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

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| In the Matter of | ) | |
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| Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS") | ) | GN Docket No. 96-228 |

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**COMMENTS OF THE**
**CONSUMER ELECTRONICS MANUFACTURERS ASSOCIATION**

The Consumer Electronics Manufacturers Association ("CEMA") hereby submits the following comments in response to the Notice of Proposed Rule Making ("*Notice*") which the Commission issued in the above-captioned proceeding on November 8, 1996.[1] In the *Notice*, the Commission has solicited comments on its proposal to create a new Wireless Communications Service ("WCS") in the 2305-2320 and 2345-2360 MHz bands that would allow licensees to provide any fixed, mobile, or radiolocation service, or satellite Digital Audio Radio services ("DARS"), consistent with the international frequency allocations with these bands.

CEMA is the principal U.S. trade association of the consumer electronics industry. CEMA members design, manufacture, import, distribute and sell a wide variety of consumer electronics equipment, including radio receivers, compact disc players, cassette recorders, loudspeakers, and home, portable and automobile audio systems. CEMA and its members therefore

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1 *See Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS")*, Notice of Proposed Rule Making, GN Docket No. 96-228, FCC 96-441 (released Nov. 8, 1996) [hereinafter *"Notice"*].

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have a significant interest in the outcome of this proceeding. As an association of manufacturers, one of CEMA's goals is to enhance the industry's ability to satisfy the public's demand for high-quality, low-cost radio receivers and related products. To this end, CEMA has long been involved in addressing DARS standards and spectrum issues, the resolution of which are prerequisites to the commercial introduction of DARS service.[2]

CEMA recognizes that, in reallocating the 2305-2320 and 2345-2360 MHz bands, the Commission is acting under the express direction of Congress as set forth in the Omnibus Consolidated Appropriations Act for 1997 ("Appropriations Act").[3] While realizing that the timetable for this reallocation and auction is not a matter for the Commission's discretion, CEMA is nonetheless concerned that the rapid pace of this proceeding does not allow the Commission to seek and consider comprehensive information vital to the decision-making for overall spectrum policy. CEMA's interest is in ensuring that, within the statutory structures, the spectrum is assigned to meet its best and most appropriate use. CEMA also seeks to ensure that DARS, when introduced, will have adequate and suitable spectrum to allow the public to take advantage of the high fidelity, distortion-free listening experience which the service can provide.

DARS service promises to fulfill a significant public need by bringing radio into the digital age and providing radio listeners with CD-quality sound. Equally important, satellite-based

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2 *See* Comments of the Consumer Electronics Group of the Electronic Industries Association, IB Docket No. 95-91 (filed Sept. 15, 1995); Reply Comments of the Consumer Electronics Group of the Electronic Industries Association, IB Docket No. 95-91 (filed Oct. 13, 1995).

3 *See* Omnibus Consolidated Appropriations Act, 1997, P.L. 104-208, 110 Stat. 3009 (1996).

DARS systems, with their broad geographic coverage and large number of channels, will benefit the public by dramatically expanding the range and diversity of radio programming. The economies of scale inherent in satellite delivery will allow DARS broadcasters to aggregate audiences in niche or rural markets, and develop programming specifically for those markets.[4]

In January of 1996, the entire 2310-2360 MHz band was allocated by the Commission for eventual use by DARS.[5] Now, pursuant to the Appropriations Act, a substantial portion of that allocation--the 2305-2320 MHz and 2345-2360 MHz bands--must be reallocated to a variety of wireless services, effectively halving the DARS allocation.

CEMA is deeply concerned about the Commission's apparent conclusion that commercial DARS broadcasting services can be implemented with only the 25 MHz reserved for this purpose in the 2320-2345 MHz band. For a DARS service to succeed it must be capable of providing compact disk quality sound with full fidelity and dynamic range and without the interference or signal interruptions common to existing radio broadcast services. It must be able to operate in a mobile environment, overcoming the difficulties inherent in velocity differences between the transmitter and the receiver. A DARS service can only meet these challenges if situated in spectrum that is adequate and suitable for the specific technical requirements of DARS broadcast.

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4 *See* Comments of Foundation for the Advancement of Hispanic Americans, IB Docket No. 95-91, at 1 (filed Sept. 12, 1995); Comments of the New York Chinatown Senior Citizens Center, IB Docket No. 95-91, at 1 (Sept. 5, 1995); Comments of the Wyoming Farm Bureau Federation, IB Docket No. 95-91, at 1 (Aug. 28, 1995).

5 *See Amendment of the Commission's Rules with Regard to the Establishment and Regulation of New Digital Audio Radio Services*, GEN Docket No. 90-357, *Report and Order*, 10 FCC Rcd 2310 (1995).

It is unlikely that DARS would be technically feasible in bands shared with other primary uses, and it is even more unlikely that potential DARS broadcasters will accept the risks of such technical infeasibility in addressing the issue of whether to participate in the WCS auctions referenced in the *Notice*.

Moreover, there are indications that the allocation of any "S-band" frequencies (the spectrum located between 2310-2360 MHz) for satellite DARS may not be technically optimal. The Commission's own Pioneer's Preference Review Panel has concluded that none of the DARS applicants (all of whom utilize the S-band for DARS transmission) demonstrated "seamless" coverage in a manner that would justify a pioneer's preference.[6] The fundamental coverage problems cited by the Panel may well be due to the physics of propagation at the S-band frequencies rather than the specific technologies being used by the applicants to transmit the signals. If the S-band proves unsuitable to the provision of seamless coverage, an alternative spectrum band will be required to implement DARS in the United States.

At present, CEMA's Digital Audio Radio Subcommittee has nearly concluded all laboratory and field tests of a variety of DARS systems that will provide the authoritative technical record with respect to the propagation of DARS broadcasts.[7] The laboratory and field test reports, containing extensive data from both "L-band" (the spectrum located between 1452-1492 MHz) and

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[6] *See* letter of Don Messner, Satellite Digital Audio Radio Service Pioneer's Preference Review Panel to John Stern, Federal Communications Commission (Nov. 18, 1996).

[7] The Digital Audio Radio Subcommittee was established in 1991 by CEMA's Audio Systems (R-3) Technical Committee to analyze, test, and set standards for DARS systems.

S-band systems performing under typical, off-air broadcast conditions, should be complete by the end of the year. The Subcommittee expects to complete its evaluations and make recommendations to the Commission regarding a DARS standard in early January, 1997.

CEMA urges the Commission not to preclude any spectrum options until the technical record of the capabilities of DARS technologies is completed and can be assessed by the Commission. If the 2320-2345 MHz band is shown by the Subcommittee tests to be unsuitable for the provision of seamless DARS coverage, the Commission will require the flexibility necessary to investigate alternative spectrum bands for the provision of DARS in the United States, including lower frequencies.

In addition, CEMA has advocated that new spectrum be reserved for use exclusively by unlicensed Part 15 devices.[8] If the 2320-2345 MHz spectrum proves unsuitable for DARS, the Commission would have a unique opportunity to create a new "Part 16" regulatory regime by designating this spectrum for use by unlicensed devices. This would be similar the Commission's actions in its allocation of 1910-1930 MHz for unlicensed broadband PCS services while structuring licensed services such that licensed frequency blocks could be paired from both sides of this "gap." If appropriate, the 2320-2345 MHz spectrum could also be used to relocate the current occupants of spectrum that would be more appropriately allocated for DARS transmission.

CEMA urges the Commission to solicit and give itself the benefit of all information relevant to the public interest, including the recommendations and data of the CEMA Digital Audio Radio Subcommittee, prior to making spectrum allocation decisions which will be difficult or

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[8] See Comments of the Consumer Electronics Manufacturers Association, ET Docket 96-102, RM-8648, RM-8653 (filed July 15, 1996).

impossible to reverse. Only such a deliberate approach will ensure that the 2305-2360 MHz spectrum is used in the most technically and economically efficient manner practicable, and that sufficient and appropriate spectrum is allocated to make it possible for Americans to receive the benefit of digital audio broadcasting services. The need for such a deliberate approach in overall spectrum policy is only reinforced by the requirement for rapid implementation of the Congressional mandate to reallocate and auction the 2305-2320 and 2345-2360 MHz bands.

Respectfully submitted,

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