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Before the
FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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

File Nos. 49/50-DSS-P/L-90
58/59-DSS-AMEND-90
44/55-DSS-AMEND-92

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OFFICE OF THE SECRETARY

OPPOSITION TO PETITIONS TO DENY
AND RESPONSE TO COMMENTS

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December 1, 1992

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SUMMARY

In mid 1990, Satellite CD Radio, Inc. (SCDR) submitted to the FCC the first application proposing a satellite digital audio radio (DAR) system. Now, after over two and one-half years of scrutiny and public comment, the time has come to grant the application.

SCDR has demonstrated that a subscription satellite DAR system is in the public interest. SCDR is poised to offer the American public thirty channels of CD-quality digital sound directly from satellites. For the first time, rural and traditionally underserved areas will have access to the same quality and quantity of radio programming as urban centers. Further, a satellite DARS will assist the development of the nation's communications infrastructure, by promoting technological development and spurring employment in high technology industries.

Despite these significant service and technological advances, some parties ask the Commission to take a "go slow" approach to SCDR's application. These commenters suggest that no application proposing satellite DAR service should be granted until the Commission has pondered all possible technical and regulatory issues. Others suggest that satellite DAR will wreak havoc upon traditional terrestrial broadcasters. Such concerns are unsupported by the record.

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As an initial matter, delay is the enemy of new service. The path of innovation is fraught with risk and risk taking. The Commission and Congress have long ago recognized that the regulatory process must be made the servant rather than the master of entrepreneurial initiatives. Further delay on SCDR's application simply puts at great risk technological advancement, opportunities for new service offerings and improved public service.

There is no need to await the outcome of pending or future rulemaking proceedings before granting SCDR's application. The Commission clearly has stated that all applications for satellite DAR service will be subject to the outcome of the rulemaking, and that applicants will have an opportunity to amend their proposals to comply with future regulatory requirements. Thus, grant of SCDR's application at this time will not prejudice the outcome of the FCC's proceedings in any fashion.

SCDR has shown that satellite DAR can coexist peacefully with existing broadcast services. SCDR's proposal for subscription-only service will complement, rather than compete directly with, existing services. Further, SCDR will not enjoy any technological advantage over existing broadcasters. The Commission has committed to ensure that existing broadcasters will have an opportunity to convert their stations to digital service, and this conversion can likely occur before a satellite-DARS provider can construct and launch.

SCDR's application is fully consistent with international obligations for broadcast satellite service (sound). First, SCDR proposes to use the S-band, for which the United States fought and won the right at the 1992 World Administrative Radio

Conference and for which the Commission has proposed to allocate for BSS-Sound in its pending NPRM. Second, there is no legal obstacle to SCDR offering audio service on a subscription basis. Moreover, the FCC is free to use all of the 50 MHz of spectrum in the S-band suggested by SCDR for satellite DAR service.

SCDR has shown that it is legally qualified to be a Commission licensee. Currently, there are no statutes, rules or policies that would prohibit non-controlling alien investment in SCDR. SCDR is seeking authorization solely as a subscription provider which, by FCC definition, is not "broadcasting." Thus, foreign investment provisions in the Communications Act are inapplicable. In any event, SCDR recognizes that it is subject to any technical or regulatory requirements that the Commission may impose in the future.

SCDR also is financially qualified to pursue its proposed system. SCDR already has invested \$ 4 million toward making its innovative idea a reality. Further, leading financial sources and satellite manufacturers have backed SCDR and have manifested their intent to support SCDR's satellite DAR system upon FCC approval.

One party, well after the time for comment elapsed, challenges SCDR's request for a pioneer's preference. The record reflects that SCDR is precisely the type of entrepreneur that the Commission's pioneer preference standards were intended to encourage and reward. It has expended substantial human and financial resources in pursuit of satellite DAR. SCDR has been the pioneer in satellite DAR technology, for which it has filed for patent protection. Further, SCDR has long championed the service at the FCC, by petitioning the Commission to allocate spectrum for the service

and tirelessly pursuing both its application and a regulatory framework for the service, including a working demonstration of the technology via satellite.

SCDR shows that it intends fully to comply with all existing and future copyright and intellectual property interests. SCDR, as an innovator itself, is sensitive to the value of intellectual property and will honor all obligations under law to the holders of valid interests.

Finally, SCDR's application is technically sound. It has conducted extensive tests and experiments, and aspects of its proposed design are supported by Bell Labs, Scientific Atlanta and others. The record also shows that SCDR's innovative technical proposal, including polarization diversity and the proposed coding scheme, is workable and spectrum efficient.

Therefore, the public interest requires the Commission to grant at this time SCDR's application for authority to construct, launch and operate a satellite DAR system.

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To: Chief, Common Carrier Bureau

OPPOSITION TO PETITIONS TO DENY
AND RESPONSE TO COMMENTS

Satellite CD Radio, Inc. (SCDR), by its attorneys, hereby replies to the petitions to deny and comments filed on its application.¹ As shown below, the arguments for delay proffered by petitioners and commenters are untimely, misplaced or wrong, and should not detain the Commission from promptly granting SCDR the authority to construct, launch, and operate a satellite digital audio radio (DAR) system.

¹ The Commission placed the SCDR application on Public Notice on October 13, 1992. Previously, several parties had commented on SCDR's application, and SCDR incorporates its prior replies to those filings by reference herein.

I. BACKGROUND AND INTRODUCTION

On May 18, 1990, SCDR filed an application to construct, launch, and operate a satellite-DAR system² and thus began the process of transporting elements of broadcasting into the digital age. At the same time, SCDR filed a petition for rulemaking seeking the allocation of sufficient spectrum for the new service.³ Subsequently, SCDR filed a request for a "pioneer's preference" in the new service.⁴

Two years ago, the Commission adopted a Notice of Inquiry on digital audio radio and accepted comment thereon.⁵ Over the next year, in a parallel effort associated with the United States preparation for the 1992 World Administrative Radio Conference (WARC), the Commission and the Executive Branch found a spectral home for the new service.⁶ Recently, having won the international rights to use the band in the United States at the WARC, the Commission has now proposed to allocate the

² During the period since the first filing, SCDR has amended its submission, in order to incorporate innovations from its research and development efforts and to keep pace with technological and marketing developments. See Compendium of Applications and Restatement of Petition for Rulemaking, FCC File Nos. 49/50-DSS-P/LA-90, 58/59-DSS-AMEND-90, 8-DSS-Misc-91(2), RM-7400 (filed Sept. 14, 1992) ("Compendium").

³ RM-7400 (filed May 18, 1990).

⁴ Request for Pioneer's Preference, Gen. Dkt 90-357, PP-24 (filed July 30, 1991); Supplement to Request for Pioneer's Preference, PP-24 (filed Jan. 23, 1992).

⁵ Digital Audio Radio Services, 5 F.C.C. Rcd 5237 (1990) ("NOI").

⁶ See FCC Announces WARC-92 Strategy for Digital Audio Broadcasting, FCC Public Notice (Oct. 31, 1991).

spectrum to DAR service in the United States.⁷ On October 13, 1992, the Commission placed the SCDR application on public notice.⁸

Over 30 parties have filed petitions or comments regarding SCDR's application. The majority of those -- from broadcasters, technology companies, program suppliers, etc. -- support SCDR's application in particular and satellite-DARS in general. These comments alone provide sufficient justification for the prompt approval of the instant application.

Most of the petitions to deny were submitted by broadcasters, apparently drafted from a common form, that reflect an apparent fear of additional marketplace competition. The National Association of Broadcasters (NAB) itself expressed similar concerns.⁹ Various entities with whom SCDR would compete for spectrum,¹⁰ customers,¹¹ or a satellite-DAR license¹² filed as well. They offer a raft of lofty-sounding reasons to delay, but their common basis in fact is private advantage from holding up SCDR's application.

⁷ Digital Audio Radio Services, FCC 92-466 (Nov. 6, 1992) ("NPRM").

⁸ FCC Public Notice Report No. DS-1244, DA-1408 (Oct. 13, 1992).

⁹ See National Ass'n of Broadcasters Petition to Deny at 2 (filed Nov. 13, 1992) ("NAB Petition").

¹⁰ See Comments of AMSC Subsidiary Corp (filed Nov. 13, 1992) ("AMSC Comments").

¹¹ See Comments of Digital Cable Radio (filed Nov. 13, 1992) ("Digital Cable Radio Comments").

¹² See Primosphere Ltd. Partnership Petition to Deny at 2 (filed Nov. 13, 1992) ("Primosphere Petition").

The Commission should not heed these protectionist pleadings. Contrary to the claims of present service providers, SCDR's application, and the satellite-DARS in general, is designed to complement, not replace, existing broadcasting. Indeed, many of SCDR's opponents raise inconsistent objections. On the one hand, they attack DARS and SCDR's application as unproven. On the other, they protest that the FCC must delay because establishment of the new service and grant of the application will have profound and disastrous consequences. In fact, as shown below, neither is true: SCDR's proposal is technically sound, and the DARS will not undermine terrestrial services and provides no impediment to traditional broadcasting adopting digital technology.

Rather, SCDR's system will provide multi-channel CD-quality digital audio service to remote areas that are not now well serviced by terrestrial services. SCDR will promote diversity of ownership and programming sources by providing additional channels of audio service throughout the country. Indeed, as a satellite service, it can uniquely serve ethnic and cultural audiences. Additionally, consumers, especially motorists, will secure a CD-quality, narrowcasted format that is also commercial free and available throughout the country.

As a result, the SCDR proposal promotes the national interest by encouraging the development of the nation's telecommunications infrastructure. Grant of SCDR's application will promote United States technical leadership and foster the creation of

high quality, high technology jobs.¹³ By granting the application, the FCC can stimulate a valuable new service by permitting an entrepreneurial company to proceed at its own risk.¹⁴ And, given the interest of other entities in becoming a satellite-DARS licensee, it is apparent that SCDR's view of the future and the promise of satellite-DARS is shared by others.

However, in the two and one-half years since the application was filed with the Commission, SCDR has been unable to bring these benefits to the public. At this juncture, as Commissioner Duggan noted, it is important that the Commission "act expeditiously, since delay is the enemy of new services."¹⁵ Commissioner Duggan's comments echo a decade-old court decision concerning the satellite business:

In this dynamic and technologically innovative industry, a proposed venture may become obsolete in just a few years. Even without regulatory delay, a satellite firm is faced with the daunting prospect of time-consuming research and construction, which entail advance planning and risky lead time--and which may lead to naught. To delay a proposed project six months will increase capital cost and diminish technological advantage; to

¹³ Several of the supporting commenters make this point. See Comments of New World Sky Media at 2 (filed Nov. 12, 1992) ("New World Comments"); Comments of The Right-Roc Group at 1 (filed Nov. 13, 1992) ("Right-Roc Comments"); Comments of Techsonic Industries at 2 (filed Nov. 13, 1992) ("Techsonic Comments"); Comments of J Boats, Inc. at 2 (filed Nov. 12, 1992) ("J Boats Comments").

¹⁴ Such an approach has been praised by at least one Commissioner. See It's Time to Re-Think Industrial Policy, Remarks of Commissioner Ervin S. Duggan before the Federal Communications Bar Association at 6 (Sept. 23, 1992).

¹⁵ Separate Statement of Commissioner Ervin S. Duggan at 1 (appended to NPRM).

delay it a year or more may destroy its attractiveness as an investment.¹⁶

The time for further delay is past. For the reasons proffered below, SCDR respectfully requests the Commission to grant its petition to construct, launch, and operate a satellite-digital audio radio system to bring CD-quality radio to the people of the United States.

II. PROMPT CONSIDERATION AND GRANT OF SCDR'S APPLICATION WILL SERVE THE PUBLIC INTEREST

Opponents of SCDR's proposal counsel the Commission to "go-slow": to delay action on the application until the Commission concludes the rulemaking proceedings that will define the regulatory framework for satellite DARS.¹⁷ Principally, they fear potential harm to existing audio service providers. As demonstrated below, prompt and favorable action on SCDR's application can proceed without prejudice to the outcome of the NPRM, will not injure existing radio broadcasters, and to do otherwise will needlessly postpone the benefits of a valuable new service to the listening public.

¹⁶ *United States v. FCC*, 652 F.2d 72, 95 (D.C. Cir. 1980) (en banc).

¹⁷ See *NAB Petition* at 7-8; *Joint Parties Petition to Deny or Defer* at 3 (filed Nov. 13, 1992) ("*Joint Parties Petition*"); *Primosphere Petition* at 9; *Digital Cable Radio Comments* at 6-7; *Comments of Int'l Radio Satellite Corp.* at 2-3 (filed Nov. 12, 1992) ("*RadioSat Int'l Comments*").

A. The Commission Should Grant SCDR's Application As Rapidly as Possible

SCDR's application for a satellite DAR system has been on file with the Commission for over two and one-half years. Throughout this time, SCDR has received substantial support from all quarters, including potential users, equipment manufacturers, program suppliers, and even broadcasters. For example, radio station WPFW, Wisconsin Public Radio and Minnesota Public Radio filed comments in support of SCDR's satellite-DAR system.¹⁸ Other supporters' comments recognize that SCDR's system can uniquely aggregate minority listening audiences¹⁹ and reach rural and remote area audiences.²⁰ These supporters, like the Commission itself, recognize the significant public interest benefits accruing from satellite DAR service through increased program diversity, technological advancement, and economic opportunity.

SCDR's detractors, however, attempt to distract attention away from these tangible benefits of satellite DAR by urging the Commission to postpone action on SCDR's application pending resolution of the NPRM and, perhaps, pending adoption of digital standards for terrestrial broadcasting. However, grant of SCDR's application

¹⁸ See Comments of Wisconsin Public Radio (filed Nov. 12, 1992) ("WPR Comments"); Comments of Minnesota Public Radio (filed Nov. 13, 1992) ("MPR Comments"); Comments of WPFW (FM) (filed Nov. 13, 1992).

¹⁹ See New World Comments at 1-2 (discussing Korean language programming).

²⁰ See J Boats Comments at 2, Techsonic Comments at 2, MPR Comments at 2.

will in no way inhibit the Commission's consideration of the issues raised in the NPRM. The Commission has made clear that any application, and resulting construction permit, for satellite DARS will be subject to the outcome of the NPRM, which includes terrestrial DAR.²¹

Indeed, SCDR's proposed system is flexibly designed so technical or legal requirements that the Commission ultimately may impose on satellite-DARS providers easily can be accommodated. As noted in its application, SCDR will accept the outcome of the NPRM and modify its application accordingly, including adapting to terrestrial digital standards. SCDR understands the regulatory uncertainty at this stage and is willing to proceed at its own risk.

Moreover, there is no need to await resolution of terrestrial broadcasting in-band standardization. That process is on-going, but has little to do with S-band DARS.²² In fact, because satellite companies have such long lead times of four or more years between the design phase and the actual implementation of service, terrestrial broadcasters could easily initiate DAR service well before any satellite providers have launched.

Further, the SCDR application may be granted without predetermining the establishment of technical standards for DAR service. Digital Cable Radio urges the

²¹ The Commission expressly granted applicants "an opportunity to amend their applications, if necessary, to conform with any requirements and policies that may be adopted" for satellite DAR service. Public Notice, Rep. No. DS-1244, DA 92-1408, at 2 (Oct. 13, 1992).

²² Indeed, SCDR has a strong interest in promoting a compatible terrestrial service to reduce receiver costs, as NAB recognizes. NAB Petition at 8 n.8.

Commission not to grant SCDR's application until a technical committee, similar to the advisory group for high definition television, has an opportunity to study all potential DAR technologies and propose to the Commission a single audio coding standard.²³ Ironically, at the same time Digital Cable Radio's requests a committee to study technical standards for satellite-DAR, it already offers digital audio service (albeit limited to in-home service) without a national standard. Thus, its call for the development of standards prior to the issuance of any authorizations for satellite-DARS suggests an attempt to detain a competitor through the regulatory process.

In fact, however, there is no need to delay service. The Electronics Industry Association (EIA) already is considering technical standards for all potential forms of DARS technologies.²⁴ As the Commission recognized, the EIA forum is committed to fair representation of all industry groups and should be encouraged to reach voluntary consensus on important technological issues that will affect all participants.²⁵ As a result, the FCC should not postpone service to the public while the industry itself is

²³ Digital Cable Radio Comments at 7-8.

²⁴ NPRM, ¶ 11 n.10.

²⁵ On September 6, 1991, the Consumer Electronics Group of the Electronic Industries Association formed a Subcommittee to study the development DARS technical standards. EIA News Release (Sept. 6, 1991). The group has committed itself to soliciting proposed DAR standards, and testing each manufacturer's prototype. EIA News Release (May 22, 1992). The EIA's schedule calls for a final standards recommendation by early 1994. EIA/CEG R-3 Audio Committee DAR Subcommittee Project Time Line (Oct. 1992). SCDR, and some of the parties that commented on SCDR's application, participate actively in this forum.

voluntarily working to accomplish this standardization. In addition, SCDR has agreed to utilize industry standards in its satellite system.²⁶

As the Commission previously has found, the public interest is best served by enabling entrepreneurial companies -- especially satellite companies subject to significant lead times -- to introduce new services at their own peril. Failure to encourage such economic activity can result in enormous losses to the American public. One study showed, for example, that the regulatory delay in introducing cellular service has cost the United States economy an estimated \$86 billion.²⁷ Here, SCDR is poised to launch an entirely new industry. Program suppliers, equipment manufacturers and suppliers, and recreation industry representatives voice strong support for prompt action on SCDR's proposal as a means of promoting economic and employment growth.²⁸ Continued delay on SCDR's application needlessly postpones economic opportunities for these important industries.

²⁶ Compendium at 4.

²⁷ See Statement of Dr. Charles L. Jackson, National Economic Research Associates, Inc., before the FCC En Banc Hearing, at 4 (Dec. 5, 1991); Communications Daily, Nov. 18, 1991, at 5; Comments of AT&T, Gen. Dkt No. 90-314, at 7 (filed Nov. 11, 1992).

²⁸ Comments of All Pro Sports and Entertainment, Inc., at 3 (filed Nov. 13, 1992) ("All Pro Sports and Entertainment Comments"); The Right-Roc Group Comments at 1; Techsonic Industries Comments at 2; Seavey Engineering Comments at 1 (filed Nov. 9, 1992); J Boats Comments at 2. In addition to the foregoing, SCDR's application was supported by high-tech companies such as Hughes Space and Communications Co., ComStream Corp., Dolby Laboratories and Aware, Inc.

B. Grant Of The SCDR Application Will Not Adversely Affect Existing Terrestrial Radio Broadcasting

The NAB itself recognizes the benefits and consumer demand for DAR service. John Abel, executive vice president of NAB has stated that "[c]onsumers clearly have growing experience and demand for high-quality digital audio technology" including DAR.²⁹ Yet despite this express recognition of consumer desire for digital audio radio services, the NAB and other parties urge the Commission to deny SCDR's application because satellite DARS will materially injure terrestrial broadcasters.³⁰ To the contrary, the proposal offered by SCDR for a national subscription service will not only have negligible impact on traditional broadcasting,³¹ it substantially will promote the Commission's fundamental goal of promoting program diversity and technological innovation.

As an initial matter, any concerns about potentially adverse effects of DAR generally on program diversity and localism should best be considered in the

²⁹ Communications Daily, Oct. 22, 1992, at 7.

³⁰ NAB Petition at 6; Joint Parties at 2-3; Comments of the Radio Operators Caucus at 3 (filed Nov. 13, 1992); Digital Cable Radio Comments at 9.

³¹ As noted in its application, SCDR is proposing a subscription-only service. Several commenters raise concerns that SCDR may not always remain a subscription-only service, or urge the Commission to decide all issues regarding classification before granting any applications for satellite DAR service. NAB Petition at 7-8; Joint Parties Petition at 3-4; BSB Communications Petition to Deny at 7 (filed Nov. 1, 1992); Ralph McBride Petition to Deny at 3 (filed Nov. 1, 1992). SCDR has no intention of becoming a broadcaster. In any event, should SCDR ever attempt to change its classification, such as to become a broadcaster, it would have to apply for FCC authorization. Interested parties would have an opportunity then to oppose such an offering. These concerns are not only highly speculative, they are well beyond the scope of this particular proceeding.

rulemaking. The NPRM and NOI both include these issues, and SCDR submits that it is inappropriate to raise them in the context of its particular application.

Even if the Commission were to consider such arguments here, there are compelling reasons to conclude that grant of SCDR's application will not impair local broadcasting. First, it is ludicrous to think that a small entrepreneurial company such as SCDR could dislodge the broadcast industry. At present, SCDR has a well-developed technical concept and preliminary funding. By contrast, the United States radio industry has an in-place infrastructure of transmitters and receivers worth billions, and it earned over \$8.5 billion in revenue during the one year period ending September 30, 1992.³² SCDR cannot threaten an industry with the economic might and powerful allies of broadcasting -- and it has not by its application.

Second, SCDR will have no technological advantage over terrestrial broadcasters. The Commission has emphasized its commitment to the continued viability of the broadcasting medium by ensuring that existing broadcasters "have an opportunity to take advantage of new digital radio technologies."³³ In fact, contrary to earlier speculation, it now appears that an in-band solution will be available to convert terrestrial broadcasters to digital service.³⁴ Consequently, allocation of the

³² Kagan Media Index, Oct. 22, 1992, at 8.

³³ NPRM, ¶ 12. The NAB acknowledges that SCDR has every incentive to promote the development of terrestrial digital services. See NAB Petition at 8 n.8.

³⁴ See Digital Radio: Static is Only Between Owners, N.Y. Times, May 6, 1992, at D8, col. 1. Two different in-band systems were demonstrated at the NAB's 1992 annual convention. Thus, solutions for developing appropriate in-band technology to accommodate both AM and FM broadcasters appear to
(continued...)

S-band for Broadcasting Satellite Service-Sound (BSS-Sound) and grant of SCDR's application will not in any respect inhibit the ability of terrestrial broadcasters to convert to digital technology.

Third, SCDR's proposal in fact may spur, rather than inhibit, the transition from analog to digital terrestrial broadcasting. The introduction of direct satellite-to-customer digital service will increase the incentive of existing broadcasters to update their physical plant as soon as possible. According to NAB's Mr. Abel, despite resistance from some radio broadcasters towards DAR, "they probably have little choice because of almost certain competition from satellite and other digital audio services."³⁵ NAB thus admits that SCDR's proposal will encourage broadcasters to enter the digital age.

Fourth, SCDR's proposed service will complement, not replace or challenge, traditional local service. SCDR's service is a wholly different transmission system, operated through subscription, not broadcast, that will attract a different audience than current AM and FM radio broadcasting. SCDR cannot duplicate local news, weather, traffic and sports programming -- the signature of terrestrial broadcasting. As noted in SCDR's Compendium, SCDR's comparative advantage is in providing a wide variety of high-quality audio programming where little or none currently exists. SCDR will be

³⁴(...continued)

be almost at hand. See Keeping Tabs on New Technologies: Radio Executives Contemplate Future of In-Band DAB, AM Improvements, Broadcasting, Sept. 14, 1992, at 15.

³⁵ Communications Daily, Oct. 22, 1992, at 7.

able to provide nationwide narrowcast service to long distance car and truck traffic. In addition, for the first time, currently underserved rural areas will have access to the same quality and quantity of radio programming available elsewhere.³⁶

Fifth, grant of SCDR's application will promote the goals of public interest broadcasting. As a satellite service, SCDR will be able to aggregate relatively small, disperse minority audiences from across the country in a cost-effective fashion. Wisconsin Public Radio and Minnesota Public Radio apparently recognize that satellite-DARS can reach their particular audience and thus support SCDR's system.³⁷ SCDR is willing to cooperate with these and other public broadcasters to ensure that the cultural, educational, and informational needs of the public can be addressed. Further, the question of set-aside channels for noncommercial educational programming should be addressed, if at all, in the rulemaking.

Finally, the record shows that SCDR's proposed service will not reduce the supply of programs available to existing broadcasters. All Pro Sports and Entertainment, Inc., for example, demonstrates that the SCDR system will generate "opportunities for new programming origination."³⁸ The Commission previously has found that new delivery systems likely will enhance overall program supply. For example, in the satellite video market, the Commission found that the introduction of

³⁶ Compendium at 5-6.

³⁷ WPR Comments at 1; MPR Comments at 1.

³⁸ All Pro Sports and Entertainment Comments at 3; see also Right-Roc Comments at 2 (SCDR system will promote program diversity).

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SUMMARY

In mid 1990, Satellite CD Radio, Inc. (SCDR) submitted to the FCC the first application proposing a satellite digital audio radio (DAR) system. Now, after over two and one-half years of scrutiny and public comment, the time has come to grant the application.

SCDR has demonstrated that a subscription satellite DAR system is in the public interest. SCDR is poised to offer the American public thirty channels of CD-quality digital sound directly from satellites. For the first time, rural and traditionally underserved areas will have access to the same quality and quantity of radio programming as urban centers. Further, a satellite DARS will assist the development of the nation's communications infrastructure, by promoting technological development and spurring employment in high technology industries.

Despite these significant service and technological advances, some parties ask the Commission to take a "go slow" approach to SCDR's application. These commenters suggest that no application proposing satellite DAR service should be granted until the Commission has pondered all possible technical and regulatory issues. Others suggest that satellite DAR will wreak havoc upon traditional terrestrial broadcasters. Such concerns are unsupported by the record.

7.

As an initial matter, delay is the enemy of new service. The path of innovation is fraught with risk and risk taking. The Commission and Congress have long ago recognized that the regulatory process must be made the servant rather than the master of entrepreneurial initiatives. Further delay on SCDR's application simply puts at great risk technological advancement, opportunities for new service offerings and improved public service.

There is no need to await the outcome of pending or future rulemaking proceedings before granting SCDR's application. The Commission clearly has stated that all applications for satellite DAR service will be subject to the outcome of the rulemaking, and that applicants will have an opportunity to amend their proposals to comply with future regulatory requirements. Thus, grant of SCDR's application at this time will not prejudice the outcome of the FCC's proceedings in any fashion.

SCDR has shown that satellite DAR can coexist peacefully with existing broadcast services. SCDR's proposal for subscription-only service will complement, rather than compete directly with, existing services. Further, SCDR will not enjoy any technological advantage over existing broadcasters. The Commission has committed to ensure that existing broadcasters will have an opportunity to convert their stations to digital service, and this conversion can likely occur before a satellite-DARS provider can construct and launch.

SCDR's application is fully consistent with international obligations for broadcast satellite service (sound). First, SCDR proposes to use the S-band, for which the United States fought and won the right at the 1992 World Administrative Radio

Conference and for which the Commission has proposed to allocate for BSS-Sound in its pending NPRM. Second, there is no legal obstacle to SCDR offering audio service on a subscription basis. Moreover, the FCC is free to use all of the 50 MHz of spectrum in the S-band suggested by SCDR for satellite DAR service.

SCDR has shown that it is legally qualified to be a Commission licensee. Currently, there are no statutes, rules or policies that would prohibit non-controlling alien investment in SCDR. SCDR is seeking authorization solely as a subscription provider which, by FCC definition, is not "broadcasting." Thus, foreign investment provisions in the Communications Act are inapplicable. In any event, SCDR recognizes that it is subject to any technical or regulatory requirements that the Commission may impose in the future.

SCDR also is financially qualified to pursue its proposed system. SCDR already has invested \$ 4 million toward making its innovative idea a reality. Further, leading financial sources and satellite manufacturers have backed SCDR and have manifested their intent to support SCDR's satellite DAR system upon FCC approval.

One party, well after the time for comment elapsed, challenges SCDR's request for a pioneer's preference. The record reflects that SCDR is precisely the type of entrepreneur that the Commission's pioneer preference standards were intended to encourage and reward. It has expended substantial human and financial resources in pursuit of satellite DAR. SCDR has been the pioneer in satellite DAR technology, for which it has filed for patent protection. Further, SCDR has long championed the service at the FCC, by petitioning the Commission to allocate spectrum for the service

and tirelessly pursuing both its application and a regulatory framework for the service, including a working demonstration of the technology via satellite.

SCDR shows that it intends fully to comply with all existing and future copyright and intellectual property interests. SCDR, as an innovator itself, is sensitive to the value of intellectual property and will honor all obligations under law to the holders of valid interests.

Finally, SCDR's application is technically sound. It has conducted extensive tests and experiments, and aspects of its proposed design are supported by Bell Labs, Scientific Atlanta and others. The record also shows that SCDR's innovative technical proposal, including polarization diversity and the proposed coding scheme, is workable and spectrum efficient.

Therefore, the public interest requires the Commission to grant at this time SCDR's application for authority to construct, launch and operate a satellite DAR system.

RECEIVED

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

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In re Application of:)
)
SATELLITE CD RADIO, INC.) File Nos. 49/50-DSS-P/L-90
) 58/59-DSS-AMEND-90
For Authority to Construct, Launch) 44/55-DSS-AMEND-92
And Operate a Digital Audio Radio)
Service Satellite System Using the)
2310 to 2360 MHz Frequency Band)

To: Chief, Common Carrier Bureau

OPPOSITION TO PETITIONS TO DENY
AND RESPONSE TO COMMENTS

Satellite CD Radio, Inc. (SCDR), by its attorneys, hereby replies to the petitions to deny and comments filed on its application.¹ As shown below, the arguments for delay proffered by petitioners and commenters are untimely, misplaced or wrong, and should not detain the Commission from promptly granting SCDR the authority to construct, launch, and operate a satellite digital audio radio (DAR) system.

¹ The Commission placed the SCDR application on Public Notice on October 13, 1992. Previously, several parties had commented on SCDR's application, and SCDR incorporates its prior replies to those filings by reference herein.

I. BACKGROUND AND INTRODUCTION

On May 18, 1990, SCDR filed an application to construct, launch, and operate a satellite-DAR system² and thus began the process of transporting elements of broadcasting into the digital age. At the same time, SCDR filed a petition for rulemaking seeking the allocation of sufficient spectrum for the new service.³ Subsequently, SCDR filed a request for a "pioneer's preference" in the new service.⁴

Two years ago, the Commission adopted a Notice of Inquiry on digital audio radio and accepted comment thereon.⁵ Over the next year, in a parallel effort associated with the United States preparation for the 1992 World Administrative Radio Conference (WARC), the Commission and the Executive Branch found a spectral home for the new service.⁶ Recently, having won the international rights to use the band in the United States at the WARC, the Commission has now proposed to allocate the

² During the period since the first filing, SCDR has amended its submission, in order to incorporate innovations from its research and development efforts and to keep pace with technological and marketing developments. See Compendium of Applications and Restatement of Petition for Rulemaking, FCC File Nos. 49/50-DSS-P/LA-90, 58/59-DSS-AMEND-90, 8-DSS-Misc-91(2), RM-7400 (filed Sept. 14, 1992) ("Compendium").

³ RM-7400 (filed May 18, 1990).

⁴ Request for Pioneer's Preference, Gen. Dkt 90-357, PP-24 (filed July 30, 1991); Supplement to Request for Pioneer's Preference, PP-24 (filed Jan. 23, 1992).

⁵ Digital Audio Radio Services, 5 F.C.C. Rcd 5237 (1990) ("NOI").

⁶ See FCC Announces WARC-92 Strategy for Digital Audio Broadcasting, FCC Public Notice (Oct. 31, 1991).

spectrum to DAR service in the United States.⁷ On October 13, 1992, the Commission placed the SCDR application on public notice.⁸

Over 30 parties have filed petitions or comments regarding SCDR's application. The majority of those -- from broadcasters, technology companies, program suppliers, etc. -- support SCDR's application in particular and satellite-DARS in general. These comments alone provide sufficient justification for the prompt approval of the instant application.

Most of the petitions to deny were submitted by broadcasters, apparently drafted from a common form, that reflect an apparent fear of additional marketplace competition. The National Association of Broadcasters (NAB) itself expressed similar concerns.⁹ Various entities with whom SCDR would compete for spectrum,¹⁰ customers,¹¹ or a satellite-DAR license¹² filed as well. They offer a raft of lofty-sounding reasons to delay, but their common basis in fact is private advantage from holding up SCDR's application.

⁷ Digital Audio Radio Services, FCC 92-466 (Nov. 6, 1992) ("NPRM").

⁸ FCC Public Notice Report No. DS-1244, DA-1408 (Oct. 13, 1992).

⁹ See National Ass'n of Broadcasters Petition to Deny at 2 (filed Nov. 13, 1992) ("NAB Petition").

¹⁰ See Comments of AMSC Subsidiary Corp (filed Nov. 13, 1992) ("AMSC Comments").

¹¹ See Comments of Digital Cable Radio (filed Nov. 13, 1992) ("Digital Cable Radio Comments").

¹² See Primosphere Ltd. Partnership Petition to Deny at 2 (filed Nov. 13, 1992) ("Primosphere Petition").

The Commission should not heed these protectionist pleadings. Contrary to the claims of present service providers, SCDR's application, and the satellite-DARS in general, is designed to complement, not replace, existing broadcasting. Indeed, many of SCDR's opponents raise inconsistent objections. On the one hand, they attack DARS and SCDR's application as unproven. On the other, they protest that the FCC must delay because establishment of the new service and grant of the application will have profound and disastrous consequences. In fact, as shown below, neither is true: SCDR's proposal is technically sound, and the DARS will not undermine terrestrial services and provides no impediment to traditional broadcasting adopting digital technology.

Rather, SCDR's system will provide multi-channel CD-quality digital audio service to remote areas that are not now well serviced by terrestrial services. SCDR will promote diversity of ownership and programming sources by providing additional channels of audio service throughout the country. Indeed, as a satellite service, it can uniquely serve ethnic and cultural audiences. Additionally, consumers, especially motorists, will secure a CD-quality, narrowcasted format that is also commercial free and available throughout the country.

As a result, the SCDR proposal promotes the national interest by encouraging the development of the nation's telecommunications infrastructure. Grant of SCDR's application will promote United States technical leadership and foster the creation of

high quality, high technology jobs.¹³ By granting the application, the FCC can stimulate a valuable new service by permitting an entrepreneurial company to proceed at its own risk.¹⁴ And, given the interest of other entities in becoming a satellite-DARS licensee, it is apparent that SCDR's view of the future and the promise of satellite-DARS is shared by others.

However, in the two and one-half years since the application was filed with the Commission, SCDR has been unable to bring these benefits to the public. At this juncture, as Commissioner Duggan noted, it is important that the Commission "act expeditiously, since delay is the enemy of new services."¹⁵ Commissioner Duggan's comments echo a decade-old court decision concerning the satellite business:

In this dynamic and technologically innovative industry, a proposed venture may become obsolete in just a few years. Even without regulatory delay, a satellite firm is faced with the daunting prospect of time-consuming research and construction, which entail advance planning and risky lead time--and which may lead to naught. To delay a proposed project six months will increase capital cost and diminish technological advantage; to

¹³ Several of the supporting commenters make this point. See Comments of New World Sky Media at 2 (filed Nov. 12, 1992) ("New World Comments"); Comments of The Right-Roc Group at 1 (filed Nov. 13, 1992) ("Right-Roc Comments"); Comments of Techsonic Industries at 2 (filed Nov. 13, 1992) ("Techsonic Comments"); Comments of J Boats, Inc. at 2 (filed Nov. 12, 1992) ("J Boats Comments").

¹⁴ Such an approach has been praised by at least one Commissioner. See It's Time to Re-Think Industrial Policy, Remarks of Commissioner Ervin S. Duggan before the Federal Communications Bar Association at 6 (Sept. 23, 1992).

¹⁵ Separate Statement of Commissioner Ervin S. Duggan at 1 (appended to NPRM).

delay it a year or more may destroy its attractiveness as an investment.¹⁶

The time for further delay is past. For the reasons proffered below, SCDR respectfully requests the Commission to grant its petition to construct, launch, and operate a satellite-digital audio radio system to bring CD-quality radio to the people of the United States.

II. PROMPT CONSIDERATION AND GRANT OF SCDR'S APPLICATION WILL SERVE THE PUBLIC INTEREST

Opponents of SCDR's proposal counsel the Commission to "go-slow": to delay action on the application until the Commission concludes the rulemaking proceedings that will define the regulatory framework for satellite DARS.¹⁷ Principally, they fear potential harm to existing audio service providers. As demonstrated below, prompt and favorable action on SCDR's application can proceed without prejudice to the outcome of the NPRM, will not injure existing radio broadcasters, and to do otherwise will needlessly postpone the benefits of a valuable new service to the listening public.

¹⁶ United States v. FCC, 652 F.2d 72, 95 (D.C. Cir. 1980) (en banc).

¹⁷ See NAB Petition at 7-8; Joint Parties Petition to Deny or Defer at 3 (filed Nov. 13, 1992) ("Joint Parties Petition"); Primosphere Petition at 9; Digital Cable Radio Comments at 6-7; Comments of Int'l Radio Satellite Corp. at 2-3 (filed Nov. 12, 1992) ("RadioSat Int'l Comments").

A. The Commission Should Grant SCDR's Application As Rapidly as Possible

SCDR's application for a satellite DAR system has been on file with the Commission for over two and one-half years. Throughout this time, SCDR has received substantial support from all quarters, including potential users, equipment manufacturers, program suppliers, and even broadcasters. For example, radio station WPFW, Wisconsin Public Radio and Minnesota Public Radio filed comments in support of SCDR's satellite-DAR system.¹⁸ Other supporters' comments recognize that SCDR's system can uniquely aggregate minority listening audiences¹⁹ and reach rural and remote area audiences.²⁰ These supporters, like the Commission itself, recognize the significant public interest benefits accruing from satellite DAR service through increased program diversity, technological advancement, and economic opportunity.

SCDR's detractors, however, attempt to distract attention away from these tangible benefits of satellite DAR by urging the Commission to postpone action on SCDR's application pending resolution of the NPRM and, perhaps, pending adoption of digital standards for terrestrial broadcasting. However, grant of SCDR's application

¹⁸ See Comments of Wisconsin Public Radio (filed Nov. 12, 1992) ("WPR Comments"); Comments of Minnesota Public Radio (filed Nov. 13, 1992) ("MPR Comments"); Comments of WPFW (FM) (filed Nov. 13, 1992).

¹⁹ See New World Comments at 1-2 (discussing Korean language programming).

²⁰ See J Boats Comments at 2, Techsonic Comments at 2, MPR Comments at 2.

will in no way inhibit the Commission's consideration of the issues raised in the NPRM. The Commission has made clear that any application, and resulting construction permit, for satellite DARS will be subject to the outcome of the NPRM, which includes terrestrial DAR.²¹

Indeed, SCDR's proposed system is flexibly designed so technical or legal requirements that the Commission ultimately may impose on satellite-DARS providers easily can be accommodated. As noted in its application, SCDR will accept the outcome of the NPRM and modify its application accordingly, including adapting to terrestrial digital standards. SCDR understands the regulatory uncertainty at this stage and is willing to proceed at its own risk.

Moreover, there is no need to await resolution of terrestrial broadcasting in-band standardization. That process is on-going, but has little to do with S-band DARS.²² In fact, because satellite companies have such long lead times of four or more years between the design phase and the actual implementation of service, terrestrial broadcasters could easily initiate DAR service well before any satellite providers have launched.

Further, the SCDR application may be granted without predetermining the establishment of technical standards for DAR service. Digital Cable Radio urges the

²¹ The Commission expressly granted applicants "an opportunity to amend their applications, if necessary, to conform with any requirements and policies that may be adopted" for satellite DAR service. Public Notice, Rep. No. DS-1244, DA 92-1408, at 2 (Oct. 13, 1992).

²² Indeed, SCDR has a strong interest in promoting a compatible terrestrial service to reduce receiver costs, as NAB recognizes. NAB Petition at 8 n. 8.

Commission not to grant SCDR's application until a technical committee, similar to the advisory group for high definition television, has an opportunity to study all potential DAR technologies and propose to the Commission a single audio coding standard.²³ Ironically, at the same time Digital Cable Radio's requests a committee to study technical standards for satellite-DAR, it already offers digital audio service (albeit limited to in-home service) without a national standard. Thus, its call for the development of standards prior to the issuance of any authorizations for satellite-DARS suggests an attempt to detain a competitor through the regulatory process.

In fact, however, there is no need to delay service. The Electronics Industry Association (EIA) already is considering technical standards for all potential forms of DARS technologies.²⁴ As the Commission recognized, the EIA forum is committed to fair representation of all industry groups and should be encouraged to reach voluntary consensus on important technological issues that will affect all participants.²⁵ As a result, the FCC should not postpone service to the public while the industry itself is

²³ Digital Cable Radio Comments at 7-8.

²⁴ NPRM, ¶ 11 n.10.

²⁵ On September 6, 1991, the Consumer Electronics Group of the Electronic Industries Association formed a Subcommittee to study the development DARS technical standards. EIA News Release (Sept. 6, 1991). The group has committed itself to soliciting proposed DAR standards, and testing each manufacturer's prototype. EIA News Release (May 22, 1992). The EIA's schedule calls for a final standards recommendation by early 1994. EIA/CEG R-3 Audio Committee DAR Subcommittee Project Time Line (Oct. 1992). SCDR, and some of the parties that commented on SCDR's application, participate actively in this forum.

voluntarily working to accomplish this standardization. In addition, SCDR has agreed to utilize industry standards in its satellite system.²⁶

As the Commission previously has found, the public interest is best served by enabling entrepreneurial companies -- especially satellite companies subject to significant lead times -- to introduce new services at their own peril. Failure to encourage such economic activity can result in enormous losses to the American public. One study showed, for example, that the regulatory delay in introducing cellular service has cost the United States economy an estimated \$86 billion.²⁷ Here, SCDR is poised to launch an entirely new industry. Program suppliers, equipment manufacturers and suppliers, and recreation industry representatives voice strong support for prompt action on SCDR's proposal as a means of promoting economic and employment growth.²⁸ Continued delay on SCDR's application needlessly postpones economic opportunities for these important industries.

²⁶ Compendium at 4.

²⁷ See Statement of Dr. Charles L. Jackson, National Economic Research Associates, Inc., before the FCC En Banc Hearing, at 4 (Dec. 5, 1991); Communications Daily, Nov. 18, 1991, at 5; Comments of AT&T, Gen. Dkt No. 90-314, at 7 (filed Nov. 11, 1992).

²⁸ Comments of All Pro Sports and Entertainment, Inc., at 3 (filed Nov. 13, 1992) ("All Pro Sports and Entertainment Comments"); The Right-Roc Group Comments at 1; Techsonic Industries Comments at 2; Seavey Engineering Comments at 1 (filed Nov. 9, 1992); J Boats Comments at 2. In addition to the foregoing, SCDR's application was supported by high-tech companies such as Hughes Space and Communications Co., ComStream Corp., Dolby Laboratories and Aware, Inc.

B. Grant Of The SCDR Application Will Not Adversely Affect Existing Terrestrial Radio Broadcasting

The NAB itself recognizes the benefits and consumer demand for DAR service. John Abel, executive vice president of NAB has stated that "[c]onsumers clearly have growing experience and demand for high-quality digital audio technology" including DAR.²⁹ Yet despite this express recognition of consumer desire for digital audio radio services, the NAB and other parties urge the Commission to deny SCDR's application because satellite DARS will materially injure terrestrial broadcasters.³⁰ To the contrary, the proposal offered by SCDR for a national subscription service will not only have negligible impact on traditional broadcasting,³¹ it substantially will promote the Commission's fundamental goal of promoting program diversity and technological innovation.

As an initial matter, any concerns about potentially adverse effects of DAR generally on program diversity and localism should best be considered in the

²⁹ Communications Daily, Oct. 22, 1992, at 7.

³⁰ NAB Petition at 6; Joint Parties at 2-3; Comments of the Radio Operators Caucus at 3 (filed Nov. 13, 1992); Digital Cable Radio Comments at 9.

³¹ As noted in its application, SCDR is proposing a subscription-only service. Several commenters raise concerns that SCDR may not always remain a subscription-only service, or urge the Commission to decide all issues regarding classification before granting any applications for satellite DAR service. NAB Petition at 7-8; Joint Parties Petition at 3-4; BSB Communications Petition to Deny at 7 (filed Nov. 1, 1992); Ralph McBride Petition to Deny at 3 (filed Nov. 1, 1992). SCDR has no intention of becoming a broadcaster. In any event, should SCDR ever attempt to change its classification, such as to become a broadcaster, it would have to apply for FCC authorization. Interested parties would have an opportunity then to oppose such an offering. These concerns are not only highly speculative, they are well beyond the scope of this particular proceeding.

rulemaking. The NPRM and NOI both include these issues, and SCDR submits that it is inappropriate to raise them in the context of its particular application.

Even if the Commission were to consider such arguments here, there are compelling reasons to conclude that grant of SCDR's application will not impair local broadcasting. First, it is ludicrous to think that a small entrepreneurial company such as SCDR could dislodge the broadcast industry. At present, SCDR has a well-developed technical concept and preliminary funding. By contrast, the United States radio industry has an in-place infrastructure of transmitters and receivers worth billions, and it earned over \$8.5 billion in revenue during the one year period ending September 30, 1992.³² SCDR cannot threaten an industry with the economic might and powerful allies of broadcasting -- and it has not by its application.

Second, SCDR will have no technological advantage over terrestrial broadcasters. The Commission has emphasized its commitment to the continued viability of the broadcasting medium by ensuring that existing broadcasters "have an opportunity to take advantage of new digital radio technologies."³³ In fact, contrary to earlier speculation, it now appears that an in-band solution will be available to convert terrestrial broadcasters to digital service.³⁴ Consequently, allocation of the

³² Kagan Media Index, Oct. 22, 1992, at 8.

³³ NPRM, ¶ 12. The NAB acknowledges that SCDR has every incentive to promote the development of terrestrial digital services. See NAB Petition at 8 n.8.

³⁴ See Digital Radio: Static is Only Between Owners, N.Y. Times, May 6, 1992, at D8, col. 1. Two different in-band systems were demonstrated at the NAB's 1992 annual convention. Thus, solutions for developing appropriate in-band technology to accommodate both AM and FM broadcasters appear to
(continued...)

S-band for Broadcasting Satellite Service-Sound (BSS-Sound) and grant of SCDR's application will not in any respect inhibit the ability of terrestrial broadcasters to convert to digital technology.

Third, SCDR's proposal in fact may spur, rather than inhibit, the transition from analog to digital terrestrial broadcasting. The introduction of direct satellite-to-customer digital service will increase the incentive of existing broadcasters to update their physical plant as soon as possible. According to NAB's Mr. Abel, despite resistance from some radio broadcasters towards DAR, "they probably have little choice because of almost certain competition from satellite and other digital audio services."³⁵ NAB thus admits that SCDR's proposal will encourage broadcasters to enter the digital age.

Fourth, SCDR's proposed service will complement, not replace or challenge, traditional local service. SCDR's service is a wholly different transmission system, operated through subscription, not broadcast, that will attract a different audience than current AM and FM radio broadcasting. SCDR cannot duplicate local news, weather, traffic and sports programming -- the signature of terrestrial broadcasting. As noted in SCDR's Compendium, SCDR's comparative advantage is in providing a wide variety of high-quality audio programming where little or none currently exists. SCDR will be

³⁴(...continued)

be almost at hand. See Keeping Tabs on New Technologies: Radio Executives Contemplate Future of In-Band DAB, AM Improvements, Broadcasting, Sept. 14, 1992, at 15.

³⁵ Communications Daily, Oct. 22, 1992, at 7.

able to provide nationwide narrowcast service to long distance car and truck traffic. In addition, for the first time, currently underserved rural areas will have access to the same quality and quantity of radio programming available elsewhere.³⁶

Fifth, grant of SCDR's application will promote the goals of public interest broadcasting. As a satellite service, SCDR will be able to aggregate relatively small, disperse minority audiences from across the country in a cost-effective fashion. Wisconsin Public Radio and Minnesota Public Radio apparently recognize that satellite-DARS can reach their particular audience and thus support SCDR's system.³⁷ SCDR is willing to cooperate with these and other public broadcasters to ensure that the cultural, educational, and informational needs of the public can be addressed. Further, the question of set-aside channels for noncommercial educational programming should be addressed, if at all, in the rulemaking.

Finally, the record shows that SCDR's proposed service will not reduce the supply of programs available to existing broadcasters. All Pro Sports and Entertainment, Inc., for example, demonstrates that the SCDR system will generate "opportunities for new programming origination."³⁸ The Commission previously has found that new delivery systems likely will enhance overall program supply. For example, in the satellite video market, the Commission found that the introduction of

³⁶ Compendium at 5-6.

³⁷ WPR Comments at 1; MPR Comments at 1.

³⁸ All Pro Sports and Entertainment Comments at 3; see also Right-Roc Comments at 2 (SCDR system will promote program diversity).

DBS likely would stimulate the demand for new programs, resulting in an increase in the amount of program supply available to local broadcast stations.³⁹

As a result, instead of threatening the viability of existing service providers, SCDR directly will advance the purpose of Section 307(b) of the Communications Act⁴⁰ by providing an enormous increase in programming diversity, especially in traditionally under-served areas. Rural areas will for the first time have access to thirty channels of audio programming, all in CD quality sound. The Commission historically has encouraged the development of such expanded service to the public.⁴¹

In any event, the potential economic impact, if any, of satellite DAR service on existing broadcasters is not relevant, as a legal matter, to the merits of SCDR's application. The FCC no longer considers the economic impact of new entrants on existing full service broadcast stations (the Carroll doctrine) in licensing and allotment proceedings.⁴² The only issue in the present matter is whether SCDR's application should be granted. Consequently, the potential economic impact of SCDR's particular

³⁹ Direct Broadcast Satellites, 90 F.C.C.2d at 691-92.

⁴⁰ 47 U.S.C. § 307(b) (1988) (requiring the Commission to ensure an "equitable distribution of radio service" among the states).

⁴¹ AM Expansion, 6 F.C.C. Rcd 6273 (1991); Commercial FM Broadcast Allocations, 94 F.C.C.2d 152 (1983) (Docket 80-90), recon., 97 F.C.C.2d 279 (1984); Low Power Television, 51 Rad. Reg. 2d (P & F) 476 (1982), recon., 53 Rad. Reg. 2d (P & F) 1267 (1983); Direct Broadcast Satellites, 90 F.C.C.2d 676 (1982), aff'd in relevant part sub nom. National Ass'n of Broadcasters v. FCC, 740 F.2d 1190 (D.C. Cir. 1984).

⁴² Over four years ago, the Commission ruled that the Carroll doctrine, which required the Commission to consider the economic impact of new service on existing service if substantial harm was sufficiently alleged, no longer was sound as a matter of economic policy. Detrimental Effects of Proposed New Broadcasting Stations on Existing Stations, 3 F.C.C. Rcd 638, 642 (1988), recon., 4 F.C.C. Rcd 2276 (1989).

proposal on existing broadcasters is not material to this proceeding. Further, to the extent that the Carroll doctrine may retain any relevance in FCC proceedings, such concerns should be raised in the rulemaking.

III. SCDR'S PROPOSED SPECTRUM IS FULLY CONSISTENT WITH INTERNATIONAL ALLOCATIONS AND UNITED STATES POLICY

A. S-Band is the Appropriate Home for DARS

Notably, the comments show little disagreement with SCDR's choice of spectrum. This is not surprising: the United States is now firmly committed to allocating S-Band frequencies (2310-2360 MHz) to DARS. Although the subject of two years of discussion and debate within the United States, the FCC took the lead in fashioning the eventual compromise at these frequencies.⁴³ And, in the face of substantial difficulty, the United States successfully established an international allocation at 2.3 GHz.⁴⁴

Now the Commission has issued a companion Notice of Proposed Rulemaking seeking to reallocate the band.⁴⁵ Given the amount of effort behind obtaining the

⁴³ See FCC Announces WARC-92 Strategy for Digital Audio Broadcasting, FCC News Release (Oct. 31, 1991).

⁴⁴ Addendum + Corrigendum to the Final Acts of the World Administrative Radio Conference, A+C p. 20, ADD 750B (Malaga-Torremolinos 1992) ("Final Acts of WARC-92").

⁴⁵ NPRM, ¶¶ 7-9.

appropriate spectrum for use by satellite-DARS applicants,⁴⁶ the Commission should act promptly on the proposed allocation. Moreover, to the extent parties question the choice of spectrum, this is an issue that should be raised, if at all, in the DARS rulemaking and not in the processing of a single application.

The sole comment raising the spectrum question, that of AMSC Subsidiary Corporation (AMSC), does not oppose institution of Digital Audio Radio service.⁴⁷ Instead, it requests that the Commission hold the spectrum vacant, against the possibility that telemetry users in the L-Band could be relocated to S-Band so that AMSC could operate at L-band.⁴⁸ In particular, AMSC claims that the relocation of S-Band telemetry users to the top 30 MHz of the band (2360-2390 MHz) could "exacerbate the MSS spectrum shortage."⁴⁹

The Commission should ignore AMSC's fanciful spectrum domino theory. Despite opposition, the United States successfully obtained a BSS-Sound allocation at the WARC for DARS at 2.3 GHz. Now, at the eleventh hour -- or, actually, long after midnight -- AMSC would have the FCC undo the careful compromise reached domestically and the United States' intensive effort at WARC. The United States stood

⁴⁶ See Comments of Satellite CD Radio Inc., NTIA Docket No. 92032-2132, at 11-14 (filed Nov. 6, 1992).

⁴⁷ AMSC Comments at 6.

⁴⁸ *Id.* at 3-6.

⁴⁹ *Id.* at 5-6.

fast in deliberations with 120 other nations to achieve this allocation at WARC-92, and there is no reason that the Commission should permit AMSC to undermine it here.

This is particularly true since the mobile satellite service in general, and AMSC in particular, has access to all the spectrum it needs. AMSC is licensed in 28 MHz at L-band⁵⁰ -- far more spectrum than SCDR is seeking. Moreover, AMSC has applied for additional L-band spectrum in the MSS allocation now under consideration for the so-called "big LEOs."⁵¹ In addition, "a considerable amount of spectrum was allocated to MSS" at WARC-92;⁵² AMSC itself admits that the WARC allocated more than 300 MHz of additional MSS spectrum internationally.⁵³ This hardly amounts to any shortage.

In addition, the opportunity cost of proceeding with DAR at the proposed spectrum allocation is very low. Given the United States' commitment to a DAR service, there is little risk that other potential services would be unfairly displaced from the S-band. Further, the Commission has recognized that the few existing licensees at 2.3 GHz easily can be relocated to other spectrum with minimal cost or burden. Currently, there are ten non-government licensees allocated to the 2310-2360 MHz

⁵⁰ Land Mobile Satellite Service, 7 F.C.C. Rcd 266, 274 (1992).

⁵¹ American Mobile Satellite Corp., Petition for Rulemaking (filed June 3, 1991).

⁵² United States Delegation Report, World Admin. Radio Conference at 28 (ITU Malaga-Torremolinos, Spain 1992) ("U.S. Del. Report").

⁵³ AMSC Comments at 3.

band, all of whom use freely tunable equipment that is designed to operate between 2310-2390 MHz.⁵⁴ Thus, there will be near zero cost to relocate these users.

In sum, and in contrast to the MSS cornucopia, there is no other spectrum allocated for BSS-Sound in the United States. Given all the spectrum allocated to MSS, SCDR's request to use one quarter of a 50 MHz band specifically designed for BSS-Sound is reasonable and in the public interest.

B. SCDR's Proposed Subscription Service is Consistent with International and Domestic Spectrum Allocations

Despite the claims of Primosphere⁵⁵ and Digital Cable Radio,⁵⁶ the BSS-Sound spectrum may lawfully be used in the United States for subscription services. These parties assert that SCDR's application is inconsistent with the outcome of WARC-92 because the proposed subscription service is not encompassed within the International Radio Regulation's definition of broadcasting satellite service.⁵⁷ These opponents are flatly wrong, as a matter of both international and domestic law.

As an initial matter, neither the International Telecommunication Union (ITU) nor the International Frequency Registration Board has ever stated that subscription service is not authorized in BSS. This is because neither body is concerned with the

⁵⁴ NPRM, ¶¶ 8-9.

⁵⁵ Primosphere Petition at 8.

⁵⁶ Digital Cable Radio Comments at 11.

⁵⁷ Primosphere Petition at 8-9; see also Digital Cable Radio Comments at 11-12.

particular programming carried aboard broadcast satellites, nor with its regulatory treatment in the country of registration.⁵⁸ Rather, they consider only whether a particular proposed satellite belongs in the "fixed," "mobile" or "broadcast" satellite service. It is enough, for international law, that broadcast service is being provided direct to users, rather than to large earth stations for further distribution.

As a matter of domestic United States law, it is well settled that subscription service can be provided in international broadcasting-satellite allocations. In DBS, for example, the Commission expressly granted applicants the opportunity to offer service by any means, including on a subscription basis.⁵⁹ In fact, several DBS permittees hold authorizations to offer video services on a subscription or private carriage basis.⁶⁰

Moreover, the Commission has recognized that similar terms can have different meanings for domestic and international purposes. For instance, the Commission found United States statutory terms such as "common carrier" are a function of United States law, and have no legal relevance in international law.⁶¹ As a result, the fact that SCDR's subscription service is not "broadcasting" for purposes of United States law does not prevent DARS generally from constituting "broadcasting" for purposes of

⁵⁸ The ITU's APP/4 does not require submission of such information when advance publishing.

⁵⁹ See Direct Broadcast Satellites, 90 F.C.C.2d at 709.

⁶⁰ See Continental Satellite Corp., 4 F.C.C. Rcd 6292, 6295-96, 6300-01 (1989) (granting several DBS licenses, including some providing partially subscription-based service).

⁶¹ See, e.g., International Communications Policies, 104 F.C.C.2d 208, 246-47 (1986), recon., 2 F.C.C. Rcd 7375 (1987).

international obligations. Thus, SCDR's proposed subscription service is fully consistent with the United States' obligations under WARC-92 to allocate 2310-2360 MHz for BSS-Sound.

C. The FCC Can Open the Entire BSS-Sound Band for Immediate Use

Two opponents raise questions about SCDR's compatibility with the so-called "upper 25 MHz" policy adopted at the 1992 World Administrative Radio Conference in Torremolinos Spain.⁶² In fact, the FCC need not constrain the BSS-Sound allocation in the United States, and SCDR's application is perfectly consistent with the WARC-92 results.

Allocations for BSS-Sound were among the most contentious issues at WARC-92.⁶³ The United States stood in the minority in recommending an allocation at 2.3 GHz: the majority of countries sought allocations at L-Band (1.5 GHz), with a strong minority (including much of Europe), seeking spectrum above 2.5 GHz. Both the 1.5 GHz and 2.5 GHz bands, however, were already extensively used by terrestrial stations and/or aeronautical telemetry, further complicating any universal allocation.⁶⁴

Moreover, there was a strong undercurrent of discontent by developing countries

⁶² See NAB Petition at 5-6 & n.5; Primosphere Petition at 5 n.5.

⁶³ U.S. Del. Report at 29.

⁶⁴ By contrast, the 2.3 GHz band is relatively lightly used by terrestrial services, a fact that the United States delegation used to its advantage.

concerned about making any allocations that could be filled by the developed world before the lesser developed countries had the opportunity to launch their own BSS-Sound systems.⁶⁵

At the last minute, the Conference compromised. A multi-regional allocation was made at 1.5 GHz,⁶⁶ with a regional allocation at 2.5 GHz for those countries (principally in Asia) that could not implement at L-Band.⁶⁷ The United States -- which could not implement BSS-Sound at either 1.5 GHz or 2.5 GHz -- was granted the right to use 2.3 GHz instead.⁶⁸

In conjunction with this compromise, the Conference adopted Resolution COM 4/W.⁶⁹ That resolution notes the need for "equitable" access to the frequencies and the "difficulties" of sharing with existing services.⁷⁰ As a result, it requires that BSS-Sound systems be coordinated with existing services pursuant to the coordination procedures already established for the broadcasting satellite service.⁷¹ At the same time, Resolution COM 4/W called for a planning conference, to be held no later than

⁶⁵ The developing world feared that Western countries with the resources to convert to digital broadcasting would occupy all available frequencies before they could modernize.

⁶⁶ See Addendum & Corrigendum to the Final Acts of WARC-92, at A+C p. 5.

⁶⁷ Id. at A+C p. 23, ADD 757A. Most of Europe eventually supported L-Band, although extended the schedule for implementation of BSS-Sound at those frequencies to protect existing services. Id. at A+C p. 6, ADD 722AAA.

⁶⁸ Id. at A+C p. 20, ADD 750B. India is also covered under the allocation.

⁶⁹ Id. at A+C p. 34.

⁷⁰ Id.

⁷¹ Id.

1998, to ensure that all countries may have access to BSS-Sound spectrum.⁷² In the interim period before the conference is convened, the Resolution suggests that BSS-Sound systems be limited to the "upper 25 MHz of the appropriate band."⁷³

The upper 25 MHz policy thus had two purposes. First, it provided a "safe harbor" for existing terrestrial stations over the medium term. In other words, it established an orderly transition for moving terrestrial services out of the affected band. Second, it ensured that not all BSS-Sound orbital slots and frequencies could be used by developed countries before the planning conference reserved space for LDCs. At least half the BSS-Sound frequencies, therefore, could be available into the next century.

The BSS-Sound allocation in the United States, at 2.3 GHz, covers only a single country -- the United States -- in Region 2. As a result, neither of the twin purposes of the "upper 25 MHz" rule would be served by its application here. First, the United States has virtually no existing stations in the band that require any transition period. In any case, however, the FCC has announced its intent to move those facilities to the 2360-2390 MHz portion of the band.⁷⁴ Second, no lesser developed countries need frequencies or slots reserved at 2.3 GHz because their allocations are at 1.5 GHz. Put differently, the upcoming BSS-Sound planning conference is not expected to "plan"

⁷² Id. The developing world insisted on a similar planning regime for BSS-Video, and the planning conferences reserved orbital access for developing world direct broadcast satellite service.

⁷³ Id.

⁷⁴ NPRM, ¶ 9.

anything at 2.3 GHz. As a result, the FCC need not artificially restrict use of 2310-2335 MHz before the planning conference.

This conclusion is not altered by the necessity of coordination with adjacent countries, including Canada and Mexico. Both of those nations plan to implement DAR in L-Band, and Canadian planning is known to be quite advanced. SCDR has already shown, moreover, that satellite-DARS can successfully be coordinated with Canada.⁷⁵ It is such coordination, not COM 4/W, that provides the protection adjacent nations will seek. In any case, coordination of the entire band will afford adjacent nations with more protection and will permit immediate and future frequency usage both in the United States and the rest of North America.

IV. SCDR'S APPLICATION COMPLIES AND WILL COMPLY WITH ALL ALIEN OWNERSHIP PROVISIONS OF THE COMMUNICATIONS ACT

A future DARS applicant, Primosphere, claims that SCDR violates the alien ownership provisions of the Communications Act.⁷⁶ Primosphere reached this conclusion based on an outdated ownership structure shown on an older Form 430.

SCDR updated its Form 430 before the November 13 filing date⁷⁷ and has since

⁷⁵ See Letter to Cecily C. Holiday from Michael Yourshaw (Nov. 20, 1992) (transmitting analysis of satellite-DARS coordination). This paper answers the NAB's claim that North American coordination of satellite-DARS will be difficult. NAB Petition at 5 n.4.

⁷⁶ Primosphere Petition at 3 (citing 47 U.S.C. § 310(b)).

⁷⁷ Satellite CD Radio, Inc., FCC Form 430 (filed Oct. 30, 1992).

provided a copy to Primosphere's counsel. Neither ownership structure violates any statute, rule or FCC policy.

Section 310(b) of the Communications Act, by its terms, requires the Commission to deny radio licenses on the basis of alien ownership only in broadcast, common carrier, aeronautical en route or aeronautical fixed radio services.⁷⁸ As noted in its application, SCDR will operate exclusively on a subscription basis.⁷⁹ The Commission specifically has determined that subscription service is not "broadcasting" for purposes of the Communications Act.⁸⁰ The Commission found that the distinguishing characteristics were that the provider intends that service not be received by the general public; special equipment is needed to receive the signal; programming likely will be encrypted; and there will be a contractual relationship between the service provider and the customer⁸¹ -- all of which are true for SCDR as well. As a result, Section 310(b) is simply inapplicable to SCDR.⁸²

⁷⁸ 47 U.S.C. § 310(b) (1988).

⁷⁹ Compendium at 18.

⁸⁰ Subscription Video Services, 2 F.C.C. Rcd 1001, 1005 (1987), aff'd sub nom., National Ass'n for Better Broadcasting v. FCC, 849 F.2d 665 (D.C. Cir. 1988).

⁸¹ See Subscription Video, 2 F.C.C. Rcd at 1006.

⁸² Cf. Orion Satellite Corp., 5 F.C.C. Rcd 4937, 4939 (1990) (finding "no statutory bar or policy reason" to limit participation by aliens in non-broadcast, non-common carrier satellite service). The Court of Appeals for the District of Columbia Circuit found that certain provisions of the Communications Act, including Section 310(b) apply "only on those stations that engage in 'broadcasting.' . . . Therefore the determination of whether a station is engaged in broadcasting can at times be critical." National Ass'n for Better Broadcasting, 849 F.2d at 666 (citations omitted). The court, therefore, recognized that if a station is not "broadcasting," the alien ownership restrictions of Section 310(b) are, by statute, not applicable.

Further, there currently is no regulatory restriction regarding non-United States investment in BSS-Sound facilities beyond the express requirements of the Communications Act. Under the Commission's policies, however, SCDR will have the right to amend its application or seek a waiver, if necessary, to conform to any legal regulations or restrictions that may be imposed as a result of rulemaking proceedings. Thus, even if the Commission ultimately decides to impose Section 310(b)-type obligations on subscription providers, SCDR will conform to any new ownership restrictions. As a result, potential concerns about alien ownership do not justify delay in considering and granting SCDR's application. Such broad policy issues are best considered in the context of the rulemaking.

V. SCDR HAS DEMONSTRATED THAT IT IS ENTITLED TO A PIONEER'S PREFERENCE

Eight months after the period formally to comment on SCDR's petition for a pioneer's preference, Digital Cable Radio argues that SCDR is not "entitled" to a preference.⁸³ Not only is Digital Cable Radio's assertion this late in the proceeding procedurally flawed, it is simply wrong.

On July 30, 1991, SCDR formalized its Request for Pioneer's Preference, which was first filed with its Rulemaking Petition on May 18, 1990, and reiterated on May 3, 1991. On January 31, 1992, the Commission issued a Public Notice giving

⁸³ Digital Cable Radio Comments at 14-15.

interested parties until March 2, 1992, to file comments.⁸⁴ Significantly, no one opposed SCDR's petition. Thus, Digital Cable Radio's opposition at this late stage in the proceeding should be dismissed as a tardy attempt further to delay consideration of SCDR's petition for pioneer's preference and its application.

Moreover, SCDR's substantial and long-term commitment to promoting satellite DAR service satisfies the Commission's high standards for a pioneer's preference. The Commission will award a pioneer's preference to a party that makes a significant contribution that leads to the establishment of a new or substantially improved communications service or technology, and the rules for the new or improved service result from the proposal.⁸⁵ The Commission reasoned that such a preference was necessary because:

[O]ur spectrum allocation and licensing processes appear to make it more difficult and expensive for an innovator to bring a new communications service to the market. We are concerned that the adverse effects of these process[es] could have a chilling effect on the development and implementation of new communications services. Innovators of new services must spend a considerable amount of time and money in order to develop these services.⁸⁶

Indeed, the agency specifically noted that:

⁸⁴ Public Notice, Rep. No. 21646 (Jan. 31, 1992).

⁸⁵ Establishment of a Pioneer's Preference, 6 F.C.C. Rcd 3488 (1991) (Report and Order).

⁸⁶ Establishment of a Pioneer's Preference, 5 F.C.C. Rcd 2766, 2766 (1990) (Notice of Proposed Rulemaking) (footnote omitted).

[S]everal innovators have recently indicated their hesitancy to dedicate such resources to the development of a new service unless they were assured that they would be able to provide the service and, thus, recoup their investment. Other parties have suggested that they would not be able to obtain from investors the necessary funding for researching and developing a new service unless they could ensure those providing the funding that the risks are reasonable compared to other investments.⁸⁷

As demonstrated in its request for a pioneer's preference, SCDR is the innovator that crafted the satellite-DARS and, from that inception, devoted its time, money, and energy to making the allocation a reality. SCDR was the first company to petition the Commission for a CD-quality digital audio radio service. In an effort to proceed vigorously with a satellite-based delivery system of CD quality sound, SCDR spent millions in subsequent years to modify and improve its proposal. In addition, SCDR developed a multiple entry scheme for DARS, which ensures service competition and, therefore, lower cost and higher quality service to the American public.⁸⁸

At the same time, SCDR has made significant contributions in the technological advancement of satellite digital audio broadcasting and has expended significant financial and human resources to develop and test the satellite DAR technology, for which it has applied for patent protection. In the fall of 1991, SCDR conducted experiments that confirmed its ability to "digitize an audio signal, uplink it to a satellite

⁸⁷ Id. See also Establishment of a Pioneer's Preference, 6 F.C.C. Rcd at 3489.

⁸⁸ See Supplement to Request for Pioneer's Preference, RM-7400, at 3-5 (filed Jan. 23, 1992).

and receive it via a consumer-oriented fixed flat patch antenna, for CD-quality playback."⁸⁹ Industry experts have widely praised SCDR's system as the first satellite-to-consumer multichannel digital quality sound system in the United States. SCDR also has demonstrated that its innovative delivery system is economically sound.⁹⁰ It has pioneered an innovative satellite system that economically surmounts multipath and blockage.

These substantial efforts now are beginning to bear fruit. The Commission has proposed to allocate spectrum in the 2310-2360 MHz band for BSS-Sound services. This followed the successful United States effort at WARC-92, which was also supported by SCDR.⁹¹ As a result of SCDR's continuous efforts, the first-ever satellite to consumer CD-quality audio service may soon be launched in the United States.

SCDR's effort is precisely the type of technical innovation and regulatory exertion that the Commission's pioneer's preference rules should encourage. The years of uncertainty and zero revenue entail a high degree of risk that SCDR, first in the industry, has been willing to accept due in part to the expectation that it could

⁸⁹ Id. at 2.

⁹⁰ Marketing studies show that satellite DARS will attract subscribers at a faster pace than did cellular telephone service in its infancy, amassing 144,000 subscribers by the end of SCDR's first year of operation and 14.4 million by the end of its sixth year of operation. See study by Yankelovich, Clancy, Shulman, Compendium at 38. In addition, SCDR's service will be inexpensive and convenient. SCDR estimates that receivers will cost only \$200-300, with a small monthly service charge, and consumers will be able to receive the signal with only a small low gain antenna. Compendium at 35.

⁹¹ SCDR personnel participated on the United States "Home Team" for WARC-92. U.S. Del. Report at 52.

ultimately receive a license.⁹² In furtherance of the incentives the FCC wished to advance in designing the preference, SCDR deserves recognition as the pioneer it is.

VI. SCDR'S PROPOSAL COMPLIES WITH FEDERAL COPYRIGHT LAW

The American Society of Composers, Authors and Publishers (ASCAP) and the Recording Industry Association of America (RIAA) raise concerns that are unrelated to the merits of SCDR's application for an FCC license. ASCAP contends that SCDR may not fully appreciate its obligations under existing copyright laws.⁹³ RIAA more specifically asks the Commission to serve as a "surrogate" enforcer of copyright interests and condition any grant of authority to engage in digital audio transmissions on the applicant's securing of licenses with the copyright holders of sound recordings that go beyond the level of protection currently considered appropriate by Congress.⁹⁴

As the pioneer of a new promising radio service, SCDR fully appreciates the importance of safeguarding intellectual property and receiving compensation for one's labors. Consequently, SCDR intends vigorously to honor all its obligations under federal law to the holders of valid copyright interests. Indeed, SCDR anticipates and hopes that the demand for its services will promote the interests of the membership of

⁹² See Establishment of a Pioneer's Preference, 5 F.C.C. Rcd at 2766 n.5 (noting "the adverse effects our processes may have on parties less willing or able to accept the costs associated with the increased risk that results. ").

⁹³ American Society of Composer Authors & Publishers Comments at 1 (filed Nov. 17, 1992).

⁹⁴ Comments of the Recording Industry of America at 4-5 (filed Nov. 17, 1992).

both ASCAP and RIAA by stimulating the development of high quality musical compositions and sound recordings, and providing yet another vehicle for the public to first listen to such material.

SCDR is fully aware of its obligations to the authors of musical compositions represented by ASCAP and others. The particular interests that the RIAA seeks to protect, however, currently are not part of United States copyright law and are beyond the scope of the Commission's expertise and jurisdiction. The United States Congress has preempted the entire field of copyright law, thus, the Commission should defer to the legislature to resolve any outstanding copyright issues raised by the RIAA. Indeed, RIAA noted that such concerns already have been presented to the Congress by the Register of Copyrights.⁹⁵

If and when the law is changed, SCDR will, of course, comply with any new obligations. In the meantime, the Commission can grant SCDR's application without condition or delay.

⁹⁵ Id. at 5-6.

VII. SCDR IS FINANCIALLY QUALIFIED

Citing only National Exchange Satellite, Inc.,⁹⁶ Digital Cable Radio questions SCDR's financial qualifications.⁹⁷ Digital Cable Radio's contention is misguided for several reasons.

First, SCDR has demonstrated that it is financially committed to proceeding with its application. SCDR has developed a concrete business plan, backed by an extensive marketing study that verifies the economic viability of the proposal.⁹⁸ Even prior to grant of a construction permit or license, SCDR has invested substantial human and capital resources on satellite-DARS. For example, SCDR has been the leading advocate of the satellite-DAR technology at the Commission, vigorously pursuing its application and petitioning the Commission to allocate spectrum for this new service, including participating in industry forums and pioneering new technologies. To date, SCDR has invested in excess of \$ 4 million in pursuit of its goal to bring digital quality audio to the American public.

The record reflects that SCDR has received substantial backing from the financial and manufacturing communities. SCDR already has received commitments from its financial backers to assist in raising all of its start-up and system construction

⁹⁶ 7 F.C.C. Rcd 1990 (1992).

⁹⁷ Digital Cable Radio Comments at 12-13.

⁹⁸ See Compendium at 36-43.

costs. In addition, SCDR has signed letters of understanding with satellite builders, who have assisted SCDR in developing a milestone schedule to construct the system.

Second, no financial qualifications have yet been established for this service. The Commission is likely to address issues regarding what financial qualifications, if any, will be imposed on satellite-DAR applicants in the associated rulemaking proceeding. SCDR will have an opportunity at that time to comply with any financial standards that the Commission may impose, and will do so.

Third, Digital Cable Radio mischaracterizes the Commission's financial qualification standards. The agency's financial standards for the fixed satellite service are, by their own terms, not applicable to other services such as BSS-Sound.⁹⁹ Moreover, contrary to Digital Cable Radio's claim, the Commission has recognized that some satellite services often have greater costs, and thus require more flexible financing. This has been particularly true for new satellite services, such as satellite-DARS, that are innovative but unproven on Wall Street, making it difficult for small applicants without internal resources to compete. Therefore, applicants for such new satellite services fulfill their financial qualifications requirements by submitting their plans for meeting the costs of constructing, launching and operating the systems.¹⁰⁰

For example, in DBS, the Commission expressly declined to impose stringent financial qualifications standards and instead, required applicants to proceed with due

⁹⁹ 47 C.F.R. § 25.140(a) (1991).

¹⁰⁰ See Radiodetermination Satellite Service, 104 F.C.C.2d 650, 663 (1986).

diligence in constructing their facilities.¹⁰¹ Thus, in lieu of filing rigid financial data, DBS applicants are required to begin construction or to complete contracting within one year and to begin operation within six years of grant of a permit.¹⁰²

Perhaps the best example of FCC policy on the financing of new satellite ventures occurred earlier this year in Norris Satellite, where the Commission considered the first entity seeking to provide fixed and mobile services in Ka-band spectrum.¹⁰³ Normally, the Domsat rules demand a high threshold financial showing,¹⁰⁴ imposed in order to ensure that the spectrum and orbital arc are used to the maximum extent possible. The Commission recognized that the Norris application would require the development of new technologies, that multiple entry was possible, and that no satellite systems were currently operating in the band.¹⁰⁵ Under such circumstances, the Commission waived the normal Domsat financial qualification rules because "the orbit-spectrum resource will continue to remain fallow if the standard is not waived."¹⁰⁶

BSS-Sound is only in its infancy and faces significant regulatory, technological and financial obstacles. Because the S-band allocation is currently underutilized and

¹⁰¹ Direct Broadcast Satellites, 90 F.C.C.2d at 719.

¹⁰² 47 C.F.R. § 100.19(b) (1991).

¹⁰³ Norris Satellite Communications, 7 F.C.C. Rcd 4289 (1992).

¹⁰⁴ 47 C.F.R. § 25.140.

¹⁰⁵ Norris Satellite, 7 F.C.C. Rcd at 4290-91.

¹⁰⁶ Id. at 4291 (emphasis in original).

multiple entry is contemplated by the Commission, BSS-Sound applicants such as SCDR are in the same position as Norris and should be treated accordingly.

Finally, the very case cited by Digital Cable Radio does not even support that Petitioner's position. In National Exchange, the Commission was considering a fixed-satellite licensee, i.e., a potential participant in a fully mature market. That licensee had already been deemed qualified, and the Commission denied a request for additional time to commence construction. Here, SCDR's plans involve a new and innovative -- but untested -- service. In accordance with Commission practice, SCDR has presented a reasonable business and financial plan and various construction milestones, and intends to meet them. Under these circumstances, SCDR should be considered financially qualified.

VIII. SCDR'S TECHNICAL PROPOSAL IS SOUND AND CONSISTENT WITH FCC RULES

Only a few entities question any aspect of SCDR's technical proposal. Not surprisingly, the doubters are entities with whom SCDR will compete in the marketplace -- other satellite-DARS and cable radio providers -- or broadcasters under the mistaken impression that satellite-DARS represents a threat to terrestrial broadcasting.¹⁰⁷ SCDR, however, was the first entity to plan and design a satellite digital audio radio system, and has been refining its plans for more than two years.

¹⁰⁷ See supra at 11-16.

Moreover, many of SCDR concepts have been confirmed through the 18 month program of experimentation SCDR has undertaken.¹⁰⁸ Although SCDR will, of course, modify its plans to comply with any requirements formulated in the associated DARS NPRM, as explained below, SCDR believes that its spacecraft and system blueprints are logical, supportable, and will provide the best-quality service to the American public while using the minimum practical amount of spectrum.

A. SCDR's Compression Schemes Are Reasonable

A few parties take issue with SCDR's selection of a 128 kbps source coding rate,¹⁰⁹ apparently believing that a higher speed data stream is necessary to achieve true CD quality. Others question whether SCDR will be compatible with future developments in the DARS industry.¹¹⁰ Neither issue is valid.

¹⁰⁸ An experimentation program was started in mid-1991 to demonstrate the key technical features of the proposed SCDR service. These features included the transmission, through an actual satellite, of multiple digitally compressed CD quality stereo music, its reception with perfect quality by a small antenna suitable for eventual incorporation in mobile vehicles, the remote control and auxiliary messaging of the vehicle receiver and an automated customer subscription system from a central control facility. The actual physical demonstrations were successfully conducted late in 1991 and the Experimental Report has been filed with the Commission.

The experimental program has continued, and an advanced demonstration is planned in the Spring of 1993. This demonstration will use the 2310-2360 MHz band and employ a mobile vehicle antenna/receiver identical to that which is planned in the SCDR system. The upcoming demonstration will concentrate on operational and service features including vehicle receiver front panel design and user friendly operator interfaces as well as the achievement of exceptional service quality under a wide variety of actual operating environments.

¹⁰⁹ NAB Petition at 10; RadioSat Int'l Comments at 5; Primosphere Petition at 10.

¹¹⁰ See NAB Petition at 10.

The record already reflects a view contrary to that of the opponents. For example, LNR Communications, which has designed, manufactured and sold all-digital satellite terminals specifically notes that it has designed a terminal that operates on a 128 kbps coding scheme.¹¹¹ LNR's DAVSAT™ terminal is already in use in the United States, Europe and South America, and LNR claims to have confirmed the technical feasibility of CD quality delivery with 128 kbps coding.¹¹²

As shown in the attached Technical Response, the 128 kbps coding scheme was chosen because it was technically feasible and, most importantly, permitted the most efficient transmission of CD quality audio possible.¹¹³ Letters from AT&T-Bell Labs and Scientific Atlanta, also attached, support this choice. SCDR should not be forced to use less efficient designs merely to satisfy parties more interested in seeing SCDR fail than in selecting the appropriate technical scheme for the implementation of satellite-DARS.

Like the dispute on source coding, the questions on standards compatibility are misguided. SCDR has clearly stated its intention to incorporate the industry standards chosen for digital audio transmission.¹¹⁴ SCDR can accomplish this because its satellite design is, essentially, a "bent pipe" where the modulation and coding schemes

¹¹¹ LNR Comments at 1 (filed Nov. 13, 1992).

¹¹² Id.

¹¹³ Technical Response at 4.

¹¹⁴ Compendium at 4. As indicated above, SCDR participates in the EIA Subcommittee now developing such standards.

are established on the ground.¹¹⁵ Indeed, the satellite design has been carefully conceived to be extremely flexible and capable of accommodating whatever standards decisions are made. Moreover, given the three-to-four-year time required to fabricate the SCDR spacecraft, sufficient adaptability exists to permit changes in payload configuration during construction.¹¹⁶

B. SCDR's Polarization Reuse Plan is Workable and Spectrum Efficient

Two petitioners question the merits of SCDR's proposal to reuse the available spectrum through polarization diversity. In particular, the NAB¹¹⁷ and Primosphere¹¹⁸ suggest that the high multipath environment of mobile communications may make distinguishing between co-frequency signals on the basis of signal polarization unworkable. Neither is correct.

The attached Technical Response demonstrates that frequency reuse by cross polarization for satellite-DARS is feasible. Even with high multipath, SCDR's investigation shows that ample margins exist to account for reflected signals. Indeed, SCDR's designs show more than 20 dB cross polarization isolation will be achieved most of the time. This figure is confirmed by Seavey, a prominent manufacturer of

¹¹⁵ Id.

¹¹⁶ At least one other party in this proceeding -- a potential programmer, which should have the greatest concern on standards compatibility -- confirms that SCDR's design is sufficiently flexible to meet whatever modulation scheme is ultimately chosen. See New World Comments at 2.

¹¹⁷ NAB Petition at 10.

¹¹⁸ Primosphere Petition at 10.

vehicular antennas, whose letter also is attached, and a satellite manufacturer. SCDR is confident that satellite-DAR systems can rely on polarization diversity; the petitioners fail to offer any contrary data reaped from their investigations.

Moreover, it is worth emphasizing that SCDR chose a scheme relying on polarization diversity for logical and pro-competitive reasons. Polarization diversity is "commonly used in fixed services," as NAB admits,¹¹⁹ because of the enormous improvements it brings in spectrum efficiency. With SCDR's scheme, any given portion of the spectrum is reused two-fold, so that the allocated 50 MHz BSS-Sound band may be used by four service providers. The polarization diversity scheme, therefore, increases the opportunity for multiple entry and will make satellite-DARS more competitive. These facts should not be discarded merely because of unsubstantiated comments.

C. Other Concerns with SCDR's Technical Proposal are Unfounded

A few entities raise other, minor, technical question about SCDR's design.¹²⁰ For the most part, a full and complete answer to their quibbling is that SCDR will comply with whatever standards are adopted in the rulemaking. However, two complaints merit a specific response.

¹¹⁹ NAB Petition at 10.

¹²⁰ Digital Cable Radio Comments at 11; Primosphere Petition at 9-11; RadioSat Int'l Comments at 4.

First, Radio Satellite Corporation (RadSat) criticizes the SCDR design for failing to propose variable data rates or return links.¹²¹ Apparently seeking to force SCDR to mimic RadSat's failed design,¹²² RadSat requests the Commission to compel actual satellite-DARS applicants to offer two-way services and different transmission rates. These choices, however, should be left to the applicants. If an entity believes that there is a market for two-way services, it should file a satellite-DARS application proposing such a system. SCDR's proposal is consistent with current FCC rules and policies (in fact, it offers variable transmission rates¹²³), and other applicants are free to propose different systems containing different features to compete in the marketplace. Such differences, however, are irrelevant to the determination of whether SCDR's application may be granted.

Second, Digital Cable Radio¹²⁴ and Primosphere¹²⁵ question SCDR's choice of 3 dBi user antennas. Although, Digital Cable Radio's service is designed to be received solely in the home, SCDR's service can accommodate mobile users, in cars and in personal stereos such as the SONY Walkman®. And, Primosphere may have made different choices that require higher-gain user antennas.

¹²¹ RadSat Comments at 3 (filed Nov. 13, 1992).

¹²² RadSat admits that it was required to "suspend operations at the end of 1991" and the founder of the company, and author of the comments, was "forced to leave the mobile satellite industry." Id. at 4 n.7.

¹²³ See Technical Response at 4.

¹²⁴ Digital Cable Radio Comments at 11.

¹²⁵ Primosphere Petition at 10.

SCDR does not take issue with this aspect of the technical plans of Digital Cable Radio or Primosphere, and looks forward to healthy rivalry among American providers of digital radio services. Such competition in the marketplace, however, provides no reason for the Commission to constrain the choices of a license applicant such as SCDR.

IX. CONCLUSION

Satellite CD Radio is a small entrepreneurial company with an idea promising enormous benefits to the American public. The majority of comments on SCDR's application affirm these benefits, and explain how they also could stimulate United States economic growth. By contrast, SCDR's opponents fail to realize that satellite digital audio will complement, not replace, existing audio delivery methods. Moreover, the commenters do not undermine SCDR's substantial technical presentation demonstrating the viability of its system. Indeed, some of the comments -- especially regarding financing, foreign ownership and frequency selection -- are just plain wrong.

In the main, the petitioners are considerably larger and possess resources far greater than SCDR. Through the regulatory process, these companies can hope to postpone the public interest benefits of SCDR's plan and, not incidentally, make prohibitive the costs of implementing a new telecommunications technology. Particularly in the area of satellites -- where planning, designing, constructing and launching take three to four years -- delay is no friend of the entrepreneur. This is

why Section 157 of the Act requires the most rapid consideration possible of new technologies and services.¹²⁶

The Commission should ensure that the United States remains at the forefront of technological leadership, including in digital audio radio. The FCC can best accomplish this through speedy approval of the instant application. For the foregoing reasons, the Commission promptly should permit Satellite CD Radio to construct, launch and operate a satellite-DAR system.

Respectfully submitted,

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¹²⁶ 47 U.S.C. § 157 (1988).