that "[t]he Commission has never granted AMSC a monopoly for the provision of space segment for domestic MSS." Constellation misses the point. AMSC has never claimed that it has a right to spectrum on the basis that the government has conferred on it some sort of "monopoly" over that spectrum. The Commission has decided, however, in large part on the basis of spectrum scarcity, that it is able to license only one domestic MSS system. See Notice of Proposed Rulemaking in Gen. Docket No. 84-1234, 50 Fed. Reg. 8149, para. 23 (February 28, 1985); Second Report and Order in Gen. Docket No. 84-1234, 2 FCC Rcd 485, paras. 4-8 (1987), recon. denied, 4 FCC Rcd 6029 (1989). With the worsening MSS spectrum shortage, that basis for the Commission's determination remains valid today.

telephone service will leave vast areas of the country unserved.[15/] "Little LEO's" do not provide a substitute for MSS service, since they will have very limited capacity and offer no voice services at all.

SCDR is also incorrect in asserting that the United States will not benefit from having its own MSS system, as opposed to having MSS provided by foreign or international entities such as Inmarsat. The American public will have greater access to MSS facilities if there is a distinct U.S. system, since the U.S. system is designed for and dedicated to U.S. service. A comparison of AMSC's system with what is being built and launched by Inmarsat demonstrates that a U.S. system provides far more benefits to the U.S. public. AMSC's system is several times more efficient in providing service to the United States. This means more capacity and lower prices for U.S. customers. Furthermore, the availability of facilities and the security of the communications are more certain if a U.S. entity owns the system. There may be instances, as SCDR points out, in which the U.S. must use foreign-owned facilities for sensitive communications, but such situations clearly carry greater risk. In sum, the record is clear that the U.S. MSS system is in need of additional spectrum, and that the U.S. would benefit from such spectrum being available.

15/ AMSC's research has indicated that some 50% of the nation's geographic area will be left unserved by terrestrial cellular telephone service. Indeed, it is ironic that SCDR should make such a claim, for one of its stated primary reasons for being is supposedly to provide satellite-delivered broadcasting service to persons who cannot receive service from terrestrial broadcast stations.

In addition to the reallocation of the RDSS uplink band to MSS, AMSC has requested that the Commission allocate to MSS 10 MHz of matching downlink spectrum, preferably the 1515-1525 MHz band. AFTRCC opposes this allocation request on the ground that it would adversely impact aeronautical telemetry users.[16/] Contrary to AFTRRC's assertions, however, sharing between MSS and aeronautical telemetry is possible. As shown in the attached Technical Appendix, AMSC's prior conclusion remains valid that implementation of the proposed MSS allocation at 1515-1525 MHz will not require any frequency reaccommodation of existing and planned aeronautical telemetry facilities.

Finally, AAR opposes AMSC's proposal insofar as it requests a 10 MHz matching downlink allocation from the 1850-1990 MHz band.[17/] AMSC recognizes that spectrum sharing in this band would be more difficult than in the 1515-1525 MHz band, and reiterates that it proposes the 1850-1990 MHz band as a matched downlink as a less favored alternative. Even so, AMSC believes that a significant portion of that band can be reallocated domestically to MSS without adverse impact on fixed microwave

---

16/ SCDR also opposed AMSC's proposal to allocate the 1515-1525 MHz band to MSS. However, SCDR has recently abandoned its proposal to seek L-band spectrum for its proposed Broadcast Satellite (Sound) Service ("BSS (Sound)") system. See SCDR's Request for Conditional Authority to Begin Construction of Satellite System, filed November 1, 1991. Therefore, AMSC will not herein address the issue of the impact of an MSS allocation in the 1515-1525 MHz band on SCDR's proposed system, except to note that sharing of spectrum between MSS and BSS (Sound) would be far easier than sharing between BSS (Sound) and aeronautical telemetry.

17/ The U.S. also proposes an MSS allocation in the 1850-1990 MHz band for the 1992 WARC.

services, and that many existing users can reduce the amount of spectrum they are assigned without adversely affecting their operations. See Supplemental Comments of AMSC in Gen. Docket No. 89-554, at 11-13 (February 21, 1991).

Thus, AMSC has shown the need for the uplink and downlink spectrum it requests, and has demonstrated that this spectrum can be allocated without adverse impact on existing users.

II. AMSC Is Best Able to Put the RDSS Spectrum to Use in the Public Interest

Those commentors with pending applications for systems in the RDSS band claim that AMSC has not made sufficient progress in implementing the U.S. MSS system, and that by contrast, their proposals hold the promise of imminent, innovative service to the public. In fact, however, AMSC has made huge progress in developing the U.S. MSS system, whereas their systems at best are in far earlier stages of development. Despite the obstacles it has faced, AMSC has firm technical specifications for a high-capacity system using proven spectrum-efficient technology. Construction of AMSC's first satellite is well under way, and AMSC soon will commence ground segment construction. International frequency coordination is at an advanced stage. In the interim, in order to bring some of the benefits of its system to the public, AMSC has developed an early service system using a satellite leased from Inmarsat and AMSC's own network operations center. Moreover, the licensing issues to which so many

commentors point are being resolved. See Tentative Decision in Gen. Docket No. 84-1234, 6 FCC Rcd 3900 (1991).[18/]

AMSC's financial qualifications to implement its system are a matter of record with the Commission. Tens of millions of dollars have already been invested in the U.S. MSS system, and the present RDSS frequencies, which are contiguous to the MSS allocation, can be added at a minimal cost of as low as $1 million per satellite, and no more than $10 million per satellite.[19/]

AMSC's system will provide a number of reliable, beneficial and innovative services to the U.S. public. AMSC is well on its way to providing high-quality mobile communications to customers in rural, unserved areas throughout the nation. Loral argues that the RDSS band should not be reallocated to MSS because in its view AMSC's geostationary system is antiquated and unable to provide service to hand-held units in the first generation.

18/ A number of commentors, in particular SCDR, seek to cast aspersions on AMSC as some sort of evil monopolist. Nothing could be further from the truth. As AMSC has stated many times, it is not opposed to competition. AMSC expects to face competition domestically from terrestrial mobile radio systems such as rural cellular and from other satellite technologies, as well as competition in the international market from Inmarsat and other foreign systems.

19/ SCDR misconstrues AMSC as asserting that the addition of the RDSS frequencies to the U.S. MSS system will result in a cost savings of between $1 million and $10 million. Comments of SCDR at 6. In fact, that estimate reflects the additional cost of adding the RDSS band. The cost savings from adding the RDSS frequencies are far greater. The measurement of these savings is essentially the difference between the $1 million-$10 million incremental cost of adding the bands to AMSC's satellites, versus the cost of constructing, launching and initially operating an entire new dedicated system for the band. These costs for the RDSS band systems range as high as $3.7 billion.

Comments of Loral at 5-6. The real issue, however, is which of the petitioners is most readily capable of providing two-way mobile communications of any type in the RDSS bands. That party is AMSC, and its mobile communications service is both practical and spectrum-efficient.

Furthermore, as shown in the attached Technical Appendix, AMSC's GPS-based position location service will preserve the Commission's intent in creating an RDSS allocation by providing at little or no cost position location service that is superior in quality to that proposed by the pending new systems.[20/] As demonstrated in the attached Technical Appendix, AMSC's system will provide more accurate position location service with greater speed and reliability than the proposed new systems, with equal or greater spectrum efficiency and at no higher cost.

Because AMSC's proposal for the RDSS band is firm and immediately workable, and because the establishment of a "pure" RDSS system has proven to be an economically infeasible proposition, there is no point in requiring the sharing of this

---

20/ Some commentors assert that AMSC's proposed relaying of information from GPS via receivers adapted for that service is not "true" RDSS service under the Commission's rules for the allocation. See Comments of Loral at 2-4; Comments of MSCI at 24. This assertion is incorrect. In response to an earlier proposal for a GPS-based RDSS system, the Commission recognized GPS-based RDSS as a legitimate RDSS technology. Memorandum Opinion and Order, 104 F.C.C.2d 637, 640 (1986).

Moreover, as demonstrated in the attached Technical Appendix, AMSC's mobile earth stations will employ the propagation properties of signals from GPS satellites in order to effect radionavigation, and will convey locally determined positions to other users in order to effect radiolocation. This is RDSS service in accordance with the definition established by the FCC and by the International Radio Regulations, Nos. 10 and 39.

spectrum with non-existent RDSS systems. For the same reasons, there is no longer any point in the U.S. proposing footnote 733Z to the international frequency allocations, which would require MSS systems in the RDSS uplink band to ensure compatibility with RDSS systems,[21/] as that footnote was proposed before it became clear that Geostar would not go forward with its RDSS system.

While AMSC is in a position to put the RDSS frequencies to use, the other proposals for those frequencies pending before the Commission are so speculative and deficient as to hold absolutely no promise of becoming reality at any time in the foreseeable future. AMSC has already shown in detail the serious design questions that surround each of the petitioners' proposals. These problems include virtually non-existent capacity, spectrum inefficiency, poor system reliability, and interference to other users of the band.[22/]

In any event, and most fundamentally, not a single one of these applicants proposes a system consistent with the RDSS

21/ See WARC Report, 6 FCC Rcd at 3939. Proposed footnote 733Z provides:

> Systems in the mobile-satellite service shall be introduced into these bands in accordance with appropriate CCIR Recommendations in order to ensure compatibility with the radiodetermination-satellite service.

22/ See AMSC Petition at 21-24; Opposition of AMSC, filed October 16, 1991, at 10-11; and Technical Appendices to those pleadings. As CORF recognizes, AMSC's proposal does not present the interference problems to radio astronomy that the others do, as AMSC proposes the lower limit of its use of the RDSS uplink band to be separated by 2.7 MHz from the Radio Astronomy Service. Comments of CORF at 6.

allocation. Each of the pending applicants requests some form of waiver or rule change that would allow it, in one way or another, to operate at variance with the existing technical rules for RDSS. The fact is that there is not a single entity presently proposing to provide the service originally envisioned by the Commission when it adopted the RDSS allocation. The following table illustrates the many ways in which the proposed RDSS band systems deviate from the Commission's rules for that allocation.

CRITERION/APPLICANT	CCI	ELLIPSAT	LORAL	MOTOROLA	TRW
Compliance With Downlink PFD Limit	No	No	Yes	No	No
Compliance With Uplink EIRP Limit	No	No	No for system C	No	Yes
Use of Designated RDSS Feeder Link Bands	Yes	No	No for system C	No	No
All Messaging on an Ancillary Basis	No	No	No	No	No
Use of Random Access	No	No	No	No	No
Limitation of Emission Timing in Radio Astronomy Regions	No	No	No	No	No
Use of 16.5 MHz CDMA With Orthogonal Codes	No	No	No	No	No

Moreover, there are serious financial issues raised by the other pending applications. MSCI recognizes that "the financial community cannot support all of the proposed systems even if all of them could be accommodated technologically."[23/] Even should the Commission determine to retain the RDSS allocation for these speculative and technically flawed proposals, and even assuming that one or more of the pending applicants would be

23/ Comments of MSCI at 20.

financially able to commence construction in the near future, there would be a plethora of issues to be resolved as to the rules and policies for licensing the systems. A number of commentors, among them MSCI and Comsat, illustrate the many matters that the Commission would need to resolve before any of the proposed systems could commence construction. It would serve the public interest, and would avoid years of prolonged Commission proceedings, to reallocate the RDSS band to AMSC, which has shown that it needs the spectrum and is prepared to put it to use almost immediately.

The provision of RDSS service in the manner envisioned by the Commission when it adopted the allocation is no longer a realistic hope; indeed, not one of the petitioners in this proceeding proposes to provide RDSS service in such a manner. The only question, therefore, becomes which of the present proponents is prepared to provide the most practical, the most workable, and the most prompt use of the RDSS band. As set forth above, the answer is clearly AMSC. It follows that retaining the RDSS allocation to accommodate uncertain, deficient and hopelessly distant proposals for that band would affirmatively disserve the public interest.

Conclusion

AMSC has shown that there is no point in retaining the RDSS allocation, that the U.S. MSS system needs the spectrum, and that AMSC can immediately and efficiently implement a proven and workable proposal for that spectrum's use. The public interest

compels the allocation of the RDSS uplink band to MSS, along with a new 10 MHz downlink band, and the assignment of this new spectrum to AMSC. AMSC therefore urges the Commission to grant AMSC's June 3 Petition and deny the Petitions for Rulemaking filed by Constellation, TRW and Ellipsat.

Respectfully submitted,

AMERICAN MOBILE SATELLITE CORPORATION

Bruce D. Jacobs
Glenn S. Richards
Gregory L. Masters
Fisher, Wayland, Cooper & Leader
1255 23rd Street, N.W.
Suite 800
Washington, D.C. 20037
(202) 659-3494

Lon C. Levin
Vice President and
Regulatory Counsel
American Mobile Satellite
Corporation
1150 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 331-5858

Dated: November 14, 1991

TECHNICAL APPENDIX