

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

In the Matter of)
)
Comprehensive Review of Licensing and) IB Docket No. 12-267
Operating Rules for Satellite Services)

NOTICE OF PROPOSED RULEMAKING

Adopted: September 28, 2012

Released: September 28, 2012

Comment Date: (45 days after date of publication in the Federal Register).
Reply Comment Date: (75 days after date of publication in the Federal Register).

By the Commission: Chairman Genachowski and Commissioners McDowell, Clyburn, Rosenworcel and Pai issuing separate statements.

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I. INTRODUCTION

1. As part of our ongoing efforts to update and streamline regulatory requirements, the Commission today initiates a comprehensive review of Part 25 of our rules, which governs licensing and operation of space stations and earth stations.¹ Satellite technology provides communications service throughout the United States and the world, and is particularly important for serving remote, underserved, or unserved communities nationwide. Satellites also provide critical connectivity for first responders by providing ubiquitous, reliable coverage during emergencies and natural disasters.

2. Over time, satellite services technology has evolved. Initially, services focused on applications for large earth stations, like delivery of video content to cable distribution points. New technology led to the development of smaller earth stations, creating a variety of new services, such as one-way satellite television to homes and two-way networks that are used by businesses for credit card transactions at retail locations. Smaller earth stations have also fostered innovative two-way fixed satellite services (FSS) and mobile satellite service (MSS) offerings, including broadband services to homes, vehicles, aircraft, and ships. While we regularly make changes to Part 25 to address technological advancements,² this Notice is our first wholesale examination of the rules governing satellite services in over a decade.³

3. The amendments we propose in this Notice modernize the rules to better reflect evolving technology, eliminate unnecessary technical and information filing requirements for applicants requesting space and earth station licenses, and reorganize and simplify existing requirements. In a companion Order adopted on September 24, 2012, we make several non-substantive changes to Part 25.⁴ The changes implemented in the companion Order and proposed in this Notice will better enable the Commission to perform its critical role in assessing the interference potential of proposed operations. Furthermore, the changes will remove unnecessary application filing requirements, allowing applicants and licensees to save time, effort, and costs in preparing applications. Other changes are designed to remove unnecessary technical restrictions, enabling applicants to submit fewer waiver requests, which will ease administrative burdens in submitting and processing applications and reduce the amount of time spent on applications by applicants, licensees, and the Commission. Collectively, the changes proposed in this Notice will streamline our regulations, releasing more rapid deployment of services to the public, greater investment, and new innovations in satellite services.

II. BACKGROUND

4. Over the past decade, the Commission has conducted a number of proceedings to keep pace with the broad technological innovations in the satellite industry, expedite the space and earth station licensing process, and delete provisions that are no longer needed. For example,

¹ 47 C.F.R. Part 25, Satellite Communications.

² See 47 U.S.C. § 161 (directing the Commission to review its regulations pertaining to the operations of telecommunications service providers in every even-numbered year and to “repeal or modify any regulation it determines to be no longer necessary in the public interest”).

³ See *Streamlining the Commission’s Rules and Regulations for Satellite Application and Licensing Procedures*, IB Docket No.95-117, Report and Order, 11 FCC Rcd 21581 (1996).

⁴ *2006 Biennial Regulatory Review – Revision of Part 25*, IB Docket No. 06-154, Report and Order, FCC 12-116 (rel. Sept. 28, 2012).

in 2003, the Commission revised the space station licensing process by adopting a first-come, first-served framework for most space station applications, allowing us to cut processing time by more than half.⁵ In 2007, the Commission adopted licensing procedures and service rules for the new 17/24 GHz Broadcasting-Satellite Service (BSS).⁶ In 2008, the Commission expanded the scope of earth station applications eligible for “routine” processing.⁷ In 2009, the Commission adopted technical and licensing rules to govern Vehicle-Mounted Earth Stations (VMES) operating in certain Ku-band frequencies.⁸ In 2010, the Commission established a “Ka-band Space Station Permitted List.”⁹ In all of these proceedings, the Commission addressed changes to Part 25 on a piecemeal basis.

5. In this Notice, we engage in a comprehensive review of the Part 25 rules for the

⁵ *Amendment of the Commission’s Space Station Licensing Rules and Policies*, IB Docket No. 02-34, First Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 10760 (2003) (*Space Station Licensing Reform Order*).

⁶ *Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for Fixed Satellite Services Providing Feeder Links to the Broadcasting-Satellite Service and for the Satellite Services Operating Bi-Directionally in the 17.3-17.8 GHz Frequency Band*, IB Docket No. 06-123, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 8842 (2007) (*17/24 GHz BSS 2007 Report and Order and FNPRM*). 17/24 GHz BSS will provide innovative video, audio, data, and video-on-demand services to consumers in the United States.

⁷ *2000 Biennial Regulatory Review – Streamlining and Other Revisions of Part 25 of the Commission’s Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations*, IB Docket Nos. 00-248 and 95-117, Eighth Report and Order and Order on Reconsideration, 23 FCC Rcd 15099 (2008) (allowing applicants to reduce power levels to compensate for smaller-than-routine antenna sizes). This culminated a series of orders revising licensing and technical rules for Fixed-Satellite-Service earth stations. See *Streamlining the Commission’s Rules and Regulations for Satellite Application and Licensing Procedures*, IB Docket No. 95-117, Report and Order, 11 FCC Rcd 21581 (1996); *Amendment of the Commission’s Space Station Licensing Policies/2000 Biennial Review – Streamlining and Other Revisions of Part 25 of the Commission’s Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations*, IB Docket Nos. 02-34 and 00-248, Third Report and Order and Second Further Notice of Proposed Rulemaking, 18 FCC Rcd 13486 (2003); *2000 Biennial Review – Streamlining and Other Revisions of Part 25 of the Commission’s Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations/Amendment of Part 25 of the Commission’s Rules and Regulations to Reduce Alien Carrier Interference Between Fixed-Satellites at Reduced Orbital Spacings and to Revise Application Procedures for Satellite Communication Services*, Fifth Report and Order in IB Docket No. 00-248 and Third Report and Order in CC Docket No. 86-496, 20 FCC Rcd 5666 (2005); *2000 Biennial Review – Streamlining and Other Revisions of Part 25 of the Commission’s Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations*, IB Docket No. 00-248, Sixth Report and Order and Third Notice of Further Rulemaking, 20 FCC Rcd 5593 (2005) (*2000 Biennial Review*).

⁸ *Amendment to Parts 2 and 25 of the Commission’s Rules to Allocate Spectrum and Adopt Service Rules and Procedures to Govern the Use of Vehicle-Mounted Earth Stations in Certain Frequency Bands Allocated to the Fixed-Satellite Service*, IB Docket No. 07-101, Report and Order, 24 FCC Rcd 10414 (2009). The VMES rules adopted in this proceeding apply to operations in the 10.95-11.2 GHz and 11.45-12.2 GHz space-to-Earth frequency bands and the 14.0-14.5 GHz Earth-to-space band.

⁹ *2006 Biennial Regulatory Review - Revision of Part 25 Establishment of a Permitted List Procedure for Ka-band Space Stations*, IB Docket No. 06-154, Declaratory Order, 25 FCC Rcd 1542 (2010) (*Ka-band Permitted List Order*). This new procedure, adopted as part of the 2006 biennial regulatory review, enables earth stations with “routine” Ka-band antennas to communicate with all satellites on the Ka-band Permitted List without additional regulatory approval, allowing Ka-band services, including broadband services, to be more quickly and readily available to consumers.

first time since 1996. In proposing changes, we seek to advance our longstanding policy of providing licensees flexibility, while ensuring an operating environment free from harmful interference.¹⁰ This review was initiated by the staff of the International Bureau and incorporates feedback and input by industry stakeholders given to us in the course of processing applications before the Commission. We reviewed Part 25 of the Commission's rules in its entirety, and we now propose to streamline or eliminate hundreds of rule sections or subsections. By revising duplicative or inconsistent rule provisions and deleting rules that have become unnecessary for effective regulatory review, we aim to remove administrative burdens on both stakeholders and the Commission. The eventual adoption of these revisions will expedite both earth and space station license processing. We encourage all stakeholders to provide feedback on these revisions to our rules. Among others, we propose the following revisions to Part 25:

- Focus our rules on addressing interference concerns, while removing unnecessary Commission oversight and regulation of technical decisions better left to licensees.
- Increase the number of earth station applications eligible for routine and streamlined processing.
- Remove unnecessary reporting rules and consolidating remaining requirements for annual reporting, while improving reporting of emergency contacts.
- Provide greater flexibility to earth station applicants in verifying antenna performance.
- Consolidate, clarify, and request comment on milestone requirements for space stations.
- Codify Commission practice of granting a single earth station license covering multiple antennas located in close proximity to each other.
- Update, improve, and consolidate definitions and technical terms throughout Part 25.

III. DISCUSSION

6. Part 25 of the Commission's Rules is organized in the following manner: Subpart A contains general rules relating to scope and definitions; Subpart B contains rules relating to application filing requirements and licensing procedures; Subpart C provides technical standards for licensing earth and space stations; Subpart D contains rules governing earth and space station operations.¹¹ In this Notice, we propose to make revisions in each of these subparts. In the following discussion, we first address revisions that encompass more than one rule section.

¹⁰ See, e.g., *Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for the Fixed-Satellite Service Providing Feeder Links to the Broadcasting-Satellite Service and for the Satellite Services Operating Bi-Directionally in the 17.3-17.8 GHz Frequency Band*, IB Docket No. 06-123, Second Report and Order, 26 FCC Rcd 8927, 8936, ¶ 15 (2011) (adopted off-axis coordination trigger affording licensees flexibility regarding satellite location, while precluding unacceptable interference to other co-frequency systems); *Redesignation of the 17.7-19.7 GHz Frequency Band*, IB Docket No. 98-172, Report and Order, 15 FCC Rcd 13430, 13476, ¶ 96 (2000) (adopted a coordination requirement designed to provide maximum flexibility of use while ensuring a workable sharing environment) (*17/24 GHz BSS 2000 Report and Order*). See also *Astrovision Int'l Inc.*, Order, 22 FCC Rcd 2379, 2383, ¶ 14 (Int'l Bur. 2007) (noted that, other than general parameters designed to prevent interference, the Commission has never dictated space station parameters, and instead allows licensees the flexibility to operate satellites tailored to their business plans).

¹¹ In addition, Subpart E is reserved, Subpart F relates to competitive bidding procedures for the satellite digital audio radio service, Subparts G and H are reserved, Subpart I relates to equal employment opportunities, and Subpart J relates to public interest obligations. We do not propose any changes to these subparts in this Notice.

We then discuss proposed changes to specific rules in the order in which the rules appear in Part 25. All of the proposed rule changes are contained in Appendix A.

A. Definitions

7. There are two rule sections in Part 25 captioned “Definitions”: Section 25.103 in Subpart A (General) and Section 25.201 in Subpart C (Technical Standards).¹² Section 25.201 states in an introductory sentence that it defines terms used in Subpart C; however, some of the defined terms are also used in Subpart B (Applications and Licenses) and/or Subpart D (Technical Operations). For ease of reference, we propose to consolidate all Part 25 definitions into Section 25.103, reserving Section 25.201 for other use.

8. Direct Broadcast Satellite (DBS) Service is currently defined in Section 25.201 as “a radiocommunication service in which signals transmitted or retransmitted by space stations, using frequencies specified in §25.202(a)(7), are intended for direct reception by the general public.” We propose to replace “frequencies specified in §25.202(a)(7)” with “the 12.2-12.7 GHz band,” which are the only frequencies that Section 25.202(a)(7) specifies. Because all DBS space station operators authorized to date offer subscription services, we propose to expand the definition to state that in addition to transmitting signals for reception by the general public, DBS space stations may transmit signals intended for reception by subscribers. We also propose to change “space stations” to “Broadcasting-Satellite Service space stations” to make clear that the term would not apply to space stations operating in the 12.2-12.7 GHz band in Europe or Asia, regions in which the frequency allocations are different.¹³

9. We propose to amend the definition of “Permitted Space Station List” (Permitted List) that currently appears in Section 25.201 to provide more detail on the scope of authority granted when the Permitted List is authorized as a point of communication¹⁴ in a Fixed-Satellite Service (FSS) earth station license. The Permitted List includes all U.S.-licensed geostationary-orbit space stations¹⁵ providing FSS in the conventional C- and Ku-bands,¹⁶ as well as non-U.S.-licensed geostationary-orbit space stations approved for U.S. market access to provide FSS in the conventional C- and Ku-bands.¹⁷ Applicants for FSS earth stations that qualify for routine processing in the conventional C- and Ku-bands may designate the Permitted List as a point of communication in an initial license application or modification application. Once such an application is granted, the earth station may communicate with any space station on the Permitted List, provided that those communications fall within the technical parameters and conditions in the earth station license and any limitations placed on the space station authorization or noted on

¹² 47 C.F.R. §§ 25.103 and 25.201.

¹³ In the United States, DBS satellites transmit in the 12.2-12.7 GHz frequency band allocated to the Broadcasting-Satellite Service. *See* 47 C.F.R. § 2.106.

¹⁴ The space stations that an earth station is authorized to access are referred to as “points of communication.”

¹⁵ While the terms “ALSAT” (*i.e.*, all U.S.-Licensed Space Stations) and Permitted List have been used synonymously, ALSAT is the first entry on the Permitted List, followed by individual non-U.S.-licensed FSS space stations granted market access in the conventional C-and/or Ku-bands. *See Amendment of the Commission's Regulatory Policies to Allow Non-U.S.-Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, IB Docket No. 96-111, First Order on Reconsideration, 15 FCC Rcd 7207, 7210-11, ¶ 6, 7214-16, ¶¶ 16-20 (1999). The current Permitted List is available at <http://www.fcc.gov/ib/sd/se/permitted.html>.

¹⁶ The conventional C-band is comprised of the 3700-4200/5925-6425 MHz frequency bands; the conventional Ku-band is comprised of the 11.7-12.2/14.0-14.5 GHz frequency bands.

¹⁷ Inclusion of non-U.S.-licensed space stations on the Permitted List is by request.

the List.

10. We also propose to add a definition of “Ka-band Space Station Permitted List,” (Ka-band Permitted List) to provide detail on the scope of authority granted when the Ka-band Permitted List is authorized as a point of communication in an FSS earth station license.¹⁸ The Commission’s Ka-band Permitted List includes all U.S.-licensed geostationary-orbit space stations providing FSS in the 20/30 GHz band, as well as those non-U.S.-licensed geostationary-orbit space stations approved for U.S. market access to provide FSS in the 20/30 GHz band.¹⁹ Applicants for FSS earth stations that qualify for routine processing in the 20/30 GHz band may designate the Ka-band Permitted List as a point of communication in an initial license application or modification application. Once such application is granted, the earth station may communicate with any space station on the Ka-band Permitted List, provided that those communications fall within the technical parameters and conditions established in the earth station license and any limitations placed on the space station authorization or noted in the List. Significantly, the earth station may not communicate with a Ka-band space station on the Permitted List in the 18.3-18.8 GHz or 19.7-20.2 GHz band until the space station operator has completed coordination under Footnote US334 to Section 2.106 of the Commission’s rules.²⁰

11. We propose to amend the definition of “routine processing or licensing,” which currently appears in Section 25.201, to reflect the fact that our rules allow for routine processing of earth station applications in bands other than the conventional C- and Ku-bands.²¹ The revised definition that we propose also cross-references the rules providing for routine processing of FSS earth stations and omits out-of-date and inaccurate text.

12. In connection with modifying the definition of “Permitted Space Station List” and “routine processing or licensing” and adding the definition of “Ka-band Permitted Space Station List,” we seek comment on whether we should avoid use of the term ALSAT²² as a synonym for routinely licensed FSS earth stations²³ and as a point of communication in FSS earth station authorizations. The Commission started using the term ALSAT to describe U.S.-licensed FSS space stations operating in the C- and Ku-bands prior to adopting a framework granting market access to non-U.S.-licensed space stations²⁴ and prior to the establishment of newer services such as DBS, Mobile-Satellite Service (MSS), and Satellite Digital Audio Radio Service (SDARS). Earth station applicants who are not aware of the historical context of the term

¹⁸ *Ka-band Permitted List Order*, 25 FCC Rcd at 1541. The Ka-band Permitted List is available at http://transition.fcc.gov/ib/sd/ka_band.html.

¹⁹ Inclusion of non-U.S.-licensed space stations on the Ka-band Permitted List is by request.

²⁰ 47 C.F.R. § 2.106 Footnote US334.

²¹ *See, e.g.*, 47 C.F.R. §§ 25.134(a)(1), 25.138(a), and 25.218(b), (g), and (h).

²² ALSAT is not defined in the rules.

²³ In various proceedings, the Commission has often referred to C- and Ku-band FSS earth stations with routinely authorized technical parameters as “ALSAT” earth stations.

²⁴ The Commission’s *DISCO II Order* implemented the market-opening commitments made by the United States in the World Trade Organization’s Agreement on Basic Telecommunications Service. In particular, the *DISCO II Order* established a framework under which the Commission considers requests by operators of non-U.S.-licensed space stations to serve the market in the United States. This analysis considers the effect on competition in the United States, spectrum availability, eligibility and operating (*e.g.*, technical) requirements, and national security, law enforcement, foreign policy, and trade concerns. *Amendment of the Commission’s Regulatory Policies to Allow Non-U.S.-Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, IB Docket No. 96-111, Report and Order, 12 FCC Rcd 24094, 24107-72, ¶¶ 30-182 (1997) (*DISCO II Order*).

occasionally interpret the term literally (*i.e.*, to mean all licensed satellites and not the more limited subset of FSS space stations included on the Permitted List or included on the Ka-band Permitted List). As a result, continued use of the term “ALSAT earth station” may no longer accurately convey the scope of the authorization. Accordingly, if we adopt the definitions proposed above, we seek comment on whether we should discontinue using the term ALSAT as a point of communication in earth station licenses and as a synonym for routinely licensed FSS earth stations in favor of the defined terms above.

13. The terms “12/14 GHz band,” “20/30 GHz band,” and “L-band” are used in several rule provisions in Part 25, but are not currently defined. We propose to define “12/14 GHz band” and “20/30 GHz band” in Section 25.103 by specifying the frequency bands to which they refer. As used in Part 25, “L-band” refers to the 1525-1559 MHz (space-to-Earth) and 1626.5-1660.5 MHz (Earth-to-space) bands, which are specified in the current definition of “1.5/1.6 GHz Mobile-Satellite Service.” Rather than defining “L-band” in Section 25.103, we propose to replace that term in the rule provisions where it now appears²⁵ with the term “1.5/1.6 MHz MSS bands.”

14. Section 25.214(a) sets forth definitions of the terms “allocated bandwidth” and “frequency assignment” for purposes of the technical rules in that section pertaining to operation of SDARS space stations. We propose to delete the definition of “frequency assignment” in Section 25.214(a)(2), as the meaning of the term as used in that section is self-evident. We also propose to specify the frequencies allocated for SDARS in Section 25.214(c)(1). This would eliminate the need to include a definition of “allocated bandwidth” in Section 25.214(a)(1), which we propose to delete.

15. We propose to delete the definitions of “ambulatory” and “low-tide elevation,” currently included in Section 25.201. These terms are not used in Part 25, other than in the definition section. We also propose to remove the existing definition of “baseline” from Section 25.201 and instead define “baseline” in Section 25.221, which prescribes rules for blanket licensing of C-band earth stations on vessels. “Baseline” is not used in the defined sense -- “the line from which maritime zones are measured” -- in any other section of Part 25.

16. We propose to add a definition of “shapeable antenna beams” in Section 25.103. We propose to use this term in Section 25.114, as explained below. Further, we propose to insert a word in the definition of “geostationary satellite” to conform to the definition of that term in Section 2.1 and to correct typographic errors in the mathematical formula in the definition of “equivalent power flux-density.” We also propose to revise the definition of “coordination distance” to conform to the definition of that term in Section 2.1.

17. Finally, we propose to delete unnecessary words from several definitions, including the definitions of ancillary terrestrial component, ancillary terrestrial component base station, ancillary terrestrial component mobile terminal, earth stations on vessel, equivalent power flux density, NGSO FSS gateway earth station, selected assignment, and vehicle-mounted earth station. Eliminating these words will have no effect on current authorizations.²⁶

B. Reporting Requirements

1. Annual Reports

18. We propose to consolidate annual reporting requirements, which are currently dispersed in several sections of Part 25, into a new rule, Section 25.170, under a new subheading

²⁵ See 47 C.F.R. §§ 25.136(f), 25.149(a) and (b), and 25.253(a), (c), and (h).

²⁶ See the proposed revised definitions in Section 25.103 in Appendix A.

in Subpart B, “Reporting Requirements for Space Station Licensees.” We also propose to make the reporting requirements more consistent among the various satellite services and to establish a uniform due date for filing such reports. The general annual reporting rule that we propose to adopt would apply to the operators of all space stations licensed under Part 25. Further, we propose to clarify in the new rule that operators granted U.S. market access for non-U.S.-licensed space stations are required to file annual reports for those space stations.²⁷

19. Most space station operators must submit annual reports to the Commission detailing the status of their space stations. Depending on the service, the operator may be required to provide the status of satellite construction and expected launch dates, a detailed description of the utilization of in-orbit satellites, any unscheduled outages, or any transponders not available for service.²⁸ These annual reports are due June 30 or October 15, depending on the service.²⁹

20. Proposed Section 25.170 would require U.S.-licensed space station operators, or operators granted U.S. market access, to report annually on June 30: (1) the status of space station construction and anticipated launch date, including any major problems or delays encountered; (2) identification of any space station(s) not available for service or otherwise not performing to specifications, any spectrum that the space station is unable to use, the cause(s) of these difficulties, and the date any space station was taken out of service or the malfunction identified; and (3) a current listing of a U.S. point(s) of contact for resolution of interference problems and emergency response. At the same time, we propose to delete service-specific reporting requirements that are either duplicative of, or are at a level of detail inconsistent with, the reporting requirements we propose here.³⁰ We seek comment on any rule language necessary to ensure that duplicative reports are not filed for the same satellite, and whether there are specialized satellite services, such as remote sensing satellites, for which reporting may not be necessary.

21. Section 4.9(c) of the Commission’s rules³¹ requires operators of space stations that carry common-carrier voice or paging communications to report outages of 30 minutes or longer to the Commission within deadlines triggered by discovery. We propose to eliminate the requirement that operators also list outages of more than 30 minutes in duration in their annual reports because the requirement is redundant insofar as it applies to outages that must be reported under Section 4.9(c) and because we see no need to require temporary outages not subject to Section 4.9(c) to be listed in annual reports.

²⁷ See 47 C.F.R. § 25.137(d), which requires operators of non-U.S.-licensed satellites seeking U.S. market access to demonstrate that the space station meets all applicable Commission requirements, including reporting requirements.

²⁸ See, e.g., 47 C.F.R. §§ 25.142(c) (annual reporting requirements for operators of NGSO MSS space stations), 25.143(e) (annual reporting requirements for operators of 1.6/2.4 GHz and 2 GHz MSS space stations), 25.144(c) (annual reporting requirements for SDARS licensees), 25.145(f)(1) (annual reporting requirements for operators of 20/30 GHz FSS space stations), 25.146(l) (annual reporting requirements for operators of 10.7/14.5 GHz NGSO FSS space stations), and 25.210(l) (annual reporting requirements for operators of FSS space stations and 17/24 GHz BSS space stations).

²⁹ Section 25.143(e) prescribes a filing date of October 15 for annual reports from 1.6/2.4 GHz and 2 GHz MSS licensees, while Sections 25.142(c), 25.145(l), and 25.146(l) prescribe a June 30 filing date for annual reports from other space station licensees.

³⁰ Specifically, we propose to eliminate Sections 25.142(c), 25.143(e), 25.144(c), 25.145(f)(1), 25.146(c), 25.146(l), 25.210(l), and 25.272(b).

³¹ 47 C.F.R. § 4.9(c).

2. Contact Information Reporting Requirements

22. We propose to move the requirements of Section 25.272(b) for providing points of contact to a new Section 25.171 under the new subheading, “Reporting Requirements for Space Station Licensees.” We also propose to condense the text of the requirement and to require operators to update the point of contact information provided under Section 25.170(c) within 10 business days of any change. Maintaining a point of contact with the Commission is essential for promptly resolving interference events and providing timely assistance in an emergency.

3. Space Station Control Arrangements

23. Section 25.114(c)(9) requires space station applicants to include information pertaining to TT&C arrangements in Schedule S of FCC Form 312, which includes data fields for specifying a call sign, street address, and phone number for each earth station performing TT&C functions. We propose to modify this requirement for several reasons. We think that it is unnecessary to require space station operators to specify a street address and phone number for each TT&C station. More generally, space station applicants often do not have concrete plans for TT&C sites at the time when they file their applications. Requiring a space station applicant to specify a TT&C location that is later changed requires the filing of a subsequent license modification application that is otherwise unnecessary. We therefore propose to delete the requirement to submit this information in space station applications. Instead, we propose to require such TT&C information to be submitted after the issuance of space station licenses. To this end, we propose to add new Section 25.172. This rule would require space station operators, including operators of non-U.S.-licensed space stations granted U.S. market access, to submit the following information before commencing commercial operations in the United States: (1) the point of contact information required by proposed Section 25.170(c); (2) the call signs of TT&C earth station(s) located in the United States; and (3) the city and country of any earth station located outside the United States providing TT&C functions for the satellite(s) in question. We propose to require operators already providing U.S. service to submit the information within 30 days of Section 25.172’s effective date. The proposed rule would require operators to file this information electronically through IBFS and to file an update within 10 days if any of this information changes, unless the change is temporary. This information could be critical in the event of an emergency. The Commission needs to quickly locate any TT&C earth stations that may be in the emergency area and verify that the operator is able to maintain control of its satellite(s).

4. Results of In-Orbit Testing

24. Section 25.210(k) requires space station operators to measure the co-polarized and cross-polarized performance of all space station antennas during preliminary in-orbit testing and submit the measurement data to the Commission within 30 days after completing the testing. We propose to amend this provision to require operators to submit the data only upon request from the Commission. We propose to remove the amended provision from Section 25.210(k) and insert it in a new section, Section 25.173, under the proposed subheading for reporting requirements. We also propose to add a provision in Section 25.173 to require space station licensees to notify the Commission at the conclusion of in-orbit testing whether a space station’s measured performance is within authorized limits and whether the space station is capable of using its assigned frequencies.

C. Mobile Terminals Aboard Aircraft

25. Several rules in Part 25 prohibit use of MSS earth station transceivers or Ancillary Terrestrial Component (ATC) mobile terminals aboard civil aircraft because on-board

operation of these devices could interfere with aircraft radionavigation.³² Sections 25.136(a) and 25.143(k) prohibit operation of 1.6/2.4 GHz and 2 GHz MSS earth station transceivers or ATC terminals aboard civil aircraft unless the device “has a direct physical connection to the aircraft cabin or cockpit communication system.” Section 25.135(b) prohibits operation of Non-Voice, Non-Geostationary (NVNG) mobile transceivers aboard civil aircraft if they are capable of radiating in the 108-137 MHz frequency band.³³ Associated rule provisions require “handheld or portable” NVNG transceivers capable of radiating in the 108-137 MHz band and handheld or portable 1.6/2.4 GHz and 2 GHz MSS or ATC transceivers to be labeled with a warning that these devices must not be operated on board civil aircraft.³⁴ There is an identical warning label requirement in Section 25.136(h) for handheld or portable 1.5/1.6 GHz transceivers. However, there is no rule that explicitly prohibits using 1.5/1.6 GHz MSS or ATC transceivers aboard aircraft.

26. We propose to replace these various band-specific use restrictions and labeling requirements with a uniform aircraft use restriction and associated warning label requirement that would apply to all portable transceivers licensed under Part 25. The proposed rule would include a new provision barring on-aircraft operation of portable 1.5/1.6 GHz transceivers. Although the rules pertaining to transceiver operation aboard aircraft are currently included in Part 25, Subpart B (Applications and Licenses), it would be more appropriate to place them in Subpart D (Technical Operation), as they pertain to station operation rather than application content, licensing procedures, or criteria for granting licenses. We therefore propose to insert the consolidated rule in a new section, Section 25.285, in Subpart D.

27. We also propose a change in the scope of the use restriction. The provision exempting transceivers with “a direct physical connection to the aircraft cabin or cockpit communication system” may be too narrow, as it does not clearly apply to devices installed for stand-alone operation that are not connected to other on-board communication facilities. We propose to revise the exception to cover devices that have been installed in aircraft in a manner approved by the FAA or are used with the consent of the pilot. Further, we propose to make it clear that the warning label requirement does not apply to devices that are too large or too heavy to be brought aboard as carry-on luggage or otherwise cannot feasibly be operated by passengers in aircraft cabins. Finally, we propose to amend the consolidated rule to apply to transmit-only devices (*e.g.*, Globalstar “SPOT” terminals)³⁵ as well as transceivers.

D. Milestone Rules

28. The Commission codified standard milestone implementation requirements in 2003 for space station licensees in all satellite services, except for DBS and SDARS.³⁶ These requirements are set forth in Section 25.164 of the rules.³⁷ The rule requires space station

³² See, *e.g.*, *Amendment of the Commission’s Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service*, CC Docket No. 92-76, Notice of Proposed Rulemaking, 8 FCC Rcd 6330, 6335, ¶ 27 (1993); *Amendment of the Commission’s Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service*, CC Docket No. 92-76, Report and Order, 8 FCC Rcd 8450, 8453-54, ¶ 12 (1993) (*Little LEO Order*).

³³ The Commission adopted the provisions in Section 25.135(b) because of concerns that NVNG receivers tuned to the 137-138 MHz MSS downlink band might emit unintentional radiation in the 108-137 MHz band, which is used for aeronautical safety and navigation communications. See *id.*

³⁴ 47 C.F.R. §§ 25.135(b), 25.136(a) and (h), and 25.143(k).

³⁵ See <http://www.findmespot.com/en/index.php> (last visited June 7, 2012).

³⁶ *Space Station Licensing Reform Order*, 18 FCC Rcd at 10827, ¶ 173.

³⁷ 47 C.F.R. § 25.164.

licensees to submit, on or before the respective milestone deadlines, information demonstrating compliance with the implementation milestones for contracting for satellite construction, completing critical design review (CDR), and commencing physical construction.³⁸ Section 25.164 does not include, however, a provision requiring a licensee to demonstrate compliance with the “launch and operate” milestone for geostationary systems or the “launch and operate the first satellite” or “bring [all satellites] into operation” milestones for non-geostationary systems. We propose to add a new paragraph in Section 25.164 providing that licensees must, on or before an applicable deadline for launch or commencement of operation, either certify compliance with the milestone requirement or advise the Commission that the requirement has not been met.

29. We further propose to add a sentence in Section 25.164(a)(4) to clarify what is required to meet a “launch and operate” milestone. This clarification is currently found in Section 25.202(c), but would be more useful in Section 25.164. The new sentence would state that licensees can demonstrate compliance with a launch/operate milestone requirement by certifying that the space station has been launched and placed in its authorized orbital location or non-geostationary orbit and that its in-orbit operation has been tested and found to be consistent with the terms of the authorization.

30. For the CDR and commence physical construction milestones, Section 25.164 simply requires space station licensees to submit “information . . . sufficient to demonstrate” compliance.³⁹ Commission Orders and Public Notices have discussed what evidence is sufficient to demonstrate compliance with the CDR and the commence physical construction milestones.⁴⁰ We invite comment on whether we should provide greater specificity in the rules concerning the evidence appropriate for demonstrating compliance with the CDR and commence physical construction milestones. We encourage parties to detail what particular evidence should be submitted to make a showing under this process.

31. We propose to delete provisions in Sections 25.164(c), (d), and (e) that exempt licensees of satellite systems licensed prior to September 11, 2003 from the milestone requirements for contracting for satellite construction, completing CDR, and commencing physical construction. Those grandfathering provisions are now obsolete, since no space stations licensed prior to September 11, 2003 are still under construction. Similarly, we propose to delete an obsolete provision in Section 25.164(g) that exempts systems licensed prior to September 20, 2004 from the milestone requirement for hybrid systems. Finally, we propose to delete service-specific milestone provisions in other sections of Part 25 that are redundant and/or inconsistent

³⁸ Operators of non-U.S.-licensed space stations that have been granted market access in the United States must also submit milestone compliance showings. See 47 C.F.R. § 25.137(d)(1).

³⁹ 47 C.F.R. §§ 25.164 (d) and (e).

⁴⁰ See, e.g., *AtContact Communications, LLC*, Order, 25 FCC Rcd 7567 (2010) (*AtContact*); *Space Station Licensing Reform Order*, 18 FCC Rcd at 10833, ¶ 191; *Policy Branch Information*, Public Notice, Report No SAT-00610, 24 FCC Rcd 7703 (2009) (finding that Intelsat LLC commenced physical construction of its satellite based on certifications that all payments under the contract had been made to date and photographs of the satellite under construction); *Policy Branch Information*, Public Notice, Report No. 07-00476, 22 FCC Rcd 18392 (2007) (finding that Loral Skynet Corporation commenced physical construction based on photographs showing propulsion equipment integrated with the satellite structure, declarations from the spacecraft manufacturer that the manufacturing contract remained in effect, that all payments due had been made, and that 70 percent of the flight equipment was constructed); and *Policy Branch Information*, Public Notice, Report No. SAT-07-00469, 22 FCC Rcd 16284 (2007) (finding that Star One commenced physical construction based on declarations from Star One SA's Director of Engineering that 80 percent of payments due under the contract had been made and on photographs showing the satellite payload integrated into the satellite bus).

with the current or proposed provisions in Section 25.164.⁴¹

E. Form 312EZ and the Autogrant Procedure

32. In public notices released in 1999 and 2000, the Commission announced an “autogrant” procedure for “routine” license applications for FSS earth stations that would operate in the conventional C-band (*i.e.*, the 3700-4200 MHz downlink band and the 5925-6425 MHz uplink band) or conventional Ku-band (11.7-12.2 GHz downlink and 14.0-14.5 GHz uplink).⁴² The public notices stated that the Commission would consider an application for such earth stations as “routine” under the following circumstances: (i) the equivalent diameter of the station’s antenna(s) is 4.5 meters or greater if the station will operate in the conventional C-band or 1.2 meters or greater if the station will operate in the conventional Ku-band; (ii) the performance of the station’s antenna(s) comports with the standards in Section 25.209(a) and (b); (iii) the antenna performance is verified in accordance with applicable provisions of Section 25.132; (iv) input power to the antenna(s) will not exceed applicable limits specified in Sections 25.134, 25.211 and 25.212; (v) the proposed station has been successfully coordinated with terrestrial systems if the station will operate in the conventional C-band; (vi) the applicant has provided an environmental impact statement pursuant to Section 1.1311 of the Commission’s rules, if required; (vii) the applicant does not propose to communicate via non-U.S.-licensed satellites not on the Permitted List; and (viii) the proposed operations are otherwise consistent with applicable provisions of the Commission’s rules. Applications eligible for the autogrant procedure would be deemed to be granted 35 days after the date they appear on public notice as accepted for filing, provided no objection was filed during the 30-day notice period.

33. In a rulemaking order released in 2003, the Commission adopted a simplified application form, Form 312EZ, to be used for earth station applications eligible for autogrant processing.⁴³ Rules pertaining to use of Form 312EZ are set forth in Section 25.115(a)(2), but these provisions do not fully specify the eligibility criteria or mention the autogrant procedure. In the interest of improving transparency, we propose to amend Section 25.115(a)(2) to codify the autogrant procedure and list all eligibility criteria. Consequently, there would be no need to retain “catchall” provision viii in the list above, which is currently codified in Section 25.115(a)(2)(ii). We also propose to amend an existing provision in Section 25.115(a)(2) that precludes use of Form 312EZ to apply for ESV or VMES licenses to additionally preclude use of that form to apply for licenses for aircraft earth stations. Further, we propose to codify a practice of permitting applicants to apply for only one transmitting antenna on Form 312EZ. Finally, we invite comment on adding a further eligibility criterion pertaining to FAA notification.⁴⁴

34. When it adopted Form 312EZ, the Commission did not make the form available to applicants proposing earth stations that would operate in the 20/30 GHz frequency bands

⁴¹ See 47 C.F.R. §§ 25.143(e)(2) and (3), 25.145(f)(1)(iv), and 25.146(k). Under the service-specific provisions in Sections 25.143, 25.145, and 25.146, compliance certification is due 10 days after each milestone deadline.

⁴² *Commission Launches Earth Station Streamlining Initiative*, Public Notice, 14 FCC Rcd 9834 (1999); *Commission Launches C-Band Earth Station Streamlining Initiative*, Public Notice, 15 FCC Rcd 24075 (2000).

⁴³ *2000 Biennial Regulatory Review -- Streamlining and Other Revisions of Part 25 of the Commission's Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations*, IB Docket No. 00-248, Third Report and Order, 18 FCC Rcd 13486, 13505-06, ¶¶ 52-54 (2003) (*2003 Streamlining Order*).

⁴⁴ See 47 C.F.R. § 25.113(c) and (e) and discussion in ¶ 44, *infra*.

because it was considering certain revisions of the 20/30 GHz FSS service rules.⁴⁵ Those issues have been resolved,⁴⁶ and 20/30 GHz GSO FSS earth stations are eligible for routine processing under Section 25.138(a). We tentatively conclude that Section 25.115 should be changed to extend Form 312EZ and autogrant eligibility to routine applications for individual 20/30 GHz earth stations that would communicate via geostationary satellites previously coordinated with Federal government systems pursuant to Footnote US334.⁴⁷ We do not intend to extend the autogrant procedure to applications not yet coordinated with government systems because we cannot be certain that such coordination would be successfully completed within 35 days of the public notice date.

35. Section 25.115(a)(3) provides that if Form 312EZ “is not available,” an applicant for a transmitting earth station that would otherwise be required to use that form must use Form 312, Main Form and Schedule B, instead. We believe that if our proposal to fully specify the eligibility criteria for using Form 312EZ is adopted, this provision will no longer be needed, and therefore, we propose to delete it.

F. Rain Fade Compensation

36. The Commission’s rules allow earth station operators to increase the power of uplink transmissions above otherwise applicable limits to overcome “rain fade,” *i.e.*, attenuation of transmitted signals due to the scattering effect of precipitation in the atmosphere. Most, but not all, of the rain fade compensation provisions are set forth in Section 25.204. Some of these provisions are redundant or contradictory. For example, Section 25.204(e) contains a 1 dB rain fade compensation allowance that seems, on its face, to apply to any earth station transmission in frequency bands above 10 GHz. Yet, Section 25.204(f) prescribes a different rain fade compensation allowance for stations transmitting in the 13.77-13.78 GHz band, and Section 25.204(g) prescribes still another rain fade compensation rule for earth stations transmitting to geostationary satellites in the 24.75-25.25 GHz band. In addition, Section 25.138(a)(5) contains a more complex rain fade compensation allowance for earth stations transmitting in the 28.35-28.6 GHz or 29.25-30.0 GHz band.

37. We propose a number of revisions to these provisions. First, we propose to amend the current rain fade compensation rule in Section 25.204(e) to apply only to uplink transmissions in the 14.0-14.5 GHz band. This change would be consistent with the Commission’s intent when it adopted that provision⁴⁸ and would eliminate conflict with other

⁴⁵ 2003 Streamlining Order at 13506, ¶ 56.

⁴⁶ See *The Establishment of Policies and Service Rules for the Non-Geostationary Satellite Orbit, Fixed Satellite Service in the Ka-band*, IB Docket No. 02-19, Report and Order, 18 FCC Rcd 14708 (2003); *2000 Biennial Regulatory Review -- Streamlining and Other Revisions of Part 25 of the Commission's Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations*, IB Docket No. 00-248, Sixth Report and Order, 20 FCC Rcd 5593, 5611, ¶¶ 40-41 (2005); and *Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use*, IB Docket No. 98-172, Second Order on Reconsideration, 17 FCC Rcd 24248, 24256-59, ¶¶ 20-22 (2002). See also *Ka-band Permitted List Order*, 25 FCC Rcd at 1546, ¶ 11.

⁴⁷ 47 C.F.R. § 2.106, Footnote US334 requires coordination between Federal space and terrestrial systems and non-Federal space and terrestrial systems operating in certain frequency bands.

⁴⁸ See *Amendment of Part 25 of the Commission's Rules and Regulations to Reduce Alien Carrier Interference Between Fixed-Satellites at Reduced Orbital Spacings and to Revise Application Processing Procedures for Satellite Communication Services*, CC Docket No. 86-496, Second Report and Order and

provisions prescribing rain fade allowances for earth stations transmitting in other frequency bands above 10 GHz. Second, we propose to move the rain fade rule for 20/30 GHz earth stations in Section 25.138(a)(5) and the rain fade rule for 17/24 GHz BSS feeder-link stations in Section 25.204(g) to Section 25.204(e). Third, we propose to eliminate the rain fade provision for 20/30 GHz earth stations in Section 25.204(g), which is redundant with respect to the rule that we propose to move from Section 25.138(a)(5) and is unduly restrictive in making rain fade compensation mandatory. As a result of these proposed changes, the rain fade compensation rules now interspersed throughout Part 25 would be contained in Section 25.204(e). In addition to those changes, we propose to include text in the rain fade rule for Ku-band stations in Section 25.204(e)(1) to make clear that it applies to earth stations that have been routinely licensed based on conformance with input power limits specified in Sections 25.134, 25.211, or 25.212.

38. Moreover, we invite comment on adopting a rule allowing earth stations transmitting in frequencies above 10 GHz, that are not subject to any of the foregoing rain fade rules, to increase uplink power to the extent needed to close communication links, provided that no harmful interference results. Commenters should address potential impact on systems sharing the same bands or operating in adjacent bands.

G. Other Proposed Changes to Subpart B – Applications and Licenses

39. Having discussed revisions that encompass more than one rule section, we now discuss changes to specific rules in the order in which they appear in Part 25. Subpart B of Part 25 includes rules relating to filing applications and licensing procedures. As discussed below, we propose to make several substantive changes to the information requirements for space and earth station applications. These proposed changes are designed to update requirements to reflect evolving technology, increase the number of earth station applications eligible for routine processing, and eliminate information requirements that are no longer needed. In addition, we propose other non-substantive changes that remove redundant or unnecessary language, and clarify potentially confusing text.

1. Section 25.111 “Additional information”

40. Section 25.111(b) prescribes requirements pertaining to international coordination procedures for U.S.-licensed space stations.⁴⁹ The first sentence states that “applicants, permittees, and licensees of radio stations governed by this part shall provide the Commission with all information it requires for the Advance Publication, Coordination, and Notification of frequency assignments pursuant to the International Radio Regulations.” We propose to add that the required information includes “due diligence” information.⁵⁰ We also propose to change the phrase “international Radio Regulations” to “Radio Regulations of the International Telecommunication Union.” We also propose to correct a grammatical error in the next sentence in Section 25.111(b), which states that protection from interference caused by stations authorized by other national administrations will be guaranteed only if international coordination procedures are timely completed. We also propose to insert the word “such” in the third sentence of Section 25.111(b), which would then read: “Any radio station for which such

Further Notice of Proposed Rulemaking, 8 FCC Rcd 1316, 1324, ¶¶ 49-50 (1993) (*Alien Carrier Interference Second Report and Order*).

⁴⁹ 47 C.F.R. § 25.111(b).

⁵⁰ ITU Resolution 49 (Rev. WRC-2003) requires a notifying administration to send “due diligence” information to the ITU's Radiocommunication Bureau (BR) that includes, among other things, the name of the operator, the satellite name and orbital characteristics, the spacecraft manufacturer, the launch services provider, the date of execution of the launch services contract, and the scheduled launch time window. This information must be submitted before the ITU deadline for bringing the satellite network into use.

coordination has not been completed may be subject to additional terms and conditions”

41. Since 2002, the ITU has assessed cost recovery fees for processing information filings for space networks. The International Bureau issued a Public Notice in 2001 announcing that an applicant, licensee, or other party on whose behalf the International Bureau submits filings to the ITU will be responsible for timely payment of these fees. The Public Notice also stated that such parties will be required to certify that they accept this obligation.⁵¹ We propose to add a new rule, Section 25.111(d), that would codify this policy. The rule would state that the Commission will submit the information required by Sections 25.111(b) or (c) to the ITU only after the applicant or licensee has filed a signed declaration that it unconditionally accepts all resultant ITU cost-recovery responsibility, referencing the call sign and international name of the satellite(s) in question and including contact information. The rule would also require the party in interest to update the contact information as necessary. Finally, the rule would require the party in interest to remit payment of any cost-recovery fee by the due date specified in the ITU invoice and would state that a license granted in reliance on such a declaration, and disposition of any future or pending Part 25 application from the same party, will be contingent upon discharge of any such payment obligation.

2. Section 25.112 “Defective applications”

42. Pursuant to the first-come, first-served licensing framework, the Commission places applications for new satellites at new orbital locations and market access requests for non-U.S.-licensed satellites at new orbital locations in a processing “queue,” and considers them in the order in which they are filed.⁵² In certain circumstances, we make an orbital location available by announcing that a filing window will open at a specific date and time. In these situations, operators often file multiple, identical applications just before and after the filing window opens in an attempt to attain first-in-line processing status.⁵³ We regularly dismiss applications and market access requests filed before the filing window opens as premature.⁵⁴ The rules do not currently include any provision, however, for dismissing duplicative applications filed after a filing window has opened. Such duplicative applications can cause public confusion and administrative delay. We therefore propose to amend Section 25.112(a), which specifies grounds for dismissing applications, to provide for dismissal of duplicative applications in a processing queue. Thus, we would maintain on file the first application or market access request filed by a company after the filing window opens and dismiss any duplicative applications and market access requests subsequently filed by the same party.

3. Section 25.113 “Station licenses and launch authority”

43. Section 25.113 contains provisions pertaining to construction permits, Federal Aviation Administration (FAA) notification requirements, earth station painting and lighting requirements, launch authority, and authority for operation of spare satellites.⁵⁵ Section 25.113(a)

⁵¹ *Implementation of ITU Cost Recovery Charges for Satellite Network Filings*, Public Notice, 16 FCC Rcd 18732 (Int’l Bur. 2001).

⁵² See 47 C.F.R. §§ 25.158(b) and 25.137(c).

⁵³ For example, an applicant might file its application several seconds before the filing window opens, and multiple times after the filing window opens. As a result, the applicant would have multiple identical applications on file. Only the first timely filed application is needed to establish a place in the processing queue.

⁵⁴ See, e.g., *Policy Branch Information*, Public Notice, DA No. 12-948 (Jan. 15, 2012).

⁵⁵ 47 C.F.R. § 25.113.

states that construction permits are not required for earth stations. Rather, applicants may construct earth stations at their own risk. Section 25.113(a) also states that applicants for earth station licenses must comply with the provisions of Section 1.1312 of the Commission's rules regarding environmental impact, prior to beginning construction. We propose to amend this rule to add that earth station applicants must also comply with requirements in Part 17 of the Commission's rules pertaining to construction, marking, and lighting of antenna structures. We also propose to insert similar provisions in Section 25.113(b) pertaining to construction of ATC base stations.⁵⁶

44. Sections 25.113(c) and (e) require applications for new earth stations or for earth station modifications involving alteration of the overall height of one or more existing antenna structures to include an FCC Antenna Structure Registration Number for the antenna structure, if assigned. If no such number has been assigned, Section 25.113(e) requires the applicant to state whether prior FAA notification is required by Part 17 of the Commission's rules and, if so, whether the applicant or owner of the structure has notified the FAA of the proposed construction or alteration and applied for an Antenna Structure Registration Number. Applicants who maintain that prior FAA notification is not required for construction or alteration of a structure with overall height more than 6.1 meters above ground level must explain in the application why such prior notification is not required. These requirements are also found in Section 25.130(e), which applies specifically to license applications for transmitting earth stations.⁵⁷ Because they prescribe content requirements for earth station applications, we propose to move these rule provisions from Section 25.113 to Section 25.115, which contains general requirements for earth station licensing, and delete the duplicative provisions in Section 25.130(e).⁵⁸ We also propose to revise the text of these provisions to make them more succinct.

45. Section 25.113(d) states that owners of earth station antenna structures must comply with painting, marking, and lighting requirements in Part 17 of the Commission's rules and that if the structure is owned by a party other than the station licensee, the "licensee or permittee" will be held responsible for compliance with such requirements in the event of default by the owner. Because these are operating requirements rather than licensing rules, we propose to remove them from Section 25.113, which is in Subpart B (Applications and Licenses) and reinsert them in a new section, Section 25.286, in Part 25, Subpart D (Technical Operations). We also propose to delete the words "or permittee" from this provision because the Commission does not issue separate permits for earth station construction.⁵⁹

46. Section 25.113(f) states that construction permits are not required for U.S.-licensed space stations. This statement is overly broad in that it does not recognize that Section 319(d) of the Communications Act requires construction permits for broadcasting stations.⁶⁰ As defined in the Communications Act, "broadcasting" means "dissemination of radio

⁵⁶ Although licensed under Part 25, ATC base stations are not earth stations, as they do not transmit to, or receive signals from, space stations. See *Flexibility for Delivery of Communications by Mobile-Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Band*, IB Docket No. 01-185, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 1962 (2003); Order on Reconsideration, 18 FCC Rcd 13590 (2003); Memorandum Opinion and Order and Second Order on Reconsideration, 20 FCC Rcd 4616 (2005).

⁵⁷ The requirements are also restated in Section 25.120(c), which applies specifically to applications for special temporary authority.

⁵⁸ See proposed Section 25.115(j) in Appendix A.

⁵⁹ See 47 C.F.R. § 25.113(a).

⁶⁰ See Section 319(d) of the Communications Act of 1934, 47 U.S.C. § 319(d).

communications intended to be received by the public, directly or by the intermediary of relay stations.”⁶¹ Service provided only to paying subscribers is not deemed to be broadcast service for purposes of the Act, however.⁶² While no space stations currently licensed by the Commission operate as broadcast stations, an applicant could seek authority to do so.⁶³ In view of this, we propose to amend the first sentence in Section 25.113(f) to state that construction permits are not required for U.S.-licensed space stations, unless they are authorized to disseminate radio communications to the public at large.

47. Section 25.113(h) states that licensees of non-geostationary-orbit (NGSO) satellite systems need not apply separately for authority to operate – *i.e.*, place into active service – technically identical in-orbit spare satellites previously authorized by a blanket space station license. This provision requires the licensee to notify the Commission that it has activated an in-orbit spare within 30 days of the activation. It also requires the licensee to certify that the activated spare did not increase the number of operating satellites in the licensee’s system above the maximum number authorized by the license and will be operated within the terms and conditions of the license. Section 25.113(h) requires the licensee to file the notification and certification electronically on FCC Form 312. Section 25.143(d) and Section 25.146(n) similarly provide that 1.6/2.4 GHz MSS, 2 GHz MSS, and 12/14 GHz NGSO FSS licensees may activate technically identical in-orbit spares without applying for additional authority, provided that they notify the Commission and certify that the authorized number of operating space stations has not been exceeded. Unlike Section 25.113(h), however, Sections 25.143(d) and 25.146(n) require the licensee to file the notification and certification within 10 days and do not require the licensee to submit the filing on Form 312. To resolve these discrepancies, we propose to amend Section 25.113(h) to require the notification and certification to be filed within 10 days and to eliminate the requirement to submit such filings on Form 312. We also propose to remove and reserve Section 25.143(d) and to delete Section 25.146(n) as redundant. We invite comment as to whether we should amend Section 25.113(h) to require the licensee to certify that it has tested the activated in-orbit spare and that its operations conform with the license terms.

4. Section 25.114 “Applications for Space Station Authorizations”

48. Section 25.114 prescribes content requirements for space station applications.⁶⁴

⁶¹ *Id.*, Section 3, 47 U.S.C. § 153.

⁶² See *Subscription Video Services*, 2 FCC Rcd 1001 (1987), *aff’d sub nom. National Association for Better Broadcasting v. FCC*, 849 F.2d 665 (D.C. Cir. 1988).

⁶³ SDARS, DBS, and 17/24 GHz BSS space stations applicants must indicate in their license application whether they seek to operate on a broadcast or non-broadcast basis, which affects the length of their license terms. Based on this election, all currently licensed SDARS, DBS, and 17/24 GHz BSS space stations have been authorized to disseminate programming to paying subscribers rather than to the general public. See *17/24 GHz BSS 2007 Report and Order and FNPRM*, 22 FCC Rcd at 8847-48, ¶ 8 and n.91 (2007) (while anticipating that most 17/24 GHz BSS operators would offer subscription service, the Commission acknowledged the possibility that a 17/24 GHz BSS licensee might choose to provide broadcast service); *Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band*, IB Docket No. 95-91, Report and Order, Memorandum Opinion, and Further Notice of Proposed Rulemaking, 12 FCC Rcd 5754, 5788-89, ¶ 84 (1997) (allowing SDARS licensees the flexibility to propose operation either as a broadcasting or subscription service); and *Inquiry into the Development of Regulatory Policy in regard to Direct Broadcast Satellites for the Period Following the 1982 Regional Administrative Radio Conference*, Report and Order, 90 FCC 2d 676 (1982), *aff’d sub nom National Association of Broadcasters v. F.C.C.*, 740 F.2d 1190 (1984) (affording similar flexibility to DBS operators).

⁶⁴ 47 C.F.R. § 25.114.

As discussed in detail in the following paragraphs, we propose to amend various provisions of this section to eliminate obsolete or otherwise unnecessary requirements. We also propose to add several new requirements to Section 25.114 addressing radio frequency interference characteristics and orbital parameters of space stations and revise this section's organization, as explained more fully below.

a. Section 25.114(a)

49. Section 25.114(a) states that a comprehensive proposal shall be submitted for each proposed space station on FCC Form 312, Main Form and Schedule S, together with attached exhibits required by Section 25.114(d). We propose to amend Section 25.114(a) to clarify that a space station application can be submitted either for a single space station or for a non-geostationary satellite constellation. In connection with this proposed change, we propose to delete Section 25.114(e), which states that a single application may be filed for a constellation of technically identical non-geostationary-orbit space stations. The provision that we propose to add in Section 25.114(a) would not preclude an applicant from requesting blanket authority for a constellation of non-geostationary space stations that are not technically identical.

b. Section 25.114(c)

50. Section 25.114(c) contains a list of the types of information that space station applicants must provide in the FCC Form 312 (Main Form and Schedule S). Section 25.114(c)(4) requires applicants to specify various technical parameters pertaining to the characteristics of proposed space stations and the properties of the radio frequency emissions they would transmit and receive. The first of these provisions, Section 25.114(c)(4)(i), requires the applicant to specify “[r]adio frequencies and polarization plan (including beacon, telemetry, and telecommand functions), center frequency, and polarization of transponders (both receiving and transmitting frequencies).” The ITU now assesses interference separately for uplinks and downlinks since current satellite designs are more complex with variable transponder sizes and large numbers of spot beams. We believe that the Commission should follow this approach. We therefore propose to amend this provision to state that applicants must provide the frequency characteristics of each uplink and downlink beam. This will enable us to evaluate the interference potential of space station uplink beams and downlink beams separately, rather than on a transponder-by-transponder basis. In addition, some space stations can vary the bandwidths of receive and transmit channels with on-board processing. Instead of requiring applicants for such space stations to specify channel bandwidths, we propose to require them to specify the maximum range of frequencies over which each beam can operate. We invite comment as to whether we should amend Section 25.114(c)(4)(i) to require applicants to specify the center frequencies of TT&C beams within a 5 megahertz range or a range of 2 percent of the assigned bandwidth, whichever is smaller.

51. We propose to revise Section 25.114(c)(4)(ii) to add a requirement to specify the maximum equivalent isotropically radiated power (EIRP) density for each transmitting beam of a given space station. This change would allow us to delete requirements in this rule to specify a subset of technical characteristics used to calculate EIRP density, such as emission designators, allocated bandwidths of emissions, final amplifier output power, and net losses between amplifier output and antenna input. We also propose to adopt modified information requirements in Section 25.114(c)(4)(ii) pertaining to shapeable antenna beams to reduce paperwork burdens for applicants proposing use of shapeable beam technology.⁶⁵

52. Section 25.114(c)(4)(iii) requires a space station applicant to identify “which beams are connected or switchable to each transponder and TT&C function.” We propose to

⁶⁵ Shapeable antenna beams are antenna beams whose shape can be varied by electronic or mechanical means.

delete this provision because it would be rendered unnecessary by the changes in Section 25.114(c)(4)(i) proposed above.

53. Section 25.114(c)(4)(iv) requires applicants to specify receiver noise temperature. We propose to delete this provision because we can easily calculate receiver noise temperature from the gain-to-temperature ratio and peak gain data required by proposed Section 25.114(c)(4)(v).

54. Section 25.114(c)(4)(v) requires applicants to specify “the relationship between satellite receive antenna gain pattern and gain-to-temperature ratio and saturation flux density for each antenna beam . . .” We propose to amend this provision to require that applicants specify peak antenna gain and gain-to-temperature ratio at beam peak. This revised requirement is sufficient to allow us to determine the interference susceptibility of such beams. For TT&C beams, we propose to require applicants to specify the minimum required uplink power flux density, which would enable us to assess the interference susceptibility of beams used TT&C. We also propose to add a requirement to specify the minimum and maximum saturation flux density levels of receiving beams fed into transponders, which would similarly be useful in assessing interference susceptibility.

55. Section 25.114(c)(4)(vi) requires applicants to specify the gain of transponder channels. Based on our experience and changes in satellite design, we propose to delete this requirement. This information is no longer necessary in performing an assessment of interference potential.⁶⁶ We also propose removing Section 25.114(c)(4)(vii), which requires applicants to specify predicted receiver and transmitter channel filter response characteristics. These parameters are not required to perform interference calculations. We are not proposing to eliminate out-of-band emission limits, however, and operators should take into consideration the potential interference environment, including adjacent frequency bands.

56. Section 25.114(c)(5) requires applicants to specify orbital locations and station-keeping tolerances for geostationary space stations. Section 25.114(c)(5)(i) allows an applicant to propose alternate orbital locations. This reflects a former “orbital location fungibility” policy that the Commission eliminated when it reformed space station licensing procedures in 2003.⁶⁷ Hence, we propose to delete the phrase “or locations if alternatives are proposed” from this provision. Section 25.114(c)(5)(ii) requires an applicant to list “the factors that support the orbital location assignment or assignments,” *i.e.*, to state reasons for assigning the proposed orbital location(s) to the applicant. The need for such information was also eliminated by the 2003 reform.⁶⁸ We therefore propose to delete this requirement. In addition, we propose minor changes in Sections 25.114(c)(5)(iii) and 25.114(c)(5)(iv) to delete redundant phrases.

57. Section 25.114(c)(6) requires applicants to specify orbital parameters for non-geostationary satellites. Applicants enter these parameters in tabular data fields in Schedule S. One such parameter currently collected in Schedule S, but not listed in Section 25.114(c)(6), is the initial phase angle of a non-geostationary satellite in its orbital plane at a reference time. This information is needed for properly modeling non-geostationary satellite constellations. We propose to add a provision to Section 25.114(c)(6) to require applicants to specify this parameter. We also propose to delete the unnecessary phrase “applicable information relating to” from Section 25.114(c)(6)(i).

⁶⁶ The current content of Section 25.114(c)(4)(vi) will be replaced by the current contents of Section 25.114(d)(3). See discussion of Section 25.114(d)(3), *infra*.

⁶⁷ *Space Station Licensing Reform Order*, 18 FCC Rcd at 10821-22, ¶ 158.

⁶⁸ *Id.*

58. Section 25.114(c)(7) requires applicants for geostationary space stations to specify “the accuracy with which the orbital inclination, the antenna axis attitude, and longitudinal drift will be maintained.” We propose to move the requirement to specify antenna axis attitude accuracy to Section 25.114(c)(5) because that parameter is related to the station-keeping accuracy parameters listed in that Section. We propose to delete the requirements to specify orbital inclination accuracy and longitudinal drift accuracy, which are redundant, as the same information is required by provisions in Section 25.114(c)(5). These changes would result in removing all of the current text from Section 25.114(c)(7). We propose to replace this text with an amended version of the current provisions in Section 25.114(d)(4).⁶⁹ We also propose to codify the requirement to include a general specification of the frequency bands on the proposed satellite(s), which is currently collected in Schedule S, in the revised Section 25.114(c)(7).

59. Section 25.114(c)(8) requires applicants to specify power flux density levels within each proposed coverage area and energy dispersal necessary to comply with limits in Section 25.208. For clarification, we propose to amend this provision by changing “[c]alculation of” to “[c]alculated,” “power flux density levels” to “maximum power flux density levels,” and “energy dispersal” to “energy dispersal bandwidths.”

60. Section 25.114(c)(10) requires the applicant to specify spacecraft weight and dimensions, on-ground and in-orbit mass, power budgets at beginning and end of life, estimated space station operational lifetime, reliability of the space station, and the basis for the reliability estimate. We propose to retain the requirement to specify estimated operational lifetime. We propose to delete the other requirements because they are either collected elsewhere or are unnecessary.

61. Section 25.114(c)(11) requires an applicant to indicate whether the proposed space station will be operated on a common carrier or non-common carrier basis. If the applicant proposes to operate on a non-common carrier basis, the rule requires a general description of the non-common-carrier transactions and specification of “the number of transponders to be offered on a non-common-carrier basis.” We propose to delete the requirement to describe transactions and specify the number of transponders to be used for non-common-carrier services, as there is no need for routine review of such information. We intend to continue requiring satellite license applicants to specify whether they plan to provide common carrier or non-common carrier services.

62. Section 25.114(c)(12) requires an applicant to estimate the dates when satellite construction will commence, when such construction will be completed, when the satellite(s) will be launched, and when they will be placed in service. The Commission’s now-standard milestone rules and associated reporting requirements⁷⁰ reduce the need for such time estimates in license applications. Section 25.113(f) already requires that applicants planning to commence construction at their own risk must notify the Commission in writing prior to commencing construction. We therefore propose to delete Section 25.114(c)(12).⁷¹

63. Section 25.114(c)(13) requires applicants to provide “[t]he polarization information specified in §§ 25.210(a)(1), (a)(3), and (i), to the extent applicable.”⁷² For clarity, we propose to amend Section 25.114(c)(13) to require applicants to specify in Schedule S the

⁶⁹ See ¶ 69, *infra*, for a description of those provisions.

⁷⁰ See 47 C.F.R. § 25.164.

⁷¹ Applicants planning to complete construction and launch on an accelerated schedule will, of course, be free to apprise the Commission of such arrangements.

⁷² 47 C.F.R. § 25.114(c)(13).

polarization information necessary for determining compliance with Section 25.210.

c. Section 25.114(d)

64. Section 25.114(d) lists the types of information space station applicants must provide in a narrative attachment. In the following paragraphs, we propose changes to specific subsections of Section 25.114(d) in consecutive order.

65. Section 25.114(d)(1) requires the applicant to provide a “[g]eneral description of the overall system facilities, operations, and services.” We propose to amend this provision to include a simplified requirement that the applicant explain how space station receiving beams would be connected to transmitting beams.

66. Section 25.114(d)(2) requires space station applicants to specify any feeder link and/or inter-satellite service frequencies requested for the satellite, “together with any demonstration otherwise required by this chapter for use of those frequencies (*e.g.*, §§ 25.203(j) and (k)).” The requirement to specify feeder link and inter-satellite service frequencies is redundant, as Section 25.114(c)(4)(i) requires applicants to enter the same information in Schedule S. The cross-reference to Section 25.203(j) is redundant, moreover, as the information that Section 25.203(j) requires is also required by Sections 25.114(c)(4)(i) and 25.114(d)(3). Further, the cross-reference to Section 25.203(k) is inappropriate because that provision does not prescribe a content requirement for space station applications. We therefore propose to delete Section 25.114(d)(2).

67. Section 25.114(d)(3) requires space station applicants to provide predicted antenna gain contour(s) for each satellite transmit and receive beam and requested orbital location. The rule requires applicants to attach gain contour diagrams for geostationary space stations in .gxt files, which can be opened with the GIMS software program.⁷³ Consequently, applicants for space stations with many transmit and/or receive beams must attach a large number of .gxt files to their applications. Allowing applicants to attach the contour diagrams in a GIMS container file,⁷⁴ instead, would significantly reduce paperwork burdens on applicants and Commission staff, because all of the diagrams could be included in one data file. We therefore propose to amend this provision to require applicants to submit antenna gain pattern contour diagrams for geostationary orbit satellites in a GIMS-readable format.⁷⁵ Because applicants submit such gain contour diagrams as attachments to Schedule S, we further propose to move this requirement to Section 25.114(c)(4)(vi).

68. In the interest of promoting administrative efficiency and reducing paperwork burdens for applicants, we propose to adopt a provision that would allow applicants for space stations with a large number of identical spot beams, other than DBS space stations, to provide antenna gain contour diagrams for one transmit and one receive antenna beam. Rather than supplying redundant information for the remaining beams the applicant must supply one of the following: (1) a map showing the locations of all of the spot beams, (2) a table giving the geographic locations in latitude and longitude to within 0.1 degree of the antenna beam

⁷³ GIMS is the ITU Radiocommunication Bureau’s Graphical Interference Management System software program. The GIMS program accepts antenna pattern contour diagram electronic files in two formats. One is a .gxt file containing a textual representation of graphical data. The other is a GIMS container file containing a database of antenna pattern contour diagrams in Microsoft Access database format. *See* <http://www.itu.int/en/ITU-R/software/Pages/gims.aspx> (last accessed April 4, 2012).

⁷⁴ *Id.*

⁷⁵ This includes the GIMS container file and .gxt files. We would prefer that applicants use the GIMS container file when there are 10 or more diagrams to attach.

boresights, or (3) a map of the isolines formed by combining some or all of the spot beams into one composite beam. We propose to insert this provision into Section 25.114(d)(3), which would be vacated by the changes proposed in paragraph 67.

69. Section 25.114(d)(4) requires space station applicants to describe the types of services to be provided, the areas to be served, the transmission characteristics and performance objectives for each type of proposed service, details of the link noise budget, typical or baseline earth station parameters, modulation parameters, and overall link performance analysis (including analysis of the effects of each contributing noise and interference source). We propose to retain the requirement to describe the services to be provided and the areas to be served and delete the other requirements listed above, which are either redundant or require the applicant to submit information not needed for interference assessment. Schedule S collects information about the services to be provided and the service areas, so we propose to move the requirement to provide such information to Section 25.114(c)(7).

70. We propose to delete the first sentence of Section 25.114(d)(5). The substance of this sentence is repeated in the next sentence of that provision. We also propose to clarify this provision by changing “power flux density” to “maximum power flux density.”

71. Section 25.114(d)(7) states that certain applicants must include information required by Section 25.140(b)(1), which, in turn, refers back to Section 25.114.⁷⁶ We propose to delete this circuitous cross-reference from Section 25.114(d)(7).

72. Section 25.114(d)(10) states that applications for 1.6/2.4 GHz Mobile-Satellite Service space stations must include “all information specified in § 25.143.” We propose to amend this provision to specifically cross-reference Section 25.143(b), which is the only paragraph in Section 25.143 that prescribes application content requirements.

73. We propose to delete redundant text from Section 25.114(d)(11), which requires applicants to state whether the space station is to operate on a common carrier or non-common carrier basis. This information is already required by Section 25.114(c)(11).

74. Section 25.114(d)(13) contains special information requirements for DBS space station applicants. We propose minor changes in this section, as shown in Appendix A, to clarify that the cross-references to Appendices 4, 30, and 30A refer to appendices to the ITU Radio Regulations.

75. Section 25.114(d)(14) requires applicants seeking authority to construct, launch, or operate a space station – or seeking access to the U.S. market for a non-U.S.-licensed space station – to disclose plans to mitigate the creation and effects of orbital debris that may result from the proposed activities. Although we do not propose to change substantially the information that applicants must disclose as part of an orbital debris mitigation plan, we seek comment on ways to clarify and simplify the disclosure process. Thus, we seek comment on amending Section 25.114(d)(14) to reflect policies that the Commission has previously adopted regarding orbital debris mitigation disclosure that are not currently codified in Part 25. As a specific example, we seek comment on amending Section 25.114(d)(14)(iv) to add that applicants for space stations to be used only for commercial remote-sensing may, in lieu of submitting detailed post-mission disposal plans to the Commission, certify that they have submitted such plans to the National Oceanic and Atmospheric Administration for review. The Commission has previously adopted such a policy, which is not currently codified in Part 25.⁷⁷ We also seek comment on

⁷⁶ We are also proposing to delete and reserve Section 25.140(b)(1). See ¶ 111 and Appendix A, *infra*.

⁷⁷ See *Mitigation of Orbital Debris*, IB Docket No. 02-54, Second Report and Order, 19 FCC Rcd 11567, 116101 ¶ 104 (2004), petition for reconsideration pending.

whether information currently provided as part of a narrative statement required by Section 25.114(d) could instead be provided by applicants as a certification or data entry as part of Schedule S, pursuant to Section 25.114(c). As an example, Section 25.114(d)(14)(i) requires, in part, an applicant to provide a narrative statement that it will limit the amount of debris released during normal operations and has assessed and will limit the probability of collisions that would cause loss of control over the spacecraft. We invite comment as to whether the public interest in minimizing creation of orbital debris could be served equally well by requiring applicants to provide such certification in Schedule S rather than in narrative statements. Alternatively, we seek comment on the feasibility and desirability of the Commission making available a template to be used for the narrative disclosure in order to simplify the preparation and review of orbital debris mitigation plans.⁷⁸

5. Section 25.115 “Applications for earth station authorizations”

76. Section 25.115(d) states that non-voice non-geostationary (NVNG), 1.6/2.4 GHz, and 2 GHz MSS user transceivers may be blanket-licensed, rather than individually licensed.⁷⁹ The Commission issues blanket licenses for MSS transceiver operations in all of the allocated MSS frequency bands. We therefore propose to amend Section 25.115(d) to remove the references to specific frequency bands.⁸⁰ Section 25.115(d) also includes a statement that an application for a blanket license for MSS user transceivers shall include “the information described in [Section] 25.136.”⁸¹ We propose to modify this text to require an applicant for a blanket license for 1.5/1.6 GHz MSS mobile earth stations to explain how it would comply with the priority and preemptive access requirements, currently set forth in Sections 25.136(d) and (e).

77. Section 25.115(e) applies to applications for earth stations operating in the 20/30 GHz band.⁸² The first sentence in Section 25.115(e) states that license applications for individual earth stations operating in the 20/30 GHz band shall be filed on Form 312, Main Form and Schedule B, and shall include “the information described in § 25.138.” The Commission’s band plan for these frequencies permits use by FSS satellites in both geostationary orbits (GSO) and non-geostationary orbits (NGSO).⁸³ The provisions in Section 25.138, however, apply, by their

⁷⁸ The focus of these proposals is on streamlining the method for collecting information, rather than the substance of the information required. To the extent commenters propose substantive changes to the Commission’s debris mitigation rules, the Commission will consider whether to initiate a separate proceeding to address such proposals.

⁷⁹ 47 C.F.R. § 25.115(d).

⁸⁰ See, e.g., *Comtech Mobile Datacom Corp.*, Order and Authorization, 24 FCC Rcd 5283 (Int’l Bur. and OET 2009) (granting modified blanket license for 1.5/1.6 GHz MSS transceivers); *Application of U.S. Leo Services, Inc.*, Order and Authorization, 11 FCC Rcd 20474 (Int’l Bur. 1996) (granting blanket license for operation of Iridium mobile terminals in the 1621.35-1626.5 MHz band); *TerreStar Networks, Inc.*, Order and Authorization, 25 FCC Rcd 228 (Int’l Bur. 2010) (granting blanket license for 2 GHz MSS transceivers and ATC mobile terminals); and *Application of Orbital Communications Corp. and Orbcomm Global, L.P. (Assignors)*, 17 FCC Rcd 4496 (Int’l Bur. 2002) (granting blanket licenses for NVNG MSS transceivers).

⁸¹ We propose to move the priority and preemptive access requirements in Sections 25.136 (d) and (e) into a new Section 25.287. See ¶ 101, *infra*.

⁸² 47 C.F.R. § 25.115(e).

⁸³ See *Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission’s Rules to Redesignate the 27.7-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Services, and for Fixed-Satellite Services*, CC Docket No. 92-297, First Report and Order and Fourth Notice of Proposed Rulemaking, 11 FCC Rcd 19005 (1996); and *17/24 GHz BSS 2000 Report and Order*, 15 FCC Rcd 13430.

terms, only to applications for earth stations that communicate via GSO space stations. Section 25.138 prescribes criteria for routine processing of such applications and alternative coordination requirements to ensure that the proposed earth stations will not cause harmful interference to other GSO satellites operating in the same bands. We propose to amend Section 25.115(e) to indicate that the requirement to provide the information required by Section 25.138 applies only to applications for earth stations that would communicate via GSO satellites. We also propose to delete the first sentence of Section 25.115(e), which states that applications for 20/30 GHz earth stations shall be filed on Form 312, Main Form, and Schedule B. This provision is redundant with Sections 25.115(a)(1), 25.130(a), and 25.131(a), which, together, require all earth station applications to be filed on those forms.

6. Section 25.118 “Modifications not requiring prior authorization”

78. Section 25.118(a)(2) states that an earth station licensee may add or change transmitters or antenna facilities or replace such equipment that is not electrically identical, without prior authority, where the new facilities do not require frequency coordination or exceed existing technical constraints.⁸⁴ The rule, as currently drafted, by its terms, is effectively limited to FSS earth stations operations.⁸⁵ We seek comment on whether we should modify the rule to include generic text applicable to both FSS and MSS.

79. Section 25.118(e) provides that a licensee may move a geostationary space station to a different orbital location assigned to that licensee without prior authority under certain circumstances, after giving 30-days prior notice to the Commission and potentially affected parties.⁸⁶ One of the specified prerequisites is that the space station licensee must certify that it has completed any necessary coordination of operation at the new location with potentially affected space station operators. To ensure more complete coordination, we propose to amend this provision to make clear that such coordination must include coordination of orbital station-keeping ranges.

80. Section 25.118(e)(8) provides that before relocating a DBS space station without prior authority, the licensee must certify that it “will not cause more interference at the new location than ... would occur from the current U.S. assignments in the [ITU] Region 2 BSS Plan and its associated Feeder Link Plan.” We propose to revise this provision to allow DBS operators who will operate within the parameters of a pending Region 2 BSS Plan modification to relocate their space stations under the provisions of Section 25.118(e). The proposed revision will afford DBS operators more flexibility while achieving the same purpose as the current rule.

81. In comments filed in another proceeding,⁸⁷ Globalstar Licensee LLC advocated amending Section 25.118(e) to allow a licensee of a constellation of NGSO space stations to reposition individual space stations without prior Commission authority, provided that the number of authorized operating space stations is not exceeded and the licensee certifies that the change(s) will not increase interference.⁸⁸ We invite public comment on Globalstar’s proposal, and on what

⁸⁴ 47 C.F.R. § 25.118(a)(2).

⁸⁵ For example, one criterion included in Section 25.118(a)(2) is the requirement to conform to Section 25.209. As a practical matter, MSS earth stations cannot conform to Section 25.209.

⁸⁶ 47 C.F.R. § 25.115(e).

⁸⁷ *2006 Biennial Regulatory Review – Revision of Part 25*, IB Docket No. 06-154, Notice of Proposed Rulemaking, 25 FCC Rcd 1551 (2010).

information should be included in the prior notice. We also seek comment on whether such a revised rule should include a requirement that the re-positioning not involve any permanent departure from a space station's authorized altitude or orbital plane.

7. Section 25.121 "License term and renewals"

82. Section 25.121(d)(1) states that the license term for a geostationary-orbit space station will begin when the licensee certifies to the Commission that the satellite has been placed into orbit and that its operation is fully consistent with the terms of the license.⁸⁹ Similarly, Section 25.121(d)(2) states that the license term for NGSO space stations will begin when the licensee certifies that the first of its authorized space stations has been placed into orbit and that its operations are fully consistent with the terms of the license. We propose to amend Section 25.121(d)(1) to provide that the license term for a geostationary space station will begin on the date when the licensee certifies that the space station's tested performance is consistent with the station authorization and that the space station has been placed in its assigned orbital location and is capable of using the assigned frequencies, pursuant to proposed Section 25.173(b).⁹⁰ We likewise propose to amend Section 25.121(d)(2) to provide that the license term for NGSO space stations will begin on the date when the licensee certifies pursuant to Section 25.173(b) that the tested performance of an initial space station is consistent with the authorization and that the space station has been placed in its assigned orbit and is capable of using the assigned frequencies.

83. Section 25.121(d)(2) also includes a statement that "all [non-geostationary] space stations brought into service during the 15-year license term shall operate pursuant to the system authorization and the operating authority for all space stations will terminate upon the expiration of the system license."⁹¹ We believe that it is redundant to state that NGSO space stations brought into service during the license term shall operate pursuant to the system authorization, as this is already stated in the system license. We therefore propose to revise this provision to simply state that operating authority for all space stations brought into service under the system license will terminate when the system license expires.

8. Section 25.129 "Equipment authorization for portable earth-station transceivers"

84. Section 25.129(c) prescribes content requirements for applications for certification of portable earth station transceivers pursuant to Part 2, Subpart J.⁹² We propose to amend this provision by adding a cross-reference to the labeling requirement in proposed new Section 25.285(b).

9. Section 25.130 "Filing requirements for transmitting earth stations"

85. The International Bureau has allowed applicants to apply for a single earth

⁸⁸ Comments of Globalstar in IB Docket No. 06-154 filed on Apr. 28, 2010. Globalstar asserted that such adjustments are sometimes needed "on a real-time basis" to maintain service quality and stressed that amendment it proposed would spare the licensee from incurring the substantial statutory filing fee for an application for modification of a non-geostationary space station license. *Id.* at 4.

⁸⁹ 47 C.F.R. § 25.121(d)(1).

⁹⁰ See ¶ 24, *supra*, and Appendix A.

⁹¹ 47 C.F.R. § 25.121(d)(2).

⁹² 47 C.F.R. § 25.129(c).

station license with multiple antennas in certain circumstances.⁹³ In frequency bands shared with terrestrial services on a co-primary basis, an applicant may request a single license for multiple antennas if the proposed antennas would be located within one geographic second of each other.⁹⁴ In frequency bands allocated only to satellite services on a primary basis, an applicant may request a single license for multiple antennas if the proposed antennas are all within 10 geographic seconds of each other.⁹⁵ The one-second single license approach is embodied in the definition of “NGSO FSS gateway earth stations” in Section 25.201, but the policy has never been fully incorporated in the Commission’s rules. We propose to codify this policy in a new provision, Section 25.130(g). The new rule would state that an applicant may request a single earth station license to cover multiple antennas at fixed locations transmitting in frequency bands shared on a co-primary basis with terrestrial services if the antennas will all be sited within an area bounded by one second of latitude and longitude. The new rule would also permit applicants to request a single license to cover multiple antennas transmitting in unshared bands if the proposed antennas will all be sited within an area bounded by 10 seconds of latitude and longitude. We invite comment on the type of information applicants should be required to provide to facilitate administration of this policy. In addition, as explained previously, we also propose to amend Section 25.130 by deleting redundant provisions from Section 25.130(e).⁹⁶

10. Section 25.131 “Filing requirements for receive-only earth stations”

86. Section 25.131 contains rules pertaining to licensing and registration of receive-only earth stations.⁹⁷ Section 25.131(b) states that “except as provided in paragraph (j) of this section,”⁹⁸ receive-only earth stations in the Fixed-Satellite Service that operate with U.S.-licensed satellites may be registered with the Commission in order to receive protection from interference from terrestrial microwave stations in co-primary frequency bands. We propose to amend Section 25.131(b) to clarify that a receive-only FSS earth station that receives signals from a non-U.S.-licensed space station in a band shared co-equally with terrestrial microwave stations (*i.e.*, the C-band) may be registered as well, if the non-U.S.-licensed space station is on the Permitted List.

87. We also propose to amend Section 25.131(b) by inserting a cross-reference to Section 25.209(e), which provides that earth stations with antennas not conforming to the standards specified in Sections 25.209(a) and (b) are entitled to no more protection from interference than earth stations conforming to those standards.

88. Section 25.131(j)(2) states that receive-only earth stations need not be licensed to receive transmissions from non-U.S.-licensed space stations on the Permitted List, provided that certain requirements are satisfied. One of the requirements is that the earth station’s antenna

⁹³ See *Additional Guidelines for Filing Modification and Renewal Applications for Domestic Fixed-Satellite Earth Stations*, Public Notice, 8 FCC Rcd 1679 (1993) (*One Second/Ten Second Public Notice*) (advising potential applicants to refrain from requesting a license for operation of multiple fixed earth-station antennas in a shared band under a single call sign if the antennas are more than a second of latitude or longitude apart from each other).

⁹⁴ *Id.* A “geographic second” is a measure of distance that is 1/3600th of a degree of longitude or latitude.

⁹⁵ *One Second/Ten Second Public Notice*, 8 FCC Rcd at 1679, ¶ 5.

⁹⁶ See ¶ 44, *supra*.

⁹⁷ 47 C.F.R. § 25.131.

⁹⁸ Section 25.131(j) requires operators of receive-only earth stations receiving transmissions from non-U.S.-licensed space stations that are not on the Permitted List to obtain a license before accessing such space stations.

meets the performance standards specified in Sections 25.209(a) and (b). We propose to delete that requirement. Receive-only stations cannot cause interference, whether or not their antennas meet the standards in Sections 25.209(a) and (b). Furthermore, the operator of any earth station not conforming to those standards can claim no more protection from interference than it could claim if the station's antenna met the standards.⁹⁹ In view of this, we see no need to require unlicensed receive-only earth stations to meet the antenna performance standards in Sections 25.209(a) and (b).

11. Section 25.132 “Verification of earth station antenna performance standards”

89. Section 25.132(a)(1) states that all license applications for transmitting earth stations, except for earth stations operating in the 20/30 GHz band, must include a certificate from the antenna manufacturer(s) that the manufacturer has ascertained through testing that the performance of the antenna(s) conforms to the standards in Section 25.209 of the Commission's rules.¹⁰⁰ We propose to clarify that this provision is limited in scope to applications for FSS earth stations. Further, we propose to amend Section 25.132(a)(1) to allow applicants to certify, in the alternative, that the tested antenna performance is consistent with either off-axis EIRP density standards in Part 25, or with coordinated off-axis EIRP density specifications. The latter change would be more consistent with rules that provide for licensing of earth stations with antennas that do not conform to the standards in Section 25.209. We also propose to amend this provision to afford greater flexibility by allowing an applicant to certify it has reviewed the radiation pattern testing performed by the manufacturer, instead of submitting a certificate of compliance from the manufacturer.

90. Section 25.132(a)(2) currently states that applications for transmitting earth stations operating in the 20/30 GHz band must include the measurements in Sections 25.138(d) and (e). The provisions in Section 25.138 apply only to 20/30 GHz earth stations that communicate via geostationary space stations.¹⁰¹ However, NGSO FSS networks may also operate in portions of the 20/30 GHz band.¹⁰² We propose to amend Section 25.132(a)(2) to clarify that only applications for 20/30 GHz earth stations communicating via geostationary space stations need to comply with Sections 25.138(d) and (e).

91. Section 25.132(d) prescribes on-site measurement requirements for earth station antennas over three meters in diameter. We propose to amend this provision to clarify that it does not apply to large antennas for 20/30 GHz GSO FSS earth stations, which are subject to somewhat different on-site measurement requirements in Section 25.138(d).

92. Section 25.132(b)(3) requires applicants proposing to operate with antennas that do not conform to the standards in Sections 25.209(a) and (b) to submit gain test plots from the antenna manufacturer, if the applicant is requesting a license based on coordination or off-axis EIRP density under Sections 25.220, 25.221, 25.222, 25.223, or 25.226.¹⁰³ We propose to amend

⁹⁹ See 47 C.F.R. § 25.209(e).

¹⁰⁰ 47 C.F.R. § 25.132(a)(1).

¹⁰¹ See discussion regarding amendment of Section 25.115(e) at ¶ 77, *supra*.

¹⁰² See *Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.7-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Services, and for Fixed-Satellite Services*, CC Docket No. 92-297, First Report and Order and Fourth Notice of Proposed Rulemaking, 11 FCC Rcd 19005 (1996); and *17/24 GHz BSS 2000 Report and Order*, 15 FCC Rcd 13430.

¹⁰³ 47 C.F.R. § 25.132(b)(3).

this provision to clarify that applicants seeking authority to operate non-conforming antennas pursuant to Section 25.218 must submit antenna gain plots as well. This information is needed to verify applicants' off-axis EIRP density specifications.

12. Section 25.133 “Period of construction; certification of commencement of operation”

93. Section 25.133(a)(1) states that each earth station license, except licenses for mobile earth stations, will include a condition specifying a time period within which the station must be constructed and placed into operation.¹⁰⁴ Section 25.133(a)(2) states that each license for mobile earth stations will include a condition specifying a time within which station operation must commence and further states that the network in which the mobile stations will operate must be brought into operation within 12 months of the license grant. This distinction between conditions in licenses for mobile earth stations and conditions in other earth station licenses reflects a difference in licensing frameworks. Rather than individually licensing each mobile earth station that would operate in a network, the Commission generally issues a blanket license covering operation of a specified number of networked mobile earth stations. The Commission also issues blanket licenses for operation of fixed earth stations in networks.¹⁰⁵ We therefore propose to revise the exception in Section 25.133(a)(1) to cover all blanket earth station licenses. Accordingly, we also propose to amend Section 25.133(a)(2) to apply to all blanket earth station licenses.

94. We also propose to change “license” to “initial license” in Sections 25.133(a)(1) and (2) to indicate that such conditions will not be re-imposed when earth station licenses are renewed. Similarly, we propose to change “each license” to “each initial license” in Section 25.133(b)(1). Section 25.133(b)(1) states that each license for an individual transmitting earth station shall require the licensee, upon completing station construction, to certify that construction has been completed and that each antenna has been tested and its performance found to be within 2 dB of “the pattern specified in § 25.209, § 25.135 ..., or § 25.213” As there is no antenna pattern specification in Section 25.135 or Section 25.213, however, we propose to amend this provision to require the licensee to certify that it has found the performance of the antenna(s) in question to be within 2 dB of the applicable pattern in Section 25.209 or the pattern authorized by the earth station license.

13. Section 25.134 “Licensing provisions for Very Small Aperture Terminal (VSAT) and C-band Small Aperture Terminals (CSAT) networks”

95. Section 25.134(a)(1) prescribes routine processing standards for applications for analog VSAT networks and applications for digital VSAT networks granted on or before September 15, 2005.¹⁰⁶ The provision pertaining to applications “granted” (or filed) prior to the specified date in 2005 is obsolete, and the provisions pertaining to applications for analog and digital networks are duplicative of provisions in Section 25.134(g). We therefore propose to delete Section 25.134(a)(1).

96. Section 25.134(b) provides that license applicants for “digital and/or analog” VSAT networks proposing to operate with higher downlink EIRP density or antenna input power than the values “specified in Paragraph (a) of this Section” must comply with certain

¹⁰⁴ 47 C.F.R. § 25.133(a)(1).

¹⁰⁵ See, e.g., 47 C.F.R. § 25.134 (blanket licensing rules for earth stations in “CSAT” and VSAT networks) and 47 C.F.R. § 25.138 (blanket licensing rules for earth stations in 20/30 GHz GSO-FSS networks).

¹⁰⁶ 47 C.F.R. § 25.134(a)(1); *2000 Biennial Review*, 20 FCC Rcd 5593.

procedures.¹⁰⁷ The provisions in Section 25.134(a) specifying downlink EIRP density and antenna input power levels for VSAT networks would be deleted by the change proposed above and have been superseded by similar provisions in Section 25.134(g), which apply by their terms to all VSAT applications filed after March 10, 2005. We therefore propose to amend Section 25.134(b) to refer to Section 25.134(g) rather than Section 25.134(a). We also propose to delete the phrase “digital and/or analog,” which is an unnecessary distinction since all VSAT networks are either digital or analog.

97. Section 25.134(e) states that a VSAT network may have more than one hub earth station.¹⁰⁸ We propose to amend this provision to add, for clarification, that the hubs in a multi-hub VSAT network may be sited in different places.

98. We propose to replace “VSAT operators in the 11.7-12.2 GHz and 14.0-14.5 GHz frequency bands” in Section 25.134(f) with “12/14 GHz VSAT operators” and delete unnecessary words from this provision.¹⁰⁹

99. Section 25.134(g) states that beginning on March 10, 2005, all license applications for 12/14 GHz VSAT networks that meet specified limits on the EIRP spectral density of satellite downlinks and earth station antenna input will be routinely processed.¹¹⁰ Compliance with the limit on input power density will not, however, ensure that VSAT terminals with an equivalent antenna diameter less than 1.2 meters or gain patterns not in conformance with the standards in Sections 25.209(a) and (b) will suppress off-axis radiation sufficiently to prevent harmful interference.¹¹¹ We therefore propose to amend Section 25.134(g) to add that in order to qualify for routine processing, a 12/14 GHz VSAT application must specify equivalent antenna diameter of 1.2 meters or more and certify conformance with those antenna performance standards pursuant to Section 25.132(a)(1). We also propose to delete the obsolete effective date in the first sentence of Section 25.134(g) and delete another obsolete date in Section 25.134(g)(4).

100. Section 25.134(h) prohibits VSAT operators from using remote earth stations that are not designed to stop transmission “when synchronization with the target satellite fails.”¹¹² However, the remote earth stations in a VSAT network do not synchronize with a target satellite directly, but rather synchronize with certain signals from, or retransmitted by, the target satellite. In order to more precisely characterize the interaction between remote VSAT earth stations and their target satellite, we therefore propose to amend Section 25.134(h) to prohibit VSAT operators from using remote earth stations that are not designed to stop transmission when synchronization to signals from the target satellite fails.

14. Sections 25.135 “Licensing provisions for earth station networks in the non-voice, non-geostationary Mobile-Satellite Service” and 25.136 “Licensing provisions for user transceivers in the 1.6/2.4 GHz, and 2 GHz Mobile Satellite Services”

101. Sections 25.135 and 25.136 contain operational requirements for MSS user

¹⁰⁷ 47 C.F.R. § 25.134(b); *2000 Biennial Review*, 20 FCC Rcd 5593.

¹⁰⁸ 47 C.F.R. § 25.134(e).

¹⁰⁹ 47 C.F.R. § 25.134(f).

¹¹⁰ 47 C.F.R. § 25.134(g).

¹¹¹ Antennas with diameters smaller than 1.2 meters in the 12/14 GHz band may not be able to meet the off-axis requirements in Section 25.209, as the main antenna gain lobe may not be sufficiently suppressed to meet the mask.

¹¹² 47 C.F.R. § 25.134(h).

transceivers.¹¹³ In the interest of improving the organizational coherence of Part 25, we propose to move the provisions in the second sentence of Section 25.135(c), Section 25.135(d), and Sections 25.136 (b), (c), (d), and (e) to a new rule section, Section 25.287, in Subpart C (Technical Standards).¹¹⁴ We also propose to amend some of those provisions to make them more concise. For instance, we propose to delete a sentence in Section 25.136(e) which states that “[i]t should be noted that the LES [*i.e.*, Land Earth Station] operates in the Fixed-Satellite Service (‘FSS’) as a feeder link for the MSS (Radio Regulations 71) and that the following capabilities are to facilitate the priority and preemption requirements.” “Land Earth Station” is currently defined in Section 25.201 in the same way, and the definition need not be repeated in substantive rule provisions. Nor is there a need to repeat that the substantive requirements are prescribed to “facilitate [*i.e.*, ensure compliance with] the priority and preemptive access requirements [in Footnotes 5.353A and US315],” as it is stated more clearly in the immediately preceding sentence.

102. Section 25.136(f) states that an L-band (*i.e.*, 1.5/1.6 GHz) MSS licensee may construct ATC base stations at any time after commencing construction of its MSS system.¹¹⁵ Section 25.143(i) contains an identical rule for 1.6/2.4 GHz and 2 GHz MSS licensees. We propose to replace these band-specific rules with a generally applicable rule, which we propose to insert in Section 25.113(b).

103. Section 25.136(g) prescribes rules pertaining to “build-out” and pre-operational testing of any type of ATC facility.¹¹⁶ Section 25.143(j) contains identical rules specifically for 1.6/2.4 GHz and 2 GHz ATC facilities. We propose to delete the duplicative rules in Section 25.143(j) and move the provisions in Section 25.136(g) to a separate subparagraph of Section 25.113(b).¹¹⁷ We also propose to revise the text of these provisions to make them more succinct.

15. Section 25.138 “Blanket licensing provisions of GSO FSS earth stations in the 18.3-18.8 GHz space-to-Earth, 19.7-20.2 GHz (space-to-Earth), 28.35-28.6 GHz (Earth-to-space), and 29.25-30.0 GHz (Earth-to-space) bands”

104. Section 25.138 contains a routine processing standard and content requirements for license applications for earth stations that communicate with geostationary FSS space stations in the 18.3-18.8 GHz, 19.7-20.2 GHz, 28.35-28.6 GHz, and 29.25-30.0 GHz frequency bands.¹¹⁸ We propose to amend the caption and first sentence in Section 25.138(a) to reflect that the processing standards and content requirements of this section apply to applications for both individual stations and blanket licenses.

105. Section 25.138(b) requires an earth station applicant proposing to operate with off-axis radiated power density or power flux density (PFD) levels in excess of those specified in Section 25.138(a) to provide a link budget analysis and explain how the applicant derived each uplink and downlink power density figure and whether operation with the proposed higher levels

¹¹³ 47 C.F.R. §§ 25.135 and 25.136.

¹¹⁴ Certain other provisions concerning operation of portable earth stations aboard civil aircraft are addressed in Section III.C., *supra*.

¹¹⁵ 47 C.F.R. § 25.136(f).

¹¹⁶ 47 C.F.R. § 25.136(g).

¹¹⁷ 47 C.F.R. § 25.136(j). As a result of this and other changes proposed above, all of the content from Section 25.136 would be removed and the section reserved.

¹¹⁸ 47 C.F.R. § 25.138.

would cause “margin shortfalls in any existing baseline service.” In addition, Section 25.138(b) requires the applicant to certify that the operators of potentially affected space stations within 6 degrees of the proposed target satellite do not object to the proposed use of higher off-axis power density. We propose to clarify and simplify these requirements by substituting a requirement that an applicant demonstrate that the higher proposed power is necessary to close the communications link and give the applicant an option between: (i) providing an interference analysis showing its proposed operations are compatible with satellite networks using space stations in the vicinity of the proposed target satellite or (ii) providing evidence that it has coordinated the proposed higher-power operation with the operators of such potentially affected satellite networks. If an applicant demonstrates through technical analysis that other satellite networks will not suffer harmful interference, there would be no need for coordination with operators of such other systems, and *vice versa*.

106. The last sentence in Section 25.138(b) requires applicants proposing earth stations that are not eligible for routine processing to certify that “all potentially affected parties (*i.e.*, those GSO FSS satellite networks that are 2, 4, and 6 degrees apart) acknowledge and do not object to the use of the applicant’s higher power densities.” For clarification, we propose to amend this provision to state that such applicants must certify that operators of co-frequency GSO FSS space stations within 6 degrees of the proposed point of communication have no objection.

107. Section 25.138(d) requires applicants to provide measured radiation patterns for each proposed earth station antenna type. We propose to replace the undefined term “the 30 GHz band” in the first sentence of this provision with “each requested uplink band.” Further, we recognize that it may not be feasible for applicants to provide such measurement data for large antennas that must be assembled on site. We therefore propose to insert text in Section 25.138(d) similar to that in Section 25.132(d), stating that the radiation patterns of antennas more than 3 meters in diameter that will be assembled on site may be measured once assembled on site, rather than prior to filing the application. In such cases, the licensee must provide certification of satisfactory performance when providing its completion of construction certification.¹¹⁹

108. Section 25.138(e) indicates the extent to which 20/30 GHz GSO FSS earth station licensees are entitled to protection from interference from downlink operation of adjacent satellites. It also requires applicants to provide “[receive] antenna performance plots for the 20 GHz band, including the format specified in paragraph (d) of this section.” For clarification, we propose to replace the term “20 GHz band” with “18.3-18.8 GHz and 19.7-20.2 GHz bands” and to change “including the format specified in paragraph (d)” to “in the format contained in paragraph (d).”

109. The first sentence in Section 25.138(f) prohibits 20/30 GHz earth station licensees from transmitting to a GSO FSS satellite without prior permission from the satellite operator or a reseller authorized by the satellite operator. The next sentence requires such transmissions to conform to the operating protocols specified by the satellite operator. We propose to delete these provisions, which are subsumed by the general rule in Section 25.273(a) that “[n]o person shall [t]ransmit to a satellite unless the specific transmission is first authorized by the satellite network control center.”

110. Section 25.138(g) states that an applicant for renewal of an earth station license

¹¹⁹ 47 C.F.R. § 25.133(b) provides that earth stations licenses will include a condition requiring the licensee to certify, upon completing construction of an individually licensed station or when commencing network operation with blanket licensed earth stations, that the earth station antenna(s) has, or have, been tested and found to be within 2 dB of patterns prescribed in certain rule sections. *See* discussion of proposed changes in Section 25.133(b) in ¶ 94, *supra*.

granted pursuant to Section 25.138 must specify the number of constructed stations in FCC Form 405. The reference to Form 405 is obsolete, as that form is no longer in use. We propose to amend this provision to refer, instead, to Form 312R, which is currently used for requesting renewal of earth station licenses.

16. Section 25.140 “Requirements for license applications for space stations in the Fixed-Satellite Service and 17/24 GHz Broadcasting-Satellite Service”

111. Section 25.140(b) prescribes content requirements for license applications for FSS and 17/24 GHz BSS space stations.¹²⁰ Section 25.140(b) states that an applicant for an FSS space station license must “demonstrate ... that it is legally, technically, and otherwise qualified to proceed expeditiously with the construction, launch and/or operation of each proposed space station facility” and provide additional information specified in subparagraphs of this rule. This could be construed to mean that space station applications must include a further “qualification” showing of an unspecified nature in addition to the information specifically required by Section 25.114 and Section 25.140. For clarification, we propose to remove the language that suggests such a further qualification showing is required. We also propose to move the provision in Section 25.140(b)(1), which states that applications subject to Section 25.140(b) must include the information specified in Section 25.114, into the first paragraph of Section 25.140(b) and reserve Section 25.140(b)(1) for other use. We also propose to amend the first sentence of Section 25.140(b) to clarify that the subsection applies to both FSS and 17/24 GHz BSS space station applicants.

112. Section 25.140(b)(2) requires FSS space station applicants to provide an interference analysis, cross-referencing appendices to a 1983 Commission order. We propose to cite the order’s FCC number and add a reference to more recent public notices that provide relevant guidance.¹²¹ We seek comment as to whether the requirement in Section 25.140(b)(2) should be made more specific, either by incorporating text from the public notices or in some other way.

17. Section 25.144 “Licensing provisions for the 2.3 GHz satellite digital audio radio service”

113. Section 25.144(a)(3)(iii) requires an applicant for a license for a 2.3 GHz SDARS system to specify the compression rates that it will use to transmit audio programming and any ancillary services.¹²² Because compression rates for SDARS audio transmissions vary dynamically depending on program content and overall bandwidth allocation needs, we propose to delete this rule.

18. Section 25.145 “Licensing provisions for the Fixed-Satellite Service in the 20/30 GHz bands”

114. Section 25.145 contains licensing rules for FSS space stations operating in the 20/30 GHz frequency bands.¹²³ Section 25.145(a) states that “[e]xcept as provided in §

¹²⁰ 47 C.F.R. § 25.140(b).

¹²¹ *International Bureau Satellite Division Information: Clarification of 47 C.F.R. § 25.140(b)(2), Space Station Application Interference Analysis*, Public Notice, Report No. SPB-207, 19 FCC Rcd 10652 (Int’l Bur., Sat. Div., 2004); *Clarification of 47 C.F.R. § 25.140(b)(2), Space Station Application Interference Analysis*, Public Notice, No. SPB-195, 18 FCC Rcd 25099 (Int’l Bur., Sat. Div., 2003).

¹²² 47 C.F.R. § 25.144(a)(3)(iii).

¹²³ 47 C.F.R. § 25.145.

25.210(b), in general all rules contained in this part” – that is, *all* of the rules in Part 25 – apply to FSS in the 20/30 GHz bands. The statement is overbroad, as many rules in Part 25 do not apply to the 20/30 GHz band. We therefore propose to delete Section 25.145(a).

19. Section 25.154 “Opposition to applications and other pleadings”

115. Section 25.154 prescribes procedural requirements for petitions to deny and related pleadings.¹²⁴ Section 25.154(a) states that a petition to deny a Part 25 application must be filed within 30 days after the application is placed on public notice. Section 25.154(c) states that oppositions to petitions to deny must be filed within 10 days after the petition to deny is filed. Section 25.154(d) provides that replies to such oppositions must be filed within five days after the opposition is filed. By their terms, however, Sections 25.154(c) and (d) do not apply in cases where a petition to deny has been filed against an earth station application filed pursuant to Section 25.220.¹²⁵ In such cases, Section 25.154(e) requires the applicant to file a statement within 30 days after the petition to deny is filed, stating whether all of the issues raised by the petitioner have been resolved.¹²⁶ Section 25.154(e) does not, however, contain any provision for filing an opposition in response to a petition to deny an application filed pursuant to Section 25.220. We propose to amend Section 25.154(e) to state that an opposition to a petition to deny an application filed pursuant to Section 25.220 may be filed within the 30-day period allowed for filing the statement regarding resolution of issues. We also propose to eliminate the exception from Section 25.154(d) for applications filed pursuant to Section 25.220. This will allow replies to oppositions to petitions to deny to be filed within five days of the opposition in all cases involving Part 25 applications. This would allow a more complete record for considering contested Section 25.220 applications.

20. Section 25.161 “Automatic termination of station authorization”

116. Section 25.161 specifies the circumstances under which station licenses granted under Part 25 automatically terminate.¹²⁷ We propose to amend Section 25.161(b) to indicate that operational authority for a space station will not terminate at the end of its license term if a modification application for extension is pending.

H. Other Proposed Changes in Subpart C – “Technical Standards”

117. Subpart C of Part 25 includes rules relating to governing technical standards of earth and space stations. As discussed below, we propose to make several substantive changes to the technical requirements. These proposed changes are designed to reflect evolving technology, and eliminate requirements that are no longer needed. In addition we propose other non-substantive changes that remove, and replace redundant, unnecessary, or potentially confusing text.

¹²⁴ 47 C.F.R. § 25.154.

¹²⁵ 47 C.F.R. § 25.220. Section 25.220 contains provisions for licensing “non-conforming” earth stations – that is, fixed earth stations not meeting routine technical standards specified elsewhere in Part 25 – based on coordination with potentially affected satellite operators

¹²⁶ The Commission’s intention when adopting Section 25.154(e) was to afford applicants filing pursuant to Section 25.220 an extended time period in which to resolve a petitioner’s objections through coordination with operators of potentially affected space stations. *2000 Biennial Regulatory Review – Streamlining and Other Revisions of Part 25 of the Commission’s Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations*, IB Docket No. 00-248, Fifth Report and Order, 20 FCC Rcd 5666, 5693, ¶ 68 (2005).

¹²⁷ 47 C.F.R. § 25.161.

1. Section 25.202 “Frequencies, frequency tolerance and emission limitations”

118. The first sentence in Section 25.202(c) states that orbital locations assigned to space stations licensed under Part 25 are subject to change by summary order of the Commission on 30 days notice.¹²⁸ This rule is based on the premise that orbital locations are fungible.¹²⁹ The 2003 *Space Station Licensing Reform Order* eliminated that assumption.¹³⁰ More recently, the Commission has noted that each orbital location has unique characteristics and that determining whether there are feasible alternatives to an orbital location may involve substituting the Commission’s judgment for that of a satellite operator.¹³¹ Consequently, if the Commission has reason to change an orbital assignment, we would need to follow the license modification process. We therefore propose to eliminate the first sentence in Section 25.202(c).

119. The second sentence in Section 25.202(c) states that an authorization to construct and/or launch a space station becomes null and void if the space station operator does not meet specified milestones. This provision is duplicative of Section 25.161(a)(1), which states that a station authorization will automatically terminate in the event of failure to meet an applicable milestone requirement specified in Sections 25.164(a) or (b), unless the licensee demonstrates that the failure was due to circumstances beyond its control. Consequently, we propose to eliminate the second sentence of Section 25.202(c).

120. The last sentence of Section 25.202(c) states that frequencies and orbital assignments are subject to the policies set forth in Commission Orders adopted in 1983, 1985, and 1996.¹³² All of these policies have been incorporated elsewhere into the Part 25 rules or have been superseded.¹³³ Consequently, we propose to eliminate this sentence. Adopting all of these changes would eliminate all of the text in Section 25.202(c), which would be reserved for other use.

¹²⁸ 47 C.F.R. § 25.202(c).

¹²⁹ See, e.g., *Pan American Satellite Corp.*, Memorandum Opinion, Order and Authorization, 60 Rad. Reg. 2d (P&F) 398 (1986); *Columbia Communications Corp.*, Memorandum Opinion and Order, 1986 WL 292761 (Com. Car. Bur. 1986).

¹³⁰ *Space Station Licensing Reform Order*, 18 FCC Rcd at 10821-22, ¶158.

¹³¹ *AtContact Communications*, 25 FCC Rcd at 7585, ¶54.

¹³² *Licensing of Space Stations in the Domestic Fixed-Satellite Service and Related Revisions of Part 25 of the Rules and Regulations*, CC Docket No. 81-704, FCC 83-184, Report and Order, 54 Rad. Reg. 2d 577 (Aug. 16, 1983) (*DomSat Order*), summary printed in *Licensing Space Stations in the Domestic Fixed-Satellite Service*, 48 F.R. 40233 (Sept. 6, 1983); *Establishment of Satellite Systems Providing International Communications*, 101 F.C.C.2d 1046 (1985) (*Separate Systems Decision*), recon., 61 R.R.2d 649 (1986), further recon., 1 F.C.C. Rcd. 439 (1986); *Amendment of the Commission's Regulatory Policies Governing Domestic Fixed Satellites and Separate International Satellite Systems and DBSC Petition for Declaratory Rulemaking Regarding the Use of Transponders to provide International DBS Service*, IB Docket No. 95-41, Report and Order, 11 FCC Rcd 2429 (1996) (*DISCO I Order*).

¹³³ For example, the 1983 *DomSat Order* adopted a two-degree orbital spacing framework for U.S.-licensed satellites serving the United States. *DomSat Order*, 54 Rad. Reg. 2d 577. The technical requirements needed to implement a two-degree spacing framework are found throughout Part 25. Further, the 1985 *Separate Systems Decision* concluded that it would serve the public interest to license U.S. satellites that would provide international services in competition with INTELSAT. *Separate Systems Decision*, 101 F.C.C.2d 1046. This “Separate Systems” policy was superseded by the Commission’s *DISCO I Order*. *DISCO I Order*, 11 FCC Rcd 2429 (allowing U.S.-licensed satellites to provide any mix of domestic and international services).

121. Section 25.202(g) requires TT&C signals for “U.S. domestic satellites” to be transmitted at either or both edges of the “allocated” frequency bands. We propose to replace the obsolete term “U.S. domestic satellites” with “U.S.-licensed satellites” and replace “allocated” with “assigned.” We also invite comment as to whether we should amend this provision to allow satellite operators to transmit TT&C signals in portions of the assigned bands other than the edges, provided that such transmissions would cause no more interference and require no greater protection than transmission of ordinary communications traffic.

2. Section 25.204 “Power limits”

122. Section 25.204 is simply captioned “Power limits,” although all of the limits that it contains pertain only to earth station operation.¹³⁴ We propose to amend the caption to read “Power limits for earth stations.”

3. Section 25.205 “Minimum angle of antenna elevation”

123. Section 25.205(a) states that earth stations will not normally be authorized to transmit at elevation angles less than 5 degrees above the horizontal plane but that the Commission may authorize operation at an elevation angle as low as 3 degrees in a seaward direction or upon a showing of good cause.¹³⁵ The purpose of this minimum angle requirement is to prevent earth stations from causing harmful interference.¹³⁶ We note, however, that the ITU Radio Regulations contain a 3-degree minimum elevation angle for earth station antennas, except as otherwise agreed in international coordination.¹³⁷ We invite comment on revising Section 25.205(a) to similarly provide for routine authorization of earth stations operating at elevation angles down to 3 degrees in frequency bands not shared with terrestrial radio systems.

4. Section 25.206 “Station identification”

124. Section 25.206 states that stations licensed under Part 25 need not transmit station identification, except for stations that are required to incorporate an Automatic Transmitter Identification System by provisions in Section 25.308.¹³⁸ There currently is no Section 25.308 in the Commission’s rules. We propose to correct the erroneous cross-reference by cross-referencing the correct section, Section 25.281.

5. Section 25.208 “Power flux density limits”

125. Section 25.208(w) requires space-to-Earth transmissions in the 17.3-17.7 GHz band to meet specified regional PFD limits at the Earth’s surface “for all conditions, including clear sky.”¹³⁹ PFD at the Earth’s surface, however, may be locally affected by weather conditions that are not uniform throughout a satellite beam’s coverage area. We therefore propose to add a note to Section 25.208(w) similar to the notes to other paragraphs in Section 25.208, stating that the prescribed limits pertain to the PFD that would be obtained under assumed free-space

¹³⁴ 47 C.F.R. § 25.204.

¹³⁵ 47 C.F.R. § 25.205. The Commission adopted this rule in 1970, and the text of the rule has remained unchanged. *See Establishment of Domestic Communication-Satellite Facilities By Nongovernmental Entities*, Docket No. 16495, Report and Order, 22 FCC 2d 86 (1970).

¹³⁶ *PacAmTel, LLC, Petition for Waiver of Section 25.205 of the Commission’s Rules*, Memorandum Opinion and Order, 17 FCC Rcd 11968 (Int’l Bur. 2002).

¹³⁷ ITU Radio Regulations, Art. 21.14.

¹³⁸ 47 C.F.R. § 25.206. *See also* ¶ 153, *infra*, where we request comment on extending ATIS requirements to types of satellite uplinks other than broadband video.

¹³⁹ 47 C.F.R. § 25.208(w).

propagation conditions. We also propose to delete the phrase “including clear sky” as unnecessary.

6. Section 25.209 “Earth station antenna performance standards”

126. Section 25.209(d) states that the antenna performance standards in Sections 25.209(a) and (b) apply to earth station antennas initially authorized after February 15, 1985 and “shall apply” to all earth station antennas after March 11, 1994.¹⁴⁰ We propose to delete this provision as obsolete. We will also correct the antenna gain envelope in Section 25.209 (h)(1) to:

29-25log₁₀(θ) dBi for 1° ≤ θ ≤ 36°

-10 dBi for 36° < θ ≤ 180°

7. Section 25.210 “Technical requirements for space stations”

127. Section 25.210(a) states that FSS space stations operating in the 4/6 GHz bands must: (1) use orthogonal linear polarization, such that one polarization sense is parallel to the equatorial plane; (2) use opposite polarization senses on uplink and downlink transmissions on the same transponder; and (3) be capable of switching polarization senses upon ground command.¹⁴¹ The Commission adopted these provisions to minimize interference between adjacent space stations providing analog video services and to be able to reassign space stations to other orbital locations.¹⁴² We seek comment on whether these rules are still necessary.

128. Section 25.210(b) requires FSS space stations operating in the 20/30 GHz bands to use orthogonal circular polarization or orthogonal linear polarization with one polarization plane defined by the equatorial plane, to put opposite polarity on uplink and downlink transmissions on the same transponder, and to be able to switch polarization sense on ground command.¹⁴³ These requirements were intended to promote efficient re-use of spectrum by requiring 20/30 GHz FSS transmissions to be on opposite, mutually non-interfering, polarizations. This objective is sufficiently served by the less restrictive full frequency re-use requirement in Section 25.210(f), which requires 20/30 GHz space stations to employ “state-of-the-art full frequency re-use” through use of orthogonal polarization and/or spatially independent beams. We therefore propose to delete Section 25.210(b).

129. Section 25.210(c) states that FSS space stations must be capable of changing transponder saturation flux densities by ground command in 4 dB steps over a range of 12 dB.¹⁴⁴ This capability can be used to equalize the uplink power levels of signals transmitted from earth stations to adjacent transponders on the same space station, and to facilitate coordination with neighboring space stations.¹⁴⁵ Since we adopted the rule, operators have developed other means of facilitating coordination. Consequently, we do not believe that it continues to be necessary to impose specific design requirements as a means of effectuating coordination. We therefore

¹⁴⁰ 47 C.F.R. § 25.209(d).

¹⁴¹ 47 C.F.R. § 25.210(a).

¹⁴² See *Alien Carrier Interference Second Report and Order*, 8 FCC Rcd at 1318, ¶¶ 10-11.

¹⁴³ 47 C.F.R. § 25.210(b).

¹⁴⁴ 47 C.F.R. § 25.210(c).

¹⁴⁵ See *Alien Carrier Interference Second Report and Order*, 8 FCC Rcd at 1318, ¶ 12.

propose to delete the current text in Section 25.210(c).¹⁴⁶

130. Section 25.210(i) prescribes cross-polarization isolation requirements for FSS space stations and 17/24 GHz BSS space stations.¹⁴⁷ We intend to retain the cross-polarization isolation requirement for 17/24 GHz BSS space stations, which could facilitate coordination with co-located space stations.¹⁴⁸ We invite comment as to whether the cross-polarization isolation requirement for FSS space stations should be relaxed and, if so, to what extent. Alternatively, we invite comment as to whether we should eliminate the minimum isolation requirement for FSS space stations and add a provision to Section 25.273(d) stating that operators of FSS space stations with less than 30 dB of receive-beam cross-polarization isolation are entitled to no more interference protection for space station receiving links than if such isolation were 30 dB.

8. Section 25.211 “Analog video transmissions in the Fixed-Satellite Service”

131. Section 25.211 is captioned “Analog video transmission in the Fixed-Satellite Services.”¹⁴⁹ Section 25.211(d) states that an earth station may be routinely licensed for “full transponder” analog video transmission in the 5925-6425 MHz band if the equivalent diameter of its antenna is 4.5 meters or more and input power to the antenna does not exceed 26.5 dBW. Section 25.211(d) also states that an earth station may be routinely licensed for “full transponder” analog video transmission in the 14.0-14.5 GHz band if the equivalent diameter of its antenna is 1.2 meters or more and the input power does not exceed 27 dBW. We see no reason to limit routine processing under Section 25.211(d) to full transponder transmissions. Therefore, we propose to delete the term “full transponder” from Section 25.211(d). We also propose to amend Section 25.211(d) to add that applicants must certify antenna performance pursuant to Section 25.132(a)(1) to be eligible for routine licensing under Section 25.211(d). Such certification is important because: (i) an antenna’s off-axis gain performance has a direct bearing on interference potential; (ii) the input power limits prescribed in Section 25.211(d) were devised to constrain the interference potential of analog video transmissions from earth stations with off-axis antenna gain patterns consistent with the standards in Section 25.209(a) and (b); and (iii) the prescribed minimum diameter of 1.2 meters does not necessarily ensure that an antenna’s off-axis gain will be consistent with those standards.

132. Section 25.211(e) provides that earth stations transmitting analog video signals in the 5925-6425 MHz band with antennas smaller than 4.5 meters in diameter or in the 14.0-14.5 GHz band with antennas smaller than 1.2 meters in diameter “are subject to the provisions of § 25.220.” Similarly, Section 25.211(f) states that applicants for “authorization for analog [earth-station] transmissions ... proposing to use maximum power into the antenna in excess of [the levels] specified in § 25.211(d)” must comply with the requirements in Section 25.220 for licensing non-conforming earth stations based on coordination. We propose to combine the provisions in Sections 25.211(e) and (f) in a single sub-paragraph (e). We also propose to change “analog transmission” in Section 25.211(f) to “analog video transmission,” in keeping with the section caption and to avoid conflict with provisions in Section 25.212 pertaining to analog

¹⁴⁶ We propose to replace this provision with a provision that is currently in Section 25.215. *See* ¶ 137, *infra*.

¹⁴⁷ 47 C.F.R. § 25.210(i).

¹⁴⁸ We also intend to retain the cross-polarization isolation requirement for DBS transmitting antennas prescribed in Section 25.215, which facilitates co-location of DBS space stations licensed to different operators.

¹⁴⁹ 47 C.F.R. § 25.211.

transmission.

9. Section 25.212 “Narrowband analog transmissions and all digital transmissions in the GSO Fixed-Satellite Service”

133. Section 25.212(c) contains routine licensing standards for earth stations transmitting narrowband analog signals or digital signals in the 14.0-14.5 GHz band.¹⁵⁰ The first sentence in Section 25.212(c) provides for routine licensing of earth stations transmitting analog signals in bandwidths up to 200 kilohertz. We propose to amend this provision to allow routine licensing of stations transmitting analog signals of up to 1 megahertz in bandwidth. This expansion of the types of earth stations eligible for routine processing would reduce the need for additional technical demonstrations for these proposed stations, reducing paperwork burdens for applicants and corresponding administrative burdens for the Commission’s staff. We also propose to amend Section 25.212(c) to cross-reference the verification requirement in Section 25.132(a)(1)¹⁵¹ and exclude Earth Stations on Vessels (ESV) and Vehicle-Mounted Earth Stations (VMES), which are subject to special licensing rules contained in other sections,¹⁵² and earth stations installed in aircraft, for which special rules are under consideration.¹⁵³

134. Section 25.212(d)(1) prescribes a routine licensing standard for 5925-6425 MHz earth stations “licensed before March 10, 2005.”¹⁵⁴ We propose to delete this obsolete provision.

135. Section 25.212(d)(2) prescribes routine licensing standards for earth stations that transmit “SCPC” (*i.e.*, single channel per carrier) signals in the 5925-6425 MHz band with antennas with equivalent diameters of 4.5 meters or more.¹⁵⁵ We propose to delete the phrase, “[f]or earth stations licensed after March 10, 2005,” from its first sentence. We also propose to insert a cross-reference to the verification requirement in Section 25.132(a)(1) and exclude ESVs, for the reason stated above. Further, we propose to modify the rule to cover all digital carriers and all analog carriers with bandwidths up to 1 megahertz.

136. Last, we propose to amend Section 25.212(e) to clarify the procedure for licensing earth stations with C-band antennas smaller than 4.5 meters in diameter or Ku-band antennas smaller than 1.2 meters in diameter. These changes will consolidate certain provisions in Sections 25.212(c) and (d)(3) into Section 25.212(e).

10. Section 25.215 “Technical requirements for space stations in the Direct Broadcast Satellite Service”

137. Section 25.215 contains a 30 dB cross-polarization isolation requirement for DBS space station antennas.¹⁵⁶ The International Bureau has routinely granted partial waivers of this requirement, however, to allow DBS space stations to operate with cross-polarization

¹⁵⁰ 47 C.F.R. § 25.212(c).

¹⁵¹ In other words, we propose to require applicants to comply with the antenna performance verification rule in Section 25.132(a)(1) to become eligible for routine licensing under Section 25.212(c), for essentially the same reason that we have proposed a similar change in Section 25.211(d). *See* ¶ 128, *supra*.

¹⁵² *See* 47 C.F.R. §§ 25.221, 25.222, and 25.226.

¹⁵³ *Service Rules and Procedures to Govern the Use of Aeronautical Mobile Satellite Service Earth Stations in Frequency Bands Allocated to the Fixed Satellite Service*, IB Docket No. 05-20, Notice of Proposed Rulemaking, 20 FCC Rcd 2906 (2005).

¹⁵⁴ 47 C.F.R. § 25.212(d)(1).

¹⁵⁵ 47 C.F.R. § 25.212(d)(2).

¹⁵⁶ 47 C.F.R. § 25.215.

isolation of 27 dB. This has not resulted in harmful interference. We believe that 27 dB of cross-polarization isolation affords adequate cross-polarization interference protection for DBS service links using current digital modulation and error-correction coding techniques. We therefore propose to relax the cross-polarization isolation requirement for DBS space station antennas (both service-link and feeder-link) to 27 dB and invite comment as to whether some other minimum cross-polarization isolation level should be prescribed instead. We also propose to move the provision from Section 25.215 to Section 25.210(c). This change would eliminate all content from Section 25.215, which we propose to reserve.

11. Section 25.217 “Default service rules”

138. Section 25.217 contains “default” technical rules for stations licensed to operate in frequency bands for which the Commission has not yet adopted frequency-specific service rules.¹⁵⁷ Paragraphs (b)(1) and (c)(1) of this section require space stations operating in such bands under licenses granted pursuant to the procedure contained in Section 25.157 or Section 25.158 to conform to the technical requirements in certain specified rule provisions, including Sections 25.210(c) and (l). As a consequence of changes proposed above,¹⁵⁸ we propose to delete the cross-references to Sections 25.210(c) and 25.210(l).

139. Section 25.217(b)(3) provides that earth station licensees with authority to communicate via NGSO-like space stations operating pursuant to the default rules in Section 25.217(b)(1) must comply with the requirements in Section 25.136. In accordance with changes proposed above,¹⁵⁹ we propose to amend this provision to cross-reference Sections 25.285 and 25.287, instead. We also propose to amend this provision to clarify that it applies specifically to licensees of mobile earth stations.¹⁶⁰

12. Section 25.218 “Off-axis EIRP envelopes for FSS earth station operations”

140. Section 25.218 provides for routine licensing of earth stations that meet specified limits on radiated power spectral density in directions other than along the transmitting antenna’s main-lobe axis.¹⁶¹ As recently amended, Section 25.218(a) applies to “all applications for FSS earth stations operating in the C-band, Ku-band, or extended Ku-band, except for: (1) ESV and VMES applications, (2) analog video earth station applications, and (3) [a]pplications for feeder-link earth stations in the 17/24 GHz BSS.” It is unnecessary to explicitly exclude 17/24 GHz BSS feeder-link earth stations, which do not transmit in the C-band, Ku-band, or extended Ku-band. We therefore propose to delete Section 25.218(a)(3). We also propose to amend Section 25.218(a) to add that it applies only to applications for earth stations that transmit to geostationary space stations, since earth stations communicating with satellites in non-geostationary orbits are not eligible for routine processing.

13. Section 25.223 “Off-axis EIRP spectral density limits for feeder-link earth stations in the 17/24 GHz BSS”

141. Section 25.223 contains rules for licensing earth stations that transmit to 17/24 GHz BSS space stations based either on compliance with limits on off-axis radiated spectral

¹⁵⁷ 47 C.F.R. § 25.217.

¹⁵⁸ See ¶¶ 18 and 129, *supra*.

¹⁵⁹ See ¶¶ 26-27 and 101, *supra*.

¹⁶⁰ See *Space Station Licensing Reform Order*, Appendix C.

¹⁶¹ 47 C.F.R. § 25.218.

density or coordination with operators of co-frequency geostationary space stations in the vicinity of the proposed satellite points of communication.¹⁶² The Commission indicated, when adopting this rule, that it applies to applications for earth stations that do *not* conform to the antenna performance standards in Section 25.209 and/or specify input power density levels in excess of that specified in Section 25.212(f).¹⁶³ As currently worded, however, the first sentence in Section 25.223 says precisely the opposite: “[t]his section applies to all applications for earth station licenses in the 17/24 GHz BSS frequency bands, except for applications in which the proposed antenna does not conform to the standards of Sections 25.209(a) and (b), and/or the proposed power density levels are in excess of those specified in Section 25.212(f) of this part.” We propose to amend Section 25.223(a) to correct this error.

142. Section 25.223 is captioned “Off-axis EIRP spectral density limits for feeder-link earth stations in the 17/24 GHz BSS.” This caption is inaccurate, as the specified spectral density levels are not mandatory limits; rather, they comprise an alternative standard for routine licensing for applications that do not qualify for routine licensing under Section 25.212(f). Furthermore, Section 25.223 does not only prescribe a licensing standard based on off-axis EIRP spectral density levels; it also prescribes alternative rules for licensing based on coordination. We propose to amend the caption to read “Alternative licensing rules for feeder-link earth stations in the 17/24 GHz BSS,” which better reflects the scope of the rule.

143. The Commission modeled Section 25.223(c) on Section 25.138(b). We propose to change Section 25.223(c) to be consistent with the proposed revisions to Section 25.138(b).¹⁶⁴

14. Sections 25.259 “Time sharing between NOAA meteorological satellite systems and non-voice, non-geostationary satellite systems in the 137-138 MHz band” and 25.260 “Time sharing between DoD meteorological satellite systems and non-voice, non-geostationary satellite systems in the 400.15-401 MHz band”

144. Sections 25.259 and 25.260 contain time-sharing rules for commercial NVNG satellite systems operating in frequency bands shared with meteorological satellite systems operated by Federal agencies.¹⁶⁵ Each of these rules includes a statement that “the Commission will not hesitate to impose sanctions ... including monetary forfeitures and license revocations, when appropriate” on licensees that violate these rules. We propose to delete these statements. It is not necessary to restate here that the Commission may impose sanctions for rule violations. We do not propose any change in enforcement policy in this regard, however.

I. Other Proposed Changes in Subpart D – Technical Operations

145. Subpart D of Part 25 includes rules governing technical operations of earth and space stations. As discussed below, we propose to make several substantive changes to the technical operations requirements to reflect evolving technology. We also propose to eliminate requirements that are no longer needed and to remove and replace redundant, unnecessary, or potentially confusing text.

1. Section 25.271 “Control of transmitting stations”

146. Commission staff has discovered during emergency and interference events that

¹⁶² 47 C.F.R. § 25.223.

¹⁶³ *17/24 GHz BSS 2007 Report and Order and FNPRM*, 22 FCC Rcd 8842.

¹⁶⁴ See ¶¶ 105-6, *supra*.

¹⁶⁵ 47 C.F.R. § 25.259; 47 C.F.R. § 25.260.

contact information for earth station licensees is often out of date. We seek comment on whether we should adopt a provision in Section 25.271 to require earth station licensees to maintain up-to-date point-of-contact information, beyond the postal point-of-contact information required by Section 1.5.¹⁶⁶

2. Section 25.276 “Points of Communication”

147. Section 25.276(a) states that unless otherwise indicated in the station authorization, an earth station may transmit to any space station in the same radio service, provided the space station operator has permitted such access.¹⁶⁷ We propose to amend this provision to state explicitly that the space station must be authorized as a point of communication in the earth station license. This proposed change would conform the rule to standard limitations on the face of earth station authorizations and is consistent with Section 301 of the Communications Act.

148. We propose to delete Section 25.276(b), which states that space stations licensed under Part 25 are authorized to provide service to earth stations located within the specified service area, including certain coastal waters.¹⁶⁸ This rule is a vestige of the Commission’s former Domsat/Separate Systems policies and is no longer needed.¹⁶⁹

3. Sections 25.281 “Automatic Transmitter Identification System (ATIS)”

149. Section 25.281 requires all satellite uplink transmissions carrying broadband video information to include a subcarrier signal that identifies the call sign of the transmitting earth station and includes contact information.¹⁷⁰ This signal is called the Automatic Transmitter Identification System signal, or ATIS signal. Transmission of ATIS signals is intended to facilitate rapid resolution of interference problems.

150. Some digital broadband video uplink signals – for instance, DBS and 17/24 GHz BSS feeder-link signals – are technically incompatible, however, with the subcarrier signal required by Section 25.281(d).¹⁷¹ When the Commission adopted Section 25.281, more than twenty years ago,¹⁷² operators transmitted broadband video signals with analog modulation techniques.¹⁷³ Today, broadband video signals are often transmitted as encoded and compressed

¹⁶⁶ 47 C.F.R. § 25.271.

¹⁶⁷ 47 C.F.R. § 25.276(a).

¹⁶⁸ 47 C.F.R. § 25.276(b).

¹⁶⁹ *DISCO I Order*, 11 FCC Rcd 2429.

¹⁷⁰ See 47 C.F.R. § 25.281(d)(3) (requiring the message transmitted on the subcarrier signal to include the earth station’s call sign, a telephone number providing immediate access to someone capable of resolving interference problems, and a unique ten-digit serial number).

¹⁷¹ DBS and 17/24 GHz BSS feeder-link signals contain several compressed and multiplexed television signals. The typical bandwidth of such a signal is 24 MHz or more. A 7.1 MHz ATIS subcarrier and such a feeder-link signal would interfere with each other because the subcarrier signal would be inside the bandwidth of the feeder-link signal.

¹⁷² *An Automatic Transmitter Identification System for Radio Transmitting Equipment*, GC Docket No. 86-337, First Report and Order, 5 FCC Rcd 3256 (1990).

¹⁷³ Analog radio frequency signal modulation techniques vary the frequency, amplitude, and/or phase of a radio frequency signal over a continuous range. In contrast, digital radio frequency modulation techniques vary frequency, amplitude, and/or phase in discrete increments, as a function of an integer numeric parameter, *i.e.* a digital data value.

digital data streams using more spectrum-efficient digital radio frequency signal modulation techniques. The technical characteristics of the ATIS signal currently specified in Section 25.281 are not well suited to use with broadband video digital modulation techniques, and could result in inefficient use of spectrum.¹⁷⁴ We therefore propose to revise Section 25.281 to prescribe appropriate methods of ATIS message transmission for stations transmitting broadband video with digital techniques.

151. We believe it is important, however, to limit the number of different techniques that operators can use to transmit ATIS information in digitally modulated uplink signals to avoid unduly burdening satellite network operators that might receive interference from broadband video uplinks with a need to purchase, operate, and maintain a variety of different types of ATIS signal receivers. We therefore seek comment on whether our rules should specify a particular method or methods for transmitting ATIS information on digitally modulated broadband video uplink signals, and if so, which method(s) we should specify. We are aware of two methods by which ATIS information could be included in such digitally modulated uplinks. Since most digital broadband video transmissions use MPEG encoding, one method is to insert the ATIS information into the Network Information Table of an MPEG transport stream.¹⁷⁵ Another method is to transmit digital broadband video uplink signals with an accompanying low-data-rate spread-spectrum signal carrying the ATIS information.¹⁷⁶ As indicated in the proposed revisions to Section 25.281 in Appendix A, we tentatively propose to allow use of either of these techniques. We seek comment on whether a grace period after the effective date of the rules would be needed to allow operators time to conform to any new ATIS requirements for digitally modulated uplinks and, if so, the length of time needed.

152. We also invite comment on content requirements for ATIS signals. Is the information currently required by Section 25.281(d)(3) adequate, or should we require more (or less) information in ATIS signals included in digitally-modulated uplinks? For example, should we require the geographic location of the earth station to be included in the ATIS data transmitted on digitally-modulated uplinks? Should we require a specific format for the ATIS message, or would it be sufficient to require the ATIS message to be transmitted in an unencrypted text format that can be easily decoded and displayed?

153. We also seek comment as to whether ATIS identification should be required for all types of satellite uplinks, and, if not, which type(s) should be excepted. The method we are proposing for transmitting ATIS data on digitally-modulated uplinks with a spread spectrum signal could be applied to any continuous digitally-modulated uplink transmission with a symbol rate of at least 128,000 symbols per second.¹⁷⁷ We seek comment on whether there are other methods of identification that could be applied to other types of transmissions.

¹⁷⁴ For example, the 7.1 MHz subcarrier requirement in Section 25.281(d)(1) could require the user to use a much larger amount of satellite transponder bandwidth than is required for the broadband video digital signal itself.

¹⁷⁵ The MPEG transport stream is a standard format for transmission and storage of audio, video, and related data that is used in digital video broadcast transmissions. An industry standard for transmitting carrier identification data in an MPEG transport stream is documented in <http://www.nabanet.com/wbuarea/library/docs/isog/presentations/2011B/1.3.1.2%20AEdwards.pdf> (*last accessed* April 16, 2012).

¹⁷⁶ See http://www.comtechefdata.com/files/articles_papers/WP-Carrier-ID-Using-MetaCarrier.pdf (*last accessed* April 11, 2012).

¹⁷⁷ The symbol rate of a digitally-modulated carrier wave is the rate at which the carrier waveform amplitude, frequency, and/or phase is varied to transmit information.

154. Feeder-link signals for DBS and 17/24 GHz BSS systems are usually transmitted using very large earth station antennas, nine meters or more in diameter. These large antennas are almost always installed, pointed, and calibrated by skilled technical personnel performing multiple quality-control checks. Once set up, their operating parameters change infrequently. They are thus unlikely to be a source of interference to other satellite communication systems. We therefore invite comment on revising Section 25.281 to exclude DBS and 17/24 GHz BSS feeder-link transmissions from the ATIS requirement.

J. Additional Technical Changes

155. In proposing these changes to Part 25, we have been guided by a licensing framework that is designed to be open and transparent. The Commission's licensing requirements are also intended to reinforce our fundamental policy goal of providing space and earth station operators with sufficient flexibility to implement technological advances and meet customer needs, while ensuring an operating environment free from harmful interference and a competitive marketplace. We recognize that other countries have also developed licensing regimes for commercial satellite services and related regulatory practices. We seek comment on whether there are technical rules or technical practices developed by other countries that might further the Commission's policy objectives and might be incorporated in Part 25. Commenters advocating adopting a rule or practice used by another country should provide specific text for any proposed rule, together with a supporting technical analysis. As an example, we invite comment on amending Part 25 to relax technical information requirements for applicants proposing to operate networks of small earth stations that would present minimal risk of harmful interference or radio frequency radiation exposure. A similar procedure is used in some European countries. Commenters advocating such a change should specify the technical parameters that should be required for applications to qualify for streamlined processing. In addition, commenters should provide an interference analysis supporting their proposals. The technical analysis should consider the potential impact on other licensed FSS operations, including ESV and VMES.

IV. REGULATORY IMPACT CONCLUSION

156. This Notice is our first wholesale examination of the rules governing satellite services in over a decade. The revisions we propose would update these rules to reflect evolving technology, eliminate unnecessary technical and information-filing requirements, and reorganize, clarify, and simplify existing requirements. The proposed changes will benefit the public interest by promoting compliance with the Commission's operating rules, improving the ability of the public and Commission to assess the interference potential of proposed operations, affording more flexibility for incorporating state-of-the-art design, and easing administrative burdens for applicants, licensees, and the Commission. Moreover, these changes will facilitate more rapid deployment of new and improved satellite services. We conclude that the benefits of the proposed changes outweigh any resultant costs and that the changes will reduce net costs, on average, for applicants and licensees. We invite comment on these conclusions.

V. PROCEDURAL MATTERS

A. Ex Parte

157. The proceeding this Notice initiates shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.¹⁷⁸ Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline

¹⁷⁸ 47 C.F.R. §§ 1.1200 *et seq.*

applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

B. Initial Regulatory Flexibility Act

158. As required by the Regulatory Flexibility Act of 1980, as amended,¹⁷⁹ the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) for this Notice, of the possible significant economic impact on small entities of the policies and rules addressed in this document. The IRFA is set forth as Appendix B. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the Notice provided on or before the dates indicated on the first page of this Notice. The Regulatory Flexibility Act of 1980, as amended (RFA),¹⁸⁰ requires that a regulatory flexibility analysis be prepared for rulemaking proceedings unless the agency certifies that "the rule will not have a significant economic impact on a substantial number of small entities."¹⁸¹ The RFA generally defines the term "small entity" as referring to any "small business," "small organization," or "small governmental jurisdiction."¹⁸² The term "small business" has the same meaning as the term "small business concern" under the Small Business Act.¹⁸³ A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).¹⁸⁴ A small organization is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."¹⁸⁵ "Small governmental jurisdiction" generally means governments of cities, counties, towns, townships, villages, school

¹⁷⁹ 5 U.S.C. § 603.

¹⁸⁰ The RFA, *see* 5 U.S.C. § 601 *et seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

¹⁸¹ 5 U.S.C. § 605(b).

¹⁸² 5 U.S.C. § 601(6).

¹⁸³ 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. § 632). Pursuant to the RFA, the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after the opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register." 5 U.S.C. § 601(3).

¹⁸⁴ Small Business Act, 15 U.S.C. § 632 (1996).

¹⁸⁵ 5 U.S.C. § 601(4).

districts, or special districts, with a population of less than 50,000.¹⁸⁶

C. Initial Paperwork Reduction

159. This document contains proposed new and modified information collection requirements. It also proposes to eliminate a number of existing information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and OMB to comment on the information collection requirements contained in this document, as required by PRA. In addition, pursuant to the Small Business Paperwork Relief Act of 2002,¹⁸⁷ we seek specific comment on how we might “further reduce the information collection burden for small business concerns with fewer than 25 employees.”¹⁸⁸

D. Filing of Comments and Reply Comments

160. Pursuant to sections 1.415 and 1.419 of the Commission’s rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. When filing comments or reply comments, please reference **IB Docket No. 12-267**. Comments may be filed using: (1) the Commission’s Electronic Comment Filing System (ECFS), (2) the Federal Government’s eRulemaking Portal, or (3) by filing paper copies. *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://www.fcc.gov/cgb/ecfs/> or the Federal eRulemaking Portal: <http://www.regulations.gov>. Filers should follow the instructions provided on the website for submitting comments.
- Paper Filers: Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission’s Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission’s Secretary must be delivered to FCC Headquarters at 445 12th Street, SW, Room TW-A325, Washington, DC 20554. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

161. People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an email to

¹⁸⁶ 5 U.S.C. § 601(5).

¹⁸⁷ Pub. L. No. 107-198.

¹⁸⁸ 44 U.S.C. § 3506(c)(4).

fcc504@fcc.gov or call the Consumer and Governmental Affairs Bureau at 202-418-0530 (voice) or 202-418-0432 (TTY). Contact the FCC to request reasonable accommodations for filing comments (accessible format documents, sign language interpreters, CART, etc.) by e-mail at: FCC504@fcc.gov; phone: 202-418-0530 or TTY: 202-418-0432.

VI. ORDERING CLAUSES

162. Accordingly, IT IS ORDERED, pursuant to Sections 4(i), 7(a), 11, 303(c), 303(f), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 157(a), 161, 303(c), 303(f), 303(g), 303(r), that this Notice of Proposed Rulemaking in IB Docket No. 12-267 is ADOPTED.

163. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center shall send a copy of this Notice of Proposed Rulemaking, including the initial regulatory flexibility act analysis, to the Chief Counsel for Advocacy of the Small Business Administration, in accordance with Section 603(a) of the Regulatory Flexibility Act, 5 U.S.C. § 601, et seq. (1981).

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A

Proposed Rule Changes

The Federal Communications Commission proposes to amend title 47 of the Code of Federal Regulations, part 25, as follows:

PART 25 -- SATELLITE COMMUNICATIONS

1. The authority citation for Part 25 is revised to read as follows:

Authority: Interprets or applies Sections 4, 301, 302, 303, 307, 309, 319, 332, and 705 of the Communications Act, as amended, 47 U.S.C. Sections 154, 301, 302, 303, 307, 309, 319, 332, and 705 unless otherwise noted.

2. Revise § 25.103 to read as follows:

§ 25.103 Definitions.

Terms with definitions including the “(RR)” designation are defined in the same way in § 2.1 of this chapter and in the Radio Regulations of the International Telecommunication Union.

1.5/1.6 GHz Mobile-Satellite Service. Mobile-Satellite Service provided in any portions of the 1525-1559 MHz space-to-Earth band and the 1626.5-1660.5 MHz Earth-to-space band, which are referred to in this rule part as the “1.5/1.6 GHz MSS bands.”

1.6/2.4 GHz Mobile-Satellite Service. A Mobile-Satellite Service that operates in the 1610-1626.5 MHz and 2483.5-2500 MHz bands, or in any portion thereof.

2 GHz Mobile-Satellite Service. A Mobile-Satellite Service that operates in the 2000-2020 MHz and 2180-2200 MHz bands, or in any portion thereof.

12/14 GHz bands. The 11.7-12.2 GHz Fixed-Satellite Service space-to-Earth band and the 14.0-14.5 GHz Fixed-Satellite Service Earth-to-space band.

17/24 GHz Broadcasting-Satellite Service. A radiocommunication service using geostationary satellites between one or more feeder-link earth stations and other earth stations, in the 17.3-17.7 GHz (space-to-Earth) (domestic allocation), 17.3-17.8 GHz (international allocation) and 24.75-25.25 GHz bands. This service is also known as “17/24 GHz BSS.” For purposes of the application processing provisions of this part, the 17/24 GHz BSS is a GSO-like service. For purposes of the technical requirements of this part, we will treat the 17/24 GHz BSS as if it were FSS. Unless specifically stated otherwise, the 17/24 GHz BSS systems are subject to the rules in this part applicable to FSS.

20/30 GHz bands. The 18.3-20.2 GHz frequency range, which is allocated for Fixed-Satellite Service (FSS) space-to-Earth transmission, and the 28.35-30.0 GHz frequency range, which is allocated for FSS Earth-to-space transmission.

Ancillary Terrestrial Component (ATC). A terrestrial communications network used in conjunction with a qualifying satellite network system authorized pursuant to these rules and the conditions established in the Orders issued in IB Docket No. 01-185, *Flexibility for Delivery of Communications by Mobile-Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Band*.

Ancillary Terrestrial Component (ATC) base station. A terrestrial fixed facility used to transmit communications to or receive communications from one or more ancillary terrestrial component

mobile terminals.

Ancillary Terrestrial Component (ATC) mobile terminal. A terrestrial mobile facility used to transmit communications to or receive communications from an ancillary terrestrial component base station or a space station.

C-band. For purposes of this part, the terms “C-band” and “conventional C-band” refer specifically to the 3700-4200 MHz space-to-Earth and 5925-6425 MHz Earth-to-space bands. These paired bands are allocated to the Fixed-Satellite Service and are also referred to as the 4/6 GHz bands.

Coordination distance. When determining the need for coordination, the distance on a given azimuth from an earth station sharing the same frequency band with terrestrial stations, or from a transmitting earth station sharing the same bidirectionally allocated frequency band with receiving earth stations, beyond which the level of permissible interference will not be exceeded and coordination is therefore not required. (RR)

Direct Broadcast Satellite Service. A radiocommunication service in which signals transmitted or retransmitted by Broadcasting-Satellite Service space stations in the 12.2-12.7 GHz band are intended for direct reception by subscribers or the general public. For the purposes of this definition, the term direct reception includes individual reception and community reception.

Earth station. A station located either on the Earth’s surface or within the major portion of the Earth’s atmosphere intended for communication:

- (1) With one or more space stations; or
- (2) With one or more stations of the same kind by means of one or more reflecting satellites or other objects in space. (RR)

Earth Station on Vessel (ESV). An earth station onboard a craft designed for traveling on water receiving from and transmitting to Fixed-Satellite Service space stations.

Emergency Call Center. A facility that subscribers of satellite commercial mobile radio services call when in need of emergency assistance by dialing “911” on their mobile earth station terminals.

Equivalent Power Flux-Density (EPFD). The sum of the power flux-densities produced at a geostationary orbit (GSO) receive earth or space station on the Earth’s surface or in the geostationary orbit, as appropriate, by all the transmit stations within a non-geostationary orbit Fixed-Satellite Service (NGSO FSS) system, taking into account the off-axis discrimination of a reference receiving antenna assumed to be pointing in its nominal direction. The equivalent power flux density, in dB(W/m²) in the reference bandwidth, is calculated using the following formula:

$$EPFD = 10 \log_{10} \left[\sum_{i=1}^{N_a} 10^{\frac{P_i}{10}} \frac{G_t(\theta_i) G_r(\varphi_i)}{4\pi d_i^2 G_{r,\max}} \right]$$

Where:

N_a is the number of transmit stations in the non-geostationary orbit system that are visible from the GSO receive station considered on the Earth’s surface or in the geostationary orbit, as appropriate;

i is the index of the transmit station considered in the non-geostationary orbit system;

P_i is the RF power at the input of the antenna of the transmit station, considered in the non-geostationary orbit system in dBW in the reference bandwidth;

θ_i is the off-axis angle between the boresight of the transmit station considered in the non-geostationary orbit system and the direction of the GSO receive station;

$G_t(\theta_i)$ is the transmit antenna gain (as a ratio) of the station considered in the non-geostationary orbit system in the direction of the GSO receive station;

d_i is the distance in meters between the transmit station considered in the non-geostationary orbit system and the GSO receive station;

φ_i is the off-axis angle between the boresight of the antenna of the GSO receive station and the direction of the i th transmit station considered in the non-geostationary orbit system;

$G_r(\varphi_i)$ is the receive antenna gain (as a ratio) of the GSO receive station in the direction of the i th transmit station considered in the non-geostationary orbit system;

$G_{r,max}$ is the maximum gain (as a ratio) of the antenna of the GSO receive station.

Feeder link. A radio link from a fixed earth station at a given location to a space station, or vice versa, conveying information for a space radiocommunication service other than the Fixed-Satellite Service. The given location may be at a specified fixed point or at any fixed point within specified areas. (RR)

Fixed earth station. An earth station intended to be used at a fixed position. The position may be a specified fixed point or any fixed point within a specified area.

Fixed-Satellite Service. A radiocommunication service between earth stations at given positions, when one or more satellites are used; the given position may be a specified fixed point or any fixed point within specified areas; in some cases this service includes satellite-to-satellite links, which may also be operated in the inter-satellite service; the Fixed-Satellite Service may also include feeder links of other space radiocommunication services. (RR)

Geostationary satellite. A geosynchronous satellite whose circular and direct orbit lies in the plane of the Earth's equator and which thus remains fixed relative to the Earth; by extension, a geosynchronous satellite which remains approximately fixed relative to the Earth. (RR)

Inter-Satellite Service. A radiocommunication service providing links between artificial earth satellites.

Ka-band Permitted Space Station List. A list of all U.S.-licensed geostationary-orbit space stations providing Fixed-Satellite Service in the 20/30 GHz bands, as well as those non-U.S.-licensed geostationary-orbit space stations approved for U.S. market access to provide Fixed-Satellite Service in the 20/30 GHz-bands. Applicants for Fixed-Satellite Service earth stations that qualify for routine processing in the 20/30 GHz bands may designate the Ka-band Permitted Space Station List as a point of communication. Once such an application is granted, the earth station operator may communicate with any space station on the Ka-band Permitted Space Station List, provided that the communications fall within the technical parameters and conditions established in the earth station license and any limitations placed on the space station authorization or noted in the Ka-band Permitted Space Station List. The earth station operator may not communicate with a space station on the list in the 18.3-18.8 GHz or 19.7-20.2 GHz band until the space station operator has completed coordination under Footnote US334 to § 2.106.

Ku-band. In this rule part, the terms “Ku-band” and “conventional Ku-band” refer specifically to the 11700-12200 MHz space-to-Earth and 14000-14500 MHz Earth-to-space bands. These paired bands are allocated to the Fixed-Satellite Service and are also referred to as the 12/14 GHz bands.

Land earth station. An earth station in the Fixed-Satellite Service or, in some cases, in the Mobile-Satellite Service, located at a specified fixed point or within a specified area on land to provide a feeder link for the Mobile-Satellite Service. (RR)

Land Mobile Earth Station. A mobile earth station in the land mobile-satellite service capable of surface movement within the geographical limits of a country or continent. (RR)

Mobile Earth Station. An earth station in the Mobile-Satellite Service intended to be used while in motion or during halts at unspecified points. (RR)

Mobile-Satellite Service. A radiocommunication service:

- (1) Between mobile earth stations and one or more space stations, or between space stations used by this service; or
- (2) Between mobile earth stations, by means of one or more space stations.

This service may also include feeder links necessary for its operation. (RR)

NGSO FSS gateway earth station. An earth station complex consisting of multiple interconnecting earth station antennas supporting the communication routing and switching functions of a non-geostationary orbit Fixed-Satellite Service (NGSO FSS) system as a whole. A gateway earth station in the NGSO FSS:

- (1) Does not originate or terminate radiocommunication traffic, but interconnects multiple non-located user earth stations operating in frequency bands other than designated gateway bands, through a satellite with other primary terrestrial networks, such as the public switched telephone network (PSTN) and/or Internet networks.
- (2) Is not for the exclusive use of any customer.
- (3) May also be used for telemetry, tracking, and command transmissions for the same NGSO FSS system.
- (4) May include multiple antennas, each required to meet the antenna performance standard in § 25.209(h), located within an area of one second latitude by one second longitude. Additional antennas located outside such area will be considered as a separate gateway earth station complex for purposes of coordination with terrestrial services.

Non-Voice, Non-Geostationary (NVNG) Mobile-Satellite Service. A Mobile-Satellite Service reserved for use by non-geostationary satellites in the provision of non-voice communications which may include satellite links between land earth stations at fixed locations.

Permitted Space Station List. A list of all U.S.-licensed geostationary-orbit space stations providing Fixed-Satellite Service in the conventional C- and Ku-bands, as well as non-U.S.-licensed geostationary-orbit space stations approved for U.S. market access to provide Fixed-Satellite Service in the conventional C- and Ku-bands. Applicants for Fixed-Satellite Service earth stations that qualify for routine processing in the conventional C- and Ku-bands may designate the Permitted Space Station List as a point of communication. Once such an application is granted, the earth station may communicate with any space station on the Permitted Space Station List, provided that the communications fall within the technical parameters and conditions in the earth station license and any limitations placed on the space station authorization or noted on the Permitted Space Station List.

Power Spectral Density (PSD). The amount of an emission's transmitted carrier power applied at the antenna input falling within the stated bandwidth. The units of power spectral density are watts per hertz and are generally expressed in decibel form as dB(W/Hz) when measured in a 1 Hz bandwidth, dB(W/4kHz) when measured in a 4 kHz bandwidth, or dB(W/1MHz) when measured in a 1 MHz bandwidth.

Protection areas. The geographic regions on the surface of the Earth where U.S. Department of Defense (DoD) meteorological satellite systems or National Oceanic and Atmospheric Administration (NOAA) meteorological satellite systems, or both such systems, are receiving signals from low earth orbiting satellites. Also, geographic protection areas around Ka-band

feeder-link earth stations in the 1.6/2.4 GHz Mobile-Satellite Service are determined in the manner specified in § 25.203(j).

Radiodetermination-Satellite Service. A radiocommunication service for the purpose of radiodetermination involving the use of one or more space stations. This service may also include feeder links necessary for its own operation. (RR)

Routine processing or licensing. Expedited processing of unopposed applications for Fixed-Satellite Service earth stations communicating via geostationary satellites that satisfy the criteria in § 25.134(a), § 25.134 (g), § 25.138(a), § 25.211(d), § 25.212(c), § 25.212(d), § 25.212(f), § 25.218, or § 25.223(b), include all required information, are consistent with all Commission rules, and do not raise any policy issues. Some, but not all, routine earth station applications are eligible for an autogrant procedure under § 25.115(a)(4).

Satellite Digital Audio Radio Service (SDARS). A radiocommunication service in which audio programming is digitally transmitted by one or more space stations directly to fixed, mobile, and/or portable stations, and which may involve complementary repeating terrestrial transmitters, telemetry, tracking and control facilities.

Satellite system. A space system using one or more artificial earth satellites. (RR)

Selected assignment. A spectrum assignment voluntarily identified by a 2 GHz MSS licensee at the time that the licensee's first 2 GHz Mobile-Satellite Service satellite reaches its intended orbit.

Shapeable antenna beam. A satellite transmit or receive antenna beam, the gain and/or gain pattern of which can be modified at any time.

Spacecraft. A man-made vehicle which is intended to go beyond the major portion of the Earth's atmosphere. (RR)

Space radiocommunication. Any radiocommunication involving the use of one or more space stations or the use of one or more reflecting satellites or other objects in space.

Space station. A station located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere. (RR)

Space system. Any group of cooperating earth stations and/or space stations employing space radiocommunication for specific purposes. (RR)

Terrestrial station. A station effecting terrestrial radiocommunication.

Vehicle-Mounted Earth Station (VMES). An earth station, operating from a motorized vehicle that travels primarily on land, that receives from and transmits to geostationary orbit Fixed-Satellite Service space stations and operates within the United States pursuant to the requirements set out in § 25.226.

3. In § 25.111, add paragraph (d) and revise the caption and paragraph (b) to read as follows:

§ 25.111 Additional information and ITU cost recovery.

* * * * *

(b) Applicants and licensees of radio stations governed by this part must provide the Commission with the information required for Advance Publication, Coordination, and Notification of frequency assignment filings pursuant to the ITU Radio Regulations (RR) including due diligence information. No protection from interference caused by radio stations authorized by other

Administrations is guaranteed unless coordination procedures are timely completed or, with respect to individual administrations, coordination agreements are successfully completed. A license for which such coordination has not been completed may be subject to additional terms and conditions required for coordination of the frequency assignments with other Administrations.

* * * * *

(d) The Commission will submit the information required by paragraphs (b) or (c) of this section to the ITU only after the party in interest has submitted a signed declaration that it unconditionally accepts all consequent ITU cost-recovery responsibility. The declaration must be electronically filed in the "Other Filings" tab of the pertinent application file in the IBFS database, and a paper copy must be mailed to the International Bureau, Satellite Division. The filing must reference the pertinent call sign and international satellite name and include the name(s), address(es), email address(es), and telephone and fax number(s) of a contact person, or persons, responsible for cost recovery inquiries and ITU correspondence and filings. Supplements must be filed as necessary to apprise the Commission of changes in the contact information. The party in interest must remit payment of any resultant cost-recovery fee to the ITU by the due date specified in the pertinent ITU invoice. A license granted in reliance on such a commitment and disposition of any pending or future Part 25 application from the same party will be contingent upon discharge of any such payment obligation.

4. In § 25.112, add a new sub-paragraph (a)(4), to read as follows:

§ 25.112 Defective applications.

(a) * * *

(1) * * *

(4) The application is identical to a pending application that was timely filed pursuant to §§ 25.157 or 25.158 of this chapter.

* * * * *

5. In § 25.113, remove and reserve paragraphs (c), (d), and (e) and revise the section caption and paragraphs (a), (b), (f), and (h) to read as follows:

§ 25.113 Provisions pertaining to station construction, launch authority, and operation of spare satellites.

(a) Construction permits are not required for earth stations. Construction of such stations may commence prior to grant of an earth station license at the applicant's own risk, subject to the requirements of § 1.1312 and Part 17 of this chapter concerning environmental processing and construction, marking, and lighting of antenna structures.

(b) Construction permits are not required for Ancillary Terrestrial Component (ATC) stations. A party with licenses issued under this part for launch and operation of 1.5/1.6 GHz, 1.6/2.4 GHz, or 2 GHz Mobile-Satellite Service space stations and operation of associated ATC facilities may commence construction of ATC base stations at its own risk after commencing physical construction of the space stations, subject to the requirements of § 1.1312 and Part 17 of this chapter. Such an MSS/ATC licensee may also conduct equipment tests for the purpose of making adjustments and measurements necessary to ensure compliance with the terms of its ATC license, applicable rules in this Part, and technical design requirements. Prior to commencing such

construction and pre-operational testing, an MSS/ATC licensee must notify the Commission of the commencement of physical satellite construction and the licensee's intention to construct and test ATC facilities. This notification must be filed electronically in the appropriate file in the International Bureau Filing System database. The notification must specify the frequencies the licensee proposes to use for pre-operational testing and the name, address, and telephone number of a representative for the reporting and mitigation of any interference resulting from such testing. MSS/ATC licensees engaging in pre-operational testing must comply with §§ 5.83, 5.85(c), 5.111, and 5.117 of this chapter regarding experimental operations. An MSS/ATC licensee may not offer ATC service to the public for compensation during pre-operational testing.

(c) [Reserved]

(d) [Reserved]

(e) [Reserved]

(f) Construction permits are not required for U.S.-licensed space stations, except for stations that the applicant proposes to operate to disseminate program content to be received by the public at large, rather than only by subscribers. Construction of a station for which a construction permit is not required may commence, at the applicant's own risk, prior to grant of a license. Before commencing pre-grant construction, however, an applicant must notify the Commission in writing that it plans to begin construction at its own risk.

* * * * *

(h) Licensees of Non-Geostationary Satellite Orbit (NGSO) satellite systems need not file separate applications to operate technically identical in-orbit spares authorized as part of a blanket license pursuant to §25.114(e) or any other satellite blanket licensing provision in this part. However, the licensee must notify the Commission within 10 days of bringing the in-orbit spare into operation and certify that operation of this space station did not cause the licensee to exceed the total number of operating space stations authorized by the Commission and that the licensee will operate the space station within the applicable terms and conditions of its license.

6. In § 25.114, remove paragraph (e) and revise paragraphs (a), (c), and (d) to read as follows:

§ 25.114 Applications for space station authorizations.

(a) A comprehensive proposal must be submitted for each proposed GSO space station or NGSO satellite constellation on FCC Form 312, Main Form and Schedule S, together with attached exhibits as described in paragraph (d) of this section. An application for blanket authority for an NGSO satellite constellation comprised of space stations that are not all technically identical must provide the information required by paragraphs (c) and (d) of this section for each type of space station in the constellation.

* * * * *

(c) * * *

(4)(i) For each space station transmitting and receiving antenna beam (including telemetry and tracking beams but not command beams), specify channel center frequencies and bandwidths and polarization plan. For command beams, specify the center frequencies within a 5 MHz range or a range of 2 percent of the channel bandwidth, whichever is smaller, and the polarization plan. If the space station can vary channel bandwidth in a particular frequency band with on-board processing, specify only the range of frequencies in that band over which the beam can operate and the polarization plan.

- (ii) Specify peak antenna gain, maximum EIRP, and maximum EIRP density for each space station transmitting antenna beam. If the satellite uses shapeable antenna beams, as defined in § 25.103, specify instead peak antenna gain, maximum possible EIRP, and maximum possible EIRP density within each shapeable beam's proposed coverage area. Provide this information for each frequency band in which the transmitting antenna would operate. In all cases, specify EIRP density in dBW/Hz. If the EIRP density varies over time, specify the maximum possible EIRP density.
- (iii) [Reserved]
- (iv) [Reserved]
- (v) For each space station receiving beam other than command beams, specify the peak antenna gain and the gain-to-temperature ratio at beam peak. For receiving beams fed into transponders, also specify the minimum and maximum saturation flux density at beam peak. If the satellite uses shapeable beams, specify the peak antenna gain and minimum and maximum gain-to-temperature ratio within each shapeable beam's proposed coverage area, and for shapeable receiving beams fed into transponders, specify the minimum and maximum saturation power flux density within the 0 dB antenna gain isoline. Provide this information for each frequency band in which the receiving beam can operate. For command beams, indicate frequencies within a 5 MHz range or a range of 2 percent of the allocated bandwidth, whichever is smaller, and specify the required minimum uplink power flux density;
- (vi) Specify predicted space station antenna gain contour(s) for each transmit and receive antenna beam and geostationary orbital location or non-geostationary orbit requested, except for beams where the contour at 8 dB below peak falls entirely beyond the edge of the visible Earth. These contour(s) should be plotted on an area map at 2 dB intervals down to 10 dB below the peak gain and at 5 dB intervals between 10 dB and 20 dB below the peak gain. Applications for geostationary orbit satellites must present this information in a GIMS-readable format. For satellites with shapeable antenna beams, provide the contours, as defined above, for the transmitting beam configuration that results in the highest EIRP density for the beams listed in § 25.114(c)(4)(ii) above and for the receiving beam configuration with the smallest gain-to-temperature ratio and the highest required saturation power flux density for the beams listed in § 25.114(c)(4)(v) above. If the shapeable beams are also steerable, include the contours that would result from moving the beam peak around the limit of the effective beam peak area and the 0 dB antenna gain isoline. The proposed maximum coverage area must be clearly specified by the applicant;
- (5) For space stations in geostationary orbit:
- (i) Orbital location requested,
 - (ii) [Reserved]
 - (iii) East-west station-keeping range,
 - (iv) North-south station-keeping range, and
 - (v) Accuracy to which antenna axis attitude will be maintained;
- (6) For space stations in non-geostationary orbits:
- (i) The number of space stations and the number of orbital planes,
 - (ii) The inclination of the orbital plane(s),
 - (iii) The orbital period,
 - (iv) The apogee,
 - (v) The perigee,
 - (vi) The argument(s) of perigee,

- (vii) Active service arc(s),
 - (viii) Right ascension of the ascending node(s), and
 - (ix) For each satellite in each orbital plane, the initial phase angle at the reference time;
- (7) The frequency bands, types of services, and the coverage areas;
- (8) Calculated maximum power flux density levels within each coverage area and energy dispersal bandwidths, if any, needed for compliance with § 25.208, for angles of arrival of 5°, 10°, 15°, 20°, and 25° above the horizontal;
- (9) [Reserved]
- (10) Estimated operational lifetime;
- (11) Whether the space station is to be operated on a common carrier basis;
- (12) [Reserved]
- (13) The polarization information for determining compliance with §§ 25.210(a)(1), (a)(3), and (i);

* * * * *

(d) * * *

- (1) Overall description of system facilities, operations and services and explanation of how uplink frequency bands can be connected to downlink frequency bands;
- (2) [Reserved]
- (3) For satellites with large numbers of identical fixed spot beams, other than DBS satellites, applicants may, as an alternative to submitting the information described in paragraph (c)(4)(vi) above with respect to these beams, provide the predicted antenna gain pattern for one transmit and receive antenna beam, along with one of the following: (i) a map showing all of the spot beams depicted on the surface of the Earth; (ii) a table identifying the beam boresight locations in latitude and longitude to the nearest 0.1 degree; or (iii) a map of the isolines formed by combining some or all of the spot beams into one composite beam;
- (4) [Reserved]
- (5) Calculation of maximum power flux density levels within each coverage area and of the energy dispersal, if any, needed for compliance with § 25.208, for angles of arrival other than 5°, 10°, 15°, 20°, and 25° above the horizontal;

* * * * *

(7) Applicants for authorizations for space stations in the Fixed-Satellite Service must also include the information specified in § 25.140(b)(2) of this part. Applicants for authorizations for space stations in the 17/24 GHz Broadcasting-Satellite Service must also include the information specified in § 25.140(b)(3), (b)(4), (b)(5), or (b)(6) of this part;

* * * * *

(10) Applications for space station authorizations in the 1.6/2.4 GHz Mobile-Satellite Service must also provide all information required by § 25.143(b);

* * * * *

(11) Applications for space stations in the Direct Broadcast Satellite Service must include a clear and detailed statement of whether the space station is to be operated on a broadcast or non-broadcast basis;

* * * * *

(13) For satellite applications in the Direct Broadcast Satellite Service, if the proposed system's technical characteristics differ from those specified in the Appendix 30 BSS Plans, the Appendix 30A feeder link Plans, Annex 5 to Appendix 30 or Annex 3 to Appendix 30A of the ITU Radio Regulations, each applicant must provide:

- (i) The information requested in Appendix 4 of the ITU Radio Regulations. Further, applicants must provide sufficient technical showing that the proposed system could operate satisfactorily if all assignments in the BSS and feeder link Plans were implemented.
- (ii) Analyses of the proposed system with respect to the limits in Annex 1 to Appendices 30 and 30A of the ITU Radio Regulations;

* * * * *

7. In § 25.115, add new paragraph (j) and revise paragraphs (a), (d), and (e) to read as follows:

§ 25.115 Application for earth station authorizations.

(a)(1) * * *

(2) Applicants for licenses for transmitting earth stations in the Fixed-Satellite Service may file on Form 312EZ if all of the following criteria are met:

- (i) the application is for a single station with only one transmitting antenna;
- (ii) the earth station will transmit in the 5925-6425 MHz band, the 14.0-14.5 GHz band, or the 28.35-28.6 GHz and/or 29.25-30.0 GHz band;
- (iii) the earth station will not be installed in ships, aircraft, or other moving vehicles and operated while the vehicles are in motion;
- (iv) the equivalent diameter of the proposed antenna is 4.5 meters or greater if the station will transmit in the 5925-6425 MHz band or 1.2 meters or greater if the station will transmit in the 14.0-14.5 GHz band;
- (v) if the station will transmit in the 5925-6425 MHz band or the 14.0-14.5 GHz band, the performance of the proposed antenna comports with the standards in § 25.209(a) and (b) and is verified in accordance with applicable provisions of § 25.132;
- (vi) if the station will transmit in the 5925-6425 MHz band or the 14.0-14.5 GHz band, input power to the antenna will not exceed applicable limits specified in §§ 25.211 and 25.212; if the station will transmit in the 28.35-28.6 GHz and/or 29.25-30.0 GHz band, off-axis EIRP density will not exceed the levels specified in § 25.138(a);
- (vii) operation of the proposed station has been successfully coordinated with terrestrial systems, if the station would transmit in the 5925-6425 MHz band;
- (viii) the applicant has provided an environmental impact statement pursuant to § 1.1311 of the Commission's rules, if required; and
- (ix) the applicant does not propose to communicate via non-U.S.-licensed satellites not on the Permitted List.

(3) Unless the Commission orders otherwise, an application filed on Form 312EZ in accordance with paragraph (a)(2) of this section will be deemed granted 35 days after the date of the public notice that the application has been accepted for filing, provided no objection is filed during the 30-day notice period.

(4) * * *

* * * * *

(d) Mobile-Satellite Service user transceivers need not be individually licensed. Service vendors may file blanket applications for such transceivers using FCC Form 312, Main Form and Schedule B, specifying the number of units to be covered by the blanket license. A blanket license application for 1.5/1.6 GHz MSS user transceivers must include an explanation of how the applicant will comply with the priority and preemptive access requirements in § 25.287 of this chapter.

(e) Earth stations operating in the Fixed-Satellite Service in the 20/30 GHz band: License applications for Fixed-Satellite Service earth stations that would communicate via geostationary satellites in the 18.3-20.2 GHz and 28.35-30.0 GHz bands must include the information required by § 25.138. Such earth stations may be licensed on a blanket basis. An application for a blanket license for such earth stations must specify the number of terminals to be covered by the license.

* * * * *

(j) An application for a new fixed earth station or modification involving alteration of the overall height of one or more existing earth station antenna structures must include the FCC Antenna Structure Registration Number(s) for the antenna structure(s), if assigned. If no such number has been assigned, the application must state whether prior FAA notification is required by Part 17 of this chapter and, if so, whether the applicant or owner of the structure has notified the FAA of the proposed construction or alteration and applied for an Antenna Structure Registration Number in accordance with Part 17. Applicants who maintain that prior FAA notification is not required for construction or alteration of a structure with overall height more than 6.1 meters above ground level must explain in the application why such prior notification is not required.

8. In § 25.118, revise paragraphs (a)(2) and (e) to read as follows:

§ 25.118 Modifications not requiring prior authorization.

(a) * * *

(2) Except for replacement of equipment where the new equipment is electrically identical to the existing equipment, an authorized earth station licensee may add, change or replace transmitters or antenna facilities without prior authorization, provided:

(i) The added, changed, or replaced facilities conform to any applicable requirements in § 25.209;

* * * * *

(e) * * *

(5) The space station licensee certifies that it has completed any necessary coordination of its space station at the new location with other potentially affected space station operators, including coordination of station-keeping volume.

* * * * *

(8) A DBS space station licensee must certify that there will be no increase in interference due to the operations of the relocated space station that would require the Commission to submit a proposed modification to the ITU Appendix 30 Broadcasting-Satellite Service (“BSS”) Plan and/or the Appendix 30A feeder link Plan to the ITU Radiocommunication Bureau.

9. In § 25.121, revise paragraph (d) to read as follows:

§ 25.121 License term and renewals.

* * * * *

(d) Space stations. (1) For geostationary-orbit space stations, the license term will begin at 3 a.m. Eastern Time on the date when the licensee certifies pursuant to § 25.173(b) of this chapter that the space station has been successfully placed into orbit at its assigned orbital location and that its operations fully conform to the terms and conditions of the space station authorization.

(2) For non-geostationary orbit space stations, the license period will begin at 3 a.m. Eastern Time on the date when the licensee certifies pursuant to § 25.173(b) that operation of an initial space station in its authorized orbit is fully compliant with the license terms and conditions. Operating authority for all space stations subsequently launched pursuant to the license will terminate upon expiration of the license.

* * * * *

10. In § 25.129, revise paragraph (c) to read as follows:

§ 25.129 Equipment authorization for portable earth-station transceivers.

* * * * *

(c) In addition to the information required by § 1.1307(b) and § 2.1033(c) of this chapter, applicants for certification required by this section must submit any additional equipment test data necessary to demonstrate compliance with pertinent standards for transmitter performance prescribed in § 25.138, § 25.202(f), § 25.204, § 25.209, and § 25.216, must submit the statements required by § 2.1093(c) of this chapter, and must demonstrate compliance with the labeling requirement in § 25.285(b).

* * * * *

11. In § 25.130, remove and reserve paragraph (e) and add new paragraph (g), to read as follows:

§ 25.130 Filing requirements for transmitting earth stations.

* * * * *

(e) [Reserved]

* * * * *

(g) Parties may apply for a single earth station license covering operation of multiple fixed antennas transmitting in frequency bands shared with terrestrial services on a co-primary basis if the proposed antennas will all be sited within an area bounded by one second of latitude and one second of longitude. Parties may apply for a single earth station license covering operation of multiple fixed antennas transmitting in frequency bands not shared with terrestrial services if the proposed antennas will all be sited within an area bounded by 10 seconds of latitude and 10 seconds of longitude. These restrictions do not apply to network applications filed pursuant to § 25.134, blanket applications for 20/30 GHz earth stations, or blanket applications filed pursuant to § 25.221, § 25.222, or § 25.226 of this chapter.

12. In § 25.131, revise the caption and paragraphs (b) and (j) to read as follows:

§ 25.131 Filing requirements and registration for receive-only earth stations.

* * * * *

(b) Receive-only earth stations in the Fixed-Satellite Service that operate with U.S.-licensed satellites, or that operate with non-U.S.-licensed satellites on the Permitted Space Station List in accordance with paragraph (j) of this section, may be registered with the Commission in order to protect them from interference from terrestrial microwave stations in bands shared co-equally with the Fixed Service in accordance with the procedures of §§ 25.203 and 25.251, subject to the stricture in § 25.209(e).

* * * * *

(j) * * *

(2) Operators of receive-only earth stations used to receive transmissions from non-U.S.-licensed space stations on the Permitted Space Station List need not file for licenses, provided that the space station operator and earth station operator comply with all applicable rules in this chapter and with the applicable conditions in the Permitted Space Station List.

13. In § 25.132, revise paragraphs (a) and (b) and the first sentence of paragraph (d) to read as follows:

§ 25.132 Verification of earth station antenna performance standards.

(a) (1) Except for applications for 20/30 GHz earth stations subject to § 25.138 of this chapter and applications subject to the requirement in paragraph (b)(3) of this section, applications for transmitting earth stations in the Fixed-Satellite Service, including feeder-link stations, must include a certification that the applicant has reviewed the results of a series of radiation pattern tests performed by the antenna manufacturer on representative equipment in representative configurations, and either (i) the test results demonstrate that the equipment meets the performance standards in § 25.209, or (ii) the tested antenna performance, taking into account the applicant's proposed antenna input power spectral density levels, is consistent with either applicable off-axis EIRP density standards in Part 25 or with coordinated off-axis EIRP density limits. The licensee must be prepared to submit the antenna radiation pattern measurements to the Commission on request.

(2) Applicants for transmitting earth stations communicating with geostationary-orbit space stations in the 20/30 GHz band must provide the antenna measurements specified in §§ 25.138(d) and (e).

(b) * * *

(3) Except as provided in paragraph (d) of this section, applicants seeking authority to operate a Fixed-Satellite Service earth station pursuant to the requirements in § 25.218, § 25.220, § 25.221, § 25.222, § 25.223 or § 25.226, must submit a copy of the manufacturer's range test plots of the antenna gain patterns specified in paragraph (b)(1) of this section.

* * * * *

(d) For each new or modified transmitting antenna over 3 meters in diameter, except antennas subject to measurement under § 25.138(d) of this chapter, the following on-site verification measurements must be completed at one frequency on an available transponder in each frequency band of interest and submitted to the Commission. * * *

* * * * *

14. In § 25.133, revise the first sentence of paragraph (a)(1), the first sentence of paragraph (a)(2), and paragraph (b) to read as follows:

§ 25.133 Period of construction; certification of commencement of operation.

(a)(1) Each initial license for an earth station governed by this part, except for blanket licenses, will specify as a condition therein the period in which construction of facilities must be completed and station operation commenced. * * *

(2) Each initial license for mobile earth stations will specify as a condition therein the period in which station operation must be commenced. * * *

(b)(1) Each initial license for a transmitting earth station subject to this part, except for blanket-licensed earth stations, will also specify as a condition therein that upon completion of station construction, the licensee must file with the Commission a certification containing the following information:

(i) * * *

(v) A certification that the facility as authorized has been completed and that each antenna has been tested and found to perform within 2 dB of the pattern specified in § 25.209 or other applicable pattern;

* * * * *

15. In § 25.134, remove and reserve paragraph (a)(1) and revise paragraphs (b), (e), (f), (g), and (h) to read as follows:

§ 25.134 Licensing provisions for 12/14 GHz Very Small Aperture Terminal (VSAT) and C-band Small Aperture Terminal (CSAT) networks.

(a)(1) [Reserved]

* * * * *

(b) VSAT networks operating in the 12/14 GHz band. An applicant for a VSAT network authorization proposing to operate with transmitted power spectral density and/or antenna input power in excess of the values specified in paragraph (g) of this section must comply with the procedures set forth in § 25.220.

* * * * *

(e) VSAT networks operating in the 12/14 GHz bands may use more than one hub earth station, and the hubs may be sited at different locations.

(f) 12/14 GHz VSAT operators may use temporary fixed earth stations as hub earth stations or remote earth stations in their networks, but must specify, in their license applications, the number of temporary fixed earth stations they plan to use.

(g) Applications for VSAT operation in the 12/14 GHz bands that meet the following requirements will be routinely processed: (1) Equivalent antenna diameter is 1.2 meters or more and the application includes certification of conformance with antenna performance standards pursuant to § 25.132(a)(1) of this chapter.

(2) The maximum transmitter power spectral density of a digital modulated carrier into any

GSO FSS earth station antenna must not exceed $-14.0 - 10\log(N)$ dB(W/4 kHz). For a VSAT network using frequency division multiple access (FDMA) or time division multiple access (TDMA) technique, N is equal to one. For a VSAT network using code division multiple access (CDMA) technique, N is the maximum number of co-frequency simultaneously transmitting earth stations in the same satellite receiving beam.

(3) The maximum GSO FSS satellite EIRP spectral density of the digital modulated emission must not exceed 10 dB(W/4kHz) for all methods of modulation and accessing techniques.

(4) The maximum transmitter power spectral density of an analog carrier into any GSO FSS earth station antenna must not exceed -8.0 dB(W/4kHz) and the maximum GSO FSS satellite EIRP spectral density must not exceed $+17.0$ dB(W/4kHz).

(5) Any earth station applicant filing an application to operate a VSAT network in the 12/14 GHz bands and planning to use a contention protocol must certify that its contention protocol usage will be reasonable.

(h) VSAT operators licensed pursuant to this section are prohibited from using remote earth stations in their networks that are not designed to stop transmission when synchronization to signals from the target satellite fails.

16. In § 25.135, remove and reserve paragraph (b), remove paragraph (d), and revise the caption and paragraph (c) to read as follows:

§ 25.135 Licensing provisions for earth station networks in the non-voice, non-geostationary Mobile-Satellite Service.

* * * * *

(b) [Reserved]

(c) Transceiver units in this service are authorized to communicate with and through U.S.-authorized space stations only.

17. Remove and reserve § 25.136.

§ 25.136 [Reserved]

18. In § 25.138, the caption and paragraphs (a), (b), (d), (e), (f), and (g) are revised to read as follows:

§ 25.138 Licensing requirements for GSO FSS Earth Stations in the 18.3-18.8 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 28.35-28.6 GHz (Earth-to-space), and 29.25-30.0 GHz (Earth-to-space) bands.

(a) Applications for earth station licenses in the GSO FSS in the 18.3-18.8 GHz, 19.7-20.2 GHz, 28.35-28.6 GHz, and 29.25-30.0 GHz bands that meet the following requirements will be routinely processed:

(1) * * *

(5) [Reserved]

* * * * *

(b) An application proposing levels in excess of those specified in paragraph (a) of this section

must demonstrate that the higher proposed power is necessary to close the communications link and include one of the following: (i) an interference analysis, demonstrating that the proposed operation is compatible with operation of other authorized or proposed systems communicating via space stations within 6 degrees of the proposed satellite point(s) of communication, providing details of its proposed radio frequency carriers which it believes should be taken into account in this analysis, and including, for each such radio frequency carrier, the link noise budget, modulation parameters, and overall link performance analysis; or (ii) certification by the applicant that operators of all co-frequency GSO FSS space stations within 6 degrees of the proposed satellite point(s) of communication have acknowledged awareness of the applicant's proposed operation with the higher power densities and stated that they have no objection to such operation.

* * * * *

- (d)(1) The applicant must provide, for each earth station antenna type, a series of radiation patterns measured on a production antenna. The measurements must be performed on a calibrated antenna range and, at a minimum, must be made at the bottom, middle, and top frequencies of each requested uplink band. The radiation patterns are:
- (i) Co-polarized patterns for each of two orthogonal senses of polarization in two orthogonal planes of the antenna.
 - (A) In the azimuth plane, plus and minus 10 degrees and plus and minus 180 degrees.
 - (B) In the elevation plane, 0 to 30 degrees.
 - (ii) Cross-polarization patterns in the E- and H-planes, plus and minus 10 degrees.
 - (iii) Main beam gain.
- (2)(i) The tests specified in paragraph (d)(1) of this section are normally performed at the manufacturer's facility; but for antennas more than 3 meters in diameter that will only be assembled on-site, on-site measurements may be used for product qualification data. If on-site data is to be used for qualification, the test frequencies and number of patterns should follow, where possible, the requirements in paragraph (d)(1) of this section for at least one frequency.
- (ii) Certification that the testing required by paragraph (d)(2)(i) of this section has been satisfactorily performed must be included with the certification filed pursuant to § 25.133(b).
- (e) Protection of downlink reception from adjacent satellite interference is based on either the antenna performance specified in § 25.209 (a) and (b), or the actual receiving earth station antenna performance, if actual performance provides greater isolation from adjacent satellite interference. For purposes of ensuring the correct level of protection, the applicant must provide, for each earth station antenna type, antenna performance plots for the 18.3-18.8 GHz and 19.7-20.2 GHz bands in the format prescribed in paragraph (d) of this section.
- (f) The holder of a blanket license pursuant to this section will be responsible for operation of any transceiver to receive GSO FSS service provided by that licensee or provided by another party with the blanket licensee's consent. Operators of GSO FSS space stations operating in the 18.3-18.8 GHz, 19.7-20.2 GHz, 28.35-28.6 GHz, and 29.25-30.0 GHz bands must not transmit communications to or from user transceivers in the United States unless such communications are authorized under a service contract with the holder of a pertinent FCC blanket license or under a service contract with another party with authority for such transceiver operation delegated by such a blanket licensee.
- (g) A licensee applying for renewal of a license issued pursuant to this section must specify on FCC Form 312R the number of constructed earth stations.

19. In § 25.140, amend caption and revise paragraph (b) to read as follows:

§ 25.140 Further requirements for license applications for space stations in the Fixed-Satellite Service and the 17/24 GHz Broadcasting-Satellite Service.

* * * * *

(b) Each applicant for a license for an FSS space station or 17/24 GHz Broadcasting-Satellite Service space station must provide the following information, in addition to that required by § 25.114:

(1) [Reserved]

(2) Except as set forth in paragraphs (b)(3), (b)(4), (b)(5), and (b)(6) of this section, applicants must provide an interference analysis to demonstrate the compatibility of their proposed system with respect to authorized space stations within 2 degrees of any proposed satellite point of communication. An applicant should provide details of its proposed radio frequency carriers which it believes should be taken into account in this analysis. At a minimum, the applicant must include, for each type of radio frequency carrier, the link noise budget, modulation parameters, and overall link performance analysis. (See appendices B and C to Licensing of Space Stations in the Domestic Fixed-Satellite Service, FCC 83-184, and the following public notices, copies of which are available in the Commission's EDOCS database: DA 03-3863 and DA 04-1708.)

* * * * *

20. In § 25.142, remove and reserve paragraph (c).

§ 25.142 [Amended]

21. In § 25.143, remove and reserve paragraphs (d) and (e) and remove paragraphs (i), (j) and (k).

§ 25.143 [Amended]

22. In § 25.144, remove paragraph (a)(3)(iii) and remove and reserve paragraph (c).

§ 25.144 [Amended]

23. In § 25.145, remove and reserve paragraphs (a) and (f)(1).

§ 25.145 [Amended]

24. In § 25.146, remove and reserve paragraphs (c), (k), and (l) and remove paragraph (n).

§ 25.146 [Amended]

25. In § 25.149, revise paragraphs (a) and (b) to read as follows:

§ 25.149 Application requirements for ancillary terrestrial components in the Mobile-Satellite Service networks operating in the 1.5/1.6 GHz, 1.6/2.4 GHz and 2 GHz Mobile-Satellite Service.

(a) * * *

(1) ATC must be deployed in the forward-band mode of operation whereby the ATC mobile terminals transmit in the MSS uplink bands and the ATC base stations transmit in the MSS downlink bands in portions of the 2 GHz MSS band, the 1.5/1.6 GHz MSS bands, and the 1.6/2.4 GHz MSS bands.

NOTE TO PARAGRAPH (a)(1): A 1.5/1.6 GHz MSS licensee is permitted to apply for ATC authorization based on a non-forward-band mode of operation provided it is able to demonstrate that the use of a non-forward-band mode of operation would produce no greater potential interference than that produced as a result of implementing the rules of this section.

(2) * * *

(ii) In the 1.5/1.6 GHz MSS bands, ATC operations are limited to the frequency assignments authorized and internationally coordinated for the MSS system of the MSS licensee that seeks ATC authority.

(iii) In the 1.6/2.4 GHz MSS bands, ATC operations are limited to the 1610-1617.775 MHz, 1621.35-1626.5 MHz, and 2483.5-2495 MHz bands and to the specific frequencies authorized for use by the MSS licensee that seeks ATC authority.

* * * * *

(b) * * *

(1) * * *

(ii) For the 1.5/1.6 GHz MSS bands, an applicant must demonstrate that it can provide space-segment service covering all 50 states, Puerto Rico, and the U.S. Virgin Islands 100 percent of the time, unless it is not technically possible for the MSS operator to meet the coverage criteria from its orbital position.

* * * * *

(5) * * *

(ii) In the 1.6/2.4 GHz MSS bands, MSS ATC is limited to no more than 7.775 MHz of spectrum in the 1610-1626.5 MHz band and 11.5 MHz of spectrum in the 2483.5-2500 MHz band. Licensees in these bands may implement ATC only on those channels on which MSS is authorized, consistent with the Big LEO band-sharing arrangement.

(iii) In the 1.5/1.6 GHz MSS bands, MSS ATC is limited to those frequency assignments available for MSS use in accordance with the Mexico City Memorandum of Understanding, its successor agreements or the result of other organized efforts of international coordination.

* * * * *

26. In § 25.154, revise paragraph (e) to read as follows:

§ 25.154 Opposition to applications and other pleadings.

* * * * *

(d) Reply comments by a party that filed a petition to deny may be filed in response to pleadings filed pursuant to paragraph (c) or (e) of this section within 5 days after expiration of the time for

filing oppositions unless the Commission extends the filing deadline and must be in accordance with other applicable provisions of §§ 1.41 through 1.52 of this chapter, except that such reply comments must be filed electronically through the International Bureau Filing System (IBFS) in accordance with the applicable provisions of part 1, subpart Y of this chapter.

(e) Within 30 days after a petition to deny an application filed pursuant to § 25.220 is filed, the applicant may file an opposition to the petition and must file a statement with the Commission, either in conjunction with, or in lieu of, such opposition, explaining whether the applicant has resolved all outstanding issues raised by the petitioner. This statement and any conjoined opposition must be in accordance with the provisions of §§ 1.41 through 1.52 of this chapter applicable to oppositions to petitions to deny, except that such reply comments must be filed electronically through the International Bureau Filing System (IBFS) in accordance with the applicable provisions of part 1, subpart Y of this chapter.

27. In § 25.161, paragraph (b) is revised to read as follows:

§ 25.161 Automatic termination of station authorization.

* * * * *

(b) The expiration of the license term, unless, in the case of an earth station license, an application for renewal of the license has been filed with the Commission pursuant to § 25.121(e) or, in the case of a space station license, an application for extension of the license term has been filed with the Commission; or

* * * * *

28. In § 25.164, add paragraph (h) and revise paragraphs (a), (b), (c), (d), and (f) to read as follows:

§ 25.164 Milestones.

(a) * * *

(4) Five years: Launch the space station, position it in its assigned orbital location, and operate it in accordance with the station authorization.

(b) * * *

(4) Three years, six months: Launch the first space station, place it in the authorized orbit, and operate it in accordance with the station authorization.

* * * * *

(c) Licensees of all satellite systems, other than DBS and DARS satellite systems, will be required to submit a copy of their binding non-contingent satellite construction contracts with the Commission on or before the milestone date for entering into such a contract.

(d) Licensees of all satellite systems, other than DBS and DARS satellite systems, will be required to submit information to the Commission sufficient to demonstrate that the licensee has completed the critical design review of the licensed satellite system on or before the milestone date scheduled for entering into such completion.

(e) Licensees of all satellite systems, other than DBS and DARS satellite systems, will be required to submit information to the Commission sufficient to demonstrate that the licensee has commenced physical construction of its licensed spacecraft on or before the milestone date for such commencement.

(f) Licensees of all space stations, other than DBS and SDARS space stations, must, on or before an applicable deadline for operation or launch and operation specified in paragraph (a) or (b) of this section, demonstrate compliance with that milestone requirement. Compliance with a milestone requirement contained in paragraph (a)(4), (b)(4), or (b)(5) of this section may be demonstrated by certifying that the space station has or the space stations have been launched and placed in the authorized orbital location or non-geostationary orbit(s) and that in-orbit operation of the space station or stations has been tested and found to be consistent with the terms of the authorization.

(g) Licensees of satellite systems that include both non-geostationary orbit satellites and geostationary orbit satellites, other than DBS and DARS satellite systems, will be required to comply with the schedule set forth in paragraph (a) of this section with respect to the geostationary orbit satellites, and with the schedule set forth in paragraph (b) of this section with respect to the non-geostationary orbit satellites.

(h) In cases where the Commission grants a satellite authorization in different stages, such as a license for a satellite system using feeder links or inter-satellite links, the earliest of the milestone schedules will be applied to the entire satellite system.

29. Amend Subpart B – Applications and Licenses by adding subtitle REPORTING REQUIREMENTS FOR SPACE STATION LICENSEES after § 25.165.

30. Add § 25.170 to read as follows:

§ 25.170 Annual Reporting Requirements.

All operators of space stations licensed under Part 25 or granted U.S. market access must, on June 30 of each year, file a report with the International Bureau and the Commission's Columbia Operations Center, 9200 Farm House Lane, Columbia, MD 21046, containing the following information:

(a) Status of space station construction and anticipated launch date, including any major problems or delay encountered;

(b) Identification of any space station(s) not available for service or otherwise not performing to specifications, any spectrum within the scope of the Part 25 license or market access grant that the space station is unable to use, the cause(s) of these difficulties, and the date any space station was taken out of service or the malfunction identified; and

(c) A current listing of the names, titles, addresses, email addresses, and telephone numbers of the points of contact for resolution of interference problems and for disaster response. Contact personnel should include those responsible for resolution of short term, immediate interference problems at the system control center, and those responsible for long term engineering and technical design issues.

NOTE TO § 25.170: Space station operators are also subject to outage reporting requirements in Part 4 of this chapter.

31. Add § 25.171 to read as follows:

§ 25.171 Contact Information Reporting Requirements.

If contact information filed in an earth station application or pursuant to § 25.170(c) changes, the

operator must file corrected information with both the International Bureau and the Columbia Field Office electronically in the Commission's International Bureau Filing System (IBFS), in the "Other Filings" tab of the station's current authorization file, and with the Commission's Columbia Operations Center, at the address listed in § 25.170. The operator must file the updated information within 10 days.

32. Add § 25.172 to read as follows:

§ 25.172 Requirements for Reporting Space Station Control Arrangements.

(a) The operator of any space station licensed by the Commission or granted U.S. market access must file the following information with the Commission prior to commencing commercial operation with the space station, or, in the case of a non-U.S.-licensed space station, prior to commencing commercial operation with U.S. earth stations.

1) The information required by § 25.170(c).

2) The call signs of any telemetry, tracking, and telecommand earth station(s) communicating with the space station from any site in the United States.

3) The location, by city and country, of any telemetry, tracking, and telecommand earth station that communicates with the space station from any point outside the United States.

(b) The information required by paragraph (a) of this section must be filed with the Commission's Columbia Operations Center, at the address listed in § 25.170. If such information becomes invalid due to a change of circumstances, the operator must file updated information in the same manner within 10 days, except with respect to temporary changes that will be in effect for less than 30 days, in which case no update is necessary.

33. Add § 25.173 to read as follows:

§ 25.173 Results of in-orbit testing.

(a) Space station operators must measure the co-polarized and cross-polarized performance of space station antennas through in-orbit testing and submit the measurement data to the Commission upon request.

(b) Within 15 days after completing in-orbit testing of a space station licensed under this part, the operator must notify the Commission that such testing has been completed and (i) certify that the space station's measured performance is consistent with the station authorization and that the space station is capable of using its assigned frequencies or (ii) inform the Commission of any discrepancy. The licensee must also indicate in the filing whether the space station has been placed in the assigned geostationary orbital location or non-geostationary orbit. If the licensee files a certification pursuant to (i), above, before the space station has been placed in its assigned orbit or orbital location, the licensee must separately notify the Commission that the space station has been placed in such orbit or orbital location within 3 days after such placement.

34. Remove and reserve § 25.201:

§ 25.201 [Reserved]

35. In § 25.202, revise the section caption, remove and reserve paragraph (c), and

revise paragraph (g) to read as follows:

§ 25.202 Frequencies, frequency tolerance, emission limits, and orbital location.

* * * * *

(c) [Reserved]

* * * * *

(g) Telemetry, tracking and command functions for U.S.-licensed satellites must be conducted at either or both edges of the assigned band(s). Frequencies, polarization and coding must be selected to minimize interference into other satellite networks and within the operator's own satellite system.

36. In § 25.204, remove and reserve paragraph (g) and revise the caption and paragraphs (e) and (f) to read as follows:

§ 25.204 Power limits for earth stations.

* * * * *

(e) To the extent specified in subparagraphs (1)-(4) below, earth stations in the Fixed-Satellite Service may employ uplink adaptive power control or other methods of fade compensation to facilitate transmission of uplinks at power levels required for desired link performance while minimizing interference between networks.

(1) Transmissions from FSS earth-stations in the 14.0-14.5 GHz band, including stations that have been routinely licensed pursuant to § 25.134, § 25.211, or § 25.212, may exceed the uplink EIRP and EIRP density limits specified in the station authorization under conditions of uplink fading due to precipitation by an amount not to exceed 1 dB above the actual amount of monitored excess attenuation over clear sky propagation conditions. EIRP levels must be returned to normal as soon as the attenuating weather pattern subsides. The maximum power level for power control purposes must be coordinated with adjacent satellite operators.

(2) An FSS earth station transmitting to a geostationary space station in the 13.77-13.78 GHz band must not generate more than 71 dBW EIRP in any 6 MHz band. An FSS earth station transmitting to a non-geostationary space station in the 13.77-13.78 GHz band must not generate more than 51 dBW EIRP in any 6 MHz band. Automatic power control may be used to increase the EIRP density in a 6 MHz uplink band in this frequency range to compensate for rain fade, provided that the power flux-density at the space station does not exceed the value that would result when transmitting with an EIRP of 71 dBW or 51 dBW, as appropriate, in that 6 MHz band in clear-sky conditions.

(3) FSS earth stations transmitting to geostationary satellites in the 28.35-28.6 GHz or 29.25-30.0 GHz band may employ uplink adaptive power control or other methods of fade compensation. For stations employing uplink power control, the values in paragraphs (a)(1), (a)(2), and (a)(4) of § 25.138 may be exceeded by up to 20 dB under conditions of uplink fading due to precipitation. The amount of such increase in excess of the actual amount of monitored excess attenuation over clear sky propagation conditions must not exceed 1.5 dB or 15 percent of the actual amount of monitored excess attenuation in dB, whichever is larger, with a confidence level of 90 percent except over transient periods accounting for no more than 0.5 percent of the time during which the excess is no more than 4.0 dB.

(4) Transmissions in the 24.75-25.25 GHz band from 17/24 GHz BSS feeder-link earth stations employing power control may exceed the values in paragraphs (b)(1), (b)(2), and (b)(4) of §

25.223 by up to 20 dB under conditions of uplink fading due to precipitation. The amount of such increase in excess of the actual amount of monitored excess attenuation over clear sky propagation conditions must not exceed 1.5 dB or 15 percent of the actual amount of monitored excess attenuation in dB, whichever is larger, with a confidence level of 90 percent except over transient periods accounting for no more than 0.5 percent of the time during which the excess is no more than 4.0 dB.

(f) An earth station in the Fixed-Satellite Service transmitting in the 13.75-14 GHz band must have a minimum antenna diameter of 4.5 m, and the EIRP of any emission in that band should be at least 68 dBW and should not exceed 85 dBW.

(g) [Reserved.]

* * * * *

37. Revise § 25.206 to read as follows:

§ 25.206 Station identification.

The requirement to transmit station identification is waived for all radio stations licensed under this part with the exception of earth stations subject to the requirements of § 25.281 of this chapter.

38. In § 25.208, revise paragraph (w) to read as follows:

§ 25.208 Power flux density limits.

* * * * *

(w) The power flux density at the Earth's surface produced by emissions from a 17/24 GHz BSS space station operating in the 17.3-17.7 GHz band for all conditions and all methods of modulation must not exceed the regional power flux density levels prescribed below.

(1) * * *

(2) * * *

(3) * * *

(4) * * *

NOTE TO PARAGRAPH (w): These limits pertain to the power flux-density that would be obtained under assumed free-space propagation conditions.

39. In § 25.209, remove and reserve paragraph (d) and revise paragraph (h) to read as follows:

§ 25.209 Antenna performance standards.

* * * * *

(d) [Reserved]

* * * * *

(h)(1) The gain of any transmitting gateway earth station antenna operating in the 10.7-11.7 GHz, 12.75-13.15 GHz, 13.2125-13.25 GHz, 13.8-14.0 GHz, and 14.4-14.5 GHz bands and communicating with NGSO FSS satellites must lie below the envelope defined as follows:

$$29-25\log_{10}(\theta) \text{ dBi for } 1^\circ \leq \theta \leq 36^\circ$$

$$-10 \text{ dBi for } 36^\circ < \theta \leq 180^\circ$$

Where: θ is the angle in degrees from the axis of the main lobe, and dBi means dB relative to an isotropic radiator.

(2) * * *

40. In § 25.210, remove and reserve paragraph (b), remove paragraphs (k) and (l), and revise paragraph (c) to read as follows:

§ 25.210 Technical requirements for space stations.

* * * * *

(b) [Reserved]

(c) Space station antennas operating in the Direct Broadcast Satellite Service or operating in the Fixed-Satellite Service for reception of feeder links for Direct Broadcast Service must be designed to provide a cross-polarization isolation such that the ratio of the on-axis co-polar gain to the cross-polar gain of the antenna in the assigned frequency band is at least 27 dB within the primary coverage area.

* * * * *

41. In § 25.211, remove paragraph (f) and revise paragraphs (d) and (e) to read as follows:

§ 25.211 Analog video transmissions in the Fixed-Satellite Service.

* * * * *

(d) An earth station may be routinely licensed for transmission of analog video services in the 5925-6425 MHz band or 14.0-14.5 GHz band provided:

(1) the application includes certification, pursuant to § 25.132(a)(1), of conformance with the antenna performance standards in § 25.209(a) and (b);

(2) an antenna with an equivalent diameter of 4.5 meters or greater will be used for such transmission in the 5925-6425 MHz band, and the input power into the antenna will not exceed 26.5 dBW;

(3) an antenna with an equivalent diameter of 1.2 meters or greater will be used for such transmission in the 14.0-14.5 GHz band, and the input power into the antenna will not exceed 27 dBW.

(e) Applications for authority for analog video uplink transmission in the Fixed-Satellite Service that are not eligible for routine licensing under paragraph (d) of this section are subject to the provisions of § 25.220 of this chapter.

42. In § 25.212, revise paragraphs (c) and (d) to read as follows:

§ 25.212 Narrowband analog transmissions and digital transmissions in the GSO Fixed-Satellite Service.

* * * * *

(c) (1) An earth station that is not subject to licensing under § 25.222 or § 25.226 of this chapter and will not be installed in aircraft may be routinely licensed for analog transmissions in the 14.0-14.5 GHz band with bandwidths up to 1 MHz if the equivalent diameter of the transmitting antenna is 1.2 meters or greater, input power spectral density into the antenna will not exceed -8 dBW/4 kHz, transmitted satellite carrier EIRP density will not exceed 17 dBW/4 kHz, and the application includes certification pursuant to § 25.132(a)(1) of conformance with the antenna performance standards in § 25.209(a) and (b).

(2) An earth station that is not subject to licensing under § 25.222 or § 25.226 of this chapter and will not be installed in aircraft may be routinely licensed for digital transmission, including digital video transmission, in the 14.0-14.5 GHz band if the equivalent diameter of the transmitting antenna is 1.2 meters or greater, input power spectral density into the antenna will not exceed -14 dBW/4 kHz, transmitted satellite carrier EIRP density will not exceed $+10.0$ dBW/4 kHz, and the application includes certification pursuant to § 25.132(a)(1) of conformance with the antenna performance standards in § 25.209(a) and (b).

(d) An earth station that is not subject to licensing under § 25.221 of this chapter may be routinely licensed for transmission in the 5925-6425 MHz band if the equivalent diameter of the transmit antenna is 4.5 meters or greater, the application includes certification pursuant to § 25.132(a)(1) of conformance with the antenna performance standards in § 25.209(a) and (b), and maximum power densities into the antenna will not exceed $+0.5$ dBW/4 kHz for analog carriers with bandwidths up to 1 MHz or $-2.7 - 10\log(N)$ dBW/4 kHz for digital carriers. For digital transmission with frequency division multiple access (FDMA) or time division multiple access (TDMA), N is equal to one. For digital transmission with code division multiple access (CDMA), N is the maximum number of co-frequency simultaneously transmitting earth stations in the same satellite receiving beam.

(e) An applicant for authority for an earth station in the Fixed-Satellite Service proposing to transmit digital signals or transmit analog signals in bandwidths up to 1 MHz and to operate with transmitted satellite carrier EIRP densities, and/or maximum antenna input power densities in excess of those specified in applicable provisions of paragraph (c) or (d) of this section or operate with a smaller antenna than specified in a relevant provision of those paragraphs must comply with the requirements in § 25.218 or § 25.220 of this chapter, unless the application is subject to licensing pursuant to § 25.221, § 25.222, or § 25.226.

* * * * *

43. In § 25.214, remove and reserve paragraph (a) and revise paragraph (c)(1) to read as follows:

§ 25.214 Technical requirements for space stations in the Satellite Digital Audio Radio Service and associated terrestrial repeaters.

(a) [Reserved]

* * * * *

(c) * * *

(1) Exclusive SDARS licenses are limited to the 2320-2345 MHz segment of the 2310-2360 MHz allocated bandwidth for SDARS;

* * * * *

44. Remove and reserve § 25.215.

§ 25.215 [Reserved]

45. In § 25.217, revise paragraph (b)(1), the first sentence of paragraph (b)(3), and paragraph (c)(1) to read as follows:

§ 25.217 Default service rules.

* * * * *

(b)(1) For all NGSO-like satellite licenses for which the application was filed pursuant to the procedures set forth in § 25.157 after August 27, 2003, authorizing operations in a frequency band for which the Commission has not adopted frequency band-specific service rules at the time the license is granted, the licensee will be required to comply with the following technical requirements, notwithstanding the frequency bands specified in these rule provisions: §§ 25.142(d), 25.143(b)(2)(ii), 25.143(b)(2)(iii), 25.204(g), 25.210(d), 25.210(f), and 25.210(i).

(2) * * *

(3) Mobile earth station licensees authorized to operate with one or more space stations subject to paragraph (b)(1) of this section must comply with the requirements in §§ 25.285 and 25.287, notwithstanding the frequency bands specified in that section. * * *

(c)(1) For all GSO-like satellite licenses for which the application was filed pursuant to the procedures set forth in § 25.158 after August 27, 2003, authorizing operations in a frequency band for which the Commission has not adopted frequency band-specific service rules at the time the license is granted, the licensee will be required to comply with the following technical requirements, notwithstanding the frequency bands specified in these rule provisions: §§ 25.142(d), 25.143(b)(2)(iv), 25.204(g), 25.210(d), 25.210(f), 25.210(i), and 25.210(j).

* * * * *

46. In § 25.218, revise paragraph (a) to read as follows:

§ 25.218 Off-axis EIRP envelopes for FSS earth stations transmitting in certain frequency bands.

(a) This section applies to all applications for Fixed-Satellite Service earth stations transmitting to geostationary space stations in the C-band, Ku-band, or extended Ku-band, except for:

- (1) ESV and VMES applications, and
- (2) Analog video earth station applications.

(b) * * *

* * * * *

47. In § 25.221, revise the caption and revise paragraph (a)(12) by revising the last sentence and adding two sentences at the end of the paragraph, to read as follows:

§ 25.221 Blanket Licensing provisions for Earth Stations on Vessels (ESVs) receiving in the 3700-4200 MHz (space-to-Earth) band and transmitting in the 5925-6425 MHz (Earth-to-space)

band, operating with GSO Satellites in the Fixed-Satellite Service.

(a) * * *

(12) * * * If, prior to the end of the 30-day comment period of the public notice, any objections are received from U.S.-licensed Fixed Service operators that have been excluded from coordination, the ESV licensee must immediately cease operation of that particular station on frequencies used by the affected U.S.-licensed Fixed Service station until the coordination dispute is resolved and the ESV licensee informs the Commission of the resolution. As used in this section, “baseline” means the line from which maritime zones are measured. The baseline is a combination of the low-water line and closing lines across the mouths of inland water bodies and is defined by a series of baseline points that include islands and “low-water elevations,” as determined by the U.S. Department of State’s Baseline Committee.

* * * * *

48. In § 25.223, revise the caption and paragraphs (a) and (c) to read as follows:

§ 25.223 Alternative licensing rules for feeder link earth stations in the 17/24 GHz BSS.

(a) This section applies to license applications for earth stations that transmit to 17/24 GHz Broadcasting-Satellite Service space stations, in which the proposed earth station’s antenna does not conform to the standards of § 25.209(a) and (b), and/or the proposed input power density level is in excess of that specified in § 25.212(f) of this part.

* * * * *

(c) Each earth station license applicant that proposes levels in excess of those defined in paragraph (b) of this section must:

(1) Submit with its application link budget analyses of the operations proposed along with a detailed written explanation of how each uplink and each transmitted satellite carrier density figure is derived, and one of the following: (i) an interference analysis demonstrating that the proposed operations are compatible with the operations of other potentially affected parties, providing details of its proposed radio frequency carriers which it believes should be taken into account in this analysis, and including, for each such radio frequency carrier, the link noise budget, modulation parameters, and overall link performance analysis; or (ii) certification that all potentially affected parties acknowledge and do not object to the use of the applicant’s higher power densities. For proposed power levels less than or equal to 3 dB in excess of the limits defined in paragraph (b) of this section, the potentially affected parties are those co-frequency U.S.-authorized 17/24 GHz BSS satellite networks that are located at angular separations of up to $\pm 6^\circ$ away; for power levels greater than 3 dB and less than or equal to 6 dB in excess of the limits defined in paragraph (b) of this section, potentially affected parties are all those co-frequency U.S.-authorized operators at up to $\pm 10^\circ$ away.

(2) No power levels greater than 6 dB in excess of the limits defined in paragraph (b) of this section will be permitted.

(d) * * *

49. In § 25.253, revise paragraphs (a), (c), and (h) to read as follows:

§ 25.253 Special requirements for ancillary terrestrial components operating in the 1626.5-1660.5 MHz/1525-1559 MHz bands.

(a) * * *

(1) In any band segment coordinated for the exclusive use of an MSS applicant within the land area of the United States, where there is no other 1.5/1.6 GHz MSS satellite making use of that band segment within the visible portion of the geostationary arc as seen from the ATC coverage area, the ATC system will be limited by the in-band and out-of-band emission limitations contained in this section and the requirement to maintain a substantial MSS service.

* * * * *

(c) * * *

(1) Demonstrate, at the time of application, how its ATC network will comply with the requirements of footnotes US308 and US315 to the table of frequency allocations contained in § 2.106 of this chapter regarding priority and preemptive access to the 1.5/1.6 GHz MSS spectrum by the Aeronautical Mobile-Satellite Route Service (AMS(R)S) and the Global Maritime Distress and Safety System (GMDSS).

* * * * *

(h) When implementing multiple base stations and/or base stations using multiple carriers, where any third-order intermodulation product of these base stations falls on a 1.5/1.6 GHz MSS band segment coordinated for use by another MSS operator with rights to the coordinated band, the MSS ATC licensee must notify the MSS operator. The MSS operator may request coordination to modify the base station carrier frequencies, or to reduce the maximum base station EIRP on the frequencies contributing to the third-order intermodulation products. The threshold for this notification and coordination is when the sum of the calculated signal levels received by an MSS receiver exceeds -70 dBm. The MSS receiver used in these calculations can be assumed to have an antenna with 0 dBi gain. Free-space propagation between the base station antennas and the MSS terminals can be assumed and actual signal polarizations for the ATC signals and the MSS system may be used.

50. In § 25.259, revise paragraph (b) to read as follows:

§ 25.259 Time sharing between NOAA meteorological satellite systems and non-voice, non-geostationary satellite systems in the 137-138 MHz band.

* * * * *

(b) An NVNG licensee time sharing spectrum in the 137-138 MHz band must establish a 24-hour per day contact person and telephone number so that claims of harmful interference into NOAA earth stations and other operational issues can be reported and resolved expeditiously. This contact information must be made available to the NOAA or its designee. If the NTIA notifies the Commission that the NOAA is receiving unacceptable interference from a NVNG licensee, the Commission will require such NVNG licensee to terminate its interfering operations immediately unless it demonstrates to the Commission's reasonable satisfaction, and that of NTIA, that it is not responsible for causing harmful interference into the worldwide NOAA system. An NVNG licensee assumes the risk of any liability or damage that it and its directors, officers, employees, affiliates, agents and subcontractors may incur or suffer in connection with an interruption of its Mobile-Satellite Service, in whole or in part, arising from or relating to its compliance or noncompliance with the requirements of this paragraph.

* * * * *

51. In § 25.260, revise paragraph (b) to read as follows:

§ 25.260 Time sharing between DoD meteorological satellite systems and non-voice, non-geostationary satellite systems in the 400.15-401 MHz band.

* * * * *

(b) An NVNG licensee time sharing spectrum in the 400.15-401 MHz band must establish a 24-hour per day contact person and telephone number so that claims of harmful interference into DoD earth stations and other operational issues can be reported and resolved expeditiously. This contact information must be made available to the DoD or its designee. If the NTIA notifies the Commission that the DoD is receiving unacceptable interference from a NVNG licensee, the Commission will require such NVNG licensee to terminate its interfering operations immediately unless it demonstrates to the Commission's reasonable satisfaction, and that of NTIA, that it is not responsible for causing harmful interference into the worldwide DoD system. A NVNG licensee assumes the risk of any liability or damage that it and its directors, officers, employees, affiliates, agents and subcontractors may incur or suffer in connection with an interruption of its Mobile-Satellite Service, in whole or in part, arising from or relating to its compliance or noncompliance with the requirements of this paragraph.

* * * * *

52. In § 25.272, remove and reserve paragraph (b).

§ 25.272 [Amended]

53. In § 25.276, remove and reserve paragraph (b) and revise paragraph (a) to read as follows:

§ 25.276 Points of communication.

(a) Unless otherwise specified in the station authorization, an earth station may transmit to any space station in the same radio service that is listed as a point of communication in the earth station license, provided that permission has been received from the space station operator to access that space station.

(b) [Reserved]

54. Revise the caption and body of § 25.281 to read as follows:

§ 25.281 Transmitter identification requirements for satellite video transmissions from fixed earth stations.

(a) Fixed earth station transmissions carrying broadband video information with analog frequency modulation must be identified through use of an Automatic Transmitter Identification System (ATIS) meeting the following specifications:

- (1) The ATIS signal must be a separate subcarrier that is automatically activated whenever any radio frequency emissions occur.
- (2) The ATIS message must continuously repeat.
- (3) The ATIS subcarrier signal must be generated at a frequency of 7.1 MHz \pm 25 kHz and modulate the uplink radio frequency carrier at a level no less than -26 dB (referenced to the unmodulated carrier).
- (4) ATIS subcarrier deviation must not exceed 25 kHz.

- (5) The ATIS message protocol must be International Morse Code keyed by a 1200 Hz \pm 800 Hz tone representing a mark and a message rate of 15 to 25 words per minute. The tone must frequency-modulate the subcarrier signal with the ATIS message.
- (b) Fixed earth station transmissions carrying broadband video information with digital modulation must be identified through use of an ATIS with the following specifications.
- (1) Either the ATIS message must be injected into the Network Information Table of the MPEG data stream, or
 - (2) the ATIS message must be modulated onto a direct sequence spread spectrum signal that has the same center frequency as the digitally-modulated broadband video signal, is transmitted along with the broadband video signal at a level that can be received by a compatible ATIS message receiver using the same antenna and downlink receiver chain as the broadband video signal, and has the following characteristics:
 - (i) binary phase-shift keying modulation;
 - (ii) spreading ratio of 4096;
 - (iii) a chip rate of 112,000 chips per second for symbol rates of the digitally-modulated broadband video signal between 128,000 and 256,000 symbols per second, or 224,000 chips per second for symbol rates of the digitally-modulated broadband video signal above 256,000 symbols per second;
 - (iv) forward error correction with a (112,70) BCH code;
 - (v) packet size, including forward error correction bits, of 122 bits; and
 - (vi) maximum message size of 32 packets.
- (c) Each message transmitted by an ATIS required by paragraph (a) or (b) above must be transmitted in an unencrypted ASCII text format that can be displayed using readily-available computer terminal emulation software and must include the following:
- (1) the FCC-assigned call sign of the transmitting earth station;
 - (2) a telephone number providing immediate access to personnel capable of resolving ongoing interference or coordination problems with the station; and
 - (3) a unique serial number of ten or more digits programmed into the ATIS message in a permanent manner such that it cannot be readily changed by the operator on duty.
 - (4) Additional information may be included in the ATIS data stream provided the total ATIS message length does not exceed 30 seconds.
- (d) The ATIS equipment must be integrated into the uplink transmitter chain with a method that cannot easily be defeated.

55. Add § 25.285 to Part 25, Subpart D, to read as follows:

§ 25.285 Operation of portable transmitters or transceivers on board aircraft.

- (a) Operation of any of the following devices aboard aircraft is prohibited, unless the device is installed in a manner approved by the Federal Aviation Administration or is used by the pilot or with the pilot's consent:
- (1) Earth stations capable of transmitting in the 1.5/1.6 GHz, 1.6/2.4 GHz, or 2 GHz Mobile-Satellite Service frequency bands;
 - (2) ATC terminals capable of transmitting in the 1.5/1.6 GHz, 1.6/2.4 GHz, or 2 GHz MSS

bands;

(3) Earth stations used for non-voice, non-geostationary Mobile-Satellite Service communication that can emit radiation in the 108-137 MHz band.

(b) No portable device of any type identified in paragraph (a) of this section (including transmitter or transceiver units installed in other devices that are themselves portable) may be sold or distributed to users unless it conspicuously bears the following warning: "This device must be turned off at all times while on board aircraft." For purposes of this section, a device is portable if it is a "portable device" as defined in § 2.1093(b) of this chapter or is designed to be carried by hand.

56. Add § 25.286 to Part 25, Subpart D, to read as follows:

§ 25.286 Antenna painting and lighting

The owner of an earth station antenna structure must comply with all applicable painting, marking, and/or lighting requirements in Part 17 of this chapter. In the event of default by the owner, the station licensee will be responsible for ensuring that such requirements are met.

57. Add § 25.287 to Part 25, Subpart D, to read as follows:

§ 25.287 Requirements pertaining to operation of mobile stations in the NVNG, 1.5/1.6 GHz, 1.6/2.4 GHz, and 2 GHz Mobile-Satellite Service bands.

(a) Any mobile earth station (MES) operating in the 1530-1544 MHz and 1626.5-1645.5 MHz bands must have the following minimum set of capabilities to ensure compliance with Footnote 5.353A in 47 C.F.R. § 2.106 and the priority and real-time preemption requirements imposed by Footnote US315.

- (1) All MES transmissions must have a priority assigned to them that preserves the priority and preemptive access given to maritime distress and safety communications sharing the band.
- (2) Each MES with a requirement to handle maritime distress and safety data communications must be capable of either:
 - (i) Recognizing message and call priority identification when transmitted from its associated Land Earth Station (LES), or
 - (ii) Accepting message and call priority identification embedded in the message or call when transmitted from its associated LES and passing the identification to shipboard data message processing equipment.
- (3) Each MES must be assigned a unique terminal identification number that will be transmitted upon any attempt to gain access to a system.
- (4) After an MES has gained access to a system, the mobile terminal must be under control of an LES and must obtain all channel assignments from it.
- (5) All MESs that do not continuously monitor a separate signaling channel or signaling within the communications channel must monitor the signaling channel at the end of each transmission.
- (6) Each MES must automatically inhibit its transmissions if it is not correctly receiving separate signaling channel or signaling within the communications channel from its associated LES.

(7) Each MES must automatically inhibit its transmissions on any or all channels upon receiving a channel-shut-off command on a signaling or communications channel it is receiving from its associated LES.

(8) Each MES with a requirement to handle maritime distress and safety communications must have the capability within the station to automatically preempt lower precedence traffic.

(b) Any LES for an MSS system operating in the 1530-1544 MHz and 1626.5-1645.5 MHz bands must have the following minimum set of capabilities to ensure compliance with Footnotes 5.353A and the priority and real-time preemption requirements imposed by Footnote US315. An LES fulfilling these requirements must not have any additional priority with respect to FSS stations operating with other systems.

(1) LES transmissions to MESs must have a priority assigned to them that preserves the priority and preemptive access given to maritime distress and safety communications pursuant to paragraph (a) of this section.

(2) The LES must recognize the priority of calls to and from MESs and make channel assignments taking into account the priority access that is given to maritime distress and safety communications.

(3) The LES must be capable of receiving the MES identification number when transmitted and verifying that it is an authorized user of the system to prohibit unauthorized access.

(4) The LES must be capable of transmitting channel assignment commands to the MESs.

(5) The communications channels used between the LES and the MES shall have provision for signaling within the voice/data channel, for an MES that does not continuously monitor the LES signaling channel during a call.

(6) The LES must transmit periodic control signals to MESs that do not continuously monitor the LES signaling channel.

(7) The LES must automatically inhibit transmissions to an MES to which it is not transmitting in a signaling channel or signaling within the communications channel.

(8) The LES must be capable of transmitting channel-shut-off commands to MESs on signaling or communications channels.

(9) Each LES must be capable of interrupting, and if necessary, preempting ongoing routine traffic from an MES in order to complete a maritime distress, urgency or safety call to that MES.

(10) Each LES must be capable of automatically turning off one or more of its associated channels in order to complete a maritime distress, urgency or safety call.

(c) No person without an FCC license for such operation may transmit to a space station in the NVNG, 1.5/1.6 GHz, 1.6/2.4 GHz, or 2 GHz Mobile-Satellite Service from anywhere in the United States except to receive service from the holder of a pertinent FCC blanket license or from another party with the permission of such a blanket licensee.

(d) The holder of an FCC blanket license for operation of mobile transmitters or transceivers for communication via an NVNG, 1.6/2.4 GHz, 1.5/1.6 GHz, or 2 GHz Mobile Satellite Service system will be responsible for operation of any such device to receive service provided by that licensee or provided by another party with the blanket licensee's consent. Operators of such satellite systems must not transmit communications to or from such devices in the United States unless such communications are authorized under a service contract with the holder of a pertinent FCC blanket earth station license or under a service contract with another party with authority for such operation delegated by such a blanket licensee.

APPENDIX B

Initial Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act (RFA),¹⁸⁹ the Commission has prepared this Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities by the policies and rules proposed in this Notice. We request written public comments on this IRFA. Commenters must identify their comments as responses to the IRFA and must file the comments by the deadlines for comments on the Notice provided above in Section V.D. The Commission will send a copy of the Notice, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.¹⁹⁰ In addition, the Notice and IRFA (or summaries thereof) will be published in the Federal Register.¹⁹¹

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

The Notice of Proposed Rulemaking seeks comment on a variety of proposals relating to a comprehensive review of Part 25 of our rules.¹⁹² We propose to update the rules to reflect evolving technology, eliminate unnecessary technical and information filing requirements, and reorganize and simplify existing requirements. The proposed changes will promote compliance with the Commission's operating rules and better enable the Commission and the public to assess the interference potential of proposed operations. Further, the changes will ease administrative burdens for applicants, licensees, and the Commission, leading to more rapid deployment of services to the public.

The NPRM proposes several changes to Part 25 of the rules. Specifically, it proposes to:

- 1) Amend the information requirements for space and earth station applications to reflect evolving technology and eliminate information that is no longer needed.
- 2) Increase the number of earth station applications eligible for routine processing.
- 3) Eliminate certain restrictive elements of rules related to space station spectrum frequency reuse requirements, transponder saturation flux density requirements, and cross-polarization isolation requirements.
- 4) Consolidate annual reporting requirements and delete reporting requirements that are not necessary; reinforce reporting requirements for 24/7 contact points in cases of interference or emergency situations.
- 5) Modify rules concerning rain fade mitigation.
- 6) Clarify the requirements for routine processing of 12/14 GHz Very Small Aperture Terminals (VSAT) networks.
- 7) Provide greater flexibility to earth station applicants in verifying antenna performance.
- 8) Consolidate milestone requirements for space stations and request comment on criteria for demonstrating compliance with the critical design review (CDR) milestone and the

¹⁸⁹ See 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601 *et seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, Title II, 110 Stat. 847 (1996) (CWAAA).

¹⁹⁰ See 5 U.S.C. § 603(a).

¹⁹¹ *Id.*

¹⁹² 47 C.F.R. Part 25, Satellite Communications.

commence physical construction milestone.

- 9) Add requirements for Automatic Transmitter Identification System (ATIS) signals for digital video uplinks, and seek comment on extending ATIS requirements to other types of uplinks.
- 10) Relax telemetry, tracking, and control (TT&C) reporting requirements and request comment on whether to allow TT&C signals in portions of the assigned frequency bands other than at the edges.
- 11) Consolidate use restrictions and labeling requirements for mobile terminals aboard civil aircraft.
- 12) Codify Commission practice of granting a single earth station license covering multiple antennas located close to each other.
- 13) Clarify the criteria for using Form 312EZ (add title) and related autogrant procedure for earth station applications.
- 14) Update, improve, and consolidate definitions.

B. Legal Basis

The proposed action is authorized under Sections 4(i), 7(a), 303(c), 303(f), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 157(a), 161, 303(c), 303(f), 303(g), and 303(r).

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules May 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 rules adopted herein.¹⁹³ The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."¹⁹⁴ In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.¹⁹⁵ A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).¹⁹⁶ Below, we describe and estimate the number of small entity licensees that may be affected by the adopted rules.

Satellite Telecommunications and All Other Telecommunications

The rules proposed in this Notice would affect some providers of satellite telecommunications services, if adopted. Satellite telecommunications service providers include satellite and earth station operators. Since 2007, the SBA has recognized two census categories for satellite telecommunications firms: "Satellite Telecommunications" and "Other Telecommunications." Under the "Satellite Telecommunications" category, a business is

¹⁹³ 5 U.S.C. § 604(a)(3).

¹⁹⁴ 5 U.S.C. § 601(6).

¹⁹⁵ 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. § 632). Pursuant to the RFA, the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register." 5 U.S.C. § 601(3).

¹⁹⁶ Small Business Act, 15 U.S.C. § 632 (1996).

considered small if it had \$15 million or less in average annual receipts.¹⁹⁷ Under the “Other Telecommunications” category, a business is considered small if it had \$25 million or less in average annual receipts.¹⁹⁸

The first category of Satellite Telecommunications “comprises establishments primarily engaged in providing point-to-point telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications.”¹⁹⁹ For this category, Census Bureau data for 2007 show that there were a total of 512 satellite communications firms that operated for the entire year.²⁰⁰ Of this total, 464 firms had annual receipts of under \$10 million, and 18 firms had receipts of \$10 million to \$24,999,999.²⁰¹

The second category of Other Telecommunications is comprised of entities “primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry.”²⁰² For this category, Census Bureau data for 2007 show that there were a total of 2,383 firms that operated for the entire year.²⁰³ Of this total, 2,346 firms had annual receipts of under \$25 million.²⁰⁴ We anticipate that some of these “Other Telecommunications firms,” which are small entities, are earth station applicants/licensees that might be affected if our proposed rule changes are adopted.

We anticipate that our proposed rule changes may have an impact on earth and space station applicants and licensees. Space station applicants and licensees, however, rarely qualify under the definition of a small entity. Generally, space stations cost hundreds of millions of dollars to construct, launch and operate. Consequently, we do not anticipate that any space station operators are small entities that would be affected by our proposed actions.

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

The NPRM proposes a number of rule changes that will affect reporting, recordkeeping and other compliance requirements for earth and space station operators. Most proposed changes, as described below, would decrease the burden for all businesses operators, especially firms that hold

¹⁹⁷ See 13 C.F.R. § 121.201, NAICS code 517410.

¹⁹⁸ See 13 C.F.R. § 121.201, NAICS code 517919.

¹⁹⁹ U.S. Census Bureau, 2007 NAICS Definitions, “517410 Satellite Telecommunications.”

²⁰⁰ See http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-_skip=900&-ds_name=EC0751SSSZ4&-_lang=en.

²⁰¹ *Id.*

²⁰² U.S. Census Bureau, 2007 NAICS Definitions, “517919 Other Telecommunications”, <http://www.census.gov/naics/2007/def/ND517919.HTM>.

²⁰³ See 13 C.F.R. § 121.201, NAICS code 517919.

²⁰⁴ U.S. Census Bureau, 2007 Economic Census, Subject Series: Information, Table 5, “Establishment and Firm Size: Employment Size of Firms for the United States: 2007 NAICS Code 517919” (issued Nov. 2010).

licenses to operate earth stations.

First, the NPRM seeks comment on revisions to simplify information collections in applications for earth station licensees, and increase the number of earth station applications eligible for routine processing. For example, we invite comment as to whether to extend eligibility to use the simplified Form 312EZ and the autogrant procedure to routine applications for 20/30 GHz earth stations that would communicate via geostationary satellites previously coordinated with Federal-government systems pursuant to Footnote US334.²⁰⁵ The NPRM also proposes to consolidate rules concerning rain fade mitigation to eliminate unnecessary restrictions, where possible.

We propose to codify Commission practice of granting a single earth station license covering multiple antennas located close to each other. Additionally, we propose to provide greater flexibility to earth station applicants in verifying antenna performance. We also propose to clarify that routine blanket earth station licensing requirements apply to individual earth station applications. We propose clarifying the requirements for routine processing of 12/14 GHz Very Small Aperture Terminals (VSAT) networks. Finally, we seek comment on whether to add requirements for Automatic Transmitter Identification System (ATIS) signals for digital video uplinks, and on extending ATIS requirements to other types of uplinks.

The NPRM also proposes changes to streamline and reorganize the rules to facilitate improved compliance. For example, we propose to replace the various band-specific use restrictions and labeling requirements for Mobile Satellite Service earth station transceivers or Ancillary Terrestrial Component (ATC) mobile terminals aboard civil aircraft with a uniform aircraft-use restriction and associated warning-label requirement that would apply to all portable transceivers licensed under Part 25.

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

The RFA requires an agency to describe any significant, specifically small business, 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 and reporting requirements under the rules for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities.”²⁰⁶

The Notice seeks comment from all interested parties. The Commission is aware that some of the proposals under consideration may impact small entities. Small entities are encouraged to bring to the Commission’s attention any specific concerns they may have with the proposals outlined in the Notice.

The Commission expects to consider the economic impact on small entities, as identified in comments filed in response to the Notice, in reaching its final conclusions and taking action in this proceeding.

In this Notice, the Commission considers rule revisions to reflect changes and advances in the satellite industry. The NPRM proposes to eliminate unnecessary technical and information

²⁰⁵ 47 C.F.R. § 2.106, Footnote US334 requires coordination between Federal space and terrestrial systems and non-Federal space and terrestrial systems operating in certain frequency bands.

²⁰⁶ 5 U.S.C. § 603(c)(1)-(c)(4).

filing requirements, and reorganize and simplify existing requirements. All of these proposals could lessen the burden of compliance on small entities with more limited resources than larger entities.

The proposed changes for earth station licensing would create more opportunities for routine licensing and allow for more liberal blanket licensing of earth stations. Whereas each of these changes would lessen the burden in the licensing process, potential additional burdens on all earth station operators may result from proposed reinforced reporting requirements for 24/7 contact points for interference or emergency situations. Earth station operators may also experience increased burden from proposed revisions to rules concerning ATIS requirements. Specifically, this NPRM proposes revisions to ATIS rules to require real-time identification of frequency use to diminish or quickly remedy interference events to other communications facilities. These changes could support future network architectures of software-defined radio that will dynamically sense and resolve interference events, as well as support denser deployment of earth stations that would further the goals of the Commission's Broadband Initiatives.²⁰⁷ Thus, the proposed revisions would ultimately lead to benefits for small earth station operators in the long-term.

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

None.

²⁰⁷ See FEDERAL COMMUNICATIONS COMMISSION, OMNIBUS BROADBAND INITIATIVE, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN (2010) (NATIONAL BROADBAND PLAN).

**STATEMENT OF
CHAIRMAN JULIUS GENACHOWSKI**

Re: *Comprehensive Review of Licensing and Operating Rules for Satellite Services,
IB Docket No. 12-267*

The FCC and the satellite industry go back to the beginning – a long and successful innovation partnership.

Fifty years ago, in 1962, under Chairman Newt Minow, the FCC was instrumental in getting the first communications satellite licensed by the Commission and launched into space. Since then, the satellite industry has become a critical piece of our communications ecosystem, employing almost 240,000 Americans and earning more than \$175 billion in global revenues in 2011.

Satellites provide essential connectivity to the U.S. media, banking, retail, transportation and other sectors. They provide international links for businesses and well as families. They're an integral part of the global Internet and cloud computing. And their ability to deliver communications services regardless of terrain or infrastructure is vital to first responders during emergencies and to connecting people in the most remote parts of America and the world. We estimate that satellites send and receive over 10 petabytes of data every day for commercial uses alone; including government use, the total is much greater.

And new satellite technologies are being developed everyday. I recently visited a start-up in San Francisco working on incredible satellite innovations related to Earth observation.

Yesterday, I met with Elon Musk, the founder and CEO of Space X, the company that's revolutionizing commercial space travel. FCC authorizations and licenses are critical to Space X, and in rapidly approving various applications the FCC has played a positive role in Space X's early success.

This is central to the mission of the FCC: facilitating innovation and the creation of new services and, indeed new industries. And we'll continue to seize opportunities to modernize our rules and processes to facilitate U.S. leadership in innovation.

Today, the FCC is proposing important steps consistent with this goal. We're proposing to modernize, streamline, or eliminate hundreds of rules or subsections governing satellite services. Among the changes, this Notice includes a shift in the focus of the rules from a "tell us how you built it" approach to a "tell us how you will avoid interference" approach. It also includes an expansion in the number and type of licensees that can take advantage of routine processing.

These are common sense changes to improve our rules, making them better for innovators, entrepreneurs and new entrants, as well as existing companies. This is a core objective of our regulatory reform.

One of my first actions as Chairman was to appoint a Special Counsel for FCC Reform and charge her and our FCC Reform Team with conducting an agency-wide review of rules and regulations ripe for updating or elimination. Today, each Bureau incorporates these reviews into all of their planning, as part of the Commission's efforts to promote innovation and entrepreneurial thinking. In addition to eliminating 263 outmoded or unnecessary regulations

since January 2010, we have repeatedly updated and streamlined rules to reflect new technology and promote more efficient decision-making within the FCC. Based on the incredible work of FCC staff, no prior Commission has a better record.

We're all committed to smart and sensible regulatory reform, to removing unnecessary burdens and eliminating barriers to private investment innovation and competition. This Notice is a terrific implementation of these important goals. I thank the staff of the International Bureau and our FCC Reform team for their hard work on this Notice.

**STATEMENT OF
COMMISSIONER ROBERT M. McDOWELL**

Re: *Comprehensive Review of Licensing and Operating Rules for Satellite Services,
IB Docket No. 12-267*

I am pleased to vote to approve today's notice of proposed rulemaking to streamline our licensing and operating rules for satellite service providers. At the outset, I congratulate and thank the team in the International Bureau for your dedication and creativity.

Satellite technology plays an important role in meeting the communications needs of public safety entities, energy and enterprise businesses, and retail consumers. Even in places where terrestrial wireless coverage is abundant, some consumers may remain unreachable due to challenging terrain, insularity or both. Satellite service providers, on the other hand, have the technical capability to connect to consumers in these areas. Given satellite technology's growing significance in the communications marketplace, I expect that interested parties will greatly appreciate the fresh look and common sense approach we propose here.

In addition to seeking comment on issues of general interest, including reporting requirements, forms and rain fade compensation, the notice literally sets forth in numerical order the proposed Part 25 licensing and technical rule changes and asks valuable questions about each one.

One proposal is particularly noteworthy. In seeking to modernize Section 25.114 of our rules, we acknowledge that today's state-of-the-art satellites employ spot-beams. Specifically, we propose to streamline our current rule to allow applicants for space stations with large numbers of identical spot beams to supply antenna gain contour diagrams for one transmit and one receive antenna beam only. The good news is that this idea is a win-win-win. Such a change will greatly reduce the burden on our FCC staff, as well as the license applicants. The resulting double efficiency will reduce costs for both taxpayers and regulatees alike. Ultimately, these cost savings are passed on to consumers of satellite services.

Thank you also to Chairman Genachowski for bringing this notice forward. I also acknowledge the interested parties that assisted the IB team with this effort. I am eager to engage and to learn more in the coming months

**STATEMENT OF
COMMISSIONER MIGNON L. CLYBURN**

Re: *Comprehensive Review of Licensing and Operating Rules for Satellite Services,
IB Docket No. 12-267*

I am pleased that the Commission is taking a comprehensive approach in updating its satellite service Rules, to better keep pace with the technological developments in the industry. Contained, in the NPRM, are a number of proposals that should improve the Commission's ability to assess the interference potential of proposed operations. Overhauling the requirements for annual reporting, licensing, and filing, should lead to substantial reductions in the administrative costs that satellite service licensees must bear to offer services. This, in turn, should lead to greater investment in satellite services and enhanced benefits for consumers.

I understand that satellite service providers, and other outside parties, provided valuable insight to the International Bureau staff on the scope of the revisions that are listed in this comprehensive NPRM. Your continued engagement will be necessary to ensure that the rule changes we ultimately approve are as helpful as possible. I thank Mindel De La Torre and Rod Porter, for their leadership on these issues. I also want to thank Gardner Foster, Bob Nelson, and Kathryn Medley, for taking the time to brief me on the item and for their excellent presentation.

**STATEMENT OF
COMMISSIONER JESSICA ROSENWORCEL**

Re: *Comprehensive Review of Licensing and Operating Rules for Satellite Services,
IB Docket No. 12-267*

Satellite services provide vital communications links to the most remote regions of the country. They connect our troops around the world. They provide an important backstop for public safety communications when terrestrial networks are down.

So I am pleased to support today's Notice of Proposed Rulemaking, which takes a fresh look at our satellite licensing and operating policies. In this Notice, we seek to update our satellite rules to reflect new technologies, eliminate outdated reporting requirements, and streamline our licensing procedures. These are good things. They set us on a path toward speedier application grants, which will mean faster deployment of new services to the public and more opportunities for innovation and investment in the satellite industry.

Thank you to the International Bureau for its work on this item.

**STATEMENT OF
COMMISSIONER AJIT PAI**

Re: *Comprehensive Review of Licensing and Operating Rules for Satellite Service, IB Docket No. 12-267*

Opening a comprehensive review of our satellite licensing and operating rules has been a long time coming. More than a decade ago, our biennial regulatory review process identified the need to streamline and revise our satellite rules.²⁰⁸ And this has become a regular refrain at the Commission, with recommendations to reexamine the rules issuing in 2005,²⁰⁹ again in 2007,²¹⁰ and in a follow-up to the 2006 biennial review adopted by the Commission just this week.²¹¹

That's why I am so pleased to support this Notice of Proposed Rulemaking that opens up a plenary review of our licensing and operating rules for satellite service. As reflected in the Notice, Commission staff have pored over literally hundreds of sections and subsections, provisions and subprovisions. They have tried to find ways to harmonize conflicting rules, to delete provisions that are no longer in effect, and to ensure that the rules on the books conform to our practice. Those few, those happy few, that band of lawyers that already knows the rules and understands how the system works may not benefit much from these clean-up efforts. But scrubbing the rules so that they are easier for companies, start-ups, and government watchdogs to understand is a valuable exercise in good government. I applaud Chairman Genachowski for starting us down this path, and I thank every member of the International Bureau staff who has dipped a laboring oar in these waters.

As we move forward with this proceeding, I hope we will hear back from stakeholders not only about the modifications proposed in this Notice but also about larger-scale reforms to our satellite licensing and operating rules. We propose streamlining a myriad of licensing and reporting obligations here, but we should think about whether all of these requirements are necessary as a threshold matter. We propose consolidating rules that apply differently to different satellite operators so that they apply across the board, but we should consider whether these rules deter satellite operators from investing in and launching new satellites. In short, we should focus on a basic question: What steps do we need to take to make the United States the most desirable country in the world for licensing and operating satellites? I look forward to reviewing the comments of all stakeholders and the analysis of our expert staff.

²⁰⁸ *2000 Biennial Regulatory Review -- Streamlining and Other Revisions of Part 25 of the Commission's Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations*, IB Docket No. 00-248, Notice of Proposed Rulemaking, 15 FCC Rcd 25128 (2000).

²⁰⁹ *2004 Biennial Review*, IB Docket No. 04-177, International Bureau Staff Report, 20 FCC Rcd 343 (2005).

²¹⁰ *2006 Biennial Regulatory Review*, IB Docket No. 06-154, International Bureau Staff Report, 22 FCC Rcd. 3138 (2007).

²¹¹ *2006 Biennial Regulatory Review -- Revision of Part 25*, IB Docket No. 06-154, Report and Order, FCC 12-116 (rel. Sept. 28, 2012).