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February 20, 1992

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Federal Communications Commission
Office of the Secretary

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

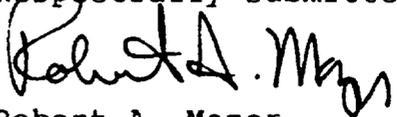
RE: Constellation Communications, Inc. Request for
Pioneer's Preference

Dear Ms. Searcy:

Pursuant to a request by Commission staff, transmitted herewith is an amended version of Constellation Communications, Inc. Request for Pioneer's Preference. The original request was submitted on June 3, 1991.

If you have any questions regarding this matter, please do not hesitate to contact the undersigned counsel for Constellation Communications, Inc.

Respectfully submitted,


Robert A. Mazer

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FEB 20 1992

Federal Communications Commission
Office of the Secretary

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of)	
)	
CONSTELLATION COMMUNICATIONS, INC.)	File No. _____
)	
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)	

**PETITION FOR RULEMAKING AND
REQUEST FOR PIONEER'S PREFERENCE**

I INTRODUCTION

Constellation Communications, Inc. ("CONSTELLATION" or "Petitioner"), by its attorneys, hereby submits this Request for Pioneer's Preference. By this Request, CONSTELLATION seeks a Pioneer Preference so that it may be assigned the necessary frequency for it to commence construction and operation of its proposed satellite system. Relatedly, CONSTELLATION has requested that the Commission initiate a rulemaking proceeding to establish a regulatory structure for licensing low earth orbit ("LEO") satellite systems in the 1610-1626.5 MHz and 2483.5-2500 MHz bands currently allocated to the radiodetermination satellite service ("RDSS bands").

CONSTELLATION is a new venture undertaken with the cooperation and support of its strategic technical partners -- International MicroSpace, Inc.

("MicroSpace"), Pacific Communication Sciences, Inc., ("PCSI") and Defense Systems, Inc. ("DSI"). CONSTELLATION, with its strategic partners, has brought together unmatched expertise in the areas of low cost satellite launch services, mobile transceiver development and space station manufacturing to develop a truly innovative and a commercially viable LEO system. On June 3, 1991, CONSTELLATION submitted to the Commission a Petition for Rulemaking and a Satellite System Application, individual applications for each of the 48 LEO satellites that comprise the initial ARIES system. This satellite system will be organized into four polar orbit planes of twelve satellites each.

The ARIES system will operate in conjunction with mobile units and gateway earth stations dispersed over wide geographic areas. It will serve customers located in rural or remote areas in the United States and abroad who are not likely to have access to cellular or other mobile radio systems. The system will provide position determination and reporting services, telephone, data and facsimile transmission services, as well as fleet surveillance and control for the transportation and public service communities where such services are not practical over conventional terrestrial systems. The ARIES system also will be able to provide real-time two-way data collection, distribution and control for remote sensor networks. This innovative and dynamic use of the RDSS bands by the ARIES system will enable many needed telecommunication services to be provided to governments, industry and the general public.

II. REQUEST FOR PIONEER'S PREFERENCE

In the Pioneer's Preference Order^{1/} the Commission recognized the need to encourage the development of new and innovative uses of the spectrum resource. By providing applicants for new services with a pioneer's preference, the Commission has attempted to promote the development of new technology that might not otherwise be brought to the marketplace. Due to Petitioner's efforts to develop this innovative use of the RDSS frequencies and to bring new services to previously unserved areas and users, Petition requests grant of a pioneer's preference for its ARIES low earth orbit satellite system.

The CONSTELLATION application and Petition for Rulemaking represent the very type of proposal that the Commission wanted to encourage when it adopted the rules on Pioneer Preference. The CONSTELLATION proposal is designed to provide new and innovative telecommunication services to many areas and people that do not have access to any telecommunication services today. The ARIES satellite system will be available everywhere in the United States and the world. If a user has access to the ARIES receiver he or she can be reached at, or communicate from, any location. Whether it be in the middle of the Grand Canyon,

^{1/} Establishment of Procedures to Provide a Preference to Applicants Proposing an Allocation for New Services, GEN Docket No. 90-217, Report and Order (May 13, 1991) ("Pioneer's Preference Order").

the National Forests of Oregon, or a military operation in the Middle East, all that will be required to communicate with another person is a receiver.

There can be no doubt that CONSTELLATION's proposal is the most practical means of implementing this new service. The ARIES system has been designed with the recognition that it must be capable of growing into a system that achieves high frequency reuse through the use of small spot beams on board future ARIES satellites, and that multiple systems and technologies must be authorized by the Commission. At the same time, the ARIES design approach allows small, low-cost satellites to be employed in the first generation of satellites before the market demand economically justifies the use of high frequency reuse satellites and their attendant high costs. This approach will ensure that this service is brought to the public in the most expeditious time period and in the most economically efficient manner possible.

CONSTELLATION also seeks a minimal amount of spectrum resource in order to implement its system. It does not seek to obtain as much spectrum resource as possible in order that it can have the opportunity to serve some unknown market in the next century. Rather, it has requested enough to serve the needs of users of its initial system. It has proposed a frequency assignment scheme in which each licensee is initially assigned a minimal amount of uplink spectrum in the uplink RDSS L-band and access to the 16.5 MHz downlink S-band on a non-exclusive shared basis by spread spectrum systems to ensure compliance with existing power flux density limits. It also proposes either an increase in the S-band power flux density limits or an expansion of the S-band spectrum between 2400-2500 MHz allocated to LEO

downlinks to increase the total amount of voice and data capacity available to the public within the constraints of these power flux density limits. This approach allows multiple systems to be established and service to be provided in an expeditious fashion. Certainly this approach brings the benefits of competition to the public and enables the Commission to avoid cumbersome and time consuming licensing process.

The ARIES satellite system will include several unique and dynamic technologies. Defense Systems Inc., a world leader in micro-satellites, has designed the innovative ARIES satellite as outgrowth of other satellites that it has pioneered for the U.S. military. Pacific Communication Services, Inc. is designing the dynamic ARIES receiver. The technological underpinnings of the receiver is based on PCSI's work in developing a variety of other mobile satellite and terrestrial receivers. Finally, International MicroSpace, Inc. is currently developing the Orbital Express™ launch vehicle which will pave the way for the micro-satellite revolution and enable the ARIES satellites to be launched into orbit in a cost-efficient and reliable manner. These three technological developments represent breakthroughs that will enable LEO satellite systems to be commercially viable.

In order to demonstrate the capabilities of this technology, CONSTELLATION has also requested authority to construct and launch two experimental satellites -- ARIES X-1 and ARIES X-2. These satellites will be used to help develop and demonstrate in practice the innovative technologies to be implemented in the ARIES system.

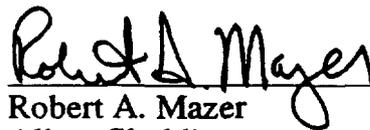
Based on the above, CONSTELLATION respectfully requests that the Commission grant it a Pioneer's Preference to construct, launch and operate the

ARIES satellite system. This will enable the public to receive the innovative services to be provided through this new and unique satellite system in the very near future.

IV. CONCLUSION

Constellation Communications, Inc. respectfully requests that the Commission grant CONSTELLATION a Pioneers Preference to implement the ARIES satellite system.

Respectfully submitted,



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2/20/92

CERTIFICATE OF SERVICE

I Robert A. Mazer hereby certify that a copy of the foregoing Opposition and Reply Comments of Constellation Communications, Inc. was sent by first class United States mail, postage prepaid, this 20th day of February, 1992, to the following:

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