

Before the
Federal Communications Commission
Washington, D.C. 20554



In the Matter of:)
)
Amendment of Eligibility Requirements in Part 78) CS Docket No. 99-250
Regarding 12 GHz Cable Television Relay) RM-9257
Service)
)

REPORT AND ORDER

Adopted: May 16, 2002

Released: May 21, 2002

By the Commission:

I. INTRODUCTION

1. In this Report and Order, we amend Part 78 of the Commission's rules to expand the class of entities eligible for licenses in the Cable Television Relay Service ("CARS") to include all multichannel video programming distributors ("MVPDs").¹ This amendment will permit all MVPDs to use frequencies in the 12.70 to 13.20 GHz band ("12 GHz CARS band") to support the delivery of video programming for their systems. Currently, franchised cable systems and wireless cable systems are eligible for CARS licenses, but private cable operators ("PCOs") and other currently Non-eligible MVPDs ("NMVPDs") are not. This action will enhance opportunities for additional competition to incumbent cable operators by making NMVPDs eligible to use all CARS frequencies, including frequencies in the 12 GHz CARS band. It will also increase the number of frequencies available to NMVPDs for video programming distribution in the 18 GHz band (17.70 to 18.58 GHz), in addition to those on which they may currently operate under Part 101 of the Commission's rules. Thus, all MVPDs will have the opportunity to use CARS frequencies to provide video services in a balanced competitive environment in which all MVPDs share microwave spectrum.

II. BACKGROUND

2. In July 1999, the Commission released a *Notice of Proposed Rulemaking* ("NPRM") in this proceeding, which sought comment on whether to amend the Commission's rules to allow PCOs and other MVPDs to use frequencies in the 12 GHz CARS band for the delivery of video programming.²

¹ "Multichannel video programming distributor" means a person such as, but not limited to, a cable operator, a multichannel multipoint distribution service, a direct broadcast satellite service, or a television receive-only satellite program distributor, who makes available for purchase, by subscribers or customers, multiple channels of video programming." 47 U.S.C. § 522(13).

² *Amendment of Eligibility Requirements in Part 78 Regarding 12 GHz Cable Television Relay Service*, 14 FCC Rcd 11967 (1999) ("NPRM"). Fourteen parties filed comments and five parties filed reply comments. A list of parties filing comments and reply comments is attached as Appendix A.

Initially, the proposal to expand CARS eligibility to include only PCOs was submitted by OpTel, Inc. ("OpTel") in a Petition for Rulemaking ("Petition").³ On our own motion, we broadened the NPRM to include consideration of the expanded use of the 12 GHz CARS band by other NMVPDs. As we stated in the NPRM, one of the Commission's most important goals is to promote and facilitate competition in the video programming distribution market.⁴ We therefore sought comment on whether other types of MVPDs could use the CARS band to compete more effectively with cable systems and the other MVPDs that are currently eligible to use the CARS band. The NPRM also sought comment on the possible drawbacks of expanding CARS eligibility, particularly with respect to the impact on incumbent cable operators' usage of CARS links to provide service within their franchise areas. The NPRM also noted that this proceeding is interrelated with other ongoing proceedings, such as the 18 GHz Redesignation Proceeding,⁵ and that decisions to be made in those proceedings might affect the proposed usage of the 12 GHz CARS band by PCOs and MVPDs.

3. OpTel is a PCO providing video and other services to residential users primarily in multiple dwelling units ("MDUs"). In its Petition, OpTel stated that it operates, through subsidiaries, private cable telecommunications systems and franchised cable systems that provide service to over 314,000 homes in nine cities.⁶ In the Petition, OpTel requested that PCOs be eligible to use frequencies on the same basis as eligible MVPDs such as franchised cable systems in the 12 GHz CARS band. OpTel also asked to be eligible to operate on frequencies in the 13.20 GHz to 13.25 GHz band used by Broadcast Auxiliary Stations ("BAS").⁷ The 12 GHz CARS band and the segment from 13.20-13.25 GHz are also shared with the Fixed Satellite Service ("FSS") for earth-to-space communications.⁸

4. Franchised cable systems and other eligible services use the 12 GHz and 18 GHz CARS bands for microwave relays pursuant to Part 78 of the Commission's Rules.⁹ Part 78 governs the licensing and operations of fixed or mobile CARS stations.¹⁰ CARS is principally a video transmission service used for intermediate links in a distribution network. Section 78.11 authorizes CARS stations to relay signals for and supply program material to cable television systems and other eligible entities using point-to-point and point-to-multipoint transmissions.¹¹ These relay stations enable cable systems and other CARS licensees to transmit television broadcast and low power television and related audio signals, AM and FM broadcast stations, ITFS signals, and cablecasting from one point (e.g., on one side

³ Petition for Rulemaking (filed April 1, 1998) ("Petition").

⁴ NPRM, 14 FCC Rcd at 11969.

⁵ IB Docket No. 98-172.

⁶ NPRM, 14 FCC Rcd at 11970-71. In a November 6, 2001, submission in this docket styled as a "Request for Action," OpTel states that it filed for Chapter 11 bankruptcy protection in October 1999. ("OpTel November 6 Request"). OpTel notes that it is now ready to exit Chapter 11, and, when it does so, it plans to focus exclusively on providing video and Internet access services primarily in the MDU marketplace in direct competition with incumbent cable operators. OpTel November 6 Request at 2.

⁷ 47 C.F.R. §§ 74.600 – 74.690.

⁸ *Id.* §§ 2.106, 78.106 & 101.101.

⁹ *Id.* §§ 78.1 – 78.115.

¹⁰ A CARS station is a "fixed or mobile station used for the transmission of television and related audio signals, signals of standard and FM broadcast stations, signals of instructional television fixed stations, and cablecasting from the point of reception to a terminal point from which the signals are distributed to the public." *Id.* § 78.5(a).

¹¹ *Id.* §§ 78.11(a),(c), & (d).

of a river or mountain) to another point (e.g., the other side of the river or mountain) or many points ("multipoint") via microwave. In this way, for example, they allow a cable system to link a community divided by a geographic barrier without building additional headends or laying costly cable or optical fiber in urbanized areas. Section 78.13 of the Commission's rules specifies that a license for a CARS station can only be issued to owners and operators of cable television systems and qualified cable network-entities, licensees and conditional licensees of channels in the MDS or MMDS, and certain ITFS operators.¹² A primary, original, and continuing use of the 12 GHz CARS band is to deliver signals over long distances between reception points and communities. CARS is not used to provide service or relay signals directly to subscribers. The 12 GHz CARS band is also used for FM, as well as, AM links ("AML").

5. Television broadcasters use BAS pursuant to Part 74, Subpart F.¹³ BAS uses the spectrum from 12.70 – 13.25 GHz for both fixed and short-range mobile transmissions. In electronic news gathering ("ENG") operations, for example, these frequencies, together with 2 GHz (1990 to 2110 MHz) and 7 GHz (6875 to 7125 MHz) frequencies, may be used to transmit a signal from the scene of an event to a nearby vehicle, where the signal is relayed to the TV station.¹⁴

6. OpTel and other PCOs provide service that is similar to, and competitive with, that provided by franchised cable systems. PCOs, however, do not use hard-wired crossings of public rights-of-way and, therefore, are not considered cable systems under the statutory definition.¹⁵ Typically, microwave facilities of PCOs, such as OpTel, use a hub-and-spoke architecture. In its simplest form, some cable headends are located at a hub, and microwave spokes are used to deliver video and telecommunications services to MDUs. For the microwave links to distribute video programming, OpTel and other PCOs currently transmit under authorizations in the Private Operational Fixed Point-to-Point Microwave Service ("OFS")¹⁶ in the band from 18.142 GHz to 18.580 GHz, which is part of the 18 GHz band shared by CARS and other services. PCOs are also eligible to use some frequencies in the band from 21.20 GHz to 23.60 GHz ("23 GHz band"). In its petition, OpTel sought to use the 12 GHz CARS band as an efficient means for hub-to-hub communications.¹⁷ OpTel also stated that interconnecting hubs would eliminate or substantially reduce the need for duplicative headend and switching facilities, thus reducing costs and enabling PCOs to compete more effectively with franchised cable systems.¹⁸ We note that amending Part 78 to make PCOs eligible for 12 GHz CARS licenses would also make them eligible for CARS licenses in the 18 GHz band, as are other current CARS licenses.¹⁹ In addition, OpTel also requested use of the BAS frequency band segment from 13.20 to 13.25 GHz for delivery of video programming.

¹² *Id.* § 78.13.

¹³ *Id.* §§ 74.600-74.690.

¹⁴ *Id.* § 74.602(a).

¹⁵ 47 U.S.C. § 522(7).

¹⁶ 47 C.F.R. §§ 101.101-151 & 101.601-3.

¹⁷ Petition at 2. OpTel also filed a separate petition requesting a waiver of Section 101.603 in order to allow OpTel to transmit video programming in the 10.70 GHz - 11.70 GHz band ("11 GHz band"). The Commission denied OpTel's waiver request. *See Petition for Waiver of Section 101.603 of the Commission's Rules*, 14 FCC Rcd 3762 (1999). OpTel noted that its waiver request involved different frequencies (11 GHz band) and issues different from those raised in this proceeding.

¹⁸ Petition at 3. *See also* RCN Comments at 4, 14.

¹⁹ 47 C.F.R. § 78.18(a)(4). Thus, a PCO could choose between applying for an OFS license to use 18.142-18.580
(continued...)

7. The NPRM sought comment on issues raised by OpTel's petition, including the technical criteria necessary to ensure that use of the 12 GHz CARS band by PCOs or other MVPDs would not interfere with existing users or unduly constrain future growth of incumbent CARS users.²⁰ The NPRM sought comment on the need of NMVPDs for access to the 12 GHz CARS band.²¹ The NPRM did not propose any changes in the technical and operational characteristics of CARS, which is a point-to-point and point-to-multipoint service used to relay signals within the system and not to the ultimate end users or subscribers. Rather, it sought comment on whether PCOs and other MVPDs can operate successfully in the 12 GHz CARS band under the existing technical and operational requirements.²² The NPRM also sought comment on the appropriate eligibility criteria for PCOs or other MVPDs who wish to obtain a CARS license and whether, after becoming a CARS licensee, PCO systems or other MVPDs should be designated as co-primary users with incumbent cable system operators or as secondary users.²³

III. DISCUSSION

A. Expanding Eligibility for CARS Licenses to All MVPDs

8. Current NMVPDs supported the proposal to expand eligibility for CARS licenses to all MVPDs. For example, RCN, EchoStar, SkyBridge, and KaStar are generally supportive.²⁴ Incumbent users of CARS were less concerned with expanded eligibility *per se* than with the effect of the proposed expansion on their own operations.²⁵ NCTA expresses generalized concern that in acting on OpTel's Petition, the Commission do nothing that impedes the ability of cable systems to employ the 12 GHz CARS band "to perform the critical role that it has been playing in cable transmission systems for many years."²⁶ The majority of commentary, as discussed more fully below, is directed to the questions of need, cost justification and technical criteria.

9. The NPRM also asked whether we should distinguish between PCOs and other NMVPDs in our consideration of expanding eligibility for use of the CARS frequencies.²⁷ We received no comments on this question. We conclude that there is no reason to make this distinction and,

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GHz for data and voice, as well as video, or applying for a CARS license to use 17.70 to 18.580 GHz, which must be used principally for video..

²⁰ NPRM, 14 FCC Rcd at 11975.

²¹ *Id.* at 11974.

²² *Id.* at 11979.

²³ *Id.* at 11974.

²⁴ See EchoStar Comments at 1-2; SkyBridge Comments at 1-3; KaStar Comments at 5; RCN Comments at 2-7.

²⁵ See, e.g., Sprint Comments at 2-5; SBE Comments at 1-4 (addressing proposed use of 13.20 to 13.25 GHz); Walt Disney Co. Comments at 1-3 (concurring with SBE Comments).

²⁶ NCTA Comments at 2. NCTA also argued that it would reserve judgement on this question until it could assess the record produced in this proceeding. In its Reply Comments, NCTA challenged the sufficiency of the evidence produced on specific issues such as cost savings and whether the NMVPDs should be granted equal status in obtaining access to 12 GHz frequencies. NCTA Reply Comments at 2-8. See also Time Warner Comments at 2-17, raising questions of competitive parity, lack of evidence of cost savings, and the need to grant only secondary status, if any to NMVPDs. We address these specific challenges below.

²⁷ See NPRM, 14 FCC Rcd 11967, 11969 (1999).

therefore, will treat all NMVPDs, including, but not limited to, PCOs, equally in terms of CARS eligibility.

10. Previously, the Commission extended CARS eligibility to MDS, MMDS, and ITFS entities in the *Wireless Cable Order*, reasoning that the “use of the microwave spectrum should be governed by the type of use rather than the type of licensee.”²⁸ NMVPDs arguably have the same use for the spectrum as those currently using it.²⁹ In the case of wireless cable operators, the Commission concluded that “because cable and wireless cable have similar needs for CARS,” the Commission’s rules should not favor one set of providers over another.³⁰ The reasoning of the *Wireless Cable Order* suggests that all MVPDs, whatever their primary means of program distribution or system architecture and regardless of whether they hold a local franchise, should be eligible to hold CARS licenses upon a demonstrated need for such spectrum and absent a finding of adverse consequences to currently eligible users of CARS.

11. We consider in the following sections whether PCOs and other NMVPDs have demonstrated a need for access to the CARS frequencies, and the BAS band, and whether access to the CARS and BAS frequencies would create an adverse impact on the current users of the bands in question. For the reasons discussed in detail below, we conclude that PCOs and other NMVPDs should generally be eligible for CARS licenses, and we do not anticipate undesirable effects on current CARS licensees.

1. Need for access to 12 GHz CARS frequencies by NMVPDs

12. The NPRM sought comment on assertions that the signal propagation characteristics (for example, the distance over which the signal remains strong) of the 18 GHz band make it unsuitable for widely distributed systems and limits growth within the PCO industry. The NPRM also sought to examine assertions that, absent access to the 12 GHz band, PCO’s costs to provide service over a large area would be substantially greater.³¹ We sought comment on estimates of effective range and the assertion that PCOs need additional range. We also requested comment on the impact to CARS operations, including franchised cable systems that are currently CARS licensees or may need access to CARS in the future if PCO entities are allowed access to the 12.75-13.25 GHz band. We asked whether cable systems’ transition to fiber optics would obviate their need for CARS stations, thus lessening any potential negative impact and making more spectrum available to other applicants, such as PCOs and other MVPDs.³²

13. OpTel contends generally that PCOs need access to compete effectively with incumbent franchised cable systems. According to OpTel, the 12 GHz band provides superior spectrum for video delivery, particularly as compared to other bands of spectrum above 21.2 GHz that private microwave

²⁸ *Amendment of Parts 21, 43, 74, 78 and 94 of the Commission’s Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Band Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Instructional Television Fixed Service, and Cable Television Relay Service*, 5 FCC Rcd 6410, 6423 (1990) (quoting Spectrum Utilization Policy for Fixed and Mobile Services in the 947 MHz-40 GHz Band, 48 Fed. Reg. 6730, ¶ 31 (1983)) (“*Wireless Cable Order*”).

²⁹ *NPRM*, 14 FCC Rcd at 11967.

³⁰ *Wireless Cable Order*, 5 FCC Rcd at 6423.

³¹ Petition at 2.

³² *NPRM*, 14 FCC Rcd at 11974 – 75.

licensees may use for that purpose. OpTel claims that those bands have neither the technical characteristics nor the bandwidth required to provide a video service that is comparable to—and competitive with—franchised cable service.³³ Moreover, OpTel states that the useful range of a 12 GHz path is substantially greater than that of an 18 GHz path and therefore can substantially increase the range of a station. OpTel believes this difference is significant in a market in which the efficiency of distribution is a large factor in the cost of operating a system.³⁴ OpTel also asserts that certain ongoing rulemaking proceedings threaten to limit use of the 18 GHz band by PCOs to distribute video programming to their customers, thus necessitating access to the 12 GHz CARS band to assure their continued existence and growth.³⁵ In its Request dated November 6, 2001, OpTel adds that allowing all MVPDs access to 12 GHz will spur competition by allowing them the capability to offer more programming and a wider variety of services and to serve more customers in different types of markets than is possible using 18 GHz frequencies.³⁶

14. We examine below the effective range of communication in the 12 GHz CARS band compared to the 18 GHz band and the associated cost differences. We also examine whether the needs of the NMVPDS can be met by their current allocations in the 18 GHz and 23 GHz bands. Finally, we must take into consideration the potential displacement of NMVPDs from the 18 GHz band because of recent Commission decisions, including the 18 GHz Redesignation Proceeding mentioned above. Our analysis demonstrates that there is a need for access to the 12 GHz CARS frequencies by NMVPDs. We then balance this need against adverse impacts to existing users of the spectrum.

a. Range differences and cost differences

15. The NPRM requested comment on the estimates of effective range presented in the Petition.³⁷ The data submitted in comments supports the assertion that the effective range for communications at 12 GHz is significantly greater than at 18 GHz. We note at the outset that the discussion centers on AM links (“AML”) because of the greater number of channels and overall bandwidth involved. FM links require a larger bandwidth than AMLs, thus limiting the number of channels for video distribution and requiring more equipment to deliver the same number of channels as AMLs. FM links, however, can have longer path lengths and are generally more reliable. Comsearch and RCN assert that rain fade is the determining factor for effective communications range.³⁸ According to one model,³⁹ in areas of moderate rainfall, 18 GHz channels can achieve a 99.99% availability⁴⁰ with a 20 dB margin over a distance of 4.8 km (3.0 mi.) and 12 GHz channels can achieve the same result over a distance of 11.8 km (7.3 mi.). For areas that experience heavier rainfall, the distances for 18 GHz and 12 GHz are approximately 2.3 km (1.4 mi.) and 4.4 km (2.7 mi.), respectively. For areas that have

³³ OpTel Comments at 2-3, (citing 47 C.F.R. § 101.603).

³⁴ *Id.* at 3.

³⁵ *Id.* at 3-4.

³⁶ OpTel November 6 Request at 3.

³⁷ *NPRM*, 14 FCC Rcd at 11975.

³⁸ RCN Comments at 6; Comsearch Comments at 3.

³⁹ Comsearch Comments at 3-5 (citing Robert K Crane, *Prediction of Attenuation by Rain*, 28 IEEE Transactions on Communications (1980).

⁴⁰ 99.99% availability is the performance factor used in the model. It is not an established value for CARS and no such performance factor has been set.

significantly less rainfall, the effective distance for 18 GHz is 11.3 km (7.0 mi.), and the effective distance for 12 GHz is limited by factors other than rain fade, especially multipath fading.⁴¹ This is consistent with OpTel's assertion that the effective range at 18 GHz is less than 8 miles and at 12 GHz is 12 miles or greater.⁴² It is also generally consistent with the assessment of RCN that the effective range at 18 GHz is 2 to 3 miles, and the effective range at 12 GHz is 8 to 10 miles.⁴³ There is no evidence in the record that contradicts these estimates. Assuming this information is accurate, the effective link length at 12 GHz is more than twice that at 18 GHz and typical values would be 3 to 7 miles for 18 GHz and 7 miles and longer for 12 GHz.

16. The NPRM asked whether there are significant differences in cost, supported by data, between use of 12 GHz spectrum and the 18 GHz and 23 GHz spectrum that PCOs already are eligible to use. The only cost data offered in comments, supplied by RCN, indicates that the cost of equipment used for 18 GHz is less than that used for 12 GHz.⁴⁴ RCN asserts that the net difference in cost between constructing a typical 12 GHz path and an 18 GHz path is directly related to the effective length for each.⁴⁵ The cost of a path of given length is attributed largely to the number of repeaters necessary to achieve that length. RCN argues that the signal will degrade beyond an acceptable level if there are more than two repeaters (3 links) in the path.⁴⁶ Each path, therefore, has a maximum distance beyond which systems cannot be connected by microwave thus necessitating that those systems have their own headend.⁴⁷

17. Using the typical link lengths discussed above as an example, and based upon the data supplied by RCN, it appears that for paths greater than 14 miles and less than 22 miles there are significantly higher costs when using 18 GHz rather than 12 GHz. It also appears that, for paths less than 6 miles, costs are lower for 18 GHz than for 12 GHz. The only figures we have are supplied by RCN, which indicate that a 12 GHz link costs \$95,000 and an 18 GHz link costs \$54,000⁴⁸ and that a headend costs in excess of \$1.5 million.⁴⁹ Using the range figures quoted above for an area of moderate rainfall and RCN's suggested costs, the following estimates result.

⁴¹ Comsearch Comments at 3.

⁴² OpTel Comments at 3.

⁴³ RCN Comments at 6.

⁴⁴ RCN Reply Comments at n.21.

⁴⁵ See RCN Comments at 8; RCN Reply Comments at 5-6.

⁴⁶ RCN Comments at 7.

⁴⁷ *Id.* at 8.

⁴⁸ See RCN Reply Comments at 5. RCN provides the total cost for a three link path as \$163,000, which gives an average per link cost of approximately \$54,000. RCN states that 18 GHz equipment is cheaper and that a big part of the cost for additional links is site rental of \$2,000 to \$4,000. RCN Comments at 6 and note 21. This indicates that the cost for the first link is probably closer to \$52,000 and for subsequent links \$55,000 to \$56,000. For simplicity, we use the average value as the cost of equipment appears to be the predominant part of the cost.

⁴⁹ RCN Comments at 8.

<u>Distance (Miles)</u>	<u>18 GHz</u>	<u>12 GHz</u>	<u>Cost Differential 18 GHz vs. 12 GHz</u>
3	1 link (\$54,000)	1 link (\$95,000)	-\$41,000
6	2 links (\$108,000)	1 link (\$95,000)	+\$13,000
7	3 links (\$162,000)	1 link (\$95,000)	+\$67,000
9	3 links (\$162,000)	2 links (\$190,000)	-\$28,000
14	New headend (\$1.5 million)	2 links (\$190,000)	+\$1.31 million
22	New headend (\$1.5 million)	3 links (\$285,000)	+\$1.215 million
> 22	New headend (\$1.5 million)	New headend (\$1.5 million)	0

Thus, on the record presented, we conclude that for some intermediate path lengths (between 6 and 9 miles in our example) and longer paths (14 to 22 miles in our example) costs are significantly less for operation in the 12 GHz band than in the 18 GHz band.

b. 23 GHz

18. NMVPDs are also eligible for OFS licenses to use the 23 GHz band. Consequently, the NPRM also asked for a cost analysis and usage comparison between the 12 GHz and 23 GHz bands.⁵⁰ The record shows, without contradiction, that the 23 GHz band is unsuitable for the needs of NMVPDs.⁵¹ Comsearch states that the band is used by PCO's for FM-Video and digital transmission, but there are no instances of AML (AM Video) transmission.⁵² It is also suggested that it would be difficult to find 500 MHz of clean spectrum, containing no potentially interfering signals or noise, in the 23 GHz band in most major markets.⁵³ Further, AML equipment for 23 GHz is apparently not available.⁵⁴ The 23 GHz band would also be subject to greater path length limitations than 18 GHz.⁵⁵ Therefore, we agree that the use of the 23 GHz band is limited for the transmission of a multitude of video channels, in the range of 50. We continue to believe, however, that this band can continue to be viable for transmission of a limited number of video channels and for transmission of data.

c. Constraints on terrestrial use of 18 GHz band

19. OpTel alleged in its Petition that contemporaneous changes in Commission rules and pending actions governing use of the 18 GHz band created additional needs to expand CARS eligibility

⁵⁰ NPRM, 14 FCC Rcd at 11973.

⁵¹ RCN Comments at n.2.

⁵² Comsearch Comments at 2.

⁵³ *Id.*

⁵⁴ *Id.* at 3.

⁵⁵ *Id.*

for use by NMVPDs.⁵⁶ The NPRM asked whether an anticipated increase of constraints on terrestrial use of the 18 GHz band warrants making the 12 GHz CARS band available to NMVPDs. Subsequently, on June 22, 2000, the Commission released the *18 GHz Redesignation Order*.⁵⁷ In that Order, the Commission terminated co-primary status for most users in the band from 17.70 to 19.70 GHz. The band was segmented between terrestrial fixed services ("FS") and Geostationary ("GSO") and Non-Geostationary Satellite Services ("NGSO"). The FS users, including PCOs and other NMVPDs, were given primary status on the 600 MHz at 17.70 to 18.30 GHz.⁵⁸ They were also given co-primary status at 18.30 to 18.58 GHz and at 19.30 to 19.70 GHz.⁵⁹ Thus, FS users have access to 880 MHz of contiguous spectrum from 17.70 to 18.58 GHz. The *18 GHz Redesignation Order* also declined to allow new secondary operations on a non-interference basis anywhere in the 17.70 to 19.70 GHz band.⁶⁰ FS operations, therefore, have lost access to 18.58 to 19.30 GHz. The Commission rejected its original proposal to designate 18.30 to 18.55 GHz for use by GSO/FSS on a primary basis because that would jeopardize many FS, CARS, and PCO operations in that band.⁶¹ In doing so, the Commission asserted that this "affords PCOs the ability to maintain and upgrade their existing systems to compete effectively against franchised cable systems."⁶² The *18 GHz Redesignation Order* did not, therefore, change the amount of spectrum available to PCOs in the 18 GHz band. Section 101.603 continues to allow use of 18.142 to 18.580 GHz, in the 18 GHz band, as the final RF link in the chain of transmission of programming material to cable systems, MDS, or master antenna systems.⁶³

20. Hughes Electronics Corporation ("Hughes"),⁶⁴ the Fixed Wireless Communication Coalition ("FWCC"),⁶⁵ and Winstar Communications, Inc., ("Winstar")⁶⁶ filed petitions for reconsideration of the *18 GHz Redesignation Order*. The Commission addressed many of the issues raised in these petitions in the *First Order on Reconsideration*, released on November 1, 2001.⁶⁷ It deferred resolution, however, of the issues that impinge directly upon this proceeding—issues raised by Hughes on the 18 GHz band plan and blanket licensing.⁶⁸ The unresolved issues are, specifically,

⁵⁶ NPRM, 14 FCC Rcd at 11975 – 76 (1999); Petition at 5.

⁵⁷ *Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite Service Use*, 15 FCC Rcd 13430 (2000) ("*18 GHz Redesignation Order*").

⁵⁸ FS users cannot use the frequencies from 17.7 to 18.142 GHz for the final rf link in the transmission chain of programming material to cable systems, MDS, or master antenna systems. 47 C.F.R. § 101.603(b)(3).

⁵⁹ *18 GHz Redesignation Order*, 15 FCC Rcd at 13443.

⁶⁰ *Id.* at 13444.

⁶¹ *Id.* at 13446.

⁶² *Id.* at 13447 – 48.

⁶³ 47 C.F.R. § 101.603(b)(3).

⁶⁴ Hughes Electronic Corporation, Petition for Partial Reconsideration (filed Oct. 6, 2000).

⁶⁵ Fixed Wireless Communication Coalition, Petition for Reconsideration (filed Oct. 10, 2000).

⁶⁶ Winstar Communications, Inc., Petition for Clarification and Reconsideration (filed Oct. 10, 2000).

⁶⁷ *Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite Service Use*, 16 FCC Rcd 19808 (2001).

⁶⁸ *Id.* at 19816.

designation of the 18.30 to 18.58 GHz sub-band as primary solely for GSO/FSS rather than co-primary with FS operations such as PCOs and CARS, and Hughes's allegation that the Commission did not address its proposal to move PCO and CARS operations altogether from 18 GHz to 12 GHz or 23 GHz.⁶⁹ We cannot conclude at this time, however, that NMVPDs have a need for 12 GHz CARS spectrum solely based upon their displacement from the 18 GHz band. Rather, our decision here rests upon our findings and conclusion that NMVPDs need 12 GHz CARS spectrum based on their demonstrated need for longer path lengths and the cost savings obtained by using 12 GHz for these purposes.

2. The 13.20 GHz to 13.25 GHz band

21. The NPRM also sought comment on request of PCOs to use the frequency band segment from 13.20 to 13.25 GHz for delivery of video programming. OpTel argues that this would allow it to provide more video channels, up to 82, making it more competitive with cable systems.⁷⁰ The NPRM pointed out that 13.20 to 13.25 GHz is not designated for CARS use but rather for BAS, including on-site mobile transmissions for ENG. The NPRM sought comment on any existing or future impact sharing with CARS might have on BAS, especially as it relates to the required digital transition for broadcasters.

22. Broadcasters oppose allowing use of the 13.20 to 13.25 GHz band by PCOs.⁷¹ The band is deemed necessary for transmission of contribution quality video⁷² by TV pickup operations in ENG.⁷³ NAB and SBE argue that this quality of video is necessary for High Definition Television ("HDTV") broadcast.⁷⁴ Coverage of events at remote venues in digital format is a significant impetus for the penetration of digital television into the consumer market.⁷⁵ Further, the necessary bandwidth for transmission of contribution quality video is 25 MHz and such channels are available to ENG TV pickup operations only in the 13.20 to 13.25 GHz and 13.15 to 13.20 GHz bands in the top 100 markets.⁷⁶

23. Currently, BAS users have access to the 2, 7, 12, and 18 GHz bands, in part shared with CARS, for ENG and other uses. The Commission's records also indicate that the vast majority of BAS

⁶⁹ *Id.* If we ultimately decide that PCOs are no longer co-primary operations in the sub-band from 18.30 to 18.58 GHz, the spectrum available to PCOs for video distribution as OFS licensees in the 18 GHz band would be reduced by 64 percent. We note, however, that by making PCOs eligible to hold CARS licenses, they will have access to the full 18 GHz CARS spectrum from 17.70 to 18.58 GHz, as currently allocated, or 17.70 to 18.3 GHz under the Hughes relocation proposal. PCOs and other NMVPDs will now have access to 880 MHz, or at least 600 MHz depending on the decision on reconsideration, in the 18 GHz spectrum rather than the 438 MHz they currently use. Any use of 18 GHz below 18.142 GHz for video distribution by PCOs and other NMVPDs, however, may entail replacement of existing equipment or acquisition of additional equipment. The cost or compensation for any relocation will be addressed in the reconsideration of the *18 GHz Redesignation Order* should we decide to reallocate the sub-band from 18.30 to 18.58 GHz. We do not know whether equipment currently used by PCOs can be readily or inexpensively modified for operation elsewhere in the 18 GHz band.

⁷⁰ *NPRM*, 14 FCC Rcd at 11972.

⁷¹ NAB Comments at 1; Walt Disney Co. Comments at 1; SBE Comments at 2.

⁷² "Contribution Quality" is higher quality video than that transmitted to viewers. It is edited, repackaged and otherwise processed for inclusion in the ultimate video output of a station. NAB Comments at n.9.

⁷³ NAB Comments at 5 - 6.

⁷⁴ NAB Comments at 5, SBE Comments at 3.

⁷⁵ Walt Disney Co. Comments at 2.

⁷⁶ NAB Comments at 6.

ENG service is performed at 2 and 7 GHz. Nevertheless, during this time of digital transition for broadcasters, we agree that ENG TV pickup operations are likely to need the 13.20 to 13.25 GHz sub-band and should remain primary to these users in that sub-band. We are cognizant, however, that this 50 MHz of spectrum is also a natural extension of the 500 MHz of spectrum from 12.70 to 13.20 GHz allocated to CARS. We are aware that, under the current competitive environment, systems offering several hundred video channels are increasingly available and that cable systems with 550 MHz capacity are common. OpTel persuasively argues that use of the frequencies from 13.20 to 13.25 GHz would provide it with more channels in the 12 GHz CARS band to be more competitive with cable systems. We, however, must balance spectrum demands by MVPDs against protection of the broadcast ENG TV pickup service and consider the goal of efficient spectrum usage.

24. We will allow CARS users, including the NMVPDs made eligible by this Order, to use the sub-band from 13.20 to 13.25 GHz as secondary users; that is, CARS stations must accept interference from and not cause interference to existing and future BAS users. Further, any applicant for a CARS license seeking use of the 13.20 to 13.25 GHz sub-band will be required to demonstrate that sufficient spectrum is not available to it in the 12.70 to 13.20 GHz band. Secondary status notwithstanding, we do not anticipate that CARS users in the 13.20 to 13.25 GHz sub-band will experience loss of service due to preemption by a new primary user as there are solutions, both technical and non-technical, that will enable sharing of the frequencies. This action should afford adequate protection for BAS ENG while providing more efficient use of spectrum.

3. Impact on competition in the video distribution market

25. The NPRM asked whether the proposed expansion of CARS eligibility would adversely affect competition in the video distribution market. This question included a request for comment on whether to give PCOs equal access to CARS frequencies notwithstanding that the franchised cable systems currently eligible for CARS have service and other requirements to which PCOs and other NMVPDs are not subject. For example, cable systems must obtain a franchise,⁷⁷ which may have a requirement to serve all residents in the franchise area, and are subject to a franchise fee.⁷⁸ They are also subject to regulation regarding leased access;⁷⁹ must carry;⁸⁰ program access;⁸¹ public, educational, and government channels;⁸² rate regulation;⁸³ channel occupancy limits;⁸⁴ sports blackout;⁸⁵ network nonduplication;⁸⁶ and syndicated exclusivity.⁸⁷ Eligible MVPDs such as MDS and MMDS operators, like PCOs and other NMVPDs are not subject to these requirements.

⁷⁷ 47 U.S.C. § 541(b)(1).

⁷⁸ *Id.* § 542.

⁷⁹ *Id.* § 532.

⁸⁰ *Id.* §§ 534 – 35.

⁸¹ *Id.* § 536.

⁸² *Id.* § 531.

⁸³ *Id.* § 543.

⁸⁴ *Id.* § 533(f)(1)(B); 47 C.F.R. § 76.504(a).

⁸⁵ 47 C.F.R. § 76.67.

⁸⁶ *Id.* § 76.92.

26. RCN argues that access to CARS frequencies will make market penetration easier for non-cable MVPDs.⁸⁸ Laying fiber optic cable can be costly and time consuming. RCN asserts that, by using CARS initially, NMVPDs can establish a customer base sufficient to support installation of a fiber optic network.⁸⁹ In opposition, Time Warner argues that all MVPDs are not equal and that cable operators have franchise requirements and other regulatory burdens, such as must carry, which are not imposed upon the NMVPDS.⁹⁰ Time Warner asserts that, for true parity to exist, PCOs should, at a minimum have the “ ‘if carry one, must carry all’ obligation with respect to local television broadcast stations.”⁹¹

27. It is undeniable that NMVPDs have fewer regulatory burdens than franchised cable systems. It is less clear why the differences in franchise obligations or carriage requirements have any relevance to limiting CARS eligibility. For example, MDS and MMDS providers currently have access to CARS frequencies and they are subject to lesser or different regulatory requirements than franchised cable operators.⁹² The Commission has previously decided that these differences in regulatory burdens should not limit CARS eligibility.⁹³ The regulatory disparities between cable systems and other MVPDs exist for historical and legitimate reasons of public policy and are irrelevant to the issue of whether NMVPDs should be excluded from using CARS frequencies. We conclude, therefore, that denying NMVPDs access to CARS frequencies based on differences in regulatory treatment would create an arbitrary distinction among MVPDs that would unnecessarily impede market entry for competitors and unnecessarily restrict their flexibility to provide services in an efficient and economical fashion.

4. Adverse impact on the ability of cable systems to serve their community

28. The NPRM asked whether expanding CARS eligibility to NMVPDs would create an adverse impact on incumbent CARS licensees. In particular, the NPRM asked whether expanding eligibility in the 12 GHz CARS band would create spectrum congestion harmful to incumbent CARS licensees. The NPRM speculated that, though all MVPDs would be equally eligible to use CARS frequencies, the ability of a cable system to serve its community might be adversely affected because at some point in the future CARS frequencies necessary for franchised cable use might be occupied by an NMVPD.⁹⁴ The NPRM also asked whether the transition to fiber optics by cable systems would mitigate any negative impact of expanding eligibility for CARS licenses.⁹⁵

29. The record provides no specific data on franchised cable systems’ future needs for CARS links. RCN contends that congestion on the 12 GHz CARS band should not be a problem in

(...continued from previous page)

⁸⁷ *Id.* § 76.151.

⁸⁸ RCN Comments at 9.

⁸⁹ *Id.*

⁹⁰ Time Warner Cable Comments at 7-10.

⁹¹ *Id.* at 10 (referring to requirements Congress was considering for satellite carriers at the time the comments were filed and which Congress later imposed.).

⁹² See 47 C.F.R. §§21.900-21.961.

⁹³ *Wireless Cable Order*, 5 FCC Rcd at 6423.

⁹⁴ *NPRM*, 14 FCC Rcd at 11974.

⁹⁵ *Id.* at 11975.

densely populated areas in the future as cable systems consolidate headends and shift to fiber optic cable, thus reducing their demand for microwave links.⁹⁶ NCTA's comments tend to support this conclusion. NCTA indicates that the cable industry's transition to fiber optics will diminish their need to use CARS frequencies. NCTA, however, provides no timeframe for this transition, nor do they conclude that it will necessarily eliminate congestion concerns.⁹⁷

30. Sprint argues that adding new users to the 12 GHz CARS band will increase the likelihood of congestion.⁹⁸ Time Warner insists there is potential for interference from additional users and that those users should prove that interference would not occur.⁹⁹ NCTA states that it may be possible to accommodate NMVPDs, but it also asserts that there should be a burden on the NMVPDs to show that no problems would occur. The record, however, contains no information to show that frequency coordination cannot be used to accommodate additional CARS facilities in all but the most congested areas. RCN asserts that congestion may be more of a problem at 18 GHz than at 12 GHz.¹⁰⁰ Further, RCN argues that congestion and difficulties in frequency coordination are typically problems for newcomers, which predominantly will be the NMVPDs.¹⁰¹ The record does not show that the use of these frequencies cannot be engineered to accommodate NMVPDs; to the contrary, the record suggests that they can use the frequencies with proper coordination.¹⁰² Therefore, we conclude that frequency coordination will address all potential interference problems and that there is no present danger of congestion due to limited use of the band as needed by NMVPDs.

5. Summary

31. In summary, we conclude that it is appropriate to make NMVPDs eligible for CARS licenses based on a demonstrated need for the spectrum by NMVPDs, the eligibility of other similarly situated MVPDs for the same licenses, and the lack of demonstrable adverse impacts on existing users of the spectrum. We note that our decisions regarding the 12 GHz CARS band in this docket are independent of the issues pending in the *18 GHz Redesignation Proceeding* and are not intended to prejudge or otherwise alter the issues pending on reconsideration. Allocation of the frequencies from 18.30 to 18.58 GHz to the GSO/FSS is the remaining issue in the *18 GHz Redesignation proceeding*. Any relocation of PCOs would entail an evaluation of costs to the PCOs and reimbursement for those costs. These issues would be best addressed in the *18 GHz Redesignation Proceeding*.

B. Conditions and Restrictions on NMVPDs

32. The NPRM sought comment on whether we should impose special technical criteria to insure that NMVPDs would not interfere with existing users or unduly constrain growth of incumbent cable services. The NPRM also asked whether special eligibility criteria should be developed for

⁹⁶ See RCN Comments at 9.

⁹⁷ See NCTA Comments at 2.

⁹⁸ Sprint Comments at 3.

⁹⁹ Time Warner Cable Comments at 9.

¹⁰⁰ RCN Comments at 11. We note that, if PCO eligibility for 18 GHz is revised, reduced or eliminated, it could cause congestion in the 12 GHz band that would have to be addressed in that context.

¹⁰¹ See *id.* at 11 – 12.

¹⁰² Comsearch Comments at 8; NCTA Comments at 3, 5.

NMVPDs, as well as whether conditions or restrictions other than those proposed should be imposed on the use of the 12 GHz CARS band by NMVPDs.

1. Technical Criteria

33. Time Warner Cable proposes, as a prerequisite to the grant of a CARS license for operation in the 12 GHz CARS band, that applicants demonstrate a need to transmit more than 10 miles, as 18 GHz frequencies should be adequate for shorter distance links.¹⁰³ RCN asserts that this would be nothing more than an unnecessary administrative burden.¹⁰⁴ We agree that such an additional requirement, applicable only to NMVPDs, would be purely discriminatory as others who are similarly situated, such as wireless cable systems, need not make such a showing. CARS stations must operate with reduced power if their path length is less than the minimum path lengths currently prescribed in Section 78.108 of the Commission's Rules.¹⁰⁵ The existing minimum path length restrictions are rigorously applied. Because all CARS stations must use less power for shorter paths and because 18 GHz equipment costs less, NMVPDs would have a strong economic incentive to use 18 GHz rather than 12 GHz for shorter paths. Thus, we do not believe additional regulatory restrictions or requirements are necessary in this regard.

34. NCTA recommends that NMVPDs be limited to hub-to-hub operations on 12 GHz CARS because it believes 18 GHz is adequate for hub-and-spoke operation.¹⁰⁶ OpTel counters that to limit NMVPDs to hub-to-hub operation would lock all NMVPDs into one system architecture and that the Commission should not dictate system design.¹⁰⁷ OpTel notes that although its use of the band may involve such transmissions, that is simply a function of OpTel's particular system architecture, and that architecture should not be arbitrarily imposed on all other competitors desiring use of the CARS spectrum. Moreover, OpTel itself may need to use 12 GHz paths to reach private communities or more remote MDUs that are not serviceable with an 18 GHz path. Again, we see no justification to discriminate among non-cable system MVPDs in terms of use restrictions, and decline to impose system architecture on users. We, therefore, conclude that NMVPDs should not be limited to hub-to-hub operations in the CARS band.

2. Eligibility criteria

35. The NPRM asked whether CARS eligibility should be conditioned on service to a specified minimum number of subscribers to avoid having a NMVPD with a small number of subscribers occupying capacity that might be needed by a cable system with a large number of subscribers.¹⁰⁸ The record offers no recommendation for a minimum number of subscribers that should be required as a prerequisite for CARS license eligibility. Only one commenter, Sprint, supports the minimum subscriber requirement "to prevent a PCO with a small number of subscribers from monopolizing a CARS station

¹⁰³ Time Warner Cable Comments at 17. *See also* Sprint Comments at 5 (showing of need to transmit over 10 miles would not be necessary if NMVPDs were given secondary status).

¹⁰⁴ RCN Comments at 16.

¹⁰⁵ 47 C.F.R. § 78.108. Operation at reduced power is required for paths shorter than the minimum length.

¹⁰⁶ NCTA Comments at 5.

¹⁰⁷ OpTel Reply Comments at 6.

¹⁰⁸ NPRM, 14 FCC Rcd at 11979.

that could otherwise be licensed to a cable system serving a significantly larger subscriber base.¹⁰⁹ RCN argues, however, that requiring a minimum number of subscribers prior to granting a CARS license would impede market penetration where the CARS license is necessary for the initial operation of the system.¹¹⁰ We are sensitive to the concern that a NMVPD should ultimately have a sufficient subscriber base for efficient use of 12 GHz CARS frequencies. On this record, however, we can set no minimum subscriber number. We believe that the economics of building CARS links will militate against using them for smaller operations.

36. NCTA and Sprint express concern that spectrum will be hoarded¹¹¹. Eligibility criteria are not needed to avoid this problem because warehousing of spectrum is prohibited by operation of Section 78.27(b) of the Commission's Rules, which provides that the CARS license is forfeited if the licensee does not notify the Commission within one year of the grant of the license that the station has commenced operation.¹¹²

3. Relative status

37. The Commission requested comment on whether NMVPDs should be designated as co-primary or secondary users.¹¹³ Some commenters have proposed that the NMVPDs be allowed to use the 12 GHz CARS band only on a secondary basis.¹¹⁴ The more persuasive argument, however, is that secondary status would in effect preclude access to this spectrum. OpTel and RCN argue that secondary status would deter investment in CARS equipment by NMVPDs. They also contend that secondary status would give other MVPDs the opportunity to intentionally disrupt NMVPDs' 12 GHz CARS operation by obtaining conflicting licenses or designing their own systems so that they would receive interference from existing or proposed NMVPD systems.¹¹⁵ Therefore, we conclude that, in order that NMVPDs may fairly benefit from use of the CARS bands and be true competitors, they should be designated co-primary users.

¹⁰⁹ Sprint Comments at 6.

¹¹⁰ RCN Comments at 15.

¹¹¹ NCTA Comments at 4; NCTA Reply Comments at 7, Sprint Comments at 4.

¹¹² 47 C.F.R. § 78.27(b).

¹¹³ The Commission has explained that "a secondary service is allowed to use the band as long as its operations do not cause interference to any primary designated operations. If a secondary service operation causes interference to a primary service, the secondary service provider must cease operation [and] a service designated as primary is the only service given priority status to operate in a frequency band. A service designated as co-primary must share operations with other services designated as co-primary in the frequency band on a co-equal basis." *See Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite Service Use*, 13 FCC Rcd 19923 at n.4 (1998) ("*Redesignation NPRM*"). In addition, secondary users must accept interference from primary users.

¹¹⁴ NCTA Comments at 5; Sprint Comments at 4; Time Warner Cable Comments at 19; Wireless Communications Association, International Comments at 1.

¹¹⁵ *See* OpTel Comments at 8; RCN Comments at 15.

C. Additional Changes to CARS

1. Voice and data

38. The principle use of CARS is for relaying video programming as a component of a larger system, for example, a microwave link in a cable system connecting headends where the system is predominantly comprised of cable or hybrid fiber optic and cable connecting the headends to subscribers.¹¹⁶ The NPRM noted that it is appropriate, for example, for a CARS station to carry 60 channels of video programming and two channels with non-video ancillary services.¹¹⁷ The NPRM did not propose changing the primary use of CARS from video programming, but sought comment on whether and to what extent CARS could be used to carry voice or data on a secondary or tertiary basis, subject to existing technical restraints.¹¹⁸ Some commenters propose unlimited carriage of voice and data.¹¹⁹ Sprint, for example, proposes to use CARS to back-haul voice and data traffic from MMDS base stations instead of using fiber optic cable.¹²⁰ Sprint states that this use would allow for more rapid deployment of high-speed advanced technological services.¹²¹ Some commenters disagreed with the limitation described in the NPRM.¹²² Others criticized the limited provision for data transmission as inadequate, and argued that failure to allow unrestricted use of CARS for voice and data would frustrate the objectives of the *MDS/ITFS Flexible Use Order* and stunt the growth of the MDS industry.¹²³ In contrast, RCN argues that one 6 MHz channel used for voice or data would be sufficient.¹²⁴

39. Relaying video programming as part of a larger system that communicates by other means or spectrum is the principle use for CARS.¹²⁵ We did not propose in the NPRM to change the fundamental character of the service. Rather, the NPRM sought comment solely on expansion of the types of users eligible for CARS within the existing parameters.¹²⁶ Transmission of video requires large segments of contiguous bandwidth. Transmission of data requires relatively small channels and can be accommodated through other currently available spectrum services, which video cannot. Consequently, the presence of a few data channels in a path needed by an MVPD for video transmission may prevent the MVPD from using that path. Thus, the data channels would effectively occupy much more spectrum than needed. We believe the CARS band is best suited for use primarily for the transmission of video. Moreover, the record we rely on here for determining that expanded eligibility will not create

¹¹⁶ 47 C.F.R. § 78.11(b).

¹¹⁷ *NPRM*, 14 FCC Rcd at n.73.

¹¹⁸ *Id.* at 11979..

¹¹⁹ Sprint Comments at 6 – 8; OpTel Comments at 9; Wireless Communications Association, International Comments at 6.

¹²⁰ Sprint Comments at 7 – 8.

¹²¹ *Id.*

¹²² Wireless Communications Association, International Comments at 6.

¹²³ *Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, 13 FCC Rcd 19112 (1998) (“*MDS/ITFS Flexible Use Order*”).

¹²⁴ RCN Comments at 16.

¹²⁵ 47 C.F.R. § 78.11(b).

¹²⁶ *NPRM*, 14 FCC Rcd at 11979.

unworkable congestion is based upon the assumption that CARS will continue to be used predominantly for video transmission. It is beyond the scope of this proceeding to determine the impact on current and future users of changing the dominant use of this spectrum. The *MDS/ITFS Flexible Use Order* was intended to allow MDS and ITFS licensees to “provide a wide array of new, enhanced services including new digital and two-way communications services.”¹²⁷ It was adopted, however, in the context of existing CARS permissible use limitations and availability of spectrum in other services. The *MDS/ITFS Flexible Use Order* did not discuss revisions to the CARS limitations on use. We will continue to allow carriage of voice and data in the same manner as currently permitted.¹²⁸

2. Channel realignment and assignment

40. The NPRM also asked for comment on the realignment and reassignment of channel frequencies to provide for more efficient use of channels by facilitating continuous channel transmissions. Specifically, the NPRM sought comments on: 1) designating the unassigned guard band (12.9465-12.9525 GHz) as channel C43, and the unassigned second guard band (13.0057-13.0125) as channel D43; and 2) allowing CARS operators to slightly shift the frequencies of channels C04-C10, channels D04-D10, channels E04-E10, and channels F04-F10 to produce 6 - 6 MHz video channels for each channel group (i.e., C group, D group, E group, and F group). Currently, applicants must seek waivers for a change in the frequency assignments for such minor frequency shifts and to use the guard band. The NPRM additionally sought comment on whether other changes in frequency assignments are necessary to provide for seamless and efficient use of the CARS frequency spectrum.

41. The comments support this proposed channel realignment and reassignment plan.¹²⁹ Sprint also suggests, in conjunction with its proposal to permit unlimited non-video usage, that the rules allow CARS licensees to combine or subdivide channels without regard to the frequency assignment plan in Section 78.18 of the rules as long as the spectral emission requirements are met.¹³⁰ As noted below in paragraph 44, the scope of this proceeding is limited and we intend to address flexible use issues separately. On the basis of the record before us, however, we find efficiency advantages to the new channelization plan proposed in the NPRM and will adopt it.

3. Reallocation to satellite downlinks

42. The NPRM sought comment on expanding eligibility for CARS licenses to entities such as PCOs, open video service (“OVS”) operators and others who provide video as their dominant service, such as the Direct Broadcast Satellite service (“DBS”).¹³¹ In its comments, EchoStar Communications Corporation (“EchoStar”) supported the proposed extension of eligibility to NMVPDs, but requested also that the Commission take it one step further. As the 12 GHz CARS band is adjacent to the 12.20 to 12.70 GHz DBS band, EchoStar states that the spectrum is of particular interest to it, if it were reallocated to satellite downlinks.¹³² EchoStar proposes that we allow ubiquitous satellite service in the 12 GHz CARS

¹²⁷ *MDS/ITFS Flexible Use Order*, 13 FCC Rcd at 19113.

¹²⁸ The Commission's rules require that a CARS station's principal use is the transmission of television broadcast material or cablecasting. 47 CFR § 78.11(b).

¹²⁹ Comsearch Comments at 67; Sprint Comments at 67.

¹³⁰ Sprint Comments at 7.

¹³¹ *NPRM*, 14 FCC Rcd at 11973 – 74.

¹³² EchoStar Comments at 2.

band. Further, inasmuch as it is very difficult for ubiquitous satellite and terrestrial services to coexist in the same spectrum without some form of coordination, EchoStar argues that the Commission should award exclusive licenses and auction the spectrum.¹³³ EchoStar proposes that to make this possible, the Commission could segment the 12 GHz CARS band between satellite and terrestrial users.¹³⁴ EchoStar also urges that this band be allocated for use by other point-to-multipoint systems, such as Northpoint Technology, Ltd. ("Northpoint"), which at the time, was being considered for allocation in the DBS band and has now been allocated there.¹³⁵ SkyBridge and OpTel strongly oppose reallocation of the 12 GHz CARS band for ubiquitous satellite use because the result would be to preclude current terrestrial uses of the band.¹³⁶ EchoStar's proposal is entirely beyond the scope of this proceeding. Our decision in this Order is based upon established needs for the 12 GHz CARS band and our purpose is to extend the benefits of existing terrestrial uses of the spectrum to all classes of MVPDs. We can neither evaluate the merits of EchoStar's proposal nor develop a regime to implement it based upon the record before us.

43. We note that on December 3, 2001, DIRECTV, Inc., and EchoStar ("DBS Operators") filed a Petition requesting that the Commission "consider housing Northpoint's proposed service in the Cable Television Relay Service ("CARS") band," and consolidate pending proceedings relating to the 12.20 to 12.70 GHz DBS band and the immediately adjacent 12.70 to 13.20 GHz CARS band, including the instant proceeding, with the Multichannel Video Distribution and Data Service ("MVDDS") proceeding.¹³⁷ The DBS Operators seek a declaration that alternate spectrum, in the CARS and MMDS bands, is suitable for the proposed MVDDS. They assert that such a reallocation would offer a constructive alternative to the current proposal to put MVDDS in the DBS band.¹³⁸ Without expressing an opinion on the merits of the DBS Operators' Petition, we reiterate that the current proceeding is limited to addressing the narrow question of NMVPD eligibility to operate a CARS station under the current technical parameters of this service. Our cost/benefit determination to expand eligibility is necessarily limited to the record before us. As stated previously and as clearly noted in the NPRM, the issues related to spectrum allocation for MVDDS are entirely beyond the scope of this proceeding.¹³⁹

44. Notwithstanding that EchoStar's proposal for DBS use of the 12 GHz CARS band and the DBS Operators' proposal for MVDDS are beyond the scope of this proceeding, they raise valid issues regarding the applicability of flexible use policies to the 12 GHz band, which we intend to address in a separate proceeding. Allocating the 12 GHz spectrum for flexible use requires analysis that such use would be in the public interest, would not deter investment in communications services and technologies,

¹³³ *Id.* at 3.

¹³⁴ *Id.*

¹³⁵ See *Amendment Of Parts 2 And 25 Of The Commission's Rules To Permit Operation Of NGSO FSS Systems Co-Frequency With GSO And Terrestrial Systems In The Ku-Band Frequency Range; Amendment of the Commission's Rules to Authorize Subsidiary Terrestrial Use of the 12.2-12.7 GHz Band by Direct Broadcast Satellite Licensees and Their Affiliates; and Applications of Broadwave USA, PDC Broadband Corporation, and Satellite Receivers, Ltd. To Provide a Fixed Service in the 12.2-12.7 GHz Band*, 16 FCC Rcd 4096 (2000) ("*MVDDS Order*").

¹³⁶ SkyBridge Reply Comments at 3-4; OpTel Reply Comments at note 15.

¹³⁷ Petition for Consolidation of Rulemaking Proceedings and for a Declaratory Ruling That Alternative Spectrum Is Suitable for the Proposed "Multichannel Video Distribution Data Service," ET Docket No. 98-206, CS Docket No. 99-250, ET Docket No. 00-258 (filed December 3, 2001).

¹³⁸ *Id.* at 5 - 8.

¹³⁹ *NPRM*, 14 FCC Rcd at 11978.

and would not result in harmful interference among users.¹⁴⁰ Such analysis cannot be done on the existing record and would require further notice and comment.

4. Auctions

45. The NPRM asked whether the proposed eligibility changes would create a licensing scheme in which there would be mutually exclusive applications that should be resolved by auction.¹⁴¹ The Commission has stated that, “[i]n the majority of cases, efficient spectrum markets will lead to use of spectrum for the highest value end use. Flexible allocations may result in more efficient spectrum markets.”¹⁴² The Commission has also recognized that where there are competing applicants “[t]he assignment of spectrum through competitive bidding has facilitated more efficient and rapid licensing of spectrum to those who value it most.”¹⁴³ There is unanimity among the commenters who discuss the issue that the broadening the class of entities eligible for CARS licenses, in itself, will not create mutually exclusive applications.¹⁴⁴ As we have stated previously, this proceeding is limited to the narrow question of NMVPD eligibility to operate a CARS station under the current technical parameters of that service. We intend to consider flexible use for this frequency allocation in a separate proceeding, and at that time we will consider whether a new licensing scheme involving a greater potential for mutually exclusive applications would be in the public interest. Pending changes in any future proceeding, we will continue to use the existing frequency coordination system in the application process because we do not have a record at this time to support changing the process. As these frequencies are currently allocated, CARS stations are used to relay communications in support of other communications systems and not to service end users directly. Given this fact, and given the coordination process prior to the filing of applications, mutual exclusivity among filed applications has not generally been an issue.

46. Comsearch suggests that the frequency coordination used for applications filed under Part 101 of the Commission’s Rules is more comprehensive and should be used rather the frequency coordination procedures currently used for CARS applications.¹⁴⁵ We agree. In addition, to make frequency coordination procedures consistent for all users of these frequencies, we will conform CARS frequency coordination procedures to those of Part 101.

¹⁴⁰ 47 U.S.C. § 303(y)(2).

¹⁴¹ NPRM, 14 FCC Rcd at 11978-79.

¹⁴² *Principles for Reallocation of Spectrum to Encourage the Development of Telecommunication Technologies for the New Millennium*, 14 FCC Rcd 19868, 19870 (1999) [*Spectrum Policy Statement*].

¹⁴³ *Principles for Promoting the Efficient Use of Spectrum By Encouraging the Development of Secondary Markets*, FCC 00-401, para. 10; 22 Communications Reg. (P&F) 791, 2000 WL 1760080 (F.C.C.) (2000) (*Secondary Markets Policy Statement*).

¹⁴⁴ Comsearch Comments at 8; Sprint Comments at 5; Time Warner Cable Comments at 19; OpTel Comments 9; RCN Comments at 12; SBE Comments at 5; Wireless Communications Association, International Comments at 1. EchoStar would have us auction the spectrum, but only after reallocating it for satellite use. EchoStar Comments at 3.

¹⁴⁵ Comsearch Reply Comments at 2. See also Comments of SkyBridge at 2 (“So long as such links are subject to the standard coordination procedures used to coordinate terrestrial facilities and satellite earth stations . . .”).

IV. ADMINISTRATIVE MATTERS

47. *Final Regulatory Flexibility Analysis.* As required by the Regulatory Flexibility Act ("RFA"),¹⁴⁶ an Initial Regulatory Flexibility Analysis ("IRFA") was incorporated in the *Notice*. The Commission sought written public comments of the possible significant economic impact of the proposed policies and rules on small entities in the *Notice*, including comments on the IRFA. Pursuant to the RFA,¹⁴⁷ a Final Regulatory Flexibility Analysis is contained in Appendix C.

48. *Paperwork Reduction Act.* This Report and Order contains new or modified information collection requirements subject to the Paperwork Reduction Act of 1995 ("PRA"), Public Law 104-13. It will be submitted to the Office of Management and Budget ("OMB") for review under Section 3507(d) of the PRA. OMB, the general public, and other Federal agencies are invited to comment on the new or modified information collection requirements contained in this proceeding. Public and agency comments are due 60 days after the date of publication in the Federal Register.

V. ORDERING CLAUSES

49. Accordingly, IT IS ORDERED that, pursuant to authority found in Sections 4(i)-(j) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i)-(j), 303(c), (f), and (r), and 309(j), the Commission's rules ARE AMENDED as set forth in Appendix B.

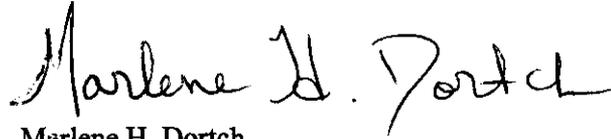
50. IT IS FURTHER ORDERED that the amendments to Sections 78.18 and 78.36 of the Commission's Rules, 47 C.F.R. §§ 78.18 & 78.36, as set forth in Appendix B WILL BECOME EFFECTIVE 30 days after publication in the Federal Register. The action contained herein has been analyzed with respect to the Paperwork Reduction Act of 1995, Public Law 104-13, and found to impose new or modified information collection requirements on the public. Implementation of these new or modified information collection requirements will be subject to approval by the Office of Management and Budget (OMB) as prescribed by the Paperwork Reduction Act; consequently, amendments to Section 78.13 of the Commission's Rules, 47 C.F.R. §§ 78.13, as set forth in Appendix B WILL BECOME EFFECTIVE upon announcement in the Federal Register of OMB approval of the new or modified information collecting requirements.

¹⁴⁶ See 5 U.S.C. § 603.

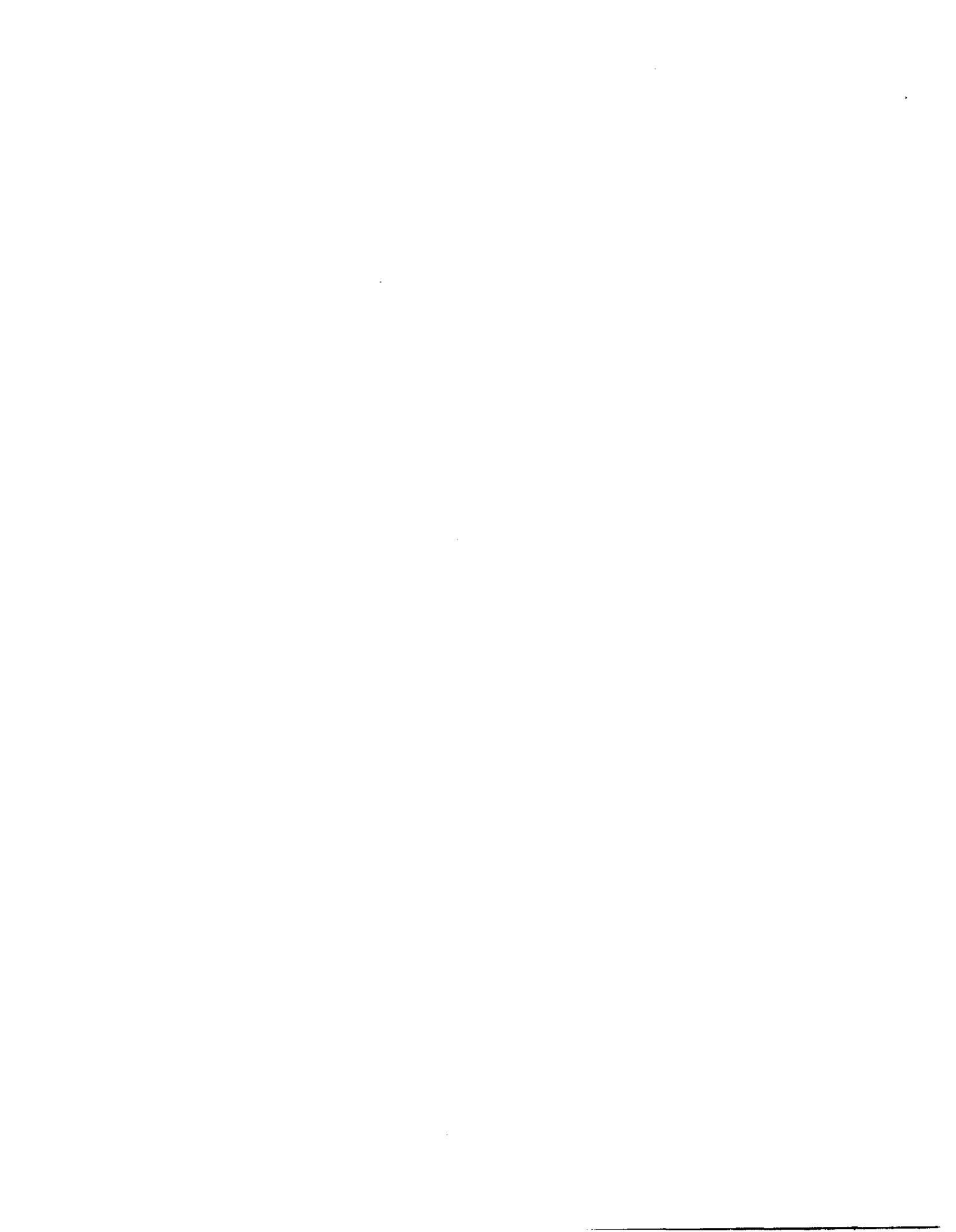
¹⁴⁷ See *id.* § 604.

51. IT IS FURTHER ORDERED that the Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Report and Order, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

A handwritten signature in black ink that reads "Marlene H. Dortch". The signature is written in a cursive style with a large initial 'M' and a long, sweeping tail on the 'h'.

Marlene H. Dortch
Secretary



APPENDIX A**A. Petitioner**

OpTel, Inc. ("OpTel")

B. Commenters

AML Wireless Systems, Inc. ("AML")
Comsearch, Inc. ("Comsearch")
EchoStar Satellite Corporation ("EchoStar")
KaStar Satellite Communications Corp., KaStarcom. World Satellite, LLC, and @ Contact, LLC
("KaStar")
National Association of Broadcasters ("NAB")
National Cable Television Association ("NCTA")
OpTel, Inc. ("OpTel")
RCN Telecom Services, Inc. ("RCN")
Skybridge LLC ("Skybridge")
Society of Broadcast Engineers ("SBE")
Sprint Corporation ("Sprint")
Time Warner Cable ("TWC")
Walt Disney Company, ABC, Inc. ("ABC")
Wireless Communications Association International, Inc. (WCA")

C. Reply Commenters

National Cable Television Association ("NCTA")
OpTel, Inc. ("OpTel")
RCN Telecom Services, Inc. ("RCN")
SkyBridge L.L.C. ("Skybridge")
Time Warner Cable ("TWC")



APPENDIX B

Part 78 of Title 47 of the Code of Federal Regulations is amended as follows:

Part 78 – Cable Television Relay Service

1. The authority for Part 78 continues to read as follows:

AUTHORITY: Secs. 2, 3, 4, 301, 303, 307, 308, 309, 48 Stat., as amended, 1064, 1065, 1066, 1081, 1082, 1083, 1084, 1085; 47 U.S.C. 152, 153, 154, 301, 303, 307, 308, 309.

2. In Section 78.13, add paragraph (f) to read as follows:

§ 78.13 Eligibility for license.

* * * * *

(f) To private cable operators and other multichannel video programming distributors not specifically identified above.

3. In Section 78.18, revise paragraph (a)(2) and add paragraph (m) to read as follows:

§ 78.18 Frequency Assignments.

(a) * * *

(2) * * *

Group C Channels

Designation	Channel Boundaries (GHz) [C Channels]	Alternate Channel Boundaries (GHz) [Ca Channels]
C01 ¹	12.7005 – 12.7065	12.7005 – 12.7065
C02 ¹	12.7065 – 12.7125	12.7065 – 12.7125
C03 ¹	12.7125 – 12.7185	12.7125 – 12.7185
C04 ¹	² 12.7185 – 12.7225	12.7185 – 12.7245
C05 ¹	12.7225 – 12.7285	12.7225 – 12.7305
C06 ¹	12.7285 – 12.7345	12.7285 – 12.7365
C07 ¹	12.7345 – 12.7405	12.7345 – 12.7425
C08 ¹	12.7405 – 12.7465	12.7405 – 12.7485
C09 ¹	12.7465 – 12.7525	12.7465 – 12.7545
C10 ¹	² 12.7525 – 12.7545	
C11 ¹	12.7545 – 12.7605	12.7545 – 12.7605
C12 ¹	12.7605 – 12.7665	12.7605 – 12.7665
C13 ¹	12.7665 – 12.7725	12.7665 – 12.7725
C14 ¹	12.7725 – 12.7785	12.7725 – 12.7785
C15 ¹	12.7785 – 12.7845	12.7785 – 12.7845
C16 ¹	12.7845 – 12.7905	12.7845 – 12.7905
C17 ¹	12.7905 – 12.7965	12.7905 – 12.7965
C18 ¹	12.7965 – 12.8025	12.7965 – 12.8025
C19 ¹	12.8025 – 12.8085	12.8025 – 12.8085
C20 ¹	12.8085 – 12.8145	12.8085 – 12.8145
C21 ¹	12.8145 – 12.8205	12.8145 – 12.8205
C22 ¹	12.8205 – 12.8265	12.8205 – 12.8265
C23 ¹	12.8265 – 12.8325	12.8265 – 12.8325

C24 ¹	12.8325 – 12.8385	12.8325 – 12.8385
C25 ¹	12.8385 – 12.8445	12.8385 – 12.8445
C26 ¹	12.8445 – 12.8505	12.8445 – 12.8505
C27 ¹	12.8505 – 12.8565	12.8505 – 12.8565
C28 ¹	12.8565 – 12.8625	12.8565 – 12.8625
C29 ¹	12.8625 – 12.8685	12.8625 – 12.8685
C30 ¹	12.8685 – 12.8745	12.8685 – 12.8745
C31 ¹	12.8745 – 12.8805	12.8745 – 12.8805
C32 ¹	12.8805 – 12.8865	12.8805 – 12.8865
C33 ¹	12.8865 – 12.8925	12.8865 – 12.8925
C34 ¹	12.8925 – 12.8985	12.8925 – 12.8985
C35 ¹	12.8985 – 12.9045	12.8985 – 12.9045
C36 ¹	12.9045 – 12.9105	12.9045 – 12.9105
C37 ¹	12.9105 – 12.9165	12.9105 – 12.9165
C38 ¹	12.9165 – 12.9225	12.9165 – 12.9225
C39 ¹	12.9225 – 12.9285	12.9225 – 12.9285
C40 ¹	12.9285 – 12.9345	12.9285 – 12.9345
C41 ¹	12.9345 – 12.9405	12.9345 – 12.9405
C42 ¹	12.9405 – 12.9465	12.9405 – 12.9465
C43 ¹	12.9465 – 12.9525	12.9465 – 12.9525

¹ See footnote 1 following GROUP A CHANNELS.

² For transmission of pilot subcarriers or other authorized narrow band signals.

Group D Channels

Designation	Channel Boundaries (GHz) [D Channels]	Alternate Channel Boundaries (GHz) [Da Channels]
D01 ¹	12.7597 – 12.7657	12.7597 – 12.7657
D02 ¹	12.7657 – 12.7717	12.7657 – 12.7717
D03 ¹	12.7717 – 12.7777	12.7717 – 12.7777
D04 ¹	² 12.7777 – 12.7817	12.7777 – 12.7837
D05 ¹	12.7817 – 12.7877	12.7837 – 12.7897
D06 ¹	12.7877 – 12.7937	12.7897 – 12.7957
D07 ¹	12.7937 – 12.7997	12.7957 – 12.8017
D08 ¹	12.7997 – 12.8057	12.8017 – 12.8077
D09 ¹	12.8057 – 12.8117	12.8077 – 12.8137
D10 ¹	² 12.8117 – 12.8137	
D11 ¹	12.8137 – 12.8197	12.8137 – 12.8197
D12 ¹	12.8197 – 12.8257	12.8197 – 12.8257
D13 ¹	12.8257 – 12.8317	12.8257 – 12.8317
D14 ¹	12.8317 – 12.8377	12.8317 – 12.8377
D15 ¹	12.8377 – 12.8437	12.8377 – 12.8437
D16 ¹	12.8437 – 12.8497	12.8437 – 12.8497
D17 ¹	12.8497 – 12.8557	12.8497 – 12.8557
D18 ¹	12.8557 – 12.8617	12.8557 – 12.8617
D19 ¹	12.8617 – 12.8677	12.8617 – 12.8677
D20 ¹	12.8677 – 12.8737	12.8677 – 12.8737
D21 ¹	12.8737 – 12.8797	12.8737 – 12.8797
D22 ¹	12.8797 – 12.8857	12.8797 – 12.8857
D23 ¹	12.8857 – 12.8917	12.8857 – 12.8917
D24 ¹	12.8917 – 12.8977	12.8917 – 12.8977
D25 ¹	12.8977 – 12.9037	12.8977 – 12.9037
D26 ¹	12.9037 – 12.9097	12.9037 – 12.9097
D27 ¹	12.9097 – 12.9157	12.9097 – 12.9157
D28 ¹	12.9157 – 12.9217	12.9157 – 12.9217
D29 ¹	12.9217 – 12.9277	12.9217 – 12.9277
D30 ¹	12.9277 – 12.9337	12.9277 – 12.9337
D31 ¹	12.9337 – 12.9397	12.9337 – 12.9397
D32 ¹	12.9397 – 12.9457	12.9397 – 12.9457
D33 ¹	12.9457 – 12.9517	12.9457 – 12.9517
D34 ¹	12.9517 – 12.9577	12.9517 – 12.9577
D35 ¹	12.9577 – 12.9637	12.9577 – 12.9637
D36 ¹	12.9637 – 12.9697	12.9637 – 12.9697

D37 ¹	12.9697 – 12.9757	12.9697 – 12.9757
D38 ¹	12.9757 – 12.9817	12.9757 – 12.9817
D39 ¹	12.9817 – 12.9877	12.9817 – 12.9877
D40 ¹	12.9877 – 12.9937	12.9877 – 12.9937
D41 ¹	12.9937 – 12.9997	12.9937 – 12.9997
D42 ¹	12.9997 – 13.0057	12.9997 – 13.0057
D43 ¹	13.0057 – 13.0117	13.0057 – 13.0117

¹ See footnote 1 following GROUP A CHANNELS.

² For transmission of pilot subcarriers or other authorized narrow band signals.

Group E Channels

Designation	Channel Boundaries (GHz) [E Channels]	Alternate Channel Boundaries (GHz) [Ea Channels]
E01 ¹	12.9525 – 12.9585	12.9525 – 12.9585
E02 ¹	12.9585 – 12.9645	12.9585 – 12.9645
E03 ¹	12.9645 – 12.9705	12.9645 – 12.9705
E04 ¹	² 12.9705 – 12.9745	12.9705 – 12.9765
E05 ¹	12.9745 – 12.9805	12.9765 – 12.9825
E06 ¹	12.9805 – 12.9865	12.9825 – 12.9885
E07 ¹	12.9865 – 12.9925	12.9885 – 12.9945
E08 ¹	12.9925 – 12.9985	12.9945 – 13.0005
E09 ¹	12.9985 – 13.0045	13.0005 – 13.0065
E10 ¹	² 13.0045 – 13.0065	
E11 ¹	13.0065 – 13.0125	13.0065 – 13.0125
E12 ¹	13.0125 – 13.0185	13.0125 – 13.0185
E13 ¹	13.0185 – 13.0245	13.0185 – 13.0245
E14 ¹	13.0245 – 13.0305	13.0245 – 13.0305
E15 ¹	13.0305 – 13.0365	13.0305 – 13.0365
E16 ¹	13.0365 – 13.0425	13.0365 – 13.0425
E17 ¹	13.0425 – 13.0485	13.0425 – 13.0485
E18 ¹	13.0485 – 13.0545	13.0485 – 13.0545
E19 ¹	13.0545 – 13.0605	13.0545 – 13.0605
E20 ¹	13.0605 – 13.0665	13.0605 – 13.0665
E21 ¹	13.0665 – 13.0725	13.0665 – 13.0725
E22 ¹	13.0725 – 13.0785	13.0725 – 13.0785
E23 ¹	13.0785 – 13.0845	13.0785 – 13.0845
E24 ¹	13.0845 – 13.0905	13.0845 – 13.0905
E25 ¹	13.0905 – 13.0965	13.0905 – 13.0965
E26 ¹	13.0965 – 13.1025	13.0965 – 13.1025
E27 ¹	13.1025 – 13.1085	13.1025 – 13.1085
E28 ¹	13.1085 – 13.1145	13.1085 – 13.1145
E29 ¹	13.1145 – 13.1205	13.1145 – 13.1205
E30 ¹	13.1205 – 13.1265	13.1205 – 13.1265
E31 ¹	13.1265 – 13.1325	13.1265 – 13.1325
E32 ¹	13.1325 – 13.1385	13.1325 – 13.1385
E33 ¹	13.1385 – 13.1445	13.1385 – 13.1445
E34 ¹	³ 13.1445 – 13.1505	³ 13.1445 – 13.1505
E35 ¹	³ 13.1505 – 13.1565	³ 13.1505 – 13.1565
E36 ¹	³ 13.1565 – 13.1625	³ 13.1565 – 13.1625
E37 ¹	³ 13.1625 – 13.1685	³ 13.1625 – 13.1685
E38 ¹	³ 13.1685 – 13.1745	³ 13.1685 – 13.1745
E39 ¹	³ 13.1745 – 13.1805	³ 13.1745 – 13.1805
E40 ¹	³ 13.1805 – 13.1865	³ 13.1805 – 13.1865
E41 ¹	³ 13.1865 – 13.1925	³ 13.1865 – 13.1925
E42 ¹	³ 13.1925 – 13.1985	³ 13.1925 – 13.1985

¹ See footnote 1 following GROUP A CHANNELS.

² For transmission of pilot subcarriers or other authorized narrow band signals.

³ See paragraph (l) of this Section.

Group F Channels

Designation	Channel Boundaries (GHz) [F Channels]	Alternate Channel Boundaries (GHz) [Fa Channels]
F01 ¹	13.0125 – 13.0185	13.0125 – 13.0185
F02 ¹	13.0185 – 13.0245	13.0185 – 13.0245
F03 ¹	13.0245 – 13.0305	13.0245 – 13.0305
F04 ¹	² 13.0305 – 13.0345	13.0305 – 13.0365
F05 ¹	13.0345 – 13.0405	13.0365 – 13.0425
F06 ¹	13.0405 – 13.0465	13.0425 – 13.0485
F07 ¹	13.0465 – 13.0525	13.0485 – 13.0545
F08 ¹	13.0525 – 13.0585	13.0545 – 13.0605
F09 ¹	13.0585 – 13.0645	13.0605 – 13.0665
F10 ¹	² 13.0645 – 13.0665	
F11 ¹	13.0665 – 13.0725	13.0665 – 13.0725
F12 ¹	13.0725 – 13.0785	13.0725 – 13.0785
F13 ¹	13.0785 – 13.0845	13.0785 – 13.0845
F14 ¹	13.0845 – 13.0905	13.0845 – 13.0905
F15 ¹	13.0905 – 13.0965	13.0905 – 13.0965
F16 ¹	13.0965 – 13.1025	13.0965 – 13.1025
F17 ¹	13.1025 – 13.1085	13.1025 – 13.1085
F18 ¹	13.1085 – 13.1145	13.1085 – 13.1145
F19 ¹	13.1145 – 13.1205	13.1145 – 13.1205
F20 ¹	13.1205 – 13.1265	13.1205 – 13.1265
F21 ¹	13.1265 – 13.1325	13.1265 – 13.1325
F22 ¹	13.1325 – 13.1385	13.1325 – 13.1385
F23 ¹	13.1385 – 13.1445	13.1385 – 13.1445
F24 ¹	³ 13.1445 – 13.1505	³ 13.1445 – 13.1505
F25 ¹	³ 13.1505 – 13.1565	³ 13.1505 – 13.1565
F26 ¹	³ 13.1565 – 13.1625	³ 13.1565 – 13.1625
F27 ¹	³ 13.1625 – 13.1685	³ 13.1625 – 13.1685
F28 ¹	³ 13.1685 – 13.1745	³ 13.1685 – 13.1745
F29 ¹	³ 13.1745 – 13.1805	³ 13.1745 – 13.1805
F30 ¹	³ 13.1805 – 13.1865	³ 13.1805 – 13.1865
F31 ¹	³ 13.1865 – 13.1925	³ 13.1865 – 13.1925
F32 ¹	³ 13.1925 – 13.1985	³ 13.1925 – 13.1985

¹ See footnote 1 following GROUP A CHANNELS.

² For transmission of pilot subcarriers or other authorized narrow band signals.

³ See paragraph (l) of this Section.

* * * * *

(m) CARS stations may be authorized use of the band from 13.20 to 13.25 GHz on a secondary basis to Television Broadcast Auxiliary Stations. Any CARS application seeking authorization for use of the 13.20 to 13.25 GHz band must demonstrate that sufficient spectrum is not available in the 12.70 to 13.20 GHz band.

4. Revise Section 78.36 to read as follows:

§ 78.36 Frequency coordination.

Coordination of fixed and mobile assignments will be in accordance with the procedure established in § 101.103(d) of this chapter.

APPENDIX C

FINAL REGULATORY FLEXIBILITY ANALYSIS

1. As required by the Regulatory Flexibility Act ("RFA"),¹ an Initial Regulatory Flexibility Analysis ("IRFA") was incorporated in the Notice of Proposed Rulemaking ("Notice") in CS Docket No. 99-250, FCC 99-166. The Commission sought written public comment on the proposals in the Notice, including comment on the IRFA.² This Final Regulatory Flexibility Analysis ("FRFA") conforms to the RFA.³

A. Need for, and Objectives of, this Report and Order.

2. The Commission undertook this proceeding in response to a petition for rulemaking filed by OpTel, Inc. The Notice sought comment on OpTel's request that we expand the definition of entities eligible to use the 12 GHz Cable Television Relay Service ("CARS") frequency band to include private cable operators ("PCOs"). CARS is a microwave radio service used predominantly by cable systems to provide video links between portions of their systems. PCOs provide a video service similar to cable systems, for example, to apartment buildings, but PCOs do not use public rights-of-way. By its own motion, the Commission expanded the Notice to include other multichannel video programming distributors ("MVPDs"). MVPDs are anyone who provides multiple channels of video programming to subscribers. This Report and Order adopts rules which will increase competition to incumbent, franchised cable operators, particularly with regard to video programming service to multi-dwelling units, by expanding eligibility to use the CARS band to PCOs and other MVPDs, such as direct broadcast satellite ("DBS") and open video systems ("OVS"). This Report and Order promotes competition in multichannel video programming distribution by allowing new services to compete with existing services by giving those new services access to the same technologies as existing services while balancing the interests of incumbent distributors by not hampering their use of those technologies.

B. Summary of Significant Issues Raised by Public Comments in Response to IRFA.

3. We received one comment in direct response to the IRFA. The Society of Broadcast Engineers ("SBE") states that the Commission analysis in the IRFA of the impact on small entities did not include the needs for production spectrum of television broadcasters and Local Television Transmission Service ("LTTS").⁴ Although the IRFA did not specifically mention broadcasters or LTTS providers, the Commission did request comment concerning the impact on small businesses, small organizations, and small business concerns.⁵ In addition, the Notice requested comment on "the compatibility of shared use of the spectrum between fixed PCOs and mobile [broadcast auxiliary stations]" and on "any existing or future impact this sharing may have with BAS, especially as it relates

¹ See 5 U.S.C. § 603. The RFA, see 5 U.S.C. § 601 – 612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

² NPRM, 14 FCC Rcd 11967, 11979 (1999).

³ See 5 U.S.C. § 604.

⁴ SBE Comments at 5.

⁵ NPRM, 14 FCC Rcd at 11980.

to the required digital transition for broadcasters.”⁶ SBE and others discussed this specific issue in their comments. Briefly, SBE opposes use of the spectrum from 13.20 GHz to 13.25 GHz by PCOs as proposed by the PCOs. The Order addresses and pays all due deference to the concerns and issues raised. The PCOs are allocated the spectrum only as secondary users of the spectrum from 13.20 GHz to 13.25 GHz, which means they cannot cause interference to television broadcasters or LTTS providers.

C. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply.

4. The RFA directs the Commission to provide a description of and, where feasible, an estimate of the number of small entities that will be affected by the rules adopted herein.⁷ The RFA defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction” under Section 3 of the Small Business Act.⁸ Under the Small Business Act, a small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (“SBA”).⁹ A small organization is generally “any “not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹⁰ Nationwide, as of 1992, there were approximately 275,801 small organizations.¹¹ “Small governmental jurisdiction”¹² generally means “governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than 50,000.”¹³ As of 1992, there were approximately 85,006 governmental entities in the United States.¹⁴ This number includes 38,978 counties, cities, and towns: of these, 37,566, or 96%, have populations of fewer than 50,000.¹⁵ The Census Bureau estimates that this ratio is approximately accurate for all governmental entities. Thus, of the 85,006 governmental entities, we estimate that 81,600 (96%) are small entities. Below, we further describe and estimate the number of small entity licensees and regulatees that may be affected by these rules.

5. The rules we adopt as a result of the Report and Order will add PCOs and other MVPDs to those entities eligible to use the 12 GHz CARS frequency band. The 12 GHz CARS frequency band, 12.70 GHz – 13.25 GHz, is currently used by franchised cable, licensees and conditional licensees of channels in the Multipoint Distribution Service (“MDS”), Multichannel, Multipoint Distribution Service

⁶ NPRM, 14 FCC Rcd at 11971.

⁷ 5 U.S.C. § 604(a)(3).

⁸ *Id.* § 601(3)(incorporating by reference the definition of “small business concern” in 15 U.S.C. § 632.) Pursuant to the RFA, the statutory definition of a small business applies, “unless an agency, after consultation with the Office of Advocacy of the SBA and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.

⁹ 15 U.S.C. § 632.

¹⁰ 5 U.S.C. § 601(4).

¹¹ 1992 Economic Census, U.S. Bureau of the Census, Table 6 (special tabulation of data under contract to Office of Advocacy of the U.S. Small Business Administration).

¹² 47 C.F.R. § 1.1162.

¹³ 5 U.S.C. § 601(5).

¹⁴ U.S. Dept. of Commerce, Bureau of the Census, “1992 Census of Governments.”

¹⁵ *Id.*

("MMDS"), and Instructional Television Fixed Services ("ITFS").¹⁶ The 12 GHz CARS spectrum, 12 GHz – 12.35 GHz, is also used by television broadcasters for both fixed and short-range mobile transmissions by Broadcast Auxiliary Stations ("BAS").¹⁷

6. *Small MVPDs.* SBA has developed a definition of small entities for cable and other pay television services, which includes such companies generating \$11 million or less in annual receipts.¹⁸ This definition includes cable system operators, closed circuit television services, direct broadcast satellite services, multipoint distribution systems, satellite master antenna systems, and subscription television services. According to the Census Bureau, there were 1,423 such cable and other pay television services generating less than \$11 million in revenue.¹⁹ We address below services individually to provide a more precise estimate of small entities.

7. The Commission has developed, with SBA's approval, its own definition of a small cable system operator for the purposes of rate regulation. Under the Commission's rules, a "small cable company" is one serving fewer than 400,000 subscribers nationwide.²⁰ Based on our most recent information, we estimate that there were 1439 cable operators that qualified as small cable companies at the end of 1995.²¹ Since then, some of those companies may have grown to serve over 400,000 subscribers, and others may have been involved in transactions that caused them to be combined with other cable operators. The Commission's rules define a "small system," for the purposes of rate regulation, as a cable system with 15,000 or fewer subscribers.²² The Commission does not request nor does the Commission collect information concerning cable systems serving 15,000 or fewer subscribers and thus is unable to estimate, at this time, the number of small cable systems nationwide.

8. The Communications Act also contains a definition of a small cable system operator, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1% of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000."²³ The Commission has determined that there are 61,700,000 subscribers in the United States. Therefore, a cable operator serving fewer than 617,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all of its affiliates, do not exceed \$250 million in the aggregate.²⁴ Based on available data,

¹⁶ 47 C.F.R. § 78.13.

¹⁷ See *id.* §§ 74.600 – 690.

¹⁸ 13 C.F.R. § 121.201

¹⁹ Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 1992 CENSUS OF TRANSPORTATION, COMMUNICATIONS AND UTILITIES, ESTABLISHMENT AND FIRM SIZE, Series UC92-S-1, Firm Size 1-123 (1995) ("1992 Census"). See *Memorandum Opinion and Order and Notice of Proposed Rule Making, Implementation of Sections of the Cable Telecommunications Consumer Protection and Competition Act of 1992, Rate Regulation and Cable Pricing Flexibility*, MM Docket No. 92-266 and CS Docket No. 96-157, 11 FCC Rcd 9517, 9531 (1996).

²⁰ 47 C.F.R. § 76.901(e). The Commission developed this definition based on its determination that a small cable system operator is one with annual revenues of \$100 million or less. See *Sixth Report and Order and Eleventh Order on Reconsideration*, MM Docket No. 92-266 and 93-215, 10 FCC Rcd 7393 (1995).

²¹ Paul Kagan Associates, Inc., *Cable TV Investor*, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

²² 47 C.F.R. § 76.901(c).

²³ 47 U.S.C. § 543(m)(2).

²⁴ 47 C.F.R. § 76.1403(b).

we find that the number of cable operators serving 617,000 subscribers or less totals approximately 1450.²⁵ Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed \$250,000,000, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under definition in the Communications Act. It should be further noted that recent industry estimates project that there will be a total of 64,000,000 subscribers and we have based our fee revenue estimates on that figure.

9. *Private Cable Operators/Satellite Master Antenna Systems.* Based on our most recent information, we estimate that there are 3400 private cable operators serving multiple dwelling units that qualify as small cable companies.²⁶ Some of those companies may have grown to serve from 800,000 to 1.6 million subscribers,²⁷ and others may have been involved in transactions that caused them to be combined with other cable operators. Consequently, we estimate that there are fewer than 3,400 small entity private cable system operators that may be affected by the decisions and rules we are adopting.

10. *Open Video System ("OVS").* The Commission has certified eleven OVS operators. Of these eleven, only two are providing service. Affiliates of residential Communications Network, Inc. ("RCN") received approval to operate OVS systems in New York City, Boston, Washington, D.C., and other areas. RCN has sufficient revenues to assure us that they do not qualify as small business entities. Little financial information is available for the other entities authorized to provide OVS service that are not yet operational. Given that other entities have been authorized to provide OVS service but have not yet begun to generate revenues, we conclude that at least some of the OVS operators qualify as small entities.

11. *Multichannel, Multipoint Distribution Service ("MMDS").* The Commission refined the definition of "small entity" for the auction of MMDS as an entity that, together with its affiliates, has average gross revenues that are not more than \$40 million for the proceeding three calendar years.²⁸ This definition of a small entity, in the context of the Commission's decision concerning MMDS auctions, has been approved by the SBA.²⁹

12. The Commission completed its MMDS auction in March 1996 for authorization in 493 basic trading areas ("BTAs"). Of the 67 winning bidders, 61 qualified as small entities. Five winners indicated that they were minority-owned and four winners indicated that they were women-owned businesses. MMDS is an especially competitive service, with approximately 1573 previously authorized and proposed MMDS facilities. Information available to us indicates that no MMDS facility generates revenue in excess of \$11 million annually. We conclude that there are approximately 1634 small MMDS providers as defined by the SBA and the Commission's auction rules.

²⁵ Paul Kagan Associates, Inc., Feb.29, 1996 (based on figures for Dec. 30, 1995).

²⁶ *Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming, Fourth Annual Report*, 13 FCC Rcd 1034, 1087 (1998).

²⁷ *Annual Assessment of the Status of Competition in Markets for the Delivery of Video programming, Fifth Annual Report*, 13 FCC Rcd 24284, 24301 (1998).

²⁸ 47 U.S.C. § 21.961(b)(1).

²⁹ *In The Matter of Amendment of Parts 21 and 74 of the Commission's Rules With regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act – Competitive Bidding*, MM Docket No. 94-31 and PP Docket No. 93-253, 10 FCC Rcd 9589 (1995).

D. Description of Projected Reporting, Record Keeping and other Compliance Requirements.

13. This Report and Order makes an additional class that will be eligible for CARS licenses. As such, they will be subject to the reporting, record keeping, and other compliance requirements of CARS. These newly eligible entities will be required to file an application, FCC Form 327, to obtain a license and to modify or renew that license. They will also be required to maintain certain station records related to maintenance of the technical parameters of the station, as specified in Section 78.69 of the Commission's Rules.³⁰

E. Steps Taken to Minimize the Impact on Small Entities, and Significant Alternatives Considered.

14. The RFA requires an agency to describe any significant alternatives that it has considered in developing its approach, which may include the following four alternatives (among others): "(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities."³¹

15. This Report and Order creates opportunities for small entities, such as PCOs and other MVPDs, to compete with incumbent providers of video programming in the 12 GHz CARS frequency band. The Commission's decision will allow new entrants, many of whom are deemed to be small entities, to have access to the 12 GHz CARS frequency band on an equal basis with franchised cable operators and other users.

16. No significant alternatives were considered other than to examine whether the options currently available to the entities currently not eligible for CARS licenses are adequate for their needs. These options are use of 18 GHz frequencies or 23 GHz frequencies under Part 101 of the Commission's Rules.³² In the Order, the Commission has decided that because the 12 GHz CARS band provides greater range at a reduced cost, that the petitioning PCOs should be given the relief requested. On its own motion, the Commission extended the eligibility to use the 12 GHz CARS band to all MVPDs. Further, the Commission made these entities eligible to use all CARS frequencies, rather than just the 12 GHz band. This will eliminate a significant barrier to entry into the MVPD market for small entities and will lessen the cost of expansion for others. Small entities, from a regulatory standpoint, will now be on a par with wireless cable operators and, in this sense, with cable systems.³³

³⁰ 47 C.F.R. § 78.69.

³¹ 5 U.S.C. § 603(c)(1) – (c)(4).

³² *Id.* §§ 101.601 – 603.

³³ Cable systems have franchising requirements and other responsibilities to which they alone are subject. For example, cable systems must obtain a franchise, 47 U.S.C. § 541(b)(1), which may have a requirement to serve all residents in the franchise area, and are subject to a franchise fee. *Id.* § 542. They are also subject to regulation regarding leased access; *Id.* § 542; must carry; *Id.* §§ 534 – 5; program access; *Id.* § 536; public, educational, and government channels; *Id.* § 531; rate regulation; *Id.* § 543; channel occupancy limits; *Id.* 533(f)(1)(B); sports blackout; 47 C.F.R. § 76.67; network nonduplication; *Id.* § 76.92; and syndicated exclusivity, *Id.* § 76.151.

17. **Report to Congress.** We will send a copy of this Report and Order, including this FRFA, in a report to Congress pursuant to the Congressional Review Act of 1996, 5 U.S.C. § 801(a)(1)(A). A copy of this report and Order and FRFA (or summary thereof) will also be published in the Federal Register, pursuant to 5 U.S.C. § 604(b), and will be sent to the Chief Counsel for Advocacy of the Small Business Administration.