

is leasing an automatic call distribution (ACD) platform from an eligible provider or from a third-party non-provider must have a written lease for such ACD platform and must include a copy of such written lease with its application for certification, and that a VRS provider leasing an ACD platform from an eligible provider must locate the ACD platform on its own premises and must use its own employees to manage the ACD platform.

3. Providers currently eligible for compensation from the TRS Fund via a means other than Commission certification must apply for certification within 30 days after the rules adopted in the *Second Report and Order* become effective, and providers with Commission certifications expiring November 4, 2011 must apply for recertification after the rules become effective but at least 30 days prior to their expiration provided that the rules are effective by that date, or risk having to shut down their operations and being denied compensation from the TRS Fund. In light of these impending deadlines for initial and recertification applications, and to avoid waste, fraud, and abuse in the VRS program, the Commission finds that good cause exists in this instance to alter the comment periods specified in § 1.429 of the Commission's rules. See 47 CFR 1.3 (providing for suspension, amendment, or waiver of Commission rules, in whole or in part, for good cause shown, and on the Commission's own motion).

Listed below are the parties filing petitions for reconsideration and clarification of the *Second Report and Order* and *Order* in CG Docket No. 10–51:

Sorenson Communications, Inc. (September 6, 2011).

AT&T Services, Inc. (September 6, 2011).

Federal Communications Commission.

Joel Gurin,

Chief, Consumer and Governmental Affairs Bureau.

[FR Doc. 2011–24860 Filed 9–26–11; 8:45 am]

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FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 74 and 101

[WT Docket No. 10–153; FCC 11–120]

Facilitating the Use of Microwave for Wireless Backhaul and Other Uses and Providing Additional Flexibility To Broadcast Auxiliary Service and Operational Fixed Microwave Licensees

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In this document, the Commission continues its efforts to increase flexibility in the use of microwave services licensed under our rules. This additional flexibility will enable FS licensees to reduce operational costs, increase reliability, and facilitate the use of wireless backhaul in rural areas. The steps we take will remove regulatory barriers that limit the use of spectrum for wireless backhaul and other point-to-point and point-to-multipoint communications. We also make additional spectrum available for wireless backhaul—as much as 650 megahertz—especially in rural areas, where wireless backhaul is the only practical middle mile solution. By enabling more flexible and cost-effective microwave services, the Commission can help accelerate deployment of fourth-generation (4G) mobile broadband infrastructure across America.

DATES: Effective October 27, 2011, except for 47 CFR 74.605, which contains new or modified information collection requirements that have not been approved by the Office of Management and Budget (OMB). The Commission will publish a document in the *Federal Register* announcing the effective date of that section.

ADDRESSES: Federal Communications Commission, 445 12th Street, SW., Washington, DC 20554. A copy of any comments on the Paperwork Reduction Act information collection requirements contained herein should be submitted to Judith B. Herman, Federal Communications Commission, Room 1–B441, 445 12th Street, SW., Washington, DC 20554 or via the Internet at JudithB.Herman@fcc.gov.

FOR FURTHER INFORMATION CONTACT: John Schauble, Wireless Telecommunications Bureau, Broadband Division, at 202–418–0797 or by e-mail to John.Schauble@fcc.gov. For additional information concerning Paperwork Reduction Act information collection

requirements contained in this document, contact Judith B. Herman at (202) 418–0214, or via the Internet at PRA@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Backhaul Report and Order and Memorandum Opinion and Order (Backhaul R&O, Backhaul MO&O), FCC 11–120, adopted and released on August 9, 2011. The full text of this document is available for inspection and copying during normal business hours in the FCC Reference Information Center, Room CY–A257, 445 12th Street, SW., Washington, DC 20554. The complete text of the *Backhaul Report and Order* and *Memorandum Opinion and Order* and related Commission documents may be purchased from the Commission's duplicating contractor, Best Copy and Printing, Inc. (BCPI), Portals II, 445 12th Street, SW., Room CY–B402, Washington, DC 20554, (202) 488–5300 or (800) 387–3160, contact BCPI at its Web site: <http://www.bcpweb.com>. When ordering documents from BCPI, please provide the appropriate FCC document number, for example, FCC 11–120. The complete text of the *Backhaul Report and Order* and *Memorandum Opinion and Order* is also available on the Commission's Web site at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-120A1.doc. Alternative formats (computer diskette, large print, audio cassette, and Braille) are available by contacting Brian Millin at (202) 418–7426, TTY (202) 418–7365, or via e-mail to bmillin@fcc.gov.

I. Introduction

1. Broadband is indispensable to our digital economy, and wireless technology is an increasingly important source of broadband connectivity. A leading example of the role of wireless technology in connecting the nation to broadband is the impact and potential of point-to-point microwave systems. An essential component of many broadband networks—particularly in mobile wireless networks—microwave backhaul facilities are often used to transmit data between cell sites, or between cell sites and network backbones. Service providers' use of microwave links as a cost-effective alternative to traditional copper circuits and fiber optic links has been increasing. In certain rural and remote locations, microwave is the only practical high-capacity backhaul solution available.

2. A robust broadband ecosystem therefore relies, at least in part, on access to adequate and cost-efficient

backhaul. In this *Report and Order*, we continue our efforts to increase flexibility in the use of microwave services licensed under our part 101 rules. The steps we take will remove regulatory barriers that today limit the use of spectrum for wireless backhaul and other point-to-point and point-to-multipoint communications. We also make additional spectrum available for wireless backhaul—as much as 650 megahertz—especially in rural areas, where wireless backhaul is the only practical middle mile solution. By enabling more flexible and cost-effective microwave services, the Commission can help accelerate deployment of fourth-generation (4G) mobile broadband infrastructure across America.

Background

3. The Commission has licensed spectrum for microwave uses for most of its history. In 1996, the Commission consolidated its rules for most microwave point-to-point and point-to-multipoint services into a new part 101 of the Commission's rules. Two specialized microwave services in particular—the Broadcast Auxiliary Service (BAS) and the Cable TV Relay Service (CARS)—have not been consolidated into part 101. Part 101 includes the point-to-point Private Operational Fixed Service (POFS) and the Common Carrier Operational Fixed Service. The Commission's licensing regime for these two services requires frequency coordination and the filing of an application for each microwave link or path containing detailed information concerning the proposed operation.

4. On August 5, 2010, the Commission commenced this proceeding “to remove regulatory barriers to the use of spectrum for wireless backhaul and other point-to-point and point-to-multipoint communications.” In the *NPRM*, the Commission sought comment on allowing FS to share the 6875–7125 MHz and 12700–13200 MHz bands currently used by BAS and CARS. The Commission also proposed to eliminate the “final link” rule that prohibits broadcasters from using FS stations as the final radiofrequency (RF) link in the chain of distribution of program material to broadcast stations. The Commission further proposed to modify the part 101 minimum payload capacity rule to allow temporary operations below the minimum capacity under certain circumstances, which would enable FS links—particularly long links in rural areas—to maintain critical communications during periods of fading. In the final portion of the *NPRM*, the Commission sought

comment on permitting FS licensees to coordinate and deploy multiple links—a primary link and “auxiliary” links. In the *NOI*, the Commission asked about relaxing efficiency standards in rural areas, permitting FS licensees to use smaller antennas, and other possible modifications to the part 101 rules, or other policies or regulations, to promote flexible, efficient and cost-effective provisions of wireless backhaul service.

5. Comments on the *Wireless Backhaul NPRM/NOI* were due October 25, 2010, and reply comments were due November 22, 2010. In addition, on June 7, 2011, the Wireless Telecommunications Bureau issued a public notice that provided additional analysis of the existing BAS and CARS operations in the 7 and 13 GHz bands and requested supplemental comment on issues relating to FS sharing in the 6875–7125 MHz and 12700–13200 MHz bands. Supplemental comments were due on June 27, 2011.

II. Report and Order

A. Making 6875–7125 MHz and 12700–13150 MHz Available for Part 101 FS Operations

6. After a careful review of the comments, we conclude that it is feasible to authorize part 101 fixed stations in 650 megahertz in the 7 and 13 GHz bands, so long as we ensure that these operations do not conflict with TV pickup stations that support important electronic newsgathering functions. As we explain in further detail below, we will therefore permit FS facilities only in areas where TV pickup operations are not licensed. As discussed below, our actions will permit additional FS stations in areas covering more than half of the nation's land mass, where they may be used to provide additional service to about 10 percent of the population.

7. BAS and CARS stations fall into one of two categories: those that remain in one place (fixed) and those that move among different locations (mobile or temporary fixed). Mobile BAS and CARS include television pickup stations, which are authorized to transmit program material, orders concerning such program material and related communications from the scenes of events that occur in places other than a television studio to associated television stations. Under current rules, which were adopted in 2002, all FS and fixed BAS and CARS stations above 2110 MHz use the prior coordination notice procedure described in § 101.103(d) of the Commission's rules, but mobile and temporary fixed BAS and CARS may use faster informal

coordination procedures. TV pickup stations in these bands are usually licensed either for a specified radius around a set of coordinates or for a television market.

8. The record indicates that it is not feasible to allow FS to share spectrum with mobile and temporary fixed TV pickup operations in areas where mobile and temporary fixed TV pickup operations are licensed. While BAS fixed and mobile operations share spectrum in the same geographic areas, the sharing that exists today would not be practicable if it were not guided by informal agreements among local market participants. Part 101 FS operators do not have the same incentive to accommodate the needs of TV pick-up operations, however, as few of them are involved in video newsgathering or video coverage of other live events. For that reason, if they were granted the same formal priority over TV pick-up operations that broadcasters' STL and ICR stations are entitled to claim under existing rules, FS operators could apply for spectrum that is presently used by TV pick-up operations—potentially precluding new TV pick-up operations and forcing existing operations to shut down. The National Spectrum Management Association (NSMA) points out that in bands that are already shared by BAS, CARS, and part 101 licensees, the bands are generally used for either fixed or mobile operations, but not both.

9. We also conclude that it is not feasible at this time to adopt a formal band segmentation plan to separate fixed and mobile operations into designated sub-bands of the 7 and 13 GHz bands, as requested by the Fixed Wireless Communications Coalition (FWCC) and Vislink, Inc. The several bands allocated for BAS and CARS today support a mix of fixed, temporary fixed, and mobile services, including airborne mobile, and comments submitted in this proceeding confirm that BAS and CARS users coordinate these services on an individual market basis, without benefit of a formal nationwide plan, to assign the different types of service (fixed, mobile, airborne) to specific band segments. A portion of the band used in one market for fixed operation may commonly be used for mobile operation in another. Thus, to avoid disrupting those arrangements, we would need to tailor any band segmentation approach that we adopted to the needs and conditions of individual markets. Since we could not adopt a uniform band plan throughout the nation and provide the same spectrum to FS throughout the nation,

the value of such band segmentation would be quite limited.

10. For areas where TV pickup licenses are not authorized, however, we conclude that sharing between part 101 FS and fixed BAS operations is feasible. WTB staff conducted additional analysis to determine whether it would be feasible for those services to share spectrum if they were separated geographically. The analysis appears to indicate that, even if FS operations were totally excluded from the service areas of TV pickup stations and CARS facilities, there would be considerable areas where FS facilities could be licensed—54 percent of the land area in the 7 GHz band and 64 percent of the land area in the 13 GHz band—largely located in more rural areas, especially in the midwestern and western regions. For each band, FS facilities could serve about 10 percent of the population. Thus, opening the 7 and 13 GHz bands to FS operations could be of particular benefit in rural areas, where spectrum in the 7 and 13 GHz bands is largely vacant.

11. To avoid interference between FS operations and TV pickup operations, we prohibit FS paths from crossing the service areas of TV pickup authorizations and require FS to coordinate with all relevant licensees, including TV pickup authorizations, pursuant to the formal part 101 coordination procedures. EIBASS, the National Association of Broadcasters (NAB), and the Wireless Internet Service Providers Association (WISPA) believe that such an arrangement would be workable. We also note the presence of co-primary fixed satellite services (FSS) in these bands. FS applicants will be required to coordinate with and protect FSS licensees and applicants pursuant to the part 101 rules.

12. The FWCC and SBE remain concerned about potential interference issues, particularly given the ability of broadcasters to operate short-term without a license. Under our rules, broadcasters can operate certain BAS facilities on a short-term basis without prior authorization for up to 720 hours a year subject to various limitations, including the fact that such short-term operation is secondary to regularly authorized facilities. We believe that such operations can be accommodated by excluding FS from two 25-megahertz channels each in the 7 GHz band (6975–7025 MHz) and the 13 GHz band (13150–13200 MHz). Excluding FS from that spectrum nationwide will accommodate TV pickup stations covering events that occur outside the license areas of local BAS and CARS operations. For the 7 GHz Band, we

choose to exclude the 6975–7025 MHz segment because excluding the middle of the band will allow for greater separation between FS transmit and receive frequencies. For the 13 GHz Band, we exclude 13150–13200 MHz because that spectrum is already reserved for television pickup operations in the top 100 markets. Furthermore, since such short-term operation is by definition secondary to other operations, broadcasters operating pursuant to § 74.24 have no right to claim interference protection from regularly authorized operations.

13. EIBASS and NAB propose additional conditions that we do not believe are necessary or appropriate. EIBASS asks that the Commission impose a requirement that the newcomer POFs station cannot degrade the noise threshold of any existing ENG–RO site by more than 0.5 dB. Although EIBASS's proposal may be an appropriate standard for evaluating a proposed FS facility, we decline to adopt it as part of our rules. Generally, in lieu of mandating specific interference criteria in our rules, we expect applicants and licensees to work out interference issues in the frequency coordination process. In addition, NAB asks that the Commission impose secondary status on FS operations in the 7 and 13 GHz Bands with respect to both existing and future BAS operations. We find that the rules we adopt fully protect existing BAS operations. With respect to future BAS operations, FS, BAS, and CARS will all be coprimary services required to protect pre-existing operations. We agree with NAB that there is an important public interest in broadcasters being able to report on breaking news events and emergency situations; but we also find there to be important public interests in the support that FS provides to vital broadband, public safety, and critical infrastructure uses.

14. We also find that FS operations would be compatible with fixed BAS operations. In 2002, the Commission amended Parts 74 and 78 of its rules to harmonize many of the rules governing BAS and CARS with rules that already applied to FS licensees under part 101, allowing the use of digital transmissions, and requiring all fixed station applicants, except for those proposing operations in the 1990–2110 MHz band, to provide affected licensees and contemporaneous applicants with 30-day prior notifications and an opportunity to participate in frequency coordination before filing their applications with the Commission. It applied part 101 frequency coordination

procedures to fixed BAS and CARS, and it did so with wide support from the affected industries. It rejected the request of one participant, SBE, that fixed BAS and CARS be allowed to continue relying upon informal coordination procedures. The subsequent ongoing shift from analog to digital transmission has accelerated the erosion of technical distinctions between BAS, CARS, and part 101 FS, and the use of consistent procedures for fixed stations in all of those services has played a vital role in the Commission's efforts to accommodate the increasing demand for closely-packed microwave links in urban areas.

15. We will allow mobile TV pickup licensees to continue to use informal coordination procedures within their service areas. Given the urgency of electronic newsgathering operations and the long history of successful real-time frequency coordination provided by local coordinators, the Commission previously found that there was little potential that interference would result from its continued function without imposing the formality of § 101.103(d) procedures. In light of our decision not to allow FS within the service areas of mobile BAS/CARS stations, there is no reason to require those stations to use formal coordination procedures.

16. The rules we adopt today will open most of the 7 and 13 GHz bands to FS over more than half of the nation's land mass where 10 percent of the population lives, while applying geographic restrictions on FS in those bands to minimize the potential for interference between FS facilities and TV pickup stations. Specifically, as reflected in the rules in Appendix A, we will allow part 101 FS stations to share the 7 and 13 GHz bands subject to the following conditions:

(1) We will not allow FS stations in the 7 and 13 GHz bands to locate their paths within the service areas of any previously licensed co-channel TV pickup stations.

(2) We will require FS operators to coordinate any new fixed links with TV pickup stations within the appropriate coordination zones of any new fixed links.

(3) As we require in other bands that fixed BAS and CARS share with part 101 fixed services, we will require all fixed BAS, fixed CARS and part 101 FS stations in the 7 and 13 GHz bands to engage in the same frequency coordination process that we require of all part 101 services.

(4) We will also reserve two 25-megahertz channels for BAS and CARS in the 7 GHz band (6975–7125 MHz) and two 25-megahertz channels in the

13 GHz band (13150–13200 MHz) nationwide to accommodate TV pickup stations covering events that occur outside the license areas of local BAS and CARS operations.

17. Regarding the various alternative channelization plans proposed in the *NPRM* and the *7 and 13 GHz Public Notice*, we have decided to retain the 25 megahertz bandwidth that presently applies to the 7 and 13 GHz bands, as this channel-width best conforms to existing operations in the band. We recognize that FWCC recommends a mix of 10, 20, and 30 megahertz channels similar to those available in other FS bands and asserts that such alignment will result in more readily available equipment. As FWCC and others have recognized, however, allowing 10 and 30 megahertz channels in a band with many pre-existing 25 megahertz channels would preclude operation on multiple 25 megahertz channels, resulting in wasted spectrum. Many commenters recommend retaining a band plan based on the 25 megahertz channel bandwidth in order to prevent such wasted spectrum. To provide for a mix of larger and smaller channel-widths, we adopt an alternative proposal suggested by FWCC and permit FS to utilize 5, 8.33, and 12.5 megahertz channels.

18. We also adopt WISPA's proposal to allow 50 megahertz channels in the 13 GHz Band. Since the 50 megahertz channels will be created from two 25 megahertz channels, we do not see any inefficiency that would result from 50 megahertz channels. We do not authorize 50 megahertz channels in the 7 GHz Band because of the limited amount of spectrum available in that band.

19. In addition, as proposed in the *NPRM*, we apply the existing FS minimum capacity and loading requirements to FS operators in the 6875–7125 and 12700–13200 bands. We do not propose to apply those requirements to operations that are authorized under Parts 74 and 78, and we maintain the existing exemption from the capacity and loading requirements of part 101 for transmitters carrying digital video motion material. With respect to the remaining proposed technical rules for FS operation, we shall apply the same technical parameters that currently apply in the Upper 6 GHz band to the adjacent 6875–7125 MHz band, as proposed in the *NPRM*, because those bands are contiguous and should be able to use similar equipment. As noted above, we believe that applying the rules currently applicable in the Upper 6 GHz band to the 6875–7125 MHz band will facilitate

equipment development and provide consistency to FS licensees. Specifically, we will apply: (1) A maximum frequency tolerance of 0.005 percent; (2) a maximum transmitter power of +55 dBw; (3) the antenna standards currently applicable to Upper 6 GHz Band stations authorized after June 1, 1997, to the 6875–7125 MHz band; (4) the capacity and loading requirements contained in § 101.141(a)(3) of the Commission's rules; and (5) the 17 kilometer minimum path length requirement of § 101.143. We retain the rules that are already applicable to the 12700–13000 MHz band, with the exception of applying the minimum payload capacity and loading requirements that currently apply in the 11 GHz band to the 12700–13150 MHz band. Finally, with the addition of part 101 fixed services in the BAS bands, we believe it is necessary for our ULS database to include all fixed receive locations. We therefore will require BAS TV pickup licensees to record their stationary receive-only sites in ULS.

20. We do not believe that allowing FS sharing in these bands will inhibit geographic expansion of BAS and CARS operations because, as a practical matter, these services have not been expanding geographically in recent years. Only one new BAS TV pickup license has been granted in the 7 GHz and 13 GHz bands in the past two years. Moreover, FWCC reports that BAS and CARS path and channel licensing, respectively, in the 13 GHz band have dropped sharply in the last decade. Furthermore, 50 megahertz of spectrum in each band will remain exclusively for BAS and CARS use, and BAS and CARS applicants will have co-primary status and the ability to apply for new facilities in the shared portions of the bands. We also note that development of new technologies could provide broadcasters with new mechanisms to support of their electronic newsgathering functions in the future. In light of this record, we reject SBE's argument that FS should not be allowed in the 7 and 13 GHz Bands because of a need to preserve spectrum for geographic expansion of BAS and CARS.

21. We find that permitting fixed microwave operations in the 7 and 13 GHz bands will benefit operators and consumers alike and that these benefits outweigh any potential costs, which our rules have been designed to eliminate. Our actions today will enable these spectrum bands to be used more intensively for wireless backhaul, public safety, and other critical uses supported by microwave without limiting their use for BAS or CARS. With this additional

spectrum available for their use, fixed microwave operators can establish more links in a given geographic area and increase the capacity of existing links, which in turn will facilitate deployment of wireless broadband services. Although it would be difficult to quantify with precision the benefits of opening the 7 and 13 GHz bands to FS, we find that those benefits outweigh the at most minimal cost of our actions.

22. As a final matter, we reject SBE's allegation that we prejudged the decision to allow FS operations in these bands. We have carefully considered the issues raised concerning sharing between FS and mobile and temporary fixed BAS and CARS, analyzing the record received in response to the *NPRM*, as well as the record received in response to the Bureau's *7 and 13 GHz Comment Public Notice*. As discussed in detail above, the rules we adopt today are clearly responsive to issues and concerns raised in this record.

B. Elimination of Final Link Rule

23. In the *NPRM*, the Commission sought comment on eliminating the "final link" rule, which prohibits broadcasters from using part 101 stations as the final radiofrequency (RF) link in the chain of distribution of the program material to broadcast stations. In other words, the rule prevents the private FS stations from transmitting one type of content ("program material") to one type of business (broadcasters) at one particular point in the transmission chain (the final RF link). The Commission questioned the sense of maintaining regulatory restrictions based on content as broadcasters and other microwave users move to digital-based systems. It expressed the belief that other existing rules would ensure productive use of spectrum and prevent broadcasters from crowding other FS licensees out of the band. The Commission also asked whether there were alternatives that could facilitate broadcaster access to FS spectrum while retaining the prohibition under certain circumstances.

24. As proposed in the *NPRM*, we herein eliminate the "final link" rule. Our action removes from our rules an artificial distinction based solely on the type of content provided and directed solely at one type of business, and is consistent with our decision to allow FS to share in the 7 and 13 GHz BAS and CARS bands. We believe it makes little sense to maintain restrictions based on content as both FS licensees and broadcasters move to digital technologies. Furthermore, FS licensees do not object to elimination of the rule

so long as FS is granted access to BAS and CARS spectrum in the 7 and 13 GHz bands, an action we are also taking in this *Report and Order*. Although AT&T expresses concern about the effect of eliminating the rule on spectrum availability, it does not object to legitimate broadcaster use of FS spectrum that is compatible with existing uses. While broadcasters have different opinions about the value of eliminating the rule, they support doing so.

25. We find that there are significant benefits, and no costs, to eliminating the final link rule. We note that no commenter has identified any cognizable harm that would result from eliminating rule. With increasing adoption of digital technologies, the final link rule has become an outdated regulation that imposes unnecessary costs on broadcasters. In some instances, it may have required broadcasters to build two different, largely redundant, systems: One system to carry program material to the transmitter site, and a separate system to handle other data. Eliminating the rule will provide tangible benefits to broadcasters, by reducing unnecessary duplication of systems and facilities and enabling them to operate more efficiently. In such light, we find the benefits of eliminating the final link rule to be significant.

C. Adaptive Modulation

26. Section 101.141(a)(3) of the Commission's rules establishes minimum payload capacities (in terms of megabits per second) for various channel sizes in certain part 101 bands. The underlying purpose of the rule is to promote efficient frequency use. Requiring links to carry a set amount of traffic (expressed in megabits/second) ensures that licensees will actually use facilities they apply for. Although the Commission has never quantified the time period over which licensees must comply with those standards, the industry has generally construed the payload requirements as applying whenever the link is in service.

27. On May 8, 2009, Alcatel-Lucent, Dragonwave, Inc. Ericsson, Inc., Exalt Communications, FWCC, Harris Stratex Networks and Motorola ("Petitioners") filed a request for interpretation of the Commission's rules. Petitioners asked the Bureau to interpret § 101.141(a)(3) of the Commission's rules to permit data rates to drop for brief periods below the minimum payload capacity specified in the rules, so long as the values mandated by the rules were maintained both in normal operation and on average. In the *NPRM*, the Commission

determined that a rule change was needed to implement the policy interpretation sought in the FWCC Request because the policy interpretation was inconsistent with the plain language of the current rule, which has been interpreted to require compliance with the minimum payload capacity at all times when a system is in operation. The Commission concluded that it would be in the public interest to commence a rulemaking proceeding to facilitate the use of adaptive modulation. It noted that "[a]llowing carriers to operate below the current efficiency standards for short periods when it is necessary to maintain an operational link, without a need for waiver, could enable carriers to save on costs and enhance reliability of microwave links." The Commission also recognized the benefits of allowing communications to be maintained during adverse propagation conditions.

28. The Commission expressed a concern that the standard proposed in the FWCC Request, *i.e.*, requiring compliance with the efficiency standards "on average" and "during normal operation," would give licensees too much latitude to deploy inefficient systems. The Commission proposed a rule under which "the minimum payload capacity requirements must be met at all times, except during anomalous signal fading, when lower capacities may be utilized in order to maintain communications." Finally, the Commission asked whether it should specify a minimum amount of time a link should be operational or a minimum efficiency standard below which an FS station may not fall.

29. We conclude that it is in the public interest to amend our rules to facilitate the use of adaptive modulation. Most commenters agree that allowing the use of adaptive modulation will have significant benefits, including (1) Maintaining data throughput better than the zero rate that would otherwise be caused by a fade; (2) continuing to handle critical traffic when the link would otherwise cease to operate; and (3) maintaining network synchronization without the need for a time-consuming reboot. EIBASS, the only party that opposes allowing adaptive modulation, argues that any attempt to define by rule the conditions that justify adaptive modulation would open "a Pandora's box." As discussed below, however, we believe that it is possible to craft rules that allow use of adaptive modulation while maintaining spectrum efficiency.

30. Parties disagree about the protections that will be necessary to ensure that adaptive modulation will

not be abused by operators that might seek to save money by operating inefficient links. Supporters of adaptive modulation recognize that there is a potential for abuse and offer a variety of proposals to address that problem. Several of them support the Commission's proposed rule language. FWCC opposes specifying a minimum percentage availability as a prerequisite for adaptive modulation because writing a minimum number into the rules will allegedly limit the freedom of link designers to specify parameters appropriate to a particular objective. It asks the Commission to impose one of several general conditions designed to maximize licensee flexibility. On the other hand, Aviat Networks, Comsearch, Motorola, Sprint, and Verizon argue that the rules should specify a minimum percentage of time when the link would be available, in order to allow use of modulations below the minimum payload capacity. Several parties propose a requirement that paths using adaptive modulation be designed to be available 99.995% or 99.999% of the time while complying with the minimum payload capacity, while FWCC and Motorola propose using a 99.95% standard.

31. In an *ex parte* filing, Verizon argues that a 99.95% standard would undermine the Commission's goal in this proceeding to maximize the opportunity for fixed services to share existing bands. In particular, Verizon asserts that a 99.95% standard would create improper incentives to use smaller and lower performance antennas, which would significantly decrease spectral efficiency and increase the deployment costs and interference to future microwave licensees. Verizon also contends that a lower standard would increase the potential for interference conflicts among wireless backhaul licensees.

32. We determine that applying a 99.95% standard strikes the appropriate balance between providing operators with the flexibility to address anomalous fading conditions while maintaining spectral efficiency. Specifically, we will require applicants seeking permission to use modulations below the minimums established in § 101.141(a)(3) of the Commission's rules to design their paths to be available at modulations compliant with the minimum payload capacity at least 99.95% of the time. In other words, applicants will have to design their paths to operate in full compliance with the capacity and loading requirements for all but 4.38 hours out of the year. A quantitative standard will provide an objective means for determining

compliance with the rules and eliminate some disputes. We are concerned that under FWCC's proposal, as well as the Commission's proposal in the *NPRM*, there would be insufficient safeguards to prevent the deployment of inefficient systems. While we understand FWCC's concern about providing sufficient flexibility to applicants, we do not believe that a 99.95% standard would be overly restrictive, because most paths are designed to a standard of at least 99.95% availability.

33. We decline to apply the 99.999% standard, as Verizon and others advocate, because it would not provide meaningful relief, as it would only anticipate 5.26 minutes a year of impaired operations for a link. With a 99.999% standard, an applicant would be required to build a more expensive system designed to operate through severe weather, which could make deployment cost-prohibitive in some instances. By way of hypothetical, consider a single link in the 6 GHz band that would require 10-foot antennas with a 99.999% standard instead of 6-foot antennas under the 99.95% standard. The total cost increase over a ten-year period in this hypothetical example could exceed \$100,000. Furthermore, most systems use multiple links. We believe that the increased reliability and cost savings adaptive modulation will make possible under a 99.95% standard outweigh the marginal costs of a small temporary reduction in spectral efficiency. Therefore, we find the 99.95% standard to be in the public interest.

34. We reject Verizon's arguments that a 99.95% design standard will lead to increased interference or provide improper incentives to deploy inefficient systems. A temporary drop in a data rate, by itself, does not increase interference to other operators. Furthermore, we adopt a series of safeguards designed to protect existing systems. We adopt the *NPRM*'s proposal to require licensees that plan to use adaptive modulation to indicate their intent in prior coordination notices. We agree with FWCC and AT&T that such a requirement will help the industry catch possible abuses and address any potential issues through the coordination process before the facilities are authorized. We will also require applicants to apply for all modulations they intend to use as part of their authorizations. Under the rule we adopt today, adaptive modulation can only be used during periods of anomalous signal fading, and the use must be necessary to allow licensees to maintain communications. Furthermore, systems must be designed to operate in full

compliance with our existing capacity and loading requirements for all but 4.38 hours out of the year. Finally, we require applicants to use good engineering practice in determining the percentage of time a system can operate in compliance with the capacity and loading requirements. As suggested by FWCC, we will not dictate the use of a specific engineering model to determine availability but presume that use of Telecommunications Industry Association Bulletin TSB 10-F to determine availability is consistent with good engineering practice.

35. To the extent Verizon is concerned about the increased use of smaller antennas, we note that our rules already contain protections designed to minimize interference from smaller antennas. Section 101.115(b) of the Commission's rules establishes directional antenna standards designed to maximize the use of microwave spectrum while avoiding interference between operators. More specifically, the Commission's rules set forth certain requirements, specifications, and conditions pursuant to which FS stations may use antennas that comply with either the more stringent performance standard in Category A (also known as Standard A) or the less stringent performance standard in Category B (also known as Standard B). In general, the Commission's rules require a fixed microwave operator using a Category B antenna to upgrade if its antenna causes interference problems that would be resolved by the use of a Category A antenna. Thus, if adaptive modulation allows a licensee to use a Category B antenna, but that antenna would cause interference to (or receive interference from) another operation, the other operator can require the licensee to upgrade to a Category A antenna if the upgrade would resolve the interference issue. This rule applies even when the use of the Category B antenna precedes use by the other licensee.

36. Further, we decline to grant Verizon's request that we establish additional equipment-based restrictions on adaptive modulation—including requiring all licensees to operate at no less than two-thirds of the minimum payload capacity values established in § 101.141(a)(3). We believe that the time-based design standard for link availability, along with the other safeguards in the rule we adopt today, will adequately prevent the proliferation of inefficient systems and find that imposing additional requirements would limit licensee flexibility and place undue regulatory burdens on licensees. Finally, we reject Verizon's

proposal to limit the transmit power and power spectral density when using non-compliant modulations to no more than 3 dB greater than the values of the worst-case (highest total signal power, highest power density) values of the available compliant modulations. An applicant can specify multiple emissions/modulation schemes, but they all must have the same EIRP unless they license separate paths. The gains realized from the use of adaptive modulation are related to the lower receiver threshold with lower order modulation schemes, not by using higher power with lower order modulation.

37. We will not require licensees to log instances when they use adaptive modulation or to include that information in station records. We are establishing the minimum availability standard as a path design requirement, not as an operational requirement. We believe that the best time to enforce the rule is before equipment is deployed, not after. Once an operator has made the investment required to deploy adequate equipment in a well-designed link, it should have every incentive to operate that equipment consistent with the design standard. It is possible, of course, that unusual weather conditions could require some operators to use adaptive modulation for longer intervals than our design standard specifies. However, we see no reason to penalize operators for events that are beyond their control. In that context, we believe that the burden imposed by requiring the logging of adaptive modulation episodes would outweigh any potential benefit of the information.

38. We conclude that allowing licensees to use adaptive modulation will confer substantial benefits on operators and their customers, while imposing minimal, if any, cost. Adaptive modulation will allow operators to maintain critical links during fade conditions, decreasing the number of microwave service outages they experience, and the detrimental impacts that these outages may cause for consumers. Furthermore, by reducing service outages, use of adaptive modulation may permit operators to avoid costs and delays associated with reinitializing service. The rules we adopt are designed to appropriately restrict use of adaptive modulation to provide fixed microwave operators additional flexibility to deal with adverse conditions while ensuring that their systems continue to be operated efficiently.

D. Auxiliary Stations

39. In the *NPRM*, the Commission sought comment on a proposal to permit greater reuse of scarce microwave resources by permitting FS licensees to coordinate and deploy multiple links—a primary link and “auxiliary” links. The idea had its origin in a petition filed by Wireless Strategies, Inc. (WSI) asking the Commission to issue a declaratory ruling “confirming that a Fixed Service licensee is permitted to simultaneously coordinate multiple links whose transmitter elements collectively comply with the Commission’s antenna standards and frequency coordination procedures.” Although the Commission denied WSI’s petition for declaratory ruling, determining that WSI’s requested interpretation was inconsistent with its current rules, it found WSI’s concept to be “worthy of further consideration.”

40. Generally, the concept of auxiliary stations rests on the fact that a point-to-point microwave transmitter typically radiates energy outward in a keyhole-shaped signal pattern. This signal pattern precludes other stations from sharing the same spectrum in that area, if placement of the new transmitter would interfere with the original licensee’s ability to receive its signal at its downlink station. The auxiliary stations proposal contemplates placement of multiple smaller transmitters within the signal pattern of the main link.

41. The Commission sought to clarify debate on the merits of the proposal by proposing specific rule changes intended to capture WSI’s underlying concept, while preserving existing part 101 practices, policies and expectations to the greatest extent possible.

Accordingly, the Commission sought comment on allowing FS licensees to deploy auxiliary stations under the following conditions, among others:

- Each auxiliary station would be required to operate on the same frequencies as the main licensed link.
- Auxiliary stations would not be allowed to cause any incremental interference to other primary links, *i.e.*, they would not be allowed to cause any more interference to other primary stations than the main link would cause.
- Auxiliary stations would be secondary in status and would have no right to claim protection from interference from any primary stations.
- Auxiliary stations would have to be coordinated in advance with other licensees and applicants pursuant to the frequency coordination process specified in § 101.103 of the Commission’s rules.
- Auxiliary stations would not be subject to the loading, antenna

standards or minimum path length requirements that apply to main links.

42. In seeking comments on those proposals, we asked commenters to provide (1) Estimates of how many systems they contemplated operating with auxiliary stations, (2) information on whether such systems would typically be deployed in urban or rural areas, (3) the types of uses to which such systems would be put, (4) the distances they contemplated between the auxiliary stations and their main links, and (5) the relative amounts of traffic that they expected to carry on main links versus the auxiliary links. We also asked commenters to discuss the possibility that services where geographic area licensing already exists—such as the Local Multipoint Distribution Service, the 24 GHz Service, or operations in the 38.6–40.0 GHz band (39 GHz band)—might provide a more reasonable way of accommodating any need for auxiliary stations.

43. Most commenters oppose the proposal to allow auxiliary stations. They argue that auxiliary stations will increase congestion, cause greater interference, and create opportunities for gaming/manipulation that would be detrimental to competition and efficient deployment of microwave facilities. Supporters contend that auxiliary stations could result in more efficient use of spectrum and could support a variety of innovative uses.

44. We decline to adopt at this time our proposal to allow use of auxiliary stations in FS bands. We lack a sufficient basis for concluding that auxiliary stations could coexist with FS stations without causing interference to primary FS stations. Moreover, we are concerned that adopting the auxiliary stations proposal would create a perverse incentive for applicants to propose excessive power for their primary transmitters, wasting spectrum in an effort to stake out as much territory as possible for auxiliary stations. Finally, using upper microwave bands such as LMDS, 24 GHz, and 39 GHz appears to be a viable alternative for the type of operations contemplated under the auxiliary station proposal.

45. Proponents of auxiliary stations largely operate on the premise that FS spectrum is “wasted,” particularly in urban areas. We disagree with this premise because there is already extensive reuse of FS spectrum. It is even possible to re-use a frequency at exactly the same location, under existing procedures.

46. As mentioned above, there is an insufficient record for us to conclude

that auxiliary stations can coexist with existing microwave operations without causing interference. We reject, however, the argument that auxiliary stations should not be allowed solely because authorizing them would cause further congestion to spectrum that is already congested. If auxiliary stations could coexist with other microwave operations, we would view the ability to use spectrum more intensively as a positive development.

47. Most opponents of the auxiliary stations concept argue that it would be inefficient to intermix frequency division duplex (FDD) currently used in the microwave bands and time division duplex (TDD) operations, as WSI proposes. Comsearch points out that intermixing FDD and TDD increases the types of potential interference that may occur, including direct interference between sites, co-site interference, and reflective interference. In response, WSI relies on the ability of smart antennas to adapt an antenna pattern and use spectrum more efficiently. As noted by EIBASS, however, WSI has not provided any detailed information concerning the physically small, phased-array microwave antenna that it asserts would be suitable for auxiliary stations. Indeed, WSI has allegedly ignored requests from SBE and NSMA for credible proof of the performance that WSI ascribes to that antenna.

48. Furthermore, while WSI has repeatedly claimed that TDD-style auxiliary station operations would use spectrum more efficiently than existing FDD-style microwave operations, it has offered insufficient analysis of how auxiliary stations would co-exist with existing microwave operations. In the *NPRM*, the Commission had emphasized its intention to avoid interference to existing operations and “maintaining the reliability and integrity of existing systems.” Furthermore, the proposal to require prior coordination for auxiliary stations and to make auxiliary stations secondary to existing primary links does not adequately address the potential for interference but instead could result in situations where incumbent microwave licensees could face the costly and time-consuming process of identifying and resolving complex interference issues.

49. An additional consideration is that adopting the auxiliary stations proposal could create a perverse incentive for applicants to propose excessive power for their primary transmitters, creating a more diffuse antenna pattern, and thus precluding other microwave operators from coordinating spectrum or operating in that larger area. In the *NPRM*, the

Commission sought comment on that issue. EIBASS, San Mateo, and Verizon point to a prior coordination notice submitted by OEM as an example of how auxiliary stations could result in an inefficient use of spectrum and preclude frequency sharing. Furthermore, several licenses issued to WSI proposed the same very high EIRP level of 84.7 dBm. The proponents of auxiliary stations have not adequately explained these circumstances, or proposed any ways in which the Commission could prevent or counteract manipulation of the auxiliary stations mechanism in this manner. Thus, we remain concerned about the compatibility of auxiliary stations with existing operations.

50. Another reason we decline to authorize auxiliary stations in FS bands is that such operations can be accommodated in several upper microwave bands for which the Commission has issued geographic area licenses, including Local Multipoint Distribution Service (LMDS) 24 GHz, and 39 GHz, in which licensees may freely deploy links as they see fit.

51. While we do not authorize auxiliary stations in existing FS bands today, we encourage proponents of the auxiliary stations concept to continue working with other interested stakeholders to develop the concept. We note that proponents of the auxiliary stations concept believe that auxiliary stations would support such varied uses as the provision of backhaul, telecommunications support for small intelligent data centers, and rural telemedicine applications. We believe proponents of auxiliary stations should take advantage of the opportunities presented by 24 GHz, LMDS, and 39 GHz bands to develop and deploy auxiliary stations. To the extent parties believe further testing is needed to develop the auxiliary stations concept, we encourage those parties to cooperate in testing and development efforts, to develop a better factual record regarding the interaction of potential auxiliary station configurations with existing incumbent microwave systems, and with microwave applicants yet to come.

III. Memorandum Opinion and Order

52. In the *Memorandum Opinion and Order*, we address various other proposals offered in response to the *NOI* that we do not intend to consider further at this time, either because the proposals lack specificity, are outside the scope of this proceeding, were previously considered by the Commission, or are not ripe for consideration at this time.

A. Local Multipoint Distribution Service

53. TIA recommends that the Commission consider harmonizing its approach to the 27.5–28.35 GHz Local Multipoint Distribution Service (LMDS) band with recent proposals by the Radio Advisory Board of Canada (RABC). TIA says that Canada has designated that band for Local Multipoint Communications Systems (LMCS), a service similar to LMDS. In an effort to maximize use of the currently underutilized LMCS spectrum, the RABC has proposed to apply site-based licensing in the band, with technical rules that favor frequency division duplex operations on bandwidths ranging from 10 to 50 megahertz. TIA argues that harmonizing U.S. rules with Canada's would establish a broader market for equipment and services, thus improving the band's market potential through economies of scale. NSMA also supports this proposal.

54. We decline to take any action on this proposal at this time. No current LMDS licensee supports the proposal. Furthermore, most LMDS licensees have received an extension until June 1, 2012 to demonstrate buildout. While LMDS licensees can deploy point-to-point services, the majority of deployments that have been reported to the Commission at this time have involved point-to-multipoint services. We believe it would be premature to undertake the type of review contemplated by TIA and NSMA before current licensees have had an opportunity to build out their systems under the existing rules.

B. Wireless Communications Service

55. Sirius XM suggests that the Commission encourage use of the 2.3 GHz Wireless Communications Service (WCS) band for wireless backhaul operations because it would present substantially fewer interference concerns to adjacent licensees than the mobile operations. In 2010, the Commission adopted technical rules for the 2.3 GHz band that would allow WCS licensees to offer mobile broadband services while limiting the potential for harmful interference to incumbent services operating in adjacent bands such as Sirius XM. In response, Sirius XM and other parties filed petitions for reconsideration asking, among other things, that the Commission reconsider several technical rules that were adopted. Given that the issue of the appropriate technical rules for the 2.3 GHz band is currently pending in WT Docket No. 07–293, we decline to consider it in the instant proceeding.

C. Multichannel Video and Data Distribution Service

56. DTV Norwich, LLC (DTV Norwich), a licensee in the Multichannel Video Distribution and Data Service (MVDDS), asks the Commission to allow MVDDS licensees to utilize higher power to provide point-to-point services. MVDDS is a fixed wireless terrestrial service at 12.2–12.7 GHz that may be used to provide one-way digital fixed non-broadcast service, including one-way direct-to-home/office wireless service. MVDDS is authorized on a co-primary, non-harmful interference basis with incumbent Direct Broadcast Satellite Service (DBS) providers and on a co-primary basis with non-geostationary satellite orbit fixed-satellite service (NGSO FSS) stations. MVDDS is licensed on a geographic area basis according to Nielsen's 2002 Designated Market Areas and several FCC-defined areas.

57. DTV Norwich argues that MVDDS point-to-point operations at higher power levels may be possible without causing interference to DBS and NGSO FSS. According to DTV Norwich, however, "at existing power levels, the point-to-point path 'hops' would simply be too short to be economically viable."

58. DTV Norwich's proposal lacks sufficient specificity to be worthy of further consideration at this time. The Commission adopted rules for MVDDS based on the extensive record of the MVDDS rule-making proceeding, which included a congressionally mandated independent analysis of potential MVDDS interference to DBS. These rules include detailed frequency coordination procedures, interference protection criteria, and limitations on signal emissions, transmitter power levels, and transmitter locations. The rules limit the effective isotropic radiated power (EIRP) for MVDDS stations to 14.0 dBm per 24 megahertz (– 16.0 dBW per 24 megahertz). To accommodate co-primary DBS earth stations, an MVDDS licensee shall not begin operation unless it can ensure that the equivalent power flux density (EPFD) from a proposed transmitting antenna does not exceed the applicable EPFD limit at any DBS subscriber location.

59. Under these circumstances, DTV Norwich's proposal is far too general to warrant further consideration. The Commission found that the power limits and other technical requirements would ensure that any interference caused to DBS customers will not exceed a level that is considered permissible. Furthermore, the Commission also contemplated that MVDDS service

providers might petition for waiver(s) of the technical rules, and required that the petitioning party must "submit an independent technical demonstration of its equipment and technology." In denying petitions to reconsider the power limits, the Commission reiterated that MVDDS providers may seek waivers of the general MVDDS limits. DTV Norwich's proposal, if considered as a waiver request, would not meet that standard because it does not provide any technical analysis to support its claims. Indeed, DTV Norwich does not identify the power levels it wishes to use. For the reasons listed above, we decline to consider DTV Norwich's proposal.

D. Revising Technical Rules in Bands Above 15 GHz

60. Sprint recommends that the Commission develop more specific technical rules governing the use of spectrum masks above 15 GHz, which would allow for less variance in the interpretation of the Commission's rules by equipment vendors and enable more frequencies to be used while also reducing interference. Sprint also asks that the Commission establish maximum power limits based on the link distance for the bands above 15 GHz. No other commenter responded to this suggestion. We decline to take action at this time because (1) Sprint has not made a concrete showing that there is a problem requiring Commission intervention, and (2) Sprint does not offer specific proposals for changes to our rules. We reserve the right to consider the matter further if additional information is brought to our attention.

E. Modification of Existing Licensing Practices and Procedures

61. XO Communications (XO) expresses concern "that substantial portions of spectrum are made available to the public in a manner that neither promotes * * * efficient spectrum use nor captures the value of this spectrum for the United States Treasury." XO contends that making "these frequencies available to interested parties at virtually no cost on a first-come, first-served basis * * * undercut[s] the value of existing LMDS spectrum licenses." XO suggests that the Commission should consider changing its procedures for licensing point-to-point services to promote more efficient spectrum use by implementing a licensing regime under which mutually exclusive applications would be accepted and resolved through competitive bidding, or alternatively, applying spectrum usage fees, and by making changes to the Universal Licensing System (ULS) database. XO

argues that adopting competitive bidding or spectrum fees would give licensees greater economic incentives to use their spectrum fully and efficiently. XO also states that the microwave link information provided in the ULS database for LMDS spectrum relative to the more extensive technical information provided for common carrier point-to-point microwave links may discourage customers from seeking to lease LMDS spectrum and that we should make changes to the ULS to place users of LMDS and common carrier microwave spectrum on an equal footing.

62. We are not persuaded that we should adopt XO's proposed changes to our licensing procedures for point-to-point services at this time. XO has provided no factual basis upon which to decide that the existing frequency coordination-based licensing regime, under which we accept applications for each microwave link or path, leads to inefficient use of this spectrum or is otherwise no longer in the public interest. While we recognize that accepting mutually exclusive applications that are resolved through competitive bidding is often an efficient way to assign licenses, we do not believe that the spectrum coordination regime for point-to-point services currently in effect, which does not result in the acceptance of mutually exclusive applications, has failed thus far either to promote efficient spectrum use or capture its value. We note, further, that the Commission may continue to use licensing schemes and other means to avoid mutual exclusivity if public interest goals are met. Moreover, we decline to implement XO's proposal to impose fees for the use of this spectrum. As the Commission has previously noted in other proceedings, we may lack the authority to impose certain user fees. Finally, to the extent that XO seeks to eliminate what it sees as an "economic disparity" between common carrier microwave spectrum and existing LMDS spectrum, we observe as an initial matter that there are significant differences between these spectrum bands. To the extent that XO's proposals regarding possible changes to the ULS are motivated by its desire to lease its LMDS spectrum for point-to-point uses, we are unaware of any obstacles that would prevent an LMDS licensee such as XO from making additional detailed technical information available to potential users seeking to lease spectrum for point-to-point use.

F. Siting Issues

1. OTARD

63. PCIA states that "local regulations continue to be a significant barrier to the collocation of antennas on existing towers" and recommends that the Commission examine its authority to streamline the collocation review process by restricting the ability of local authorities to review the placement of wireless antenna. We deny PCIA's request. In 2000, the Commission determined that section 332(c)(7) of the Communications Act provides state and local governments with the authority to regulate the placement, construction, and modification of carrier hub sites and relay antennas. PCIA is asking the Commission to modify this decision. PCIA, however, has not presented any change of circumstances, legal precedent, or statutory authority to support this change, so we see no reason to revisit the Commission's decision in the *2000 OTARD Report and Order*.

2. Colocation of Microwave Facilities

64. XO states that some carriers violate section 251(c)(6) of the Communications Act by hindering XO's efforts to expand its collocation facilities at incumbent LEC central offices to include microwave transmission equipment. XO contends that "the Commission should expressly confirm that the collocation of microwave transmission facilities as proposed by XO was one of the arrangements contemplated by section 251(c)(6) of the [Communication] Act." We find that the limited information provided by XO on this issue does not provide us with a sufficient basis upon which to act at this time. This decision does not preclude XO from filing a more complete submission as it deems appropriate.

G. Universal Service

65. FiberTower suggests that the Commission utilize the Universal Service Fund to make wireless backhaul available to qualifying areas and for qualifying purposes. In February of 2011, the Commission proposed to revise the Universal Service Fund. In that item, the Commission asked whether it should modify the universal service rules to provide additional support for middle mile costs and what effect would middle mile support have on incentives for small carriers to develop regional networks that provide lower cost, higher capacity backhaul capability. Given that the issue of providing Universal Service funding for wireless backhaul service is currently pending in the Universal Service

proceeding, we decline to address this issue in this proceeding but are incorporating FiberTower's comments into the record of WC Docket No. 10–90.

H. Upper Microwave Substantial Service

66. NSMA argues that in determining whether 24 GHz, 39 GHz, and LMDS licensees have offered substantial service, the Commission fails to positively consider “basic and important steps that lead to successful band utilization * * *”. It gives the following examples of such activity: (1) Spending significant resources producing Requests for Proposals (RFPs) to develop equipment in its band; (2) utilizing the Secondary Markets rules to offer spectrum leases throughout the license area; (3) submitting proposals to carrier, government or enterprise customers that rely upon utilizing the wide-area license; and/or (4) building several links, but has not yet met the safe harbor criterion (typically four links per million of population). NSMA asks the Commission to “track and credit” such activities.

67. We see no need to modify our substantial service rules and policies. NSMA's arguments ignore one of the Commission's overriding purposes of buildout requirements: Providing “a clear and expeditious accounting of spectrum use by licensees to ensure that service is indeed being provided to the public.” The Wireless Telecommunications Bureau has correctly rejected substantial service showings based on preparatory activities of the type described by NSMA where there is no actual service being provided to the public. We emphasize, however, that safe harbors are merely one means of demonstrating substantial service, and given an appropriate showing, a level of service that does not meet a safe harbor may still constitute substantial service. Furthermore, we will evaluate all substantial service showings that do not meet an established safe harbor on a case-by-case basis.

I. Other Pending Matters

68. We recognize that there are other pending matters and proceedings relating to wireless backhaul that are not addressed in this item. Those matters and proceedings include: (1) A petition for rulemaking asking that the 7125–8500 MHz band be allocated for non-Federal use and allotted for FS use, (2) a petition for rulemaking asking that conditional authority be authorized throughout the 23 GHz band and change the mechanism for coordinating operation with the National

Telecommunications Information Administration (NTIA), and (3) a request made in this proceeding to revise the Commission's policy of allowing a satellite earth station to coordinate for the full 360-degree azimuth range of the earth station even when it is communicating with only one satellite in a limited segment of the band. We will address these issues separately or in future orders in this proceeding.

IV. Procedural Matters

69. *Paperwork Reduction Analysis:* This document contains new information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104–13. While we did not seek comment on the information collection requirements in the *NPRM*, we are seeking comments now. The information collection 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. In addition, we note that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107–198, *see* 44 U.S.C. 3506(c)(4), we seek specific comment on how the Commission might further reduce the information collection burden for small business concerns with fewer than 25 employees.

70. *Final Regulatory Flexibility Analysis of the Report and Order:* Because we amend the rules in this *Report and Order*, we have included this Final Regulatory Flexibility Analysis (FRFA). This present FRFA conforms to the Regulatory Flexibility Act (RFA). Accordingly, we have prepared a Final Regulatory Flexibility Analysis concerning the possible impact of the rule changes contained in the *Report and Order* on small entities.

A. Need for, and Objectives of, the Proposed Rules

In this *Report and Order*, we adopt three changes to our rules involving microwave stations. First, we allow fixed service (FS) stations to operate in the 6875–7125 MHz and 12700–13150 MHz bands. Second, we eliminate the prohibition on broadcasters using part 101 stations as the final radiofrequency (RF) link in the chain of distribution of program material to broadcast stations. Third, we amend our minimum payload capacity rule to facilitate the use of adaptive modulation to allow licensees to maintain communications by briefly

reducing the rate at which they send data.

With respect to the first action, we anticipate that demand for fixed service spectrum will increase substantially as it is increasingly used for wireless backhaul and other important purposes. The 6875–7125 MHz and 12700–13150 MHz bands are currently assigned to television pickup, television studio-transmitter links, television relay stations, television translator relay stations, and mobile-only CARS. Assigning this spectrum to the fixed service will provide additional spectrum that will be used for wireless backhaul and other critical applications, while protecting other existing services in these bands.

Second, § 101.603(a)(7) of the Commission's rules, commonly known as the “final link” rule, prohibits broadcasters from using part 101 stations as the final radiofrequency (RF) link in the chain of distribution of program material to broadcast stations. The rule ensures that private operational fixed stations are used for private, internal purposes and prevents broadcasters from causing congestion when part 74 Broadcast Auxiliary Service (BAS) frequencies are available. In light of the increasing use of digital technologies, we conclude that the “final link” rule may no longer serve its intended purpose and may in fact inhibit the full use of part 101 spectrum. As broadcasters and other microwave users move to digital-based systems, we conclude it does not make sense to distinguish between program material and other types of content transmitted using digital technologies. Furthermore, the rule may impose additional costs by requiring broadcasters to build two different systems: one system to carry program material to the transmitter site and a separate system to handle other data. In light of the extensive sharing between BAS and FS of the same bands, we believe it is appropriate to provide broadcasters with additional flexibility to use the FS bands. We therefore eliminate this rule.

Third, we amend our part 101 technical rules to facilitate the use of adaptive modulation, which is a process that reduces the data rate of a microwave link in order to maintain communications. Section 101.141(a)(3) of the Commission's rules establishes minimum payload capacities (in terms of megabits per second) for various channel sizes in certain part 101 bands. The underlying purpose of the rule is to promote efficient frequency use. Although the Commission has never quantified the time period over which licensees must comply with those

standards, the industry has generally construed the payload requirements as applying whenever the link is in service. Fixed service links, especially long links, are subject to atmospheric fading: a temporary drop in received power caused by changes in propagation conditions. Fading leads to an increase in errors and sometimes to a complete loss of communications. One way to combat fading is by briefly reducing the data rate, which requires a temporary change in the type of modulation, a process called "adaptive modulation." The use of adaptive modulation may reduce the minimum payload capacity below the value specified in the rule for a short time, although this still represents an increase over the otherwise zero level during the fade. Adaptive modulation has public interest benefits of allowing communications to be maintained during adverse propagation conditions. Given the critical backhaul and public safety applications of fixed service stations, we find this benefit to be significant. By allowing this level of flexibility in our efficiency standards, we hope to provide carriers with a way to lower their costs yet still use the spectrum efficiently. This rule change will allow licensees to take advantage of the benefits of adaptive modulation while ensuring efficient use of the spectrum.

B. Legal Basis

The action is authorized pursuant to sections 1, 2, 4(i), 7, 201, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, and 333 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 157, 201, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, and 333, and section 706 of the Telecommunications Act of 1996, as amended, 47 U.S.C. 1302.

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

The RFA directs agencies to provide a description of, and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules and policies, if adopted. The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction." In addition, the term "small business" has the same meaning as the term "small business concern" 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 SBA.

Small Businesses, Small Organizations, and Small Governmental Jurisdictions. Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three comprehensive, statutory small entity size standards. First, nationwide, there are a total of approximately 27.5 million small businesses, according to the SBA. In addition, a "small organization" is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field." Nationwide, as of 2007, there were approximately 1,621,315 small organizations. Finally, the term "small governmental jurisdiction" is defined generally as "governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand." Census Bureau data for 2011 indicate that there were 89,476 local governmental jurisdictions in the United States. We estimate that, of this total, as many as 88,506 entities may qualify as "small governmental jurisdictions." Thus, we estimate that most governmental jurisdictions are small.

Wireless Telecommunications Carriers (except satellite). The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees. Census Bureau data for 2007, which now supersede data from the 2002 Census, show that there were 3,188 firms in this category that operated for the entire year. Of this total, 3,144 had employment of 999 or fewer, and 44 firms had employment of 1,000 employees or more. Thus under this category and the associated small business size standard, the Commission estimates that the majority of wireless telecommunications carriers (except satellite) are small entities that may be affected by our proposed action.

Fixed Microwave Services. Microwave services include common carrier, private-operational fixed, and broadcast auxiliary radio services. At present, there are approximately 31,549 common carrier fixed licensees and 89,633 private and public safety operational-fixed licensees and broadcast auxiliary radio licensees in the microwave services. Microwave services include common carrier, private-operational fixed, and broadcast auxiliary radio services. They also include the Local Multipoint Distribution Service (LMDS), the Digital Electronic Message Service (DEMS), and the 24 GHz Service, where licensees can choose between common

carrier and non-common carrier status. The Commission has not yet defined a small business with respect to microwave services. For purposes of the IRFA, the Commission will use the SBA's definition applicable to Wireless Telecommunications Carriers (except satellite)—i.e., an entity with no more than 1,500 persons is considered small. For the category of Wireless Telecommunications Carriers (except Satellite), Census data for 2007, which supersede data contained in the 2002 Census, show that there were 1,383 firms that operated that year. Of those 1,383, 1,368 had fewer than 100 employees, and 15 firms had more than 100 employees. Thus under this category and the associated small business size standard, the majority of firms can be considered small. The Commission notes that the number of firms does not necessarily track the number of licensees. The Commission estimates that virtually all of the Fixed Microwave licensees (excluding broadcast auxiliary licensees) would qualify as small entities under the SBA definition.

Radio Broadcasting. The subject rules and policies potentially will apply to all AM and FM radio broadcasting licensees and potential licensees. A radio broadcasting station is an establishment primarily engaged in broadcasting aural programs by radio to the public. Included in this industry are commercial, religious, educational, and other radio stations. Radio broadcasting stations which primarily are engaged in radio broadcasting and which produce radio program materials are similarly included. However, radio stations that are separate establishments and are primarily engaged in producing radio program material are classified under another NAICS number. The SBA has established a small business size standard for this category, which is: firms having \$7 million or less in annual receipts. According to BIA/Kelsey, MEDIA Access Pro Database on January 13, 2011, 10,820 (97%) of 11,127 commercial radio stations have revenue of \$7 million or less. Therefore, the majority of such entities are small entities. We note, however, that many radio stations are affiliated with much larger corporations having much higher revenue. Our estimate, therefore, likely overstates the number of small entities that might be affected by any ultimate changes to the rules and forms.

Television stations. The SBA defines a television broadcasting station as a small business if such station has no more than \$14.0 million in annual receipts. Business concerns included in this industry are those "primarily

engaged in broadcasting images together with sound.” The Commission has estimated the number of licensed commercial television stations to be 1,390. According to Commission staff review of the BIA Kelsey Inc. Media Access Pro Television Database (BIA) as of January 31, 2011, 1,006 (or about 78 percent) of an estimated 1,298 commercial television stations in the United States have revenues of \$14 million or less and, thus, qualify as small entities under the SBA definition. The Commission has estimated the number of licensed noncommercial educational (NCE) television stations to be 391. We note, however, that, in assessing whether a business concern qualifies as small under the above definition, business (control) affiliations must be included. Our estimate, therefore, likely overstates the number of small entities that might be affected by our action, because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies. The Commission does not compile and otherwise does not have access to information on the revenue of NCE stations that would permit it to determine how many such stations would qualify as small entities.

In addition, an element of the definition of “small business” is that the entity not be dominant in its field of operation. We are unable at this time to define or quantify the criteria that would establish whether a specific television station is dominant in its field of operation. Accordingly, the estimate of small businesses to which rules may apply do not exclude any television station from the definition of a small business on this basis and are therefore over-inclusive to that extent. Also, as noted, an additional element of the definition of “small business” is that the entity must be independently owned and operated. We note that it is difficult at times to assess these criteria in the context of media entities and our estimates of small businesses to which they apply may be over-inclusive to this extent.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements

This *Report and Order* contains new 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. In addition, we note that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107–198, *see* 44 U.S.C. 3506(c)(4), we seek specific comment on how the Commission might further reduce the information collection burden for small business concerns with fewer than 25 employees.

E. Steps Taken To Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed 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 or reporting requirements under the rule for 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 small entities.

As noted above, this *Report and Order* (1) allows fixed service stations to operate in the 6875–7125 and 12700–13150 MHz bands, (2) eliminates the prohibition on broadcasters using part 101 stations as the final radiofrequency (RF) link in the chain of distribution of the program material to broadcast stations, (3) and amends our minimum payload capacity rule to facilitate the use of adaptive modulation to allow licensees to maintain communications by briefly reducing the rate at which they send data. These actions would provide additional options to all licensees, including small entity licensees. Such actions will serve the public interest by making additional spectrum available for fixed service users, providing additional flexibility for broadcasters to use microwave spectrum, and allowing communications to be maintained during adverse propagation conditions. The rules could therefore open up beneficial economic opportunities to a variety of spectrum users, including small businesses.

Generally, the alternative approach would be to maintain the existing rules. If the rules were not changed, the 6875–7125 MHz and 12700–13150 MHz bands would remain unavailable for fixed service use. Given the increasing demand for part 101 spectrum for backhaul and other uses, not making that spectrum available would make it increasingly difficult to meet the demand for microwave facilities. If the

prohibition on broadcasters using part 101 stations as the final radiofrequency (RF) link in the chain of distribution of the program material to broadcast stations is not eliminated, broadcasters will be limited to using Broadcast Auxiliary Service spectrum for that purpose, and may have to build two separate microwave systems using different frequencies. Such an alternative would be inadequate to meet the demands of licensees and is therefore less than ideal. If no BAS spectrum is available, broadcasters will have to pay to prepare a request for waiver to access part 101 spectrum and await action on that waiver request before they can begin operation. Such expense and delay may be particularly harmful to small businesses.

With respect to our proposal to amend our minimum capacity payload rule to facilitate adaptive modulation, if our rules are not amended to facilitate the use of adaptive modulation, licensees will be unable to fully use technology to maintain critical communications during signal fades. An alternative to the adaptive modulation proposal made in the *NPRM* would be to allow compliance with the efficiency standards “on average” and “during normal operation.” We believe that standard would give licensees too much latitude to deploy inefficient systems that would be inconsistent with good engineering practices.

F. Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rules

None.

V. Ordering Clauses

71. Accordingly, it is ordered, pursuant to sections 1, 2, 4(i), 7, 201, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, 333 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 157, 201, 301, 302, 303, 307, 308, 309, 310, 319, 324, 332, and 333, and section 706 of the Telecommunications Act of 1996, as amended, 47 U.S.C. 1302, that this *Report and Order* is hereby adopted.

72. It is further ordered that the rules adopted herein will become effective 30 days after the date of publication in the **Federal Register**, except for § 74.605, which contains new or modified information collection requirements that require approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) and will become effective after the Commission publishes a notice in the **Federal Register** announcing such approval and the relevant effective date.

73. It is further ordered that the Comments of FiberTower Corporation filed on October 25, 2010 shall be inserted into the record of WC Docket No. 10–90.

74. It is further ordered that the Commission shall send a copy of this *Report and Order* to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

75. It is further ordered that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, shall send a copy of this *Report and Order* and *Memorandum Opinion and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects in 47 CFR Parts 74 and 101

Communications equipment, Radio, Reporting and recordkeeping requirements.

Federal Communications Commission

Bulah P. Wheeler,

Deputy Manager.

Final Rules

For the reasons discussed in the preamble, the Federal Communications Commission hereby amends 47 CFR parts 74 and 101 as follows:

PART 74—EXPERIMENTAL RADIO, AUXILIARY, SPECIAL BROADCAST AND OTHER PROGRAM DISTRIBUTIONAL SERVICES

- 1. The authority citation for part 74 continues to read as follows:

Authority: 47 U.S.C. 154, 302a, 303, 307, 336(f), 336(h) and 554.

- 2. Amend § 74.602 by revising paragraph (a) introductory text to read as follows:

§ 74.602 Frequency assignment.

(a) The following frequencies are available for assignment to television pickup, television STL, television relay and television translator relay stations. The band segments 17,700–18,580 and 19,260–19,700 MHz are available for broadcast auxiliary stations as described in paragraph (g) of this section. The band segment 6425–6525 MHz is available for broadcast auxiliary stations as described in paragraph (i) of this section. The bands 6875–7125 MHz and 12700–13200 MHz are co-equally shared with stations licensed pursuant to Parts 78 and 101 of the Commission's Rules. Broadcast network-entities may also use the 1990–2110, 6425–6525 and 6875–7125 MHz bands for mobile television pickup only.

* * * * *

- 3. § 74.605 is added to read as follows:

§ 74.605 Registration of stationary television pickup receive sites.

Licensees of TV pickup stations in the 6875–7125 MHz and 12700–13200 MHz bands shall register their stationary

receive sites using the Commission's Universal Licensing System.

PART 101—FIXED MICROWAVE SERVICES

- 4. The authority citation for part 101 continues to read as follows:

Authority: 47 U.S.C. 154, 303.

- 5. Amend § 101.31 by revising paragraph (b)(1) introductory text to read as follows:

§ 101.31 Temporary and conditional authorizations.

* * * * *

(b) * * *

(1) An applicant for a new point-to-point microwave radio station(s) or a modification of an existing station(s) in the 952.95–956.15, 956.55–959.75, 3,700–4,200; 5,925–6,425; 6,525–6,875; 6,875–7,125; 10,550–10,680; 10,700–11,700; 11,700–12,200; 12,700–13,150; 13,200–13,250; 17,700–19,700; and 21,800–22,000 MHz, and 23,000–23,200 MHz bands (see § 101.147(s) for specific service usage) may operate the proposed station(s) during the pendency of its applications(s) upon the filing of a properly completed formal application(s) that complies with subpart B of part 101 if the applicant certifies that the following conditions are satisfied:

* * * * *

- 6. Amend § 101.101 by adding the entry “6875–7125” to the table to read as follows:

§ 101.101 Frequency availability.

Frequency Band (MHz)	Radio Service				Notes
	Common carrier (Part 101)	Private radio (Part 101)	Broadcast Auxiliary (Part 74)	Other (Parts 15, 21, 22, 24, 25, 74, 78, & 100)	
* * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
6875–7125	CC	OFS	TV BAS	CARS.	
* * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *

* * * * *

- 7. Amend § 101.103 by revising paragraph (d)(2)(ii) to read as follows:

§ 101.103 Frequency coordination procedures.

* * * * *

(d) * * *

(2) * * *

(ii) Notification must include relevant technical details of the proposal. At minimum, this should include, as applicable, the following:

Applicant's name and address.
Transmitting station name.

Transmitting station coordinates.

Frequencies and polarizations to be added, changed or deleted.

Transmitting equipment type, its stability, actual output power, emission designator, and type of modulation(s) (loading). Notification shall indicate if modulations lower than the values listed in the table to § 101.141(a)(3) of the Commission's rules will be used.

Transmitting antenna type(s), model, gain and, if required, a radiation pattern provided or certified by the manufacturer.

Transmitting antenna center line height(s) above ground level and ground elevation above mean sea level.

Receiving station name.

Receiving station coordinates.

Receiving antenna type(s), model, gain, and, if required, a radiation pattern provided or certified by the manufacturer.

Receiving antenna center line height(s) above ground level and ground elevation above mean sea level.

Path azimuth and distance.

Estimated transmitter transmission line loss expressed in dB.

Estimated receiver transmission line loss expressed in dB.

For a system utilizing ATPC, maximum transmit power, coordinated transmit power, and nominal transmit power.

Note: The position location of antenna sites shall be determined to an accuracy of no less than ± 1 second in the horizontal dimensions (latitude and longitude) and ± 1 meter in the vertical dimension (ground elevation) with respect to the National Spatial Reference System.

* * * * *

■ 8. Amend § 101.107(a), in the table by adding the entry “6,875 to 7,125¹” to read as follows:

§ 101.107 Frequency tolerance.

(a) * * *

Frequency (MHz)	Frequency Tolerance (percent)
6,875 to 7,125 ¹	0.005
* * * * *	
Frequency band (MHz)	Maximum authorized bandwidth
6,875 to 7,125	25 MHz ¹
12,700 to 13,150	50 MHz
* * * * *	

■ 9. Amend § 101.109(c), in the table by adding the entries “6,875 to 7,125” and “12,700–13,150” to read as follows:

§ 101.109 Bandwidth.

(c) * * *

* * * * *

■ 10. Amend § 101.113(a), in the table by adding the entry “6,875–7,125” to read as follows:

§ 101.113 Transmitter power limitations.
(a) * * *

Frequency band (MHz)	Maximum allowable EIRP ^{1, 2}	
	Fixed ^{1,2} (dBW)	Mobile (dBW)
6,875–7,125	+55	

■ 11. Amend § 101.115(b), in the table by adding the entry “6,875–7,125” to read as follows:

§ 101.115 Directional antennas.

(b) * * *

ANTENNA STANDARDS

Frequency (MHz)	Category	Maximum beamwidth to 3 dB points ¹ (included angle in degrees)	Minimum antenna gain (dBi)	Minimum radiation suppression to angle in degrees from centerline of main beam in decibels							
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°	100° to 140°	140° to 180°	
6,875 to 7,125	A	2.2	38	25	29	33	36	42	55	55	
	B	2.2	38	21	25	29	32	35	39	45	
* * * * *											

■ 12. Amend § 101.141 by revising paragraph (a)(3) introductory text and by adding the following entries “25.0 89.4³ 50 2 DS–3/STS–1” in the table as follows:

§ 101.141 Microwave modulation.

(a) * * *

(3) The following capacity and loading requirements must be met for equipment applied for, authorized, and

placed in service after June 1, 1997 in 3700–4200 MHz (4 GHz), 5925–6425, 6525–6875 MHz (6 GHz), 6875–7125 MHz (7 GHz), 10,550–10,680 MHz (10 GHz), 10,700–11700 MHz (11 GHz), and 12,700–13,150 MHz (13 GHz) bands, except during anomalous signal fading. During anomalous signal fading, licensees may adjust to a modulation specified in their authorization if such modulation is necessary to allow licensees to maintain communications,

even if the modulation will not comply with the capacity and loading requirements specified in this paragraph. Links that use equipment capable of adjusting modulation must be designed using generally accepted multipath fading and rain fading models to meet the specified capacity and loading requirements at least 99.95% of the time, in the aggregate of both directions in a two-way link.

* * * * *

Nominal channel bandwidth (MHz)	Minimum Payload capacity (Mbits/s) ¹	Minimum traffic payload (as percent of payload capacity)	Typical utilization ²
25.0	89.4	³ 50	2 DS–3/STS–1.
* * * * *			

* * * * *

■ 13. Amend § 101.147 as follows:

■ a. Add the entry “6,875–7,125 MHz” to the table in paragraph (a);

■ b. Revise the entry “12,700–13,200 MHz” in the table in paragraph (a);

■ c. Add note (34) to paragraph (a);

■ d. Redesignate paragraph (l) as paragraph (k);

■ e. Add a new paragraph (l);

■ f. Revise paragraph (p).

The revisions and additions read as follows:

§ 101.147 Frequency assignments.

* * * * *

(a) * * *

* * * * *

6,875–7,125 MHz (10), (34)

* * * * *

12,700–13,200 (22), (34)

* * * * *

(34) In the bands 6,875–7,125 MHz and 12,700–13,150 MHz, links shall not intersect with the service areas of television pickup stations.

* * * * *

(l) 6875 to 7125 MHz. 25 MHz authorized bandwidth.

(1) 5 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
6877.5	7027.5
6882.5	7032.5
6887.5	7037.5
6892.5	7042.5
6897.5	7047.5
6902.5	7052.5
6907.5	7057.5
6912.5	7062.5
6917.5	7067.5
6922.5	7072.5
6927.5	7077.5
6932.5	7082.5
6937.5	7087.5
6942.5	7092.5
6947.5	7097.5
6952.5	7102.5
6957.5	7107.5
6962.5	7112.5
6967.5	7117.5
6972.5	7122.5

(2) 8.33 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
6879.165	7029.165
6887.495	7037.495
6895.825	7045.825
6904.155	7054.155
6912.485	7062.485
6920.815	7070.815
6929.145	7079.145
6937.475	7087.475
6945.805	7095.805
6954.135	7104.135

Transmit (receive) (MHz)	Receive (transmit) (MHz)
6962.465	7112.465
6970.795	7120.795

(3) 12.5 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
6881.25	7031.25
6893.75	7043.75
6906.25	7056.25
6918.75	7068.75
6931.25	7081.25
6943.75	7093.75
6956.25	7106.25
6968.75	7118.75

(4) 25 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
6887.5	7037.5
6912.5	7062.5
6937.5	7087.5
6962.5	7112.5

* * * * *

(p) 12,200 to 13,150 MHz. (1) 12,000–12,700 MHz. The Commission has allocated the 12.2–12.7 GHz band for use by the Direct Broadcast Satellite Service (DBS), the Multichannel Video Distribution and Data Service (MVDDS), and the Non-Geostationary Satellite Orbit Fixed Satellite Service (NGSO FSS). MVDDS shall be licensed on a non-harmful interference co-primary basis to existing DBS operations and on a co-primary basis with NGSO FSS stations in this band. MVDDS use can be on a common carrier and/or non-common carrier basis and can use channels of any desired bandwidth up to the maximum of 500 MHz provided the EIRP does not exceed 14 dBm per 24 megahertz. Private operational fixed point-to-point microwave stations authorized after September 9, 1983, are licensed on a non-harmful interference basis to DBS and are required to make any and all adjustments necessary to prevent harmful interference to operating domestic DBS receivers. Incumbent public safety licensees shall be afforded protection from MVDDS and NGSO FSS licensees, however all other private operational fixed licensees shall be secondary to DBS, MVDDS and NGSO FSS licensees. As of May 23, 2002, the Commission no longer accepts applications for new licenses for point-to-point private operational fixed stations in this band, however, incumbent licensees and previously filed applicants may file applications for

minor modifications and amendments (as defined in § 1.929 of this chapter) thereto, renewals, transfer of control, or assignment of license. Notwithstanding any other provisions, no private operational fixed point-to-point microwave stations are permitted to cause harmful interference to broadcasting-satellite stations of other countries operating in accordance with the Region 2 plan for the Broadcasting-Satellite Service established at the 1983 WARC.

(2) 12,700 to 13,150 MHz. 50 MHz authorized bandwidth.

(i) 5 MHz channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
12702.5	12927.5
12707.5	12932.5
12712.5	12937.5
12717.5	12942.5
12722.5	12947.5
12727.5	12952.5
12732.5	12957.5
12737.5	12962.5
12742.5	12967.5
12747.5	12972.5
12752.5	12977.5
12757.5	12982.5
12762.5	12987.5
12767.5	12992.5
12772.5	12997.5
12777.5	13002.5
12782.5	13007.5
12787.5	13012.5
12792.5	13017.5
12797.5	13022.5
12802.5	13027.5
12807.5	13032.5
12812.5	13037.5
12817.5	13042.5
12822.5	13047.5
12827.5	13052.5
12832.5	13057.5
12837.5	13062.5
12842.5	13067.5
12847.5	13072.5
12852.5	13077.5
12857.5	13082.5
12862.5	13087.5
12867.5	13092.5
12872.5	13097.5
12877.5	13102.5
12882.5	13107.5
12887.5	13112.5
12892.5	13117.5
12897.5	13122.5
12902.5	13127.5
12907.5	13132.5
12912.5	13137.5
12917.5	13142.5
12922.5	13147.5

(ii) 8.33 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
12704.165	12929.165
12712.495	12937.495

Transmit (receive) (MHz)	Receive (transmit) (MHz)
12720.825	12945.825
12729.155	12954.155
12737.485	12962.485
12745.815	12970.815
12754.145	12979.145
12762.475	12987.475
12770.805	12995.805
12779.135	13004.135
12787.465	13012.465
12795.795	13020.795
12804.125	13029.125
12812.455	13037.455
12820.785	13045.785
12829.115	13054.115
12837.445	13062.445
12845.775	13070.775
12854.105	13079.105
12862.435	13087.435
12870.765	13095.765
12879.095	13104.095
12887.425	13112.425
12895.755	13120.755
12904.085	13129.085
12912.415	13137.415

(iii) 12.5 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
12706.25	12931.25
12718.75	12943.75
12731.25	12956.25
12743.75	12968.75
12756.25	12981.25
12768.75	12993.75
12781.25	13006.25
12793.75	13018.75
12806.25	13031.25
12818.75	13043.75
12831.25	13056.25
12843.75	13068.75
12856.25	13081.25
12868.75	13093.75
12881.25	13106.25
12893.75	13118.75
12906.25	13131.25
12918.75	13143.75

(iv) 25 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
12712.5	12937.5
12737.5	12962.5
12762.5	12987.5
12787.5	13012.5
12812.5	13037.5
12837.5	13062.5
12862.5	13087.5
12887.5	13112.5
12912.5	13137.5

(v) 50 MHz bandwidth channels:

Transmit (receive) (MHz)	Receive (transmit) (MHz)
12725	12925

Transmit (receive) (MHz)	Receive (transmit) (MHz)
12775	12975
12825	13025
12875	13075

* * * * *

■ 11. Amend § 101.603 by revising paragraph (a)(7) to read as follows:

§ 101.603 Permissible communications.

(a) * * *

(7) Licensees may transmit program material from one location to another;

* * * * *

[FR Doc. 2011-23001 Filed 9-26-11; 8:45 am]

BILLING CODE 6712-01-P

DEPARTMENT OF TRANSPORTATION

Office of the Secretary

49 CFR Part 40

[Docket DOT-OST-2010-0161]

RIN 2105-AE13

Procedures for Transportation Workplace Drug and Alcohol Testing Programs: Federal Drug Testing Custody and Control Form; Technical Amendment

AGENCY: Office of the Secretary, DOT.

ACTION: Final Rule; Technical Amendment.

SUMMARY: On September 27, 2010, the U.S. Department of Transportation (DOT) published an interim final rule (IFR) authorizing the use of a new Federal Drug Testing Custody and Control Form (CCF) in its drug testing program. Use of the form is authorized beginning October 1, 2010. This final rule responds to comments to the IFR and will finalize the authorization and procedures for using the new CCF for DOT-required drug tests. The intended effect of this final rule is to finalize the authority for use of the new CCF and to make a technical amendment to its drug testing procedures by amending a provision of the rule which was inadvertently omitted from a final rule in August 2010. The September 27, 2010 final rule was published under RIN 2105-AE03, however, it was inadvertently shown as a completed action on the Fall 2010 Agenda; this action replaces RIN 2105-AE03.

DATES: The rule is effective September 27, 2011.

FOR FURTHER INFORMATION CONTACT: Bohdan Baczara, U.S. Department of Transportation, Office of Drug and

Alcohol Policy and Compliance, 1200 New Jersey Avenue, SE., Washington, DC 20590; 202-366-3784 (voice), 202-366-3897 (fax), or bohdan.baczara@dot.gov (e-mail).

SUPPLEMENTARY INFORMATION:

Background and Purpose

All urine specimens collected under the DOT drug testing regulation, 49 CFR Part 40, must be collected using chain-of-custody procedures that incorporate the use of the CCF promulgated by the Department of Health and Human Services (HHS). On November 17, 2009, HHS published a proposal to revise the CCF [74 FR 59196]. In their proposal, HHS stated that the CCF is used for the Federal workplace drug testing program, but also pointed out that DOT

“* * * requires its regulated industries to use the Federal CCF” [74 FR 59196]. Because many of the commentors to the HHS proposal were transportation industry employers, Consortia/Third-party Administrators (C/TPAs), and associations, the Department was confident the commentors understood the new CCF would be used in the DOT-regulated program. All the comments submitted were thoroughly reviewed by HHS and taken into consideration in fashioning the new CCF. The Department worked closely with HHS on the new CCF. HHS announced the new CCF in the **Federal Register** [75 FR 41488]. The CCF became effective date of October 1, 2010.

However, because of the short time frame between the HHS publication of the new CCF and its October 1, 2010 effective date, the Department did not have an opportunity to propose a rulemaking and therefore issued an Interim Final Rule (IFR) on September 27, 2010 [75 FR 59105] authorizing DOT-regulated employers to also begin using the new CCF on October 1, 2010. The Department sought comments only on the actual implementation of the new CCF, and not on the form itself because HHS already sought and received comments on the form and its use because many of the commentors to the HHS proposal were transportation industry employers, C/TPAs, and associations. In the IFR, the Department made minor procedural amendments to the regulation to merely reflect the changes HHS made to the revised CCF, and clarified how collectors, laboratories, and medical review officers (MROs) must use the new form in the DOT regulated context. There were 15 comments from four commentors.

The Department is also making a technical amendment to address an omission in the rule text of a final rule published on August 16, 2010 [75 FR