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

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In re Applications of	)	
	)	
MOTOROLA SATELLITE COMMUNICATIONS, INC.	)	File Nos. 9-DSS-P-91(87)
	)	CSS-91-010
For Authority to Construct, Launch and	)	
Operate a Low Earth Orbit Satellite	)	
System in the 1610-1626.5 MHz Band.	)	
	)	
ELLIPSAT CORPORATION	)	File No. 11-DSS-P-91(6)
	)	
For Authority to Construct Ellipso I,	)	
an Elliptical Orbit Communication	)	
Satellite System in the 1610-1626.5 MHz	)	
and 2483.5-2500 MHz Bands	)	

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REPLY COMMENTS OF  
CONSTELLATION COMMUNICATIONS, INC.

DOMESTIC FACILITIES DIVISION  
SATELLITE RADIO BRANCH

Constellation Communications, Inc. ("CONSTELLATION"), by its attorneys, hereby opposes the initial comments of the American Mobile Satellite Corporation ("AMSC"), Hughes Aircraft Company ("Hughes") and the Communications Satellite Corporation ("COMSAT") in the above-captioned proceedings.

By Public Notice dated April 1, 1991,<sup>1/</sup> the Commission released for public comment the applications of Motorola Satellite Communications, Inc. ("Motorola") and Ellipsat Corporation ("Ellipsat"). Each applicant has requested Commission authorization to implement a low earth

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<sup>1/</sup> Public Notice, Report No. DS-1068 (April 1, 1991).

orbit ("LEO") satellite system in the RDSS bands. The Commission also invited potential applicants to submit proposals for competing LEO satellite systems. On June 3, 1991, CONSTELLATION submitted to the Commission comments on both the Motorola and Ellipsat applications as well as CONSTELLATION's application for authorization to construct 48 low earth orbit satellites which will comprise the ARIES™ satellite system. Comments and competing applications were filed by a number of other parties. In particular, AMSC, Hughes and COMSAT combined several matters in their pleadings which question the regulatory and technical viability of LEO satellite systems. For example, AMSC and Hughes propose reallocation of the radiodetermination satellite service ("RDSS") L-bands for geostationary earth orbit ("GEO") mobile satellite service ("MSS") and request reassignment of these frequencies for use by AMSC. CONSTELLATION by these comments strongly opposes these proposals and urges the Commission to expeditiously issue licenses for the pending LEO systems.

A. The Commission Must Move Expeditiously to License LEO Systems and Avoid Extraneous Issues that Will Delay Resolution of this Proceeding.

As CONSTELLATION has previously stated, the deployment of LEO satellite systems will bring the benefits of mobile communication services to currently unserved areas here and abroad. CONSTELLATION anticipates a robust demand for these services including position location services, messaging and

basic telephony. Moreover, LEO systems will serve as catalysts for commercial space activity generally, consistent with the goals of the U.S. National Space Policy. Given the dramatic benefits that LEO systems will offer, the Commission must act quickly to bring these services to the public in the near term.

In this regard, the Commission should reject efforts to introduce issues that do not directly relate to the authorization of LEO systems operating in the RDSS bands. The introduction of such issues will unnecessarily expand the scope of these proceedings and prevent an expeditious examination of the key licensing issues. The net result will be an extended delay in the implementation of service.

For instance, COMSAT has raised a number of questions concerning the international implications of LEO systems and the Commission's need to examine compliance with U.S. treaty obligations to INTELSAT and INMARSAT.<sup>2/</sup> CONSTELLATION believes that these issues are not central to the consideration of the pending application and therefore should not be allowed to delay the authorization of initial LEO systems. Rather, the Commission should focus on the technical issues relating to the introduction of LEO systems in the RDSS bands, and that most of

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<sup>2/</sup> Constellation also objects to COMSAT's presumption that AMSC has a monopoly on domestic LMSS. Comments of Communications Satellite Corporation at pp. 9-10.

the concerns raised by COMSAT would be alleviated by a multiple entry policy for LEO systems in these bands. Once authorizations have been issued, the Commission can concentrate on any international implications of LEO systems not addressed under current policy. By setting aside extraneous issues, the Commission will permit expeditious implementation of the first generation of service.

In addition, the Commission's preparations for the 1992 World Administrative Radio Conference ("WARC") are likely to be disrupted by attempts to include incompatible MSS systems using geostationary satellites, such as the one proposed by AMSC, in the RDSS bands. When the Commission first proposed adding MSS to the RDSS bands,<sup>3/</sup> it also proposed to limit MSS to spread spectrum systems to ensure compatibility between MSS and RDSS. Later, it was shown that certain LEO MSS systems not using spread spectrum techniques were compatible with RDSS.<sup>4/</sup> In addition, all of the new LEO applications filed on June 3, 1991 claim compatibility with RDSS and earlier filed LEO

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<sup>3/</sup> See Second Notice of Inquiry in General Docket No. 89-554, 5 FCC Rcd 6064 (1990).

<sup>4/</sup> See Sharing Between MSS-LEO Systems and GSO Systems in the Radiodetermination-Satellite Service, Radioastronomy, Radionavigation-Satellite and Aeronautical Correspondence Service in the Vicinity of 1.6 GHz, U.S. contribution to the 1991 CCIR Joint Interim Working Party to the 1992 WARC, Doc. JIWP92/54.

systems in the RDSS bands. Thus, the Commission's attempts in the 1992 WARC proceedings to increase the use of the RDSS bands by the introduction of multiple RDSS and LEO satellite systems on a compatible basis have received extensive validation and technical justification.

On the other hand, non-spread spectrum MSS systems using the geostationary earth orbit are basically incompatible with RDSS and LEO systems in the RDSS bands because such systems require transmissions at very high power densities compared to RDSS and LEO systems. AMSC has not attempted to make a showing in its June 3, 1991 filing that it is compatible with RDSS or LEO systems, nor is it likely to do so for the technical reasons given in the discussion below. Moreover, the Commission has identified other bands for future growth of GEO MSS systems in its Report on the WARC proceedings.<sup>5/</sup> Therefore, there is no need for the Commission to jeopardize the chances of success for its current 1992 WARC proposals that enhance the use of the RDSS bands by multiple RDSS and LEO systems just to keep the door open for the incompatible GEO MSS system proposed by AMSC.

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<sup>5/</sup> Report in General Docket No. 89-554, FCC 91-188 (June 20, 1991).

B. The Commission Must Reject Attempts to Assign the RDSS bands to AMSC for Geostationary Mobile Satellites

The Commission must reject the comments which seek assignment of RDSS frequencies for use by AMSC. In their initial comments, both AMSC and Hughes propose that the Commission should reassign the RDSS spectrum to the geostationary mobile satellite service. Although they reach the same conclusion, each commentor provides a different justification for the proposed reassignment. AMSC states that there is a shortage of frequency for MSS. It has identified the RDSS bands as an appropriate source for new spectrum. Because AMSC has been issued an authorization in certain bands allocated to MSS, it concludes that it is entitled to the RDSS frequencies as well.

Hughes pursues a somewhat different approach but reaches the same conclusion. It criticizes what it perceives as the inefficiency of LEO satellite systems when compared to geostationary systems. Hughes offers the example of the Tritium system, a three satellite next generation mobile satellite geostationary system which it claims would provide the same services as Motorola's 77 satellite LEO Iridium

system, but at a lower cost and with greater efficiency.<sup>6/</sup> Hughes then goes on to claim that because AMSC is the only geostationary MSS licensee, it should receive these frequencies. AMSC would then be able to use these additional frequencies for both its initial and future generations of geostationary MSS systems.

Both Hughes and AMSC appear to assume that the FCC has granted AMSC a monopoly for the provision of domestic mobile satellite services. This is patently untrue. Hughes' and AMSC's conclusions are not supported by the record in the Commission's mobile satellite proceeding nor have they offered Commission statements or policy on this issue outside the MSS proceeding. The Commission's decision to assign 28 MHz of spectrum to AMSC for the provision of MSS was not based on a desire to create a monopoly, but was the Commission's attempt to expeditiously license a service provider given multiple applicants and limited frequency. At no time did the

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<sup>6/</sup> Actually, Hughes' claims are exaggerated since it will require twice the number of satellites and twice the investment to provide the same system reliability as a LEO system because of the need to have in-orbit satellites to protect against the catastrophic loss of such high capacity satellites. Furthermore, the Hughes comparison of the technical viability of its Tritium system to the pending LEO systems is not informative since Tritium is merely a concept that will not be implemented in the United States until the second generation AMSC satellites are launched sometime in the later part of the next decade.

Commission endorse AMSC as a mobile satellite service monopoly nor did the Commission preclude future licensing of competing MSS systems. In fact, the Commission stated that, "we do not preclude the possibility of additional systems in the future should the need arise, should additional allocations be made, or should technological developments make it feasible to divide the available spectrum."<sup>1/</sup>

Contrary to the tone of both the Hughes and AMSC filings, the Commission has never made a public interest determination that AMSC should enjoy a monopoly for the provision of MSS. The Commission has not used a monopoly approach for any other domestic satellite services, and there is no indication that the Commission intended to initiate that policy for mobile satellite services. The licensing of a consortium for the provision of MSS was necessitated by the existence of twelve applicants for 28 MHz of spectrum. There is no reason to believe that the Commission would have been unwilling to license multiple service providers had there been fewer applicants or more frequency.

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<sup>1/</sup> 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 for the Provision of Various Common Carrier Services, 2 FCC Rcd. 485, 494 n.16 (1989).



Notwithstanding the Commission's good faith efforts to find an equitable solution to the shortage of frequency for twelve MSS applicants, AMSC is attempting to thwart the public interest by establishing a complete monopoly for all mobile satellite services. AMSC is unwilling to accept any competition, even from outside the MSS bands. This monopolistic practice is not new. The Commission has seen AMSC's attempt to expand its frequency assignments to include the maritime mobile satellite service frequencies<sup>8/</sup> and now it is witnessing the same attempt for the RDSS frequencies. Even though the Commission specifically contemplated introducing additional MSS systems in the bands assigned to AMSC, AMSC is attempting to prevent any competitive entry for the provision of advanced mobile communication services in other bands. Having received its fill, AMSC cannot stop itself from returning to the well for more frequency, even if it comes at the price of competition and to the detriment of the public interest.

Although AMSC and Hughes attempt to conceal their motives by cloaking their arguments in claims of greater efficiency, it is clear that these are merely a ruse for the obvious attempt to preserve a monopoly position for the provision of mobile satellite services. But the promotion of a

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<sup>8/</sup> See Gen. Docket No.90-56.

monopoly for these services runs directly counter to the Commission's policies as well as the overall public interest. As CONSTELLATION has previously stated in this proceeding, the Commission's multiple entry policy has served to foster competition and innovation in the provision of satellite and other services. This has translated into price competition and the development of new technology and services, both of which serve the public interest. Accepting the AMSC and Hughes claims and the endorsement of a monopoly service provider will serve as a repudiation of long term Commission policy and will harm the public interest.

The technical characteristics of the AMSC system would also preclude use of the bands by RDSS and LEO systems as a practical matter. It has been established that the high power densities required by GEO MSS systems will produce harmful interference to RDSS systems unless the capacity of the GEO MSS system is severely limited.<sup>9/</sup> Thus, sharing between the AMSC system and RDSS and LEO systems will not be feasible unless the AMSC system is limited to only a very few channels in the 1616.5-1626.5 MHz RDSS bands. Since AMSC has access to the 28

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<sup>9/</sup> See e.g., U.S. contribution to the Second Meeting of the 1992 WARC Working Group of CITELE, Document WARC92/USA-15. AMSC apparently concedes the point that its proposed system is incompatible with RDSS. See AMSC's application filed on June 3, 1991 at page 3.

MHz specified in the AMSC Authorization Order,<sup>10/</sup> and has applied for the additional 33 MHz of MSS spectrum proposed for domestic MSS systems in General Docket No. 90-56, there is no practical purpose to be served by authorizing AMSC to utilize the RDSS bands to derive a few additional channels. On the other hand, barring the AMSC system from the RDSS bands will result in much more efficient use of the scarce spectrum between 1 and 3 GHz in providing satellite service to mobile users by allowing the Commission to authorize several competing RDSS and LEO systems as proposed in the other pending applications in the RDSS bands.

#### CONCLUSION

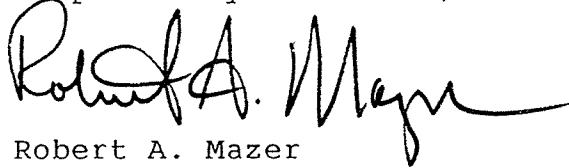
For the above reasons, Constellation Communications, Inc. asks the Commission to reject attempts to assign the valuable RDSS L-band frequencies to AMSC or delay consideration

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<sup>10/</sup> Amendment of Part 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 for the Provision of Various Common Carrier Services. 4 FCC Rcd 6029 (1989).

of the pending applications by injecting consideration of issues not necessary or relevant to a prompt grant of these applications.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert A. Mazer". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Robert A. Mazer  
Albert Shuldiner

NIXON, HARGRAVE, DEVANS & DOYLE  
Suite 800  
One Thomas Circle, N.W.  
Washington, D.C. 20005  
(202) 223-7200

Counsel for Constellation  
Communications, Inc.

Dated: July 3, 1991

I, Robert A. Mazer, hereby certify that a copy of the foregoing Reply Comments of Constellation Communications, Inc. was served by first-class mail, postage prepaid this 3rd day of July, 1991 on the following:

Leonard S. Kolsky  
Vice President and Director of  
Regulatory Affairs  
Motorola, Inc.  
1350 I Street, N.W.  
Washington, D.C. 20005

Philip L. Malet, Esq.  
Alfred M. Mamlet, Esq.  
Steptoe & Johnson  
1330 Connecticut Avenue, N.W.  
Washington, D.C. 20036  
Attorneys for Motorola Satellite Communications, Inc.

Robert G. Perry  
President and Chief Operating Officer  
Ellipsat Corporation  
2420 K Street, N.W.  
Washington, D.C. 20037

Jill Abeshouse Stern, Esq.  
Miller & Holbrooke  
1225 19th Street, N.W.  
Washington, D.C. 20036  
Attorneys for Ellipsat Corporation

Cheryl Lynn Schneider, Esq.  
Communications Satellite Corporation  
950 L'Enfant Plaza, S.W.  
Washington, D.C. 20024

Troy D. Ellington  
Terri B. Natoli  
GTE Spacenet Corporation  
1700 Old Meadow Road  
McLean, Virginia 22102

Dr. Robert L. Riemer  
Committee on Radio Frequencies  
HA-562  
National Research Council  
2101 Constitution Avenue, N.W.  
Washington, D.C. 20418

E. William Henry, Esq.  
Henry M. Rivera, Esq.  
Melanie Haratunian, Esq.  
Ginsburg, Feldman and Bress Chartered  
1250 Connecticut Avenue, N.W.  
Suite 800  
Washington, D.C. 20036  
Attorneys for RDSS Inc.

Noah A. Samara  
Chairman and Chief Executive Officer  
AfriSpace, Inc.  
8000 K Street, N.W., 7th Floor  
Washington, D.C. 20001

Tedson J. Meyers, Esq.  
Reid & Priest  
701 Pennsylvania Avenue, N.W.  
Washington, D.C. 20004  
Attorneys for AfriSpace, Inc.

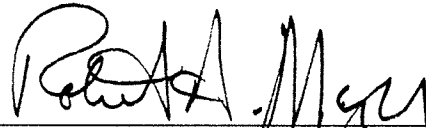
Gary M. Epstein, Esq.  
James F. Rogers, Esq.  
Kevin C. Boyle, Esq.  
Latham & Watkins  
1001 Pennsylvania Avenue, N.W.  
Suite 1300  
Washington, D.C. 20004  
Attorneys for Hughes Aircraft Company

Norman P. Leventhal, Esq.  
Raul R. Rodriguez, Esq.  
Stephen D. Baruch, Esq.  
Leventhal, Senter & Lerman  
2000 K Street, N.W., Suite 600  
Washington, D.C. 20006  
Attorneys for TRW, Inc.

Lon C. Levin, Esq.  
Glenn S. Richards, Esq.  
Gurman, Kurtis, Blask & Freedman,  
Chartered  
1400 Sixteenth Street, N.W.  
Suite 500  
Washington, D.C. 20036

Bruce D. Jacobs, Esq.  
Fisher, Wayland, Cooper & Leader  
1255 23rd Street, N.W., Suite 800  
Washington, D.C. 20037  
Attorneys for American Mobile Satellite Corporation

Leslie A. Taylor, Esq.  
LESLIE TAYLOR ASSOCIATES  
6800 Carlynn Avenue  
Bethesda, Maryland 20817  
Attorney for Norris Satellite Communications, Inc.



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Robert A. Mazer