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

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)	
)	
SATELLITE CD RADIO, INC.)	File Nos. 49/50 DSS-P/LA-90;
)	58/59-DSS-AMEND-90;
Application for Digital Audio)	44/45-DSS-AMEND-92
Radio Service Satellite System)	

NOV 14 1994

SUPPLEMENTAL COMMENTS DOMESTIC FACILITIES DIVISION
SATELLITE RADIO BRANCH

Satellite CD Radio, Inc. (CD Radio), hereby submits Supplemental Comments in this application regarding rules to allow for the non-mutually exclusive grant of the above-captioned application and multiple other licenses in the Satellite Digital Audio Radio Service ("SDARS").¹

In May of 1990, CD Radio filed its application and a petition for rulemaking to allocate spectrum and develop rules for SDARS. Over two years ago, the Commission issued a Notice of Proposed Rulemaking to allocate 50 MHz of spectrum in the S-band for provision of satellite-delivered DARS.² Shortly thereafter, the agency announced a "cut-off" date to accept applications for processing at the same time as CD Radio's 1990 application.³ On December 15, 1992, five other applicants applied for SDARS licenses; two subsequently withdrew their applications, leaving a total of four applicants for the S-band spectrum.

¹ See the attached Motion for Acceptance of Supplemental Comments.

² Digital Audio Radio Services, 7 F.C.C. Rcd 7776 (1992).

³ Public Notice DA 92-1408 (Oct. 13, 1992).

Since that time, CD Radio has held discussions with the other three applicants for SDARS licenses. On November 17, 1993, after careful analysis, CD Radio and two of the other three applicants concluded that the four pending applications were not mutually exclusive and that all four applicants could be accommodated in the amount of spectrum proposed to be allocated on a proportional basis.⁴ The fourth applicant requested only 10 MHz in its application, less than a proportionate share of the proposed allocation, and thus can be accommodated in whatever spectrum plan ultimately is adopted. All four applicants later discussed with Commission staff their belief that frequency assignments could be made that avoid mutual exclusivity.⁵

Thereafter, the four applicants held further discussions focused on creating a set of service rules that clearly provided for equitable and efficient access to and use of the spectrum and provided a mechanism for the Commission to grant licenses for particular spectrum assignments. The applicants worked together cooperatively and in good faith, and CD Radio appreciates their efforts. Although several complete drafts were exchanged, and rules were agreed to by at least one other applicant, no final agreement on every rule was reached by all applicants.

Given the public interest in beginning a process to license qualified SDARS applicants, and make any necessary changes in the Commission's rules, CD Radio hereby files proposed

⁴ Letter to Cecily Holiday from Richard E. Wiley, Douglas J. Mister, and Howard Liberman, dated November 17, 1993.

⁵ Letter to William F. Caton from Michael Yourshaw dated December 22, 1993.

service rules for the SDARS service. By this filing, CD Radio is speaking only for itself, not for any of the three other applicants. However, the attached rules reflect that -- to CD Radio's knowledge -- there continues to be no controversy over spectrum sharing, and thus no mutual exclusivity in the SDARS service.

The enclosed rules represent CD Radio's understanding of what can be agreed to by all, consistent with CD Radio's understanding of Commission policy. While CD Radio's commitment to offer a subscription-based service is well known to the Commission, as a result of discussions with the other applicants, the rules are silent on the subject of subscription-based and advertising supported service. CD Radio, however, reaffirms its commitment to provide subscription only service and its willingness to accept SDARS licensing rules with such limitation if the Commission believes this would best serve the public interest.

Prompt action on service rules for the SDARS service will serve the public interest. CD Radio's application has now been on file for *over four-and-one-half-years*. The Commission's *NPRM*, and the applications of the three other parties are now approximately two years old. But, while U.S. SDARS plans have been on hold, other nations have been pressing forward: the Canadian-European Eureka 147 is in the final stages of standards setting, and has proposed to launch a SDARS satellite -- using European technology -- as soon as 1998.⁶ Without prompt action, the United States, which originally had technological and service leadership in providing digital audio via satellite, will now slip behind. CD Radio again notes that, in addition to promoting new technology, industrial growth and employment, SDARS will provide the listening

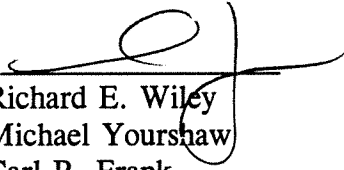
⁶ Horner, *Europe looks skyward to DAB*, BROADCASTING AND CABLE 59 (Sept. 26, 1994).

public with improved programming diversity, especially in rural areas. Only by rapid issuance of proposed service rules, and the licensing of qualified applicants, can the United States hope to maintain its initiative.

For the foregoing reasons, the Commission should use the attached rules and further inputs it may obtain to prepare a *Further Notice of Proposed Rulemaking* that would suggest service rules and a process of licensing pending applicants. Thereafter, the Commission should rapidly proceed to license and authorize qualified SDARS applicants to begin offering this valuable service to the American public.

Respectfully submitted,

By



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November 9, 1994

Proposed Rules and Regulations

1. The Table of Contents for Part 25 is revised to read as follows:

PART 25- SATELLITE COMMUNICATIONS Subpart A - General

Sec.

- | | |
|-----------------|---|
| 25.101 | Basis and scope. |
| 25.102 | Station authorization required. |
| 25.103 | Definitions. |
| 25.104 | Preemption of local zoning of earth stations. |
| 25.105 - 25.108 | [Reserved] |
| 25.109 | Cross-reference. |

Subpart B - Applications and Licenses

- | | |
|--------|---|
| 25.110 | Filing of applications, fees, and number of copies. |
| 25.111 | Additional information. |
| 25.112 | Defective applications. |
| 25.113 | Construction permits. |
| 25.114 | Applications for space station authorizations. |
| 25.115 | Applications for earth station authorizations. |
| 25.116 | Amendments to applications. |
| 25.117 | Modification of station license. |
| 25.118 | Assignment or transfer of control of station authorization. |

- 25.119 Application for special temporary authorization.
- 25.120 License term and renewals.

EARTH STATIONS

- 25.130 Filing requirements for transmitting earth stations.
- 25.132 Verification of earth station antenna performance standards.
- 25.133 Period of construction; certification of commencement of operation.
- 25.134 Licensing provisions of very small aperture terminal (VSAT) networks.
- 25.135 Licensing provisions for earth station networks in the non-voice, non-geostationary mobile-satellite service.
- 25.136 Operating provisions for earth station networks in the 1.6/2.4 GHz mobile-satellite service.

SPACE STATIONS

- 25.140 Qualifications of domestic fixed-satellite space station licensees.
- 25.141 Licensing provisions for the radiodetermination satellite service.
- 25.142 Licensing provisions for the non-voice, non-geostationary mobile-satellite service.
- 25.143 Licensing provisions for the 1.6/2.4 GHz mobile satellite service.
- 25.144 Licensing provisions for the 2.3 GHz satellite digital audio radio service.

PROCESSING OF APPLICATIONS

- 25.150 Receipt of applications.
- 25.151 Public notice period.
- 25.152 Dismissal and return of applications.
- 25.153 Repetitious applications.
- 25.154 Opposition to applications and other pleadings.
- 25.155 Mutually exclusive applications.
- 25.156 Consideration of applications.

FORFEITURE, TERMINATION, AND REINSTATEMENT OF STATION AUTHORIZATION

- 25.160 Administrative sanctions.
- 25.161 Automatic termination of station authorization.
- 25.162 Cause for termination of interference protection.
- 25.163 Reinstatement.

Subpart C - Technical Standards

- 25.201 Definitions.
- 25.202 Frequencies, frequency tolerance and emission limitations.
- 25.203 Choice of sites and frequencies.
- 25.204 Power limits.
- 25.205 Minimum angle of antenna elevation.

- 25.206 Station identification.
- 25.207 Cessation of emissions.
- 25.208 Power flux density limits.
- 25.209 Antenna performance standards.
- 25.210 Technical requirements for space stations in the Fixed-Satellite Service.
- 25.211 Video transmissions in the Domestic Fixed-Satellite Service.
- 25.212 Narrowband transmissions in the Fixed Satellite Service.
- 25.213 Inter-Service coordination requirements for the 1.6/2.4 GHz Mobile-Satellite Service.
- 25.251 Special requirements for coordination.
- 25.252 Maximum permissible interference power.
- 25.253 Determination of coordination distance for near great circle propagation mechanisms.
- 25.254 Computation of coordination distance contours for propagation modes associated with precipitation scatter.
- 25.255 Guidelines for performing interference analyses for near great circle propagation mechanisms.
- 25.256 Guidelines for performing interference analyses for precipitation scatter modes.
[Reserved]

Subpart D - Technical Operations

- 25.271 Control of transmitting stations.
- 25.272 General inter-system coordination procedures.
- 25.273 Duties regarding space communications transmissions.

- 25.274 Procedures to be followed in the event of interference.
- 25.275 Particulars of operation.
- 25.276 Points of communication.
- 25.277 Temporary fixed earth station operations.
- 25.278 Additional coordination obligation for non-geostationary and geostationary satellite systems in frequencies allocated to the Fixed-Satellite Service.

Subpart E - Developmental Operations

- 25.279 Inter-Satellite Service.
- 25.300 Developmental operation.
- 25.308 Automatic Transmitter Identification System (ATIS).

Subparts F - G -- [Reserved]

**Subpart H - Authorization to Own Stock in
the Communications Satellite Corporation**

- 25.501 Scope of this subpart.
- 25.502 Definitions.
- 25.503 - 25.504 [Reserved]
- 25.505 Persons requiring authorization.
- 25.506 - 25.514 [Reserved]
- 25.515 Method of securing authorization.
- 25.516 - 25.519 [Reserved]

- 25.520 Contents of application.
- 25.521 Who may sign applications.
- 25.522 Full disclosures.
- 25.523 Form of application, number of copies, fees, etc.
- 25.524 [Reserved]
- 25.525 Action upon applications.
- 25.526 Amendments.
- 25.527 Defective applications.
- 25.528 - 25.529 [Reserved]
- 25.530 Scope of authorization.

2. The authority citation for Part 25 continues to read as follows:

AUTHORITY: Sections 101 - 404, 76 Stat. 419 - 427; 47 U.S.C. 701 - 744, Sec. 4, 48 Stat. 1066, as amended; 47 U.S.C. 154. Interprets or applies Sec. 303, 48 Stat. 1082, as amended; 47 U.S.C. 303.

3. A new paragraph is added, in alphabetical order, to Sections 2.1 and 25.201 to read as follows:

Satellite Digital Audio Radio Service ("SDARS"). A one-way radiocommunication system in which digital signals are transmitted by space stations and complementary terrestrial transmitters to fixed, mobile and transportable stations.

4. Section 25.114 is amended by revising paragraph (c)(18), to read as follows:

§ 25.114. Applications for space station authorizations. —

* * *

(c) * * *

(18) Detailed information demonstrating the financial qualifications of the applicant to construct and launch the proposed satellites. Applications for domestic and mobile satellite systems shall provide the financial information required by §25.140(b)-(e) or §25.142(a)(4). Applications for SDARS systems shall provide the financial information required by §25.144(b)(3). Applications for international satellite systems authorized pursuant to Establishing of Satellite Systems Providing International Communications, 50 FR 42266 (October 18, 1985), 101 FCC 2d 1046 (1985), recon. 61 RR 2d 649 (1986), further recon. 1 FCC Rcd 439 (1986), shall provide the information required by that decision.

5. Section 25.120 is amended by adding paragraph (d)(3) as follows:

§25.120 License term and renewals.—

* * *

(d) Space stations.

* * *

(3) For systems in the satellite digital audio radio service, the license term will begin at 3 a.m. EST on the date that the licensee certifies to the Commission that its system has successfully been placed in orbit and is ready to commence operations and its operations will fully conform to the terms and conditions of the SDARS system authorization.

6. A new Section 25.144 is added to read as follows:

§25.144 Licensing provisions for the 2.3 GHz digital audio radio service.

(a) Definitions.

(1) "System." The term "system" means the constellation of one or more SDARS space stations and complementary terrestrial facilities that an individual applicant or licensee proposes to construct and operate.

(2) "Usable bandwidth." The term "usable bandwidth" means that portion of the 2310-2360 MHz band that is usable by the SDARS licensees.

- (3) "Frequency assignment." The term "frequency assignment" means a subsection of the usable bandwidth exclusively assigned to a single SDARS licensee. All frequency assignments are of equal bandwidth.
- (b) System application requirements:
- (1) Each application for a system authorization in the satellite digital audio radio service in the above-referenced bands shall describe in detail the proposed satellite digital audio radio system, setting forth all pertinent technical, legal, and financial qualifications of the applicant. Applicants must also file information demonstrating compliance with all requirements of this section.
 - (2) Applicants for a satellite digital audio radio service system must identify the power flux density produced within its frequency assignment at the Earth's surface by each space station of their system to allow a determination of whether coordination with terrestrial services is required under international footnote 751B of §2.106 of the Commission's Rules.
 - (3) Financial qualifications.
 - (i) Each applicant for system authorization in the satellite digital audio radio service must demonstrate, on the basis of the documentation contained in its application that it is financially qualified to proceed with the construction, launch and operation of its proposed system in accordance with a schedule of milestones established at authorization. This showing shall include all information described in §25.104(c), (d) and (e) of this part.
 - (ii) The SDARS milestones are as follows, based on the date of authorization:
 - (A) One year: Complete contracting for construction of first space station or begin space station construction.
 - (B) Two years: If applied for, complete contracting for construction of second space station or begin second space station construction.
 - (C) Six years: In-orbit operation of at least one space station.
- (c) Permissible communications. Space stations in these bands are authorized to transmit to fixed, mobile, and transportable receivers. Complementary terrestrial stations

are authorized to repeat transmissions from SDARS space stations for reception by fixed, mobile, and transportable receivers.

(d) Frequency assignment policies.

(1) Each system authorized under this section will be conditioned upon construction, launch and operation milestones. The failure to meet any of the milestones contained in an authorization will result in its cancellation, unless such failure is due to circumstances beyond the operator's control.

(2) Spectrum assignments will be made for each system as follows:

(i) All licensees are limited to the usable bandwidth in the 2310-2360 MHz band.

(ii) The usable bandwidth will be divided into one frequency assignment for each licensed system from the initial processing group provided that there shall be a minimum of two frequency assignments. Should any initial system license be canceled, the number of frequency assignments shall be redetermined (with a minimum of two) and frequency assignment bandwidth shall be re-divided pro-rata. If the definition of usable bandwidth is changed, frequency assignment bandwidth shall be re-divided pro-rata.

(iii) Unless the licensees agree otherwise, each licensee shall be assigned the highest frequency assignment remaining available on the date of launch of its first spacecraft. Each licensee must notify the Commission of the specific frequency assignment it is using at the same time it certifies to the Commission it has met the milestone requiring launch of its first spacecraft. Frequency assignments assigned pursuant to this subsection are assigned on an exclusive basis.

(iv) An SDARS system may temporarily occupy frequency assignments other than its own, provided its transmissions can be reconfigured to use only its own frequency assignment upon launch of other SDARS systems obtaining an assignment in a previously unused frequency assignment. Any such SDARS system temporarily using spectrum outside of its frequency assignment must terminate use of that spectrum immediately upon the successful launch of any SDARS satellite that becomes assigned to that frequency assignment.

- (v) Each operational system may employ cross polarization within its frequency assignment and may transmit cross polarized emissions in other frequency assignments by mutual agreement of the licensee of those frequency assignments.
- (vi) Each system operator will reduce its bandwidth occupancy by 0.1 MHz to create two 0.2 MHz assignments adjacent to the edge of the usable bandwidth for location of telemetry beacons.

(3) SDARS licensees may utilize any modulation technique.

(e) Reporting requirements. All operators of satellite digital audio radio service systems shall, on June 30 of each year, file a report with the Common Carrier Bureau and the Commission's Laurel, Maryland field office containing the following information:

- (1) Status of space station construction and anticipated launch dates, including any major problems or delays encountered;
- (2) A listing of any non-scheduled space station outages for more than thirty minutes and the cause(s) of such outages;
- (3) Identification of any space stations not available for service or otherwise not performing to specifications, the cause(s) of these difficulties, and the date any space station was taken out of service or the malfunction identified.

7. Section 25.202 is amended by adding a new paragraph (a)(4), as follows:

§ 25.202. Frequencies, frequency tolerance and emission limitations.

* * *

(a) * * *

(4) The following frequencies are available for use by the satellite digital audio radio service:

2310-2360 MHz: Space-to-Earth (primary)

CERTIFICATE OF SERVICE

I, Barbara A. Pomeroy, hereby certify that the foregoing Supplemental Comments of Satellite CD Radio, Inc. was mailed via first class, postage prepaid mail on November 9, 1994, to the persons on the attached list.


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