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Federal Communications Commission

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

WASHINGTON, D.C.

In re Application of)
)
 SATELLITE CD RADIO, INC.)
)
 For Authority to Construct,)
 Launch and Operate a Digital)
 Audio Radio Service Satellite)
 System in the 2310-2360 MHz)
 Band)

File Nos: 49/50-DSS-P/LA-90
 58/59-DSS-AMEND-90
 44/45-DSS-AMEND-92

NOV 17 1992

OFFICE OF CHIEF
 DOMESTIC FACILITIES DIVISION
 COMMON CARRIER BUREAU

COMMENTS OF AMSC SUBSIDIARY CORPORATION

AMSC Subsidiary Corporation ("AMSC"), by its attorneys, hereby submits its Comments on the above-referenced application of Satellite CD Radio, Inc. ("SCDR") to operate a Digital Audio Radio Service ("DARS") satellite system. As shown below, spectrum in the 2310-2360 MHz band would be of great value in reaccommodating aeronautical telemetry facilities operating in spectrum allocated internationally to Mobile Satellite Service ("MSS"), and could serve as additional MSS downlink spectrum. Because this band would contribute greatly toward ameliorating the shortage of spectrum for the development of Mobile Satellite Service ("MSS"), the Commission should be careful to assign SCDR only the amount of spectrum needed to implement its proposed system. From AMSC's analysis, it appears that as little as 8 MHz of this spectrum would be necessary for SCDR's system.

Background

AMSC is the licensee of the U.S. MSS system.^{1/} In numerous Commission proceedings, AMSC has explained that a severe international shortage of MSS spectrum has constrained the development of domestic MSS and continues to be an impediment to the full development of the service.^{2/} While AMSC has taken great strides toward implementing a U.S. MSS system that will provide many beneficial services to the public, AMSC's experience in the international coordination process has shown that AMSC is unlikely to be able to gain access to as much spectrum as originally anticipated.

The Commission recognized this shortage, and recommended the allocation of substantial amounts of additional MSS spectrum at the 1992 World Administrative Radio Conference ("WARC").^{3/} As a

1/ See Memorandum Opinion, Order and Authorization, Gen. Docket No. 84-1234, 4 FCC Rcd 6041 (1989), rev'd in part sub nom. Aeronautical Radio, Inc. v. FCC, 928 F.2d 428 (D.C. Cir. 1991). See also Tentative Decision, Gen. Docket No. 84-1234, 6 FCC Rcd 4900 (1991); Final Decision on Remand, Gen. Docket No. 84-1234, 7 FCC Rcd 266 (1992).

2/ See, e.g., Comments of AMSC, ET Docket No. 92-9 (June 8, 1992); Petition of AMSC, ET Docket No. 92-28, RM-7806 (June 3, 1991); Comments of AMSC, Gen. Docket No. 89-554 (December 3, 1990); AMSC's Request for Modification and Supplemental Information, File Nos. 7/8/9-DSS-MP/ML-89 (December 27, 1989).

3/ See Report, Gen. Docket No. 89-554, 6 FCC Rcd 3900 (1991); see also U.S. Department of State, United States Proposals for the 1992 World Administrative Radio Conference for Dealing With Frequency Allocations in Certain Parts of the Band (July 1991).

result of the subsequent efforts of the U.S. delegation, the 1992 WARC allocated more than 300 MHz of additional MSS spectrum internationally. However, this was only the first step. Given the sharply increasing demand for MSS by providers in the U.S. and other countries, the need to coordinate MSS spectrum with the many foreign governments that operate or propose to operate MSS systems of their own, and the constraints placed on the availability of MSS spectrum by the need to prevent interference, a substantial amount of the spectrum allocated internationally to MSS must be made available for use by U.S. MSS providers.^{4/}

Among the international allocations made at the 1992 WARC was the 1492-1525 MHz (space-to-Earth) band, which was allocated to MSS in Region 2 on a co-primary basis. AMSC has requested authority to utilize a 10 MHz portion of this band (1515-1525 MHz) for its MSS system. The Commission, however, has not proposed to allocate the 1515-1525 MHz band to MSS domestically at this time.^{5/} The basis for Commission concern is that the 1492-1525 MHz band is part of a larger band that currently is used in the U.S. principally for aeronautical telemetry.

^{4/} See Comments of AMSC, Gen. Docket No. 90-314, ET Docket No. 92-100 (November 9, 1992); Comments of AMSC, NTIA Docket No. 920532-2132 (November 6, 1992).

^{5/} See Notice of Proposed Rule Making and Tentative Decision, ET Docket No. 92-28, FCC 92-358, at 7 n.15 (September 4, 1992).

Nonetheless, AMSC's analysis has shown that it would be practical for MSS to share a portion of the 1492-1525 MHz band with aeronautical telemetry systems.^{6/} One reason such sharing is practicable is that some telemetry systems that are not compatible with domestic MSS can be accommodated in a portion of the 2310-2390 MHz band, which also is used primarily for aeronautical telemetry purposes. AMSC is continuing to work toward formulating a plan by which MSS can share the 1492-1525 MHz band with telemetry facilities.

SCDR's application seeks authority to operate a system which would provide digital audio programming and other information to subscribers. The transmissions would be downlinked to subscribers using frequencies in the 2310-2360 MHz portion of the 2310-2390 MHz aeronautical telemetry band.^{7/} SCDR's system would employ two widely-spaced geostationary satellites, each using 8 MHz of downlink spectrum on the same polarization to

^{6/} See Consolidated Opposition of AMSC to Petitions to Deny, File Nos 15/16-DSS-MP-91, Annex to Technical Appendix (January 31, 1992); Further Reply of AMSC, RM-7400, Technical Appendix (October 18, 1990).

^{7/} In a separate action, the Commission has proposed to allocate the 2310-2360 MHz band for satellite digital audio radio services, including complementary terrestrial broadcasting. See Notice of Proposed Rule Making and Further Notice of Inquiry, Gen. Docket No. 90-357, FCC 92-466 (November 6, 1992). Though these Comments are directed only at SCDR's specific application, a number of issues concerning the application overlap the issues raised in the Commission's rulemaking proceeding. AMSC therefore reserves the right to file additional comments in the rulemaking proceeding.

simultaneously transmit the same programming (16 MHz total). SCDR states, however, that frequency reuse is possible using orthogonal polarizations. SCDR contemplates that the remainder of the band will be used by other DARS systems and by complementary terrestrial "gapfiller" DARS facilities.

Discussion

As the U.S. has recognized, there is a critical need for additional spectrum for the full development of MSS in the United States. The 2310-2390 MHz band is important to ameliorating this shortage. As this band is primarily utilized for aeronautical telemetry, it is ideally suited to reaccommodating telemetry facilities presently operating in the 1492-1525 MHz band, thereby helping to make an additional portion of international MSS spectrum available in the United States. In the alternative, a portion of the 2310-2390 MHz band should be considered for an MSS downlink.

The Commission has recognized that a DARS system cannot share spectrum with aeronautical telemetry systems, as it has proposed to relocate the telemetry systems operating in the 2310-2360 MHz band to the 2360-2390 MHz band.^{8/} Thus, any spectrum allocated to DARS in the 2310-2360 MHz band would limit the

^{8/} See Notice of Proposed Rule Making and Further Notice of Inquiry, Gen. Docket No. 90-357, FCC 92-466, at 4, paras. 8-9 (November 6, 1992).

frequencies available for reaccommodating telemetry systems in the 1492-1525 MHz band, therefore exacerbating the MSS spectrum shortage.

AMSC does not oppose the institution of Digital Audio Radio Service. Nonetheless, despite the ability of MSS to provide mobile communications to the approximately 50% of the U.S. unserved by terrestrial mobile facilities, save thousands of lives, and increase the efficiency of U.S. industry, only 28 MHz of spectrum is assigned to MSS in the United States. After international coordination, only a fraction of that amount is likely to be available to a U.S. MSS system. In light of this, the Commission should seriously question whether 50 MHz of spectrum is necessary for a service which is of questionable demand and represents only an enhancement of radio broadcast service that is almost universally available in the United States. To promote spectrum efficiency and maximize the availability of spectrum for the development of MSS, the Commission should ensure that there is a demonstrated demand for one or more DARS systems in the 2310-2360 MHz band, and that such systems are assigned only so much spectrum as required to provide their proposed service.

AMSC's review of SCDR's application reveals that SCDR requests far more of the 2310-2360 MHz band than is necessary. SCDR's proposed system would transmit identical programming over two satellites using the same polarization, each using 8 MHz of

spectrum. This appears to be twice the amount of spectrum that SCDR needs; using the polarization reuse capability that SCDR claims, its proposed system could effectively use as little as 8 MHz total.^{9/}

SCDR suggests that the remaining spectrum in the 2310-2360 MHz band would be utilized by other DARS systems, including complementary terrestrial "gapfiller" systems. However, the extent of interest in providing DARS service in this band remains to be seen.^{10/} No party other than SCDR has yet expressed an interest in providing satellite DARS in the 2310-2360 MHz band, and as the Commission's NPRM proposing a DARS allocation points out, interest in terrestrial DARS centers primarily on providing the service within spectrum below 1 GHz. Moreover, SCDR's application fails to set forth how the terrestrial element of its service would be accommodated. SCDR's proposed satellites use a single beam to cover the continental U.S., and cannot support the frequency reuse SCDR had originally proposed between the satellite and terrestrial elements of the service.

^{9/} See SCDR's Compendium of Applications and Restatement of Petition for Rulemaking (September 25, 1992), at 24, 63 and Figure 1.


^{10/} The Commission has established a December 15, 1992 cut-off date for DARS applications in the 2310-2360 MHz band. See Public Notice, Report No. DS-1244, DA 92-1408 (October 13, 1992).

Conclusion


The 2310-2360 MHz band is of considerable importance in alleviating the chronic shortage of MSS spectrum, by helping to make internationally allocated MSS spectrum available in the United States and possibly serving as MSS downlink spectrum in the future. This band therefore should be made available for DARS only to the extent necessary. SCDR appears to have requested at least twice as much spectrum as it needs. Thus, should the Commission ultimately conclude that an allocation for DARS is in the public interest, it should limit SCDR to using only the 8 MHz of spectrum that appears necessary to operate its system.

Respectfully submitted,

AMSC SUBSIDIARY 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
AMSC Subsidiary Corporation
1150 Connecticut Avenue, N.W.
Fourth Floor
Washington, D.C. 20036
(202) 331-5858

Dated: November 13, 1992

DECLARATION

I, Thomas M. Sullivan, do hereby declare as follows:

1. I have a Bachelor of Science degree in Electrical Engineering and have taken numerous post-graduate courses in Physics and Electrical Engineering.

2. I am presently employed by Atlantic Research Corporation and was formerly employed by the IIT Research Institute, DoD Electromagnetic Compatibility Analysis Center.

3. I am qualified to evaluate the foregoing Comments of AMSC Subsidiary Corporation. I am familiar with Part 25 and other relevant parts of the Commission's Rules and Regulations.

4. I have participated in the development of standards and criteria for space and terrestrial services in the CCIR for over fifteen (15) years.

5. I served as Technical Advisor to the U.S. Delegation to WARC-92 and participated in sessions of WARC-92 addressing frequency sharing and other technical matters.

6. I have been involved in the preparation of and have reviewed the foregoing Comments of AMSC Subsidiary Corporation. The technical facts contained therein are accurate to the best of my knowledge and belief.

Under penalty of perjury, the foregoing is true and correct.

13 November 1992
Date


Thomas M. Sullivan
Thomas M. Sullivan

CERTIFICATE OF SERVICE

I, Denise Sullivan, a secretary in the law firm of Fisher, Wayland, Cooper and Leader, hereby certify that on this 13th day of November, 1992, I served a true copy of the foregoing "COMMENTS OF AMSC SUBSIDIARY CORPORATION" by first class United States Mail, postage prepaid, upon the following:

*Rosalee Chiara
Common Carrier Bureau
Federal Communications Commission
2025 M Street, N.W., Room 6114
Washington, D.C. 20554

Robert D. Briskman
President
Satellite CD Radio, Inc.
1001 22nd Street, N.W.
Washington, D.C. 20037



Denise Sullivan

*By Hand Delivery