

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

In the matter of)
)
Amendment of Parts 25, 74, 78 and 101 of the)
Rules regarding Coordination between the Non-) ET Docket No. 03-254
Geostationary and Geostationary Satellite Orbit)
Fixed-Satellite Service and Fixed, Broadcast)
Auxiliary and Cable Television Relay Services in)
the 7 GHz, 10 GHz and 13 GHz Frequency Bands)

NOTICE OF PROPOSED RULE MAKING

Adopted: December 15, 2003

Released: December 23, 2003

Comments Date: [30 days from publication in the Federal Register]
Reply Comments Date: [45 days from publication in the Federal Register]

By the Commission:

INTRODUCTION

1. By this action (Notice), we propose to modify our frequency coordination rules to promote sharing between non-geostationary satellite orbit (NGSO) and geostationary satellite orbit (GSO) fixed-satellite service (FSS) operations and various terrestrial services operating in several frequency bands. Specifically, we consider a joint proposal by SkyBridge L.L.C. and the Fixed Wireless Communications Coalition (Skybridge/FWCC Growth Zone Proposal) to supplement our existing coordination procedures to promote sharing between new NGSO FSS space-to-Earth (downlink) operations and existing Fixed Service (FS) operations in the 10.7-11.7 GHz (10 GHz) band.1 We also set forth proposals for amending our frequency coordination rules to address situations where NGSO FSS and GSO FSS operations share spectrum with terrestrial operations in the FS, Broadcast Auxiliary Service (BAS) and Cable Television Relay Service (CARS) in various bands. Specifically, we:

- Propose to apply the principles of the Skybridge/FWCC Growth Zone Proposal to our coordination rules for NGSO FSS downlink operations sharing with FS operations in the 10 GHz band;
• Propose to apply the existing Parts 25 and 101 coordination rules for coordination of new FSS (both NGSO and GSO) earth stations with mobile BAS/CARS operations in the 6875-7075 MHz (7 GHz) and 12750-13250 MHz (13 GHz) bands, and consider whether any additions or modifications to the rules are needed to address the operating characteristics of mobile services;

1 See SkyBridge/FWCC Ex Parte Comments in ET Docket No. 98-206, filed December 8, 1999, at 3. These ex parte comments are included in the docket file for this proceeding. SkyBridge filed one of the petitions for rulemaking (RM-9147) to which ET Docket No. 98-206 responds and is one of four applicants for NGSO FSS satellite systems in the 10 GHz band. The FWCC is a coalition of microwave equipment manufacturers, licensees, and their associations, and communications service providers and their associations, interested in terrestrial fixed microwave communications.

- Propose to allow either the Parts 74 and 78 informal *ad hoc* coordination rules or the Part 101 coordination rules to be used for the coordination of mobile BAS/CARS operations with FSS (both NGSO and GSO) earth stations, in the 7 GHz and 13 GHz bands, and consider whether any additions or modifications of these rules are needed; and,
- Propose to apply the existing Parts 25 and 101 coordination rules for sharing between new NGSO FSS earth stations and fixed BAS/CARS operations in the 7 GHz and 13 GHz bands.

We undertake this proceeding to facilitate the introduction of new satellite and terrestrial services while promoting interference protection among the various users in these bands.

BACKGROUND

2. In several recent proceedings, the Commission has taken actions to allow new satellite services in frequency bands used by various fixed and mobile operations. As described below, the Commission deferred to this proceeding consideration of frequency coordination procedures to be used by these new satellite services when deploying new earth stations in the 7 GHz, 10 GHz and 13 GHz bands.

3. In the *First Report and Order and Further Notice of Proposed Rule Making* (“NGSO FSS Ku-Band R&O”) in ET Docket No. 98-206, the Commission, *inter alia*, authorized NGSO FSS downlink and uplink operations in the 10 GHz and 13 GHz bands, respectively, to serve as backbone or “gateway” links.² NGSO FSS gateway earth stations act as a gateway or hub from the NGSO system to terrestrial networks.³ The Commission also decided to apply the existing Parts 25 and 101 rules for coordination of NGSO FSS gateway earth stations with FS operations in the 10 GHz band. In addition, the Commission decided not to exclude NGSO FSS gateway earth stations from a 50 km radius around the 100 most populous U.S. cities, as it had proposed so as not to inhibit FS growth in the 10 GHz band. Rather, it recognized a proposal filed by Skybridge/FWCC to protect the opportunity for FS expansion in areas of high FS use (“Growth Zones”) as a viable alternative to excluding NGSO FSS gateway earth stations from specific geographic locations. The Commission concluded that while the Skybridge/FWCC Growth Zone proposal represented an efficient and flexible spectrum sharing approach for the

² *Amendment of Parts 2 and 25 of the Commission’s Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range*, FCC 00-418, *First Report and Order and Further Notice of Proposed Rule Making*, ET Docket No. 98-206, 16 FCC Rcd 4096 (rel. Dec. 8, 2000).

³ NGSO satellite systems are characterized by a constellation of satellites continuously orbiting the earth. Rather than appearing to remain stationary relative to a fixed user as a geostationary satellite does, NGSO satellites move across the sky from horizon to horizon relative to a fixed point on Earth. In a geostationary orbit, the GSO satellite's position appears fixed relative to an observer on the Earth because the satellite is orbiting the Earth at the same rate as the Earth spins. Coordination between NGSO and terrestrial operations is complicated by the variability of the satellites’ orbital positions relative to the surface of the Earth, a factor absent in the GSO to terrestrial sharing case. For the purposes of NGSO FSS in the Ku-band (10-14 GHz frequency range), our rules generally define an NGSO FSS gateway earth station as an earth station complex consisting of multiple interconnecting earth station antennas supporting the communication routing and switching functions of an NGSO FSS system as a whole. A service link is a bi-directional transmission path between a satellite and subscriber earth stations. *See* 47 C.F.R. § 25.201.

10 GHz band, more analysis was necessary before this approach could be adopted.⁴ It, therefore, deferred action on the Skybridge/FWCC proposal to this proceeding.

4. On reconsideration of the *NGSO FSS Ku-Band R&O*, the Commission, among other things, expanded the use of the 13 GHz band by NGSO FSS gateway earth stations to include the 13.15-13.2125 GHz band, but excluded such operations within 50 km of the top 100 TV markets to limit the impact on existing BAS and CARS use of the band for mobile television pickup operations (“TVPU”).⁵ Further, the Commission indicated that it would not license NGSO FSS gateway earth stations in the 13 GHz band until appropriate coordination rules are adopted.⁶

5. In the *Report and Order (MSS Feeder Link R&O)* in ET Docket No. 98-142, the Commission, *inter alia*, allocated the 6700-7025 MHz band for NGSO FSS downlink operations, limited to feeder link operations of NGSO mobile-satellite service (“MSS”) systems.⁷ In addition, the Commission grandfathered two NGSO licensees to operate their NGSO MSS feeder link earth stations at three sites in the 7025-7075 MHz downlink band.⁸ The Commission applied Parts 25 and 101 coordination rules to address sharing between the new NGSO FSS operations and the existing fixed service links in the 6700-6875 MHz band, but deferred to this proceeding consideration of coordination rules for the 7 GHz (*i.e.*, 6875-7075 MHz) portion of the band, noting the lack of any coordination procedures to address sharing between FSS earth stations and fixed and mobile TVPU stations in this band.⁹

⁴ See *FCC Seeks Comment on SkyBridge and FWCC Ex Parte Filings on Regulatory Scheme for Shared Use of the 10.7-11.7 GHz Band*, ET Docket No. 98-206, *Public Notice*, DA 99-3008 (rel. Dec. 27, 1999) [hereinafter *Growth Zone Public Notice*]; *NGSO FSS Ku-Band R&O* ¶ 67 (deferring further analysis of the proposal to this proceeding). In responses to the Public Notice on December 27, 1999, 11 parties commented on the Skybridge/FWCC Growth Zone Proposal.

⁵ A BAS mobile television pickup (“TVPU”) station is defined as a land mobile station used for the transmission of TV program material and related communications from scenes of events occurring at points removed from the TV station studios to a TV broadcast, Class A TV, or low power TV station, or other purposes as authorized in § 74.631 (*e.g.*, transmission to the network(s) with which the television broadcast station is affiliated; temporary studio-transmitter links (“STL”) or TV relay links (“TVR”) consistent with Section 74.632). A CARS TVPU is similarly defined by Section 78.5, for transmissions from scenes of events to cable television studios or headends. See 47 C.F.R. §§ 74.601, 74.631, 74.632, and 78.5(d). Fixed operations previously licensed within 50 km of the top 100 TV markets in the 13.15-13.2125 GHz band may continue to operate subject to periodic license renewals. See 47 C.F.R. §§ 74.602 and 78.18. See also *NGSO FSS Ku-Band R&O* at ¶ 126 and *Amendment of Parts 2, 25 of the Commission’s Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band*, ET Docket No. 98-206, *Second Memorandum Opinion and Order*, FCC 03-25, (rel. Feb. 11, 2003) at ¶¶ 11-13.

⁶ See *NGSO Ku-Band R&O* at ¶ 128.

⁷ *Amendment of Parts 2, 25 and 97 of the Commission’s Rules with Regard to the Mobile-Satellite Service Above 1 GHz*, ET Docket No. 98-142, *Report and Order*, FCC 02-23, 76 FR 17288 (Apr. 10, 2002), 17 FCC Rcd 2658 (2002). A feeder link is a bi-directional transmission path between a satellite and an earth station at a fixed point. Feeder links convey information for a space radio communication service other than the fixed-satellite service. See 47 C.F.R. § 2.1.

⁸ See *NGSO FSS Ku-Band R&O* at ¶ 39.

⁹ See *MSS Feeder Link R&O* ¶¶ 55-57. These NGSO MSS systems use 2 GHz spectrum for service links and also have feeder uplink operations in the 5091-5250 MHz and 15.43-15.63 GHz bands, but no additional coordination rules are necessary for the feeder uplink bands, as sharing and coordination for those bands were addressed in the *MSS Feeder Link R&O*. See *MSS Feeder Link R&O* ¶¶ 16-19, 67-69.

6. Finally, in a separate proceeding, the Commission recently reviewed and modified service rules governing BAS, CARS and FS operations.¹⁰ In the *BAS/CARS R&O*, the Commission, among other actions, modified the coordination procedures for BAS and CARS. Specifically, the Commission decided to require all fixed BAS and CARS operations in the 7 GHz and 13 GHz bands to coordinate their operations under Section 101.103(d) of the Commission's rules. On the other hand, mobile BAS and CARS in the 7 GHz and 13 GHz bands were given the flexibility to use either the coordination procedures of Section 101.103(d) or informal local *ad hoc* coordination procedures under Sections 74.638 and 78.36 of the Commission's Rules.¹¹ Significantly, the Commission's decision did not address whether these coordination procedures were adequate to address sharing between BAS/CARS and satellite operations in these bands.

DISCUSSION

A. Coordination between NGSO FSS and FS Operations at 10 GHz

7. *Background.* Currently, the principal use of the 10 GHz band is terrestrial fixed point-to-point operations.¹² FSS downlink operations are also permitted in this band, but such operations are limited to earth stations performing intercontinental communications with GSO satellites.¹³ In the *NGSO FSS Ku-Band R&O*, the Commission permitted the operation of NGSO FSS gateway earth stations in the 10 GHz band for downlink operations and applied the Parts 25 and 101 coordination requirements for sharing between NGSO FSS and FS facilities in the band.

8. The Parts 25 and 101 coordination rules for sharing between FSS and FS operations require that before filing an application for a new facility, an applicant generally must identify all potentially affected licensees and applicants in the vicinity of their proposed station and resolve all potential interference problems with them.¹⁴ Once a station is coordinated and authorized, it is entitled to interference protection from all future stations. Typically, an FS station is authorized for only specific frequencies in an allocated band, whereas FSS earth stations are authorized for all frequencies within an allocated band and thus can impair future growth by FS licensees or new applicants whose operations would be within the coordination distance of an FSS earth station.¹⁵ In its *ex parte* comments, Skybridge/FWCC states that their Growth Zone proposal is intended to address the FS community's concerns that new NGSO FSS operations not hinder FS growth, and the NGSO FSS applicants' concerns that earth stations not be excluded from operating in certain geographic areas.

¹⁰ See *Revisions to Broadcast Auxiliary Service Rules in Part 74 and Conforming Technical Rules for Broadcast Auxiliary Service, Cable Television Relay Service and Fixed Services in Parts 74, 78 and 101 of the Commission's Rules*, ET Docket No. 01-75, *Report and Order*, FCC 02-298 ¶¶ 60-62, 64 (“*BAS/CARS R&O*”).

¹¹ 47 C.F.R. §§ 74.638, 78.36.

¹² There are approximately 4100 fixed point-to-point stations in the 10 GHz band.

¹³ 47 C.F.R. § 2.106 NG104. There are 128 GSO earth stations licensed in the 10 GHz band. There are also feeder link earth station operations for GSO MSS in this band.

¹⁴ See, e.g., 47 C.F.R. §§ 101.21(f), 101.103(d), 25.203, and 25.251.

¹⁵ The coordination distances or contours for FSS earth stations can vary from 100 km to 500 km, depending on terrain and various technical criteria. Sharing techniques such as shielding, directional antennas, spatial diversity and frequency diversity can be used to allow stations to be deployed within the coordination contour. Our rules (47 C.F.R. §§ 74.638, 78.36) generally rely on the International Telecommunication Union (“ITU”) Appendix 7 technical definitions and techniques for performing the coordination. See International Telecommunication Union, *Radio Regulations* (2001), Appendix 7 (WRC-2000), *Methods for the determination of the coordination area around an earth station in the frequency bands between 100 MHz and 105 GHz* (“ITU Appendix 7”). ITU Appendix 7 addresses NGSO as well as GSO earth stations, and mobile as well as fixed terrestrial services.

9. The Skybridge/FWCC proposal would establish special coordination procedures for NGSO FSS operations in certain geographic areas, identified as FS “Growth Zones,” where FS use is high and growth is most likely to occur. The special coordination requirements for new NGSO FSS operations in the FS Growth Zone would preserve future FS growth potential. Under this proposal,

An FS Growth Zone would be defined as any county in which, based on a semi-annual determination, at least 30 FS frequencies are licensed to transmit in the 10.7-11.7 GHz band.

Five conditions would be placed on any NGSO FSS gateway earth station located in an FS Growth Zone:

- a) The NGSO FSS gateway shall be located in the FS Growth Zone in accordance with standard coordination procedures, except that the coordination shall assume that all FS stations relevant to the coordination are operating on all FS transmit frequencies in the 10.7-11.7 GHz band.
- b) If an FS applicant seeking to operate a new FS station in an FS Growth Zone would be precluded, under the standard coordination procedures, from doing so at a particular location due to the existence of an NGSO FSS gateway, the NGSO FSS earth station gateway licensee shall, at the FS applicant's request, be responsible for reducing the effect on the NGSO FSS gateway of the power radiated by the proposed FS station to the greatest extent practicable, consistent with sound engineering practices and in a manner that does not materially degrade the operation capabilities of the NGSO FSS earth station gateway, up to a maximum of 20 dB below the level derived from the free-space coordination calculation.
- c) In order to locate an NGSO FSS gateway at a particular site within an FS Growth Zone that otherwise would not be acceptable under the standard coordination procedures, an NGSO FSS applicant may voluntarily agree to accept, from a specified azimuth, a certain level of interference from a particular FS station in excess of the level that would be consistent with the standard coordination procedures. To the extent that an NGSO FSS gateway earth station is sited pursuant to this provision, the licensee shall in the future be obligated to continue to accept, from that specified azimuth, that same aggregate level of interference from any FS stations.
- d) In coordinating a new FS station with an NGSO FSS gateway earth station located in an FS Growth Zone, the coordination shall not take into account elevation angles from the NGSO FSS gateway's earth stations below the lowest geometrical elevation angle that can be employed by the NGSO FSS gateway's earth stations for each direction of azimuth, taking into account the specific characteristics of the relevant satellite constellation.
- e) If, at the time of submission of a request for coordination of a particular NGSO FSS gateway site to a recognized frequency coordinator, that site is located outside of any FS Growth Zone, any NGSO FSS gateway facility subsequently licensed to operate at that site shall not be subject to the provisions of subsections (a), (b), (c), or (d) of this section, regardless of whether the county in which that site is located subsequently becomes an FS Growth Zone.¹⁶

10. In support of its proposal, Skybridge/FWCC indicates that the Commission's licensing requirements already include county location among the required FS station application fields and this information is therefore readily available. It further asserts that the best predictor of FS future growth is the level of current use and that growth patterns indicate that a minimum of thirty fixed licensed frequencies in a given county is a reasonable predictive threshold for likely future expansion in a given area. Skybridge/FWCC also suggests that the Commission publish semi-annually a public notice listing the counties meeting its definition. Skybridge/FWCC posits that focusing on obligations of NGSO FSS licensees to protect FS growth potential would yield a more flexible approach than the exclusion of NGSO FSS gateway earth stations in given geographic regions. Skybridge/FWCC also argues that adopting certain conditions to supplement our coordination rules would ensure protection of anticipated FS growth.

¹⁶ Skybridge/FWCC Growth Zone Proposal, *supra* note 2, at 5-6.

11. *Proposal.* We tentatively conclude that our frequency coordination procedures should be modified to include the terms as we propose to modify them, below, of the Skybridge/FWCC Growth Zone Proposal for NGSO FSS gateway earth stations coordinating with the FS in the 10 GHz band. We believe that modifying our coordination requirements in this way will ensure that the use of the 10 GHz band by FS is not significantly hindered by the introduction of NGSO FSS gateway operations and that NGSO FSS operators will have more flexibility in deciding where to locate gateway earth stations. We note that the 10 GHz band has been targeted as an important alternative spectrum for FS operations being relocated from other bands.¹⁷ FS use in this band has seen continued growth. We do not think that the proposed coordination approach will significantly hinder NGSO FSS operations. The areas qualifying for Growth Zone treatment would be limited and, by their design and purpose, the number of NGSO FSS gateway earth stations should be small and have sufficient deployment flexibility. Finally, we believe that the coordination obligations put forth by Skybridge/FWCC are reasonable, and note that they would only apply if an NGSO FSS gateway earth station licensee determines that deployment within a Growth Zone is necessary. We request comment on our tentative conclusions regarding the effectiveness and benefits of the Skybridge/FWCC Growth Zone Proposal and whether FS expansion can be accommodated under this approach.

12. We note that the Skybridge/FWCC Growth Zone Proposal reflects a compromise reached by two significant parties in this proceeding, but it is prudent to address all of the various interests in the band. Therefore, we intend to explore alternatives to some of the procedures in the SkyBridge/FWCC Growth Zone Proposal and seek comment on them. First, we propose to adopt the qualification criteria in the SkyBridge/FWCC Growth Zone definition of any county in which at least 30 FS frequencies are licensed to transmit in the 10.7-11.7 GHz band. We acknowledge the advantages of using counties as Growth Zone boundaries in that they are well defined. The use of counties would also be administratively convenient, since this information is readily available in our license and other coordination databases. Further, a minimum fixed number of FS operations (30 FS transmit frequencies per county) would provide an easy and definitive method of determining when a county would qualify as a Growth Zone. Nevertheless, this approach does not account for varying county size and the fact that 30 licensed FS transmit frequencies could be on a single FS path or 30 different FS paths. This could be a problem in that large counties with low FS path densities would qualify as Growth Zones and smaller counties with higher FS path densities, but not 30 frequencies, would not qualify as Growth Zones. Therefore, we seek comment on this proposal and on any alternatives that might normalize the qualification factors for Growth Zones or otherwise account for varying county sizes and deployment scenarios.

13. Rather than propose the Skybridge/FWCC suggestion that the Commission publish a public notice every 6 months with a list of counties that qualify as Growth Zones, we propose to make the determination of whether an area qualifies as a Growth Zone a case-by-case function of the frequency coordination process. We find that making and publishing Growth Zone determinations every six

¹⁷ The 10 GHz band was identified as a relocation band for fixed point-to-point operations to be relocated from the 2 GHz band reallocated in 1993 in the Emerging Technologies proceeding and in 1997 in the Mobile-Satellite Service (MSS) 2 GHz allocation proceeding. We continue to rely on this and other bands in the Ku-Band as a relocation home in other proceedings, such as for Advanced Wireless Services (AWS). See Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service, ET Docket No. 92-9, *Second Report and Order*, 8 FCC Rcd 6495 (1993) (Emerging Technology proceeding). See also *First Report and Order & Further Notice of Proposed Rule Making*, ET Docket No. 95-18, 12 FCC Rcd 7388 (1997) (2 GHz MSS allocation proceeding). In *Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems*, ET Docket No. 00-258, *Second Report and Order*, FCC 02-304 (Rel. Nov. 15, 2002), the Commission stated its belief that the 4 GHz, 6 GHz, 10 GHz, and 11 GHz bands first identified in the Emerging Technologies proceeding continue to be viable suitable spectrum for microwave incumbent licenses to be relocated for AWS; see also *Emerging Technologies Second Report and Order*, 8 FCC Rcd 6495 (1993).

months is unnecessary because this information can easily be handled as part of the coordination process for a new NGSO FSS gateway earth station. This approach would also provide “near real-time” currency to the process. We seek comment on this proposal and any alternatives.

14. We also propose to adopt the conditions (*see* (a) through (e) in paragraph 9) on NGSO FSS deployment set forth in the SkyBridge/FWCC Growth Zone Proposal. These conditions would ensure: 1) that the coordination process protects the potential for FS growth throughout the allocated band, even though FS licensees would continue to be authorized for specific frequencies on an as needed basis; 2) that NGSO FSS licensees accepting a certain level of interference along a given azimuth from incumbent FS licensees will accept the same level of impact from future FS applicants; and 3) that coordination only considers the particular technical characteristics of the NGSO FSS gateway earth station being deployed without considering “look angles” to the satellites that will not be used. We seek comment on whether these conditions should apply only to NGSO FSS gateway earth stations located within a Growth Zone, or whether they should also apply to those in proximity to, or within a certain distance of, a Growth Zone, and, if so, what the proximity criteria or distance should be. We also seek comment on whether these conditions should apply only to the protection of FS stations located within the Growth Zone in which the NGSO FSS earth station is located, or whether they should also apply to the protection of other FS stations located outside that Growth Zone but within the coordination contour of the earth station. Further, we seek comment on whether the level of impact from future FS applicants, expressed in the proposal as an aggregate level of interference from any FS stations (*see* (c) in paragraph 9), should apply case-by-case to individual transmit frequencies, to the aggregate of transmit frequencies operating on a single transmit path from a station, or to all frequencies on all transmit paths from a station. We seek comment on whether these conditions are appropriate to ensure equitable sharing. We also seek comment on whether other conditions or changes to our coordination procedures would be appropriate to address sharing between these services.

B. Coordination between FSS and BAS/CARS Operations at 7 GHz and 13 GHz

15. *Background.* As indicated above, we have taken several actions that will permit new NGSO FSS earth stations to share the 7 GHz and 13 GHz bands with existing mobile and fixed BAS and CARS operations. These NGSO FSS earth stations will be either gateway or feeder link earth stations. We therefore believe that the total number of NGSO FSS earth stations should be small and that coordination and sharing with existing terrestrial mobile and fixed BAS and CARS operations should be possible. We note, for example, a limited number of GSO FSS earth stations have been successfully coordinated and are authorized in both the 7 GHz and 13 GHz bands.¹⁸

16. Mobile BAS and CARS operations in the 7 GHz and 13 GHz bands typically include TVPU stations that operate under Part 74 and Part 78, respectively.¹⁹ These stations are used to perform impromptu electronic newsgathering (“ENG”) at the scene of a breaking event and to cover scheduled events, such as sports or political events. TVPU stations operate in a variety of configurations within an authorized operations area. They may transmit from an ENG truck directly to a fixed receiver at the station or through a relay link at a remote fixed receiver location.²⁰ TVPU signals may also originate or relay through aeronautical TVPU platforms, such as helicopters, to a fixed receive point or to a mobile satellite uplink truck, or other facilities, to reach the ultimate receive point, typically a studio. TVPU applications also include communications from “window ledge” or mobile camera locations to on-site

¹⁸ There are one GSO uplink earth station licensed in the 7 GHz band and 11 GSO uplink earth stations licensed in the 13 GHz band.

¹⁹ *See* 47 C.F.R. §§ 74.602, 78.18.

²⁰ Fixed receiver sites for TVPU signals are typically located on tall buildings, towers, or mountain tops and employ remotely steerable directional antenna(s), thus affording maximum coverage of TVPU transmissions within the operations area.

production facilities or to a TVPU truck for relay to a fixed receive point.

17. TVPU stations are typically licensed for a specific area of operation, such as a standard metropolitan area, and for a specific frequency band.²¹ Operational areas may also be county-wide, regional, statewide, or nationwide, depending on the needs of the licensee.²² A TVPU licensee may also be authorized to operate on any or all frequencies within an allocated band.²³ When necessary, BAS and CARS short-term itinerant operation under the provisions of Sections 74.24 and 78.11, respectively, may be used to deploy outside the licensee's authorized area and frequencies for very short time periods.²⁴ In order to maintain the flexibility of TVPU operations to cover events where and when they occur without causing interference, local frequency coordinators are often used to perform *ad hoc* informal coordination for both local and non-local broadcast entities that wish to use the 7 GHz and 13 GHz bands within an area. BAS frequency coordinators often effect real-time coordination to accommodate TVPU ENG deployments as needed to cover unscheduled, fast-breaking newsworthy events, such as disasters or law enforcement activities.²⁵ While mobile TVPU operations have a primary allocation in the 7 GHz and 13 GHz bands, they generally must protect fixed BAS/CARS uses in these bands.²⁶

18. In the *BAS/CARS R&O*, the Commission decided that mobile TVPU operations in the 7 GHz and 13 GHz bands could continue to use the local *ad hoc* coordination procedures contained in Sections 74.638(d) and 78.36(d) of the Commission's Rules, but could also use the more formal coordination procedures in Section 101.103(d).²⁷ Local *ad hoc* coordination, described in Sections 74.638(d) and 78.36(d) of the Commission's Rules, simply places responsibility upon applicants for selecting frequencies that are least likely to result in mutual interference with other licensees in the same area. Applicants may consult local frequency coordination committees, where they exist, for information on frequencies available in the area.²⁸ No specific procedures are provided for identifying frequencies or contacting other users in the area. Further, the local *ad hoc* coordination process does not require evidence of the accomplishment of frequency coordination to get a license, because coordination occurs on an ongoing or as needed basis. Under the coordination procedures in Section 101.103(d), coordination of new facilities is accomplished before an authorization is granted. Parties must file

²¹ See 47 C.F.R. § 74.632(a), (c).

²² For example, while one local TV station may only need to operate within a 15 mile radius to accommodate its ENG, another entity may need to operate with a 100 mile radius, within a county, or in a wide region within a state, to accomplish its ENG operations. In the Commission's database, approximately 25% of BAS TVPU stations in the 6875-7075 MHz and 12750-13250 MHz bands are licensed by point and radius, while the remainder are generally licensed by city.

²³ Aeronautical and wide area TVPU operations use the same frequencies as fixed BAS/CARS and other TVPU operations. Authorization of multiple frequencies enables frequency selection to avert interference to other operations as the TVPU's location and antenna pointing change for each different operation.

²⁴ See 47 C.F.R. § 74.24 and 78.11.

²⁵ We note that public safety and Homeland Security organizations often rely upon such coverage for immediate and up-to-the-minute information.

²⁶ See 47 C.F.R. §§ 74.602(a), 74.602(d), 74.604(b), 74.604(c), 78.18(b), and 78.18(l). Licensees of mobile BAS/CARS TVPUs have a strong incentive to do so because most of the fixed BAS/CARS stations they are protecting belong to them.

²⁷ For BAS, Section 74.638(b) incorporates by reference the coordination procedures in Section 101.103(d). For CARS, Section 78.36 describes the same, rather than incorporate by reference, the coordination procedures in Section 101.103(d). For simplicity, our discussion will refer to the coordination procedures as Section 101.103(d) procedures in both cases.

²⁸ Local frequency coordination committees are typically groups of or individual broadcast or cable entities who volunteer to assist other broadcast and cable entities in selecting frequency assignments to avoid interference to other broadcast and cable users in an area.

notification with, and resolve any conflicts or technical problems identified by response from, all potentially affected licensees and applicants within a 30-day time period, prior to filing an application for a license.²⁹ An application for license from the Commission must contain a certification of completion of coordination, including notification and response, and a list of licensees/applicants notified. Once the station is coordinated and a license application is filed, the station is entitled to protection from future applicants.

19. The existing fixed use of the 7 and 13 GHz bands includes BAS fixed point-to-point stations under Part 74, such as studio-transmitter link (“STL”), TV relay (“TVR”), TV translator relay (“TTR”), and TV microwave booster (“TVB”) stations and fixed CARS stations used in a point-to-multipoint configuration to distribute content throughout a cable television system or from one cable television system to another. These fixed BAS/CARS operations are licensed and coordinated with other operations to avoid interference.³⁰ Fixed BAS/CARS operations in the 7 GHz and 13 GHz bands use the coordination procedures in Section 101.103(d) because these operations are technically similar to the FS operations that are governed by that section and with which they share frequency bands.³¹ In contrast, fixed receiver stations that communicate with BAS mobile TVPUs are not licensed with the Commission.³² Nevertheless, the informal *ad hoc* coordination process by local frequency coordinators has enabled fixed receive-only stations to operate without significant interference problems.

20. The present FSS use of the 7 GHz and 13 GHz bands is limited due to extensive use of these bands by BAS and CARS operations. Further, we note that CARS eligibility has recently been expanded to include all multichannel video programming distributors, which could further increase CARS use of the bands.³³ As mentioned above, we further anticipate that because new NGSO FSS operations in these bands are limited to gateway or feeder link operations, the number of new NGSO earth stations should also be small. Parts 25 and 101 of the Commission’s rules sets forth the coordination procedures for FSS earth stations to enable sharing with existing terrestrial operations.³⁴ The technical aspects of coordination are based on Appendix 7 of the International Telecommunications Union (ITU) Radio Regulations and certain Recommendations of the ITU Radiocommunication Sector.³⁵ FSS entities typically use commercial coordination companies to aid in performing the coordination.

21. *Proposal.* We acknowledge that frequency coordination and spectrum sharing between FSS and BAS/CARS fixed and mobile operations will be challenging. Nevertheless, we believe that spectrum sharing between FSS earth stations (both GSO and NGSO) and BAS/CARS fixed and mobile operations is feasible because the number of new FSS earth stations should be relatively small. We find that there are several factors that effect how fixed, mobile, and fixed-satellite services will share the

²⁹ If no response is received within the 30 day period, the applicant will be deemed to have made reasonable efforts to coordinate and may file its application. See 47 C.F.R. § 101.103(d).

³⁰ See 47 C.F.R. §§ 74.638(b), 78.36(b)

³¹ See 47 C.F.R. §§ 74.638(b) and 78.36(b), which reference the interference criteria specified in Section 101.105 and the coordination procedures in Section 101.103(d). We also note that these procedures, except at 6.5 GHz and 17.7-19.7 GHz, specifically exempt BAS/CARS from compliance with the provision in Section 101.103(d) requiring compliance with Section 101.21(f) (“Technical Content of Applications”) in coordinating frequency usage with FSS earth stations, as that matter was deferred to this rule making proceeding. See 47 C.F.R. §§ 74.638, 78.36 and 101.103(d), and 101.105

³² We note, however, that fixed receiver stations that communicate with CARS mobile TVPUs are licensed.

³³ *Amendment of Eligibility Requirements in Part 78 Regarding 12 GHz Cable Television Relay Service*, CS Docket No. 99-250, RM-9257, *Report and Order*, FCC 02-149, 17 FCC Rcd 9930 (2002).

³⁴ See 47 C.F.R. §§ 25.203, 25.251 and 101.103(d). The Part 25 rules reference the coordination procedures in Section 101.103(d).

³⁵ See 47 C.F.R. § 25.251(b).

7 GHz and 13 GHz bands. For example, mobile BAS/CARS operations, which may include aeronautical operations, require a great deal of deployment flexibility to cover news or events when and where they happen, whereas fixed BAS/CARS and FSS operations are stationary and often have high requirements for reliability. Further, the interference protection expectations of mobile BAS/CARS operations, which may rely upon informal *ad hoc* coordination, would likely be different than those of fixed BAS/CARS and FSS operations, which coordinate their use prior to authorization to ensure reliable communications. Therefore, we address separately mobile and fixed BAS and CARS coordination with FSS for the 7 GHz and 13 GHz bands.

22. *Coordination of FSS with Mobile BAS and CARS operations.* As discussed below, we propose to maintain the existing coordination requirements for both FSS and mobile BAS and CARS operations in the 7 GHz and 13 GHz bands, rather than propose to require that all operations in the bands follow the same coordination procedures. Thus, NGSO and GSO FSS operators seeking to deploy new earth stations in these bands would continue to initiate coordination with mobile BAS and CARS operations using the coordination procedures in Sections 25.203, 25.251 and 101.103(d). Similarly, new mobile BAS and CARS operations initiating coordination in the 7 GHz and 13 GHz bands would continue to have the flexibility to use either the informal *ad hoc* local coordination procedures in Sections 74.638 and 78.36 or the coordination procedures in Section 101.103(d) to coordinate with FSS earth stations.

23. We first address the coordination procedures that an FSS entity would use when it initiates coordination for a new earth station. At the outset, pursuant to Sections 25.203(b) and 25.251, the FSS entity needs to identify the coordination distance contour for the earth station based on the technical criteria contained in ITU Appendix 7 and certain ITU Recommendations. These technical criteria address protection of mobile as well as terrestrial fixed facilities, and thus, we believe, contain sufficient technical rigor to enable identification and protection of mobile TVPU stations. In this context, however, we note that the maximum coordination distances and coordination contours calculated using ITU Appendix 7 are conservatively large, particularly for sharing between an NGSO FSS earth station and aeronautical TVPU stations.³⁶ Considering the relative brevity of TVPU operations, particularly for worst-case pointing by either an earth station or a mobile antenna, we seek comment on whether these distances should be changed with a view toward reducing the overall coordination burden where the potential for interference is minimal. Parties favoring reducing the coordination distances should support alternative distances with appropriate engineering analysis.

24. Regarding the administrative aspects of coordination for FSS earth stations, our Parts 25 and 101 rules require notification to all potentially affected licensees and applicants within the ITU Appendix 7 coordination distance contour for the earth station.³⁷ We note that the rules give applicants the flexibility to determine how best to identify facilities that may affect or be affected by the proposed facilities, and licensees who must be notified. Thus, in addition to thoroughly checking relevant Commission and any other licensing databases to assess both local and nationwide licensees that may have operations in the affected area, the FSS earth station applicant should also find it useful to contact local broadcast frequency coordinators, where they exist, to help identify the licensees with operations within the coordination contour of the FSS earth station, that need to be notified.³⁸ Once notification is

³⁶ For example, the maximum coordination distances between NGSO FSS earth station and terrestrial facilities over land and coastal areas, respectively, are 375 km and 500 km. For aeronautical mobile, the coordination distance is always 500 km. See ITU Appendix 7 at Table 3, Table 10. These distances extend well beyond the radio horizons of the earth station and terrestrial facilities in order to consider over-the-horizon propagation of interfering signals by mechanisms such as tropospheric scatter, ducting, and rain scatter. See ITU Appendix 7 at 1.5.

³⁷ See 47 C.F.R. §§ 25.203 and 101.103(d).

³⁸ We note that SBE maintains a list of local broadcast frequency coordinators, by county, on its website at <http://www.sbe.org>.

initiated, any responses from affected parties indicating potential interference must specify the technical details in writing, and all parties must make every reasonable effort to eliminate all technical problems and conflicts. Further, if no response is received within the 30 day period, the applicant will be deemed to have made reasonable efforts to coordinate and may file its application. We believe that this process will meet the needs of both the new FSS applicants and the BAS/CARS incumbents, who can identify and provide full technical details of the facilities that may interfere with the proposed earth station; facilities requiring protection, including fixed receiver sites; aeronautical TVPU operations; and mobile patterns of use.³⁹ Because BAS/CARS stations and FSS earth stations have co-primary allocations in these bands, new FSS entrants must protect all incumbent BAS/CARS operations. Therefore, new FSS entrants in the 7 GHz and 13 GHz bands must consider typical deployments of TVPU operations within their authorized area to ensure that existing TVPU uses and operations are not adversely affected.

25. In addition, we note that Section 25.203(c)(3) requires coordination procedures to be completed within 30 days, but allows FSS applicants to extend the maximum coordination period to 45 days by mutual consent of the parties.⁴⁰ To accommodate the notification and response process for incumbent TVPU operations, which may involve additional consideration of fixed receiver sites, aeronautical operations, and mobile patterns of use identified by notified parties as described above, we seek comment on whether the maximum coordination period should be increased beyond 45 days and, if so, for how long. We also seek comment on whether any modifications to the coordination process proposed above should be made to account for the technical and operational differences between NGSO FSS and GSO FSS earth stations.

26. We also believe the existing coordination procedures provide sufficient flexibility for the parties to agree to reduce the likelihood of interference by shielding the earth station, particularly in satellite downlink bands, or constraining operations by various means.⁴¹ We note that these coordination procedures have been used successfully in coordinating the three FSS downlink earth stations grandfathered by the *MSS Feeder Link R&O* with mobile BAS/CARS TVPU stations in the

³⁹ While our databases do not contain information regarding receive-only sites that communicate with BAS mobile TVPU operations, we believe that the new FSS entrant will be able to identify and protect such stations by contacting the appropriate BAS frequency coordinators, as well as eligible BAS licensees, within the coordination contour of the FSS earth station, to gather information prior to notification. Contacting nationwide licensees, and network or other entities whose short-term itinerant deployments may reasonably be expected nationwide, would also be prudent.

⁴⁰ See 47 C.F.R. §§ 25.203, 101.103.

⁴¹ See 47 C.F.R. §§ 25.203(b), 25.203(c)(4), 78.36(b)(1), 101.103(d)(1). For example, where incumbent TVPU fixed receive sites or aeronautical deployments could be conducted with highly directional antennas to preclude harmful interference into or from the prospective new FSS earth station, where ground TVPU operation is not expected over a wide area within the coordination contour, or where alternate frequencies or frequency bands would normally accommodate TVPU operation adequately, the TVPU licensee could feasibly accept constraints on operations as appropriate to reasonably accommodate the proposed FSS earth station. Agreements could be reached to restrict the power, height/altitude, and pointing angle of TVPU facilities, including aeronautical TVPU transmitters in the downlink case, and TVPU fixed receive site and aeronautical receivers in the uplink case, based on distance from the FSS earth station. Further measures could incorporate exclusion of aeronautical TVPU operations on certain frequencies and limits on frequency use in areas where operation on alternate frequencies or frequency bands would not be blocked by other operations.

7025-7075 MHz band.⁴² They have also been successfully used to coordinate FSS uplink earth stations with mobile BAS/CARS TVPU stations in the 13 GHz band.⁴³ While we believe existing Parts 25 and 101 coordination procedures are adequate to ensure that new FSS earth stations are deployed without interference with mobile BAS and CARS operations, we seek comment on the above conclusions and proposals, and whether any additional steps or rule modifications are necessary to address the sharing scenarios in the 7 GHz and 13 GHz bands as the number of earth stations and BAS/CARS deployments increase.

27. As we noted above, we propose to allow BAS and CARS entities flexibility to use either the informal *ad hoc* coordination process in Sections 74.638 and 78.36 or the coordination procedures in Section 101.103(d) when they initiate coordination for a new mobile BAS/CARS station with FSS earth stations in the 7 GHz and 13 GHz bands. These coordination procedures have been adequate to address sharing with BAS/CARS fixed operations and should offer sufficient protection between BAS/CARS mobile and FSS operations without unnecessary burdens and regulatory oversight. Since the number of earth stations in these bands should be few and readily identifiable through the Commission's files, BAS and CARS entities should have little difficulty in notifying the appropriate FSS entity for coordination purposes.⁴⁴ We observe that our rules give BAS and CARS applicants the flexibility to determine how best to contact the parties they identify for coordination and thus we believe that these rules do not need to be modified in this regard. Because FSS has a co-primary allocation in these bands, new BAS and CARS entrants must protect all authorized FSS operations.

28. We recognize the *ad hoc* coordination process relies on mutual interest, cooperation, and informal negotiations among licensees. It is less burdensome to the parties and affords mobile services maximum flexibility with regard to deployment. We believe this an important factor for TVPU operations where it is not possible to predict where breaking news may happen. On the other hand, we also recognize that the more formal frequency coordination procedures in Parts 25 and 101 would likely provide FSS operations with additional certainty of protection from TVPU operations. We seek comment on our proposal to allow BAS and CARS entities the flexibility to use either the *ad hoc* coordination process in Sections 74.638 and 78.36 or the coordination procedures in Section 101.103(d). Commenters should address whether this approach is the best means to maintain flexibility for mobile TVPU operations and to provide adequate protection to NGSO FSS earth stations. We also seek comment on any other alternatives to our existing coordination rules for FSS and BAS/CARS mobile operations. Finally, we seek comment from small businesses or other small entities concerning the alternatives proposed above.

29. The Commission's rules allow for short-term itinerant TVPU operation under Sections 74.24

⁴² See *MSS Feeder Link R&O* ¶ 39. These three FSS earth stations are associated with two NGSO satellite systems and are located in Brewster, Washington, licensed to Verestar, Inc., for operation in the 6975-7075 MHz band on May 10, 2001; in Clifton, Texas, licensed to Globalstar USA, LLC for operation in the 6875-7055 MHz band on Feb. 27, 1998; and in Finca Pascual, Puerto Rico, licensed to Globalstar Caribbean, Ltd for operation in the 6900-7055 MHz band on June 23, 2000. See *Amendment of Parts 2, 25 and 97 of the Commission's Rules with Regard to the Mobile-Satellite Service Above 1 GHz*, ET Docket No. 98-142, *Memorandum Opinion and Order*, FCC 03-69, 68 FR 32406 (May 30, 2003), 18 FCC Rcd 6897 (rel. Apr. 2, 2003)(*MSS Feeder Link MO&O*) at n. 46.

⁴³ There are 11 GSO earth stations licensed in the 13 GHz band.

⁴⁴ Section 25.202(a)(1) limits NGSO FSS use of the 7 GHz, 10 GHz, and 13 GHz bands to gateway earth stations, subject to the operational and technical restrictions set forth in Section 25.201, which defines an NGSO FSS gateway earth station and requires conformance with the antenna performance standards in Section 25.209(h). 47 C.F.R. §§ 25.201, 25.202(a)(1), and 25.209(h). We believe that this restrictive definition will limit proliferation.

and 78.11, respectively, for BAS and CARS.⁴⁵ Typically, these operations are conducted by broadcast licensees under the authority of a Part 73 license, or by BAS or CARS licensees whose authorization does not cover the frequency or geographic area of use. Our Part 74 rules allow BAS short-term operation for a limit of 720 hours per year and on a secondary, non-interference basis—i.e., the operations must cease if they cause interference to other users in the band.⁴⁶ Coordination for BAS short-term operation requires notification to the appropriate frequency coordinator or co-channel licensees, except where an unanticipated need renders notification impractical.⁴⁷ Our Part 78 rules allow CARS short-term operation by a licensed CARS TVPU for up to one day without prior Commission authority and for more than one day upon notification to the Commission. However, our rules do not address the regulatory status of CARS short-term operations. Finally, we note that there may be certain venues, such as major sporting events, where simultaneous TVPU use of the full band is routinely needed to facilitate coverage by local TVPU licensees and short-term itinerant deployments, or where alternate frequencies are not available due to congestion. In such cases, TVPU licensees and short-term itinerant operants could anticipate full use of the band.

30. Because it is not possible to predict where breaking news may happen, licensees of new FSS earth stations should be aware and take into account short-term TVPU deployments, to the extent possible. This can be done by avoiding locations where operations by TVPU licensees and short-term itinerant use is expected to be high, such as in major urban areas or near certain venues, such as locations where major sporting events are held.

31. In the *BAS/CARS R&O*, the Commission recently declined to expand the BAS short-term frequency coordination procedure to include a two-way notification/response coordination requirement for short-term use with respect to FSS earth stations operations.⁴⁸ The Commission stated that all short-term operation is secondary, and that the existing Section 74.24(g) requirement to notify the local coordinating committee or co-channel licensees is sufficient to ensure short-term deployments have a minimal chance of causing harmful interference while providing broadcasters the ability to cover newsworthy events without delay. We thus propose to maintain the secondary, non-interference status of BAS short-term itinerant TVPU operations vis-à-vis primary FSS operations in the 7 GHz and 13 GHz bands. In this connection, we remind BAS short-term operants that they are responsible for ensuring notification to any co-channel FSS earth station within whose coordination contour a prospective short-term deployment is contemplated, whether notification is effected through a local frequency coordinator or directly with the FSS earth station.⁴⁹ We also propose to require CARS short-term operators to notify either the local frequency coordinator or co-channel licensees, including licensees of FSS earth stations, and provide the name and telephone number of a person who may be contacted in the event of interference, except where it is impractical, similar to the BAS notification requirements. We believe this action will provide more certainty to licensed fixed, mobile, and particularly earth station operations without burdening CARS short-term itinerant operations. In this connection, we seek comment on whether the status of CARS short-term operations should be on a

⁴⁵ 47 C.F.R. §§ 74.24, 78.11.

⁴⁶ Section 74.24(c) provides: Short-term operation is on a secondary, non-interference basis to regularly authorized stations and shall be discontinued immediately upon notification that perceptible interference is being caused to the operation of a regularly authorized station. Short-term station operators shall, to the extent practicable, use only the effective radiated power and antenna height necessary for satisfactory system performance.

⁴⁷ See 47 C.F.R. § 74.24(g).

⁴⁸ See *BAS/CARS R&O* at ¶ 90.

⁴⁹ Coordination would not only serve to protect FSS downlink earth stations from short-term operations in the 7 GHz band, but could also be used to properly site and engineer short-term operations to avert interference from FSS uplink earth stations in the 13 GHz bands.

secondary, non-interference basis, similar to BAS short-term operations.⁵⁰ Because short-term itinerant TVPU operations would be susceptible to interference if they deploy near FSS uplink earth stations, they would benefit by coordinating their use to avoid such deployment. Moreover, we encourage all parties to a coordination to cooperate in resolving any potential interference concerns regarding a prospective short-term operation. We believe that the short-term operation procedures, described above, could be used by the short-term TVPU operants to address potential interference scenarios. Under these procedures, the short-term itinerant TVPU operants will likely contact either the local frequency coordinators or co-channel BAS/CARS licensees, who likely have been involved in FSS earth station coordinations and are aware of any existing FSS earth station in an area. Further, we do not believe there will be large areas where short-term itinerant operations would be precluded by FSS earth stations because the number of these earth stations should be limited. We seek comment on these proposals and whether other coordination steps would be necessary to address FSS sharing with short-term itinerant operations. For example, should FSS licensees maintain a point of contact to facilitate frequency engineering for short-term itinerant deployments⁵¹ to cover unplanned events? This point of contact could afford an avenue for rapid information exchange and thereby facilitate both the continued viability of short-term itinerant deployments and the protection of FSS operations. Alternatively, absent any coordination as described above, FSS entities could take precautions to protect downlink earth stations from interference from short-term itinerant TVPU operations.⁵²

32. In connection with the use of Parts 25 and 101 coordination procedures for the coordination of FSS earth stations with mobile stations in the 7 GHz and 13 GHz bands, we note that the interference protection criteria in Sections 101.105(a), (b), and (c) for FS, and referenced by Sections 74.638 and 78.36, respectively, for BAS and CARS, specifically address the protection of fixed stations, but not mobile stations. We seek comment on whether those rules should be amended to apply specifically to mobile as well as fixed stations, whether they should be supplemented to include criteria unique to the protection on mobile and fixed receivers used in conjunction with mobile stations, and what the additional criteria should be. Commenters recommending additional criteria, such as the baseline interference and threshold degradation figures in Sections 101.105(a) and (b) or the conservative default criteria in Section 101.105(c)(2), should support their proposals with engineering showings.

33. We believe that the approaches described above for coordinating FSS (both NGSO and GSO) and BAS/CARS mobile operations achieve a viable balance between the needs of FSS licensees for certainty and reliability and the needs of BAS/CARS for flexibility. We seek comment on these findings and proposals, as well as any modifications to the above procedures that would enhance the good faith and speed of participants or otherwise improve or streamline the process without compromising our goals.

34. *Coordination of FSS and Fixed BAS and CARS Operations:* In both ET Docket No. 98-142 and ET Docket No. 98-206, the Commission stated its belief that Parts 25 and 101 coordination procedures could protect both NGSO FSS earth stations and fixed BAS/CARS stations, but deferred adoption of those procedures to this proceeding, as discussed above.⁵³ We propose to maintain the coordination procedures in Sections 25.203 and 25.251 for coordination of new FSS earth stations with

⁵⁰ See 47 C.F.R. §§ 74.24(c).

⁵¹ We refer here to the effort of frequency planning and engineering, including contacting licensees for detailed technical information, to ensure that an individual short-term itinerant deployment occurs without causing or receiving harmful interference, and distinguish this usage from the coordination procedure specified for short-term frequency coordination in Section 74.24.

⁵² These precautions could include such measures as siting in remote areas or taking advantage of terrain obstructions; erecting berms or using other shielding techniques; or using minimum antenna elevation angles above the horizon.

⁵³ See *NGSO FSS Ku-Band R&O* ¶ 128; *MSS Feeder Link R&O* ¶¶ 54-55.

fixed BAS/CARS stations in the 7 GHz and 13 GHz bands, and to adopt the coordination procedures set forth in Sections 101.21(f) and 101.103(d) for coordination of new fixed BAS and CARS stations with FSS earth stations, whether NGSO or GSO.⁵⁴ These procedures and the ITU Appendix 7 technical criteria referenced by them have proven successful in coordinating FS facilities governed by Part 101 with FSS earth stations. Fixed BAS and CARS facilities under Part 74 and Part 78 are similar, if not identical, to the Part 101 FS facilities in frequency, technical characteristics, limitations, and use, and thus should be able to follow the same technical criteria for coordination purposes.⁵⁵ We believe that the same coordination procedures should be used for coordinating fixed BAS and CARS with FSS in the 7 GHz and 13 GHz bands, as currently used for coordinating fixed FS with FSS in the nearby 6525-6875 MHz and 10 GHz bands. We favor using uniform coordination procedures for similar services to simplify our rules and the frequency coordination process. Therefore, we propose to amend Sections 74.638 and 78.36 to reference Section 101.21(f) and 101.103(d) procedures for coordinating fixed BAS/CARS facilities with FSS earth stations where the prospective fixed facilities are within the coordination contour of the FSS earth station, as defined in the ITU Appendix 7.⁵⁶ We seek comment on this proposal. We also seek comment on whether any additional measures are needed, or any additional information should be exchanged, to ensure the efficacy of these coordination procedures for fixed BAS and CARS facilities.

35. We also propose that the FS interference protection criteria in Section 101.105(a), (b), and (c) apply to the protection of fixed BAS and CARS receivers and that new FSS earth stations use this criteria when coordinating with incumbent fixed BAS and CARS operations.⁵⁷ We believe use of these criteria will be as successful for protecting fixed BAS and CARS receivers as they have proven to be for FS receivers. We seek comment on these conclusions and proposals.

PROCEDURAL INFORMATION

36. *Paperwork Reduction Analysis.* This Notice of Proposed Rulemaking contains a proposed and/or modified information collection. As part of its continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget (OMB) to take this opportunity to comment on the information collections contained in this NPRM, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. Written comments on the proposed information collection must be submitted by the public, Office of Management and Budget (OMB) and other interested parties on or before **[60 days from the date of publication of the NPRM in the Federal Register]**.

37. *Initial Regulatory Flexibility Analysis.* The analysis pursuant to the Regulatory Flexibility Act of 1980, as amended, *see* 5 U.S.C. Section 603, is contained in Appendix B.

38. *Ex Parte Presentation.* This is a permit-but-disclose rule making proceeding. *Ex parte* presentations are permitted, provided they are disclosed as provided in Commission Rules.⁵⁸

⁵⁴ 47 C.F.R. §§ 101.21(f), 101.103(d), 25.203, and 25.251.

⁵⁵ The ITU Appendix 7 provides methods for determining the coordination contour within which earth stations must coordinate their proposed operations.

⁵⁶ We note that when we modified 47 C.F.R. §§ 74.638 and 78.36 under the *BAS/CARS R&O*, we inadvertently did not clarify in which bands applicants for mobile BAS/CARS have the flexibility to use either the informal *ad hoc* coordination process in Sections 74.638 and 78.36 or the coordination procedures in Section 101.103(d) when they initiate coordination. Therefore, in this proceeding, we will further modify these rules to more clearly reflect the decision made in the *BAS/CARS R&O* regarding such flexibility. *See BAS/CARS R&O* at ¶¶ 62 and Appendix A; *see also* Appendix A of this Notice.

⁵⁷ *See* 47 C.F.R. § 101.105.

⁵⁸ *See generally* 47 C.F.R. §§ 1.1202, 1.1203, and 1.1206(a).

39. *Authority.* This action is taken pursuant to Sections 4(i), 4(j), 7(a), 303(c), 303(f), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154(i), 157(a), 303(c), 303(f), 303(g), and 303(r).

40. *Comments:* 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 on or before **[30 days after publication in the Federal Register], and reply comments on or before [45 days after publication in the Federal Register]**. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies. See Electronic Filing of Documents in Rulemaking Proceedings, 63 Fed. Reg. 24121 (1998).

41. Written comments by the public on the [proposed and/or modified] information collections are due **[60 days from date of publication in the Federal Register]**. Written comments must be submitted by the public, Office of Management and Budget (OMB) and other interested parties on the proposed and/or modified information collections on or before **[60 days from date of publication in the Federal Register]**. In addition to filing comments with the Secretary, a copy of any comments on the information collection(s) contained herein should be submitted to Judith Boley Herman, Federal Communications Commission, Room 1-C804, 445 12th Street, SW, Washington, DC 20554, or via the Internet to jboley@fcc.gov and to Kim A. Johnson, OMB Desk Officer, Room 10236 NEOB, 725 17th Street, N.W., Washington, DC 20503 or via the Internet to Kim_A_Johnson@omb.eop.gov.

42. Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, U.S. Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form <your e-mail address.>" A sample form and directions will be sent in reply.

43. 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 appear in the caption of this proceeding, commenters must submit two additional copies for each additional docket or rulemaking number. Parties who choose to file by paper should also submit their comments on diskette. Such a submission should be on a 3.5-inch diskette formatted in an IBM compatible format using Microsoft Word or compatible software. The diskette should be accompanied by a cover letter and should be submitted in "read only" mode. The diskette should be clearly labeled with the commenter's name, proceeding (including the lead docket number, type of pleading (comment or reply comment), date of submission, and the name of the electronic file on the diskette. The label should also include the following phrase "Disk Copy – Not an Original." Each diskette should contain only party's pleading, preferably in a single electronic file. In addition, commenters must send diskette copies to the Commission's copy contractor, Qualex International, Portals II, 445 12th Street, SW, Room CY-B402, Washington, DC, 20554. All filings must be addressed to the Commission's Secretary, Marlene H. Dortch, Office of the Secretary, Federal Communications Commission.

44. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). The Commission's contractor, Natek, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D.C. 20002. The filing hours at this location are 8:00 a.m. to 7:00 p.m. 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 mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, SW, Washington, D.C. 20554. All filings must be addressed to the Commission's Secretary, Marlene H. Dortch, Office of the Secretary, Federal Communications Commission.

45. Alternative formats (computer diskette, large print, audio cassette and Braille) are available to persons with disabilities by contacting Brian Millin at (202) 418-7426, TTY (202) 418-2555, or via e-mail to Brian.Millin@fcc.gov. This *Notice* can also be downloaded at <http://www.fcc.gov/oet>

46. *Further Information.* For further information concerning this Notice of Proposed Rule Making, contact the Office of Engineering and Technology, Ted Ryder, (202)418-2803, email tryder@fcc.gov, or James Miller, (202) 418-7351, TTY (202) 418-2989, email jjmiller@fcc.gov.

ORDERING CLAUSES

47. IT IS ORDERED, that pursuant to Sections 4(i), 4(j), 7(a), 303(c), 303(f), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154(i), 157(a), 303(c), 303(f), 303(g), and 303(r), this Notice of Proposed Rule Making is hereby ADOPTED.

48. 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 Rule Making, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene Dortch
Secretary

APPENDIX A: PROPOSED RULES

For the reasons discussed in the preamble, the FCC proposes changes to 47 C.F.R. Parts 25, 74, and 78 as follows:

PART 25 – SATELLITE COMMUNICATIONS

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

AUTHORITY: 47 U.S.C. 701-744. Interprets or applies Sections 4, 301, 302, 303; 307, 309 and 332 of the Communications Act, as amended, 47 U.S.C. Sections 154, 301, 302, 303, 307, 309 and 332, unless otherwise noted.

2. Section 25.201 is proposed to be amended to add text as follows:

§25.201 Definitions.

* * * * *

Fixed Service Growth Zone. A fixed service (FS) growth zone is any county in which at least 30 FS frequencies are licensed to transmit in the 10.7-11.7 GHz band. Growth zone determinations shall be made at the time of submission of a request for coordination of the NGSO FSS gateway earth station to a frequency coordinator and shall be a component of the coordination process required under this Part.

* * * * *

3. Section 25.203 is proposed to be amended to add new subsection (l) to read as follows:

§ 25.203 Choice of sites and frequencies.

* * * * *

(l) NGSO FSS gateway earth stations operating in the 10.7-11.7 GHz band may be located in a fixed service (FS) growth zone, as defined by § 25.201 of this Part and recognized during the gateway earth station's coordination process pursuant to its license application, subject to the following conditions:

(1) The NGSO FSS gateway earth station located in the FS growth zone shall be in accordance with standard coordination procedures, except that coordination shall assume that all FS stations relevant to the coordination are operating on all FS transmit frequencies in the 10.7-11.7 GHz band; and

(2) If an FS applicant seeking to operate a new FS station in an FS growth zone would be precluded, under the standard coordination procedures, at a particular location in the band due to the existence of the gateway earth station, the gateway earth station licensee shall, at the FS applicant's request, be responsible for reducing the effect on the gateway earth station of the power radiated by the proposed FS station to the greatest extent practicable, consistent with sound engineering practices and in a manner that does not materially degrade the operational capabilities of the gateway earth station, up to a maximum of 20 dB below the interference level derived from the free-space coordination calculation; and

(3) In order to locate an NGSO FSS gateway earth station at a particular site within an FS growth zone that otherwise would not be acceptable under the standard coordination procedures, an NGSO FSS gateway earth station applicant may voluntarily agree to accept, from a specified azimuth, a certain level of interference from a particular FS station in excess of the level that would be consistent with the standard coordination procedures. To the extent that an NGSO FSS gateway earth station is sited

pursuant to this subsection, the licensee shall in the future be obligated to continue to accept, from that specified azimuth, that same aggregate level of interference from any FS stations; and

(4) In coordinating a new FS station with an NGSO FSS gateway earth station located in an FS growth zone, the coordination shall not take into account NGSO FSS gateway earth station antenna elevation angles below the lowest geometric elevation angle that can be employed by the NGSO FSS gateway earth station for each direction of azimuth, taking into account the specific characteristics of the relevant satellite constellation; and

(5) If, at the time of submission of a request for coordination of a particular NGSO FSS gateway earth station site to a frequency coordinator, that site is located outside of any FS growth zone, any NGSO FSS gateway earth station facility subsequently licensed to operate at that site shall not be subject to the provisions of subsections (1)(1), (2), (3), or (4) of this section, regardless of whether the county in which that site is located subsequently becomes an FS growth zone.

* * * * *

PART 74 – EXPERIMENTAL RADIO, AUXILIARY, SPECIAL BROADCAST AND OTHER PROGRAM DISTRIBUTION SERVICES

4. The authority citation for Part 74 continues to read as follows:

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

5. Section 74.638 is proposed to be amended by revising paragraph (a), paragraph (b), the introductory text of paragraph (c), and paragraph (d) to read as follows:

§ 74.638 Frequency coordination.

(a) Coordination of all frequency assignments for fixed stations in all bands above 2110 MHz, and for mobile (temporary fixed) stations in the bands 6425-6525 MHz and 17.7-19.7 GHz, will be in accordance with the procedure established in paragraph (b) of this section, except that the prior coordination process for mobile (temporary fixed) assignments may be completed orally and the period allowed for response to a coordination notification may be less than 30 days if the parties agree. Coordination of all frequency assignments for all mobile (temporary fixed) stations in all bands above 2110 MHz, except the bands 6425-6525 MHz and 17.7-19.7 GHz, will be conducted in accordance with the procedure established in paragraph (b) of this section or with the procedure in paragraph (d) of this section. Coordination of all frequency assignments for all fixed stations in the band 1990-2110 MHz will be in accordance with the procedure established in paragraph (c) of this section. Coordination of all frequency assignments for all mobile (temporary fixed) stations in the band 1990-2110 MHz will be conducted in accordance with the procedure in paragraph (d) of this section.

(b) For each frequency coordinated under this paragraph, the interference protection criteria in § 101.105(a), (b), and (c) of this chapter and the frequency usage coordination procedures in § 101.103(d) of this chapter will apply.

(c) For each frequency coordinated under this paragraph, the following frequency usage coordination procedures will apply:

* * *

(d) For each frequency coordinated under this paragraph, applicants are responsible for selecting the frequency assignments that are least likely to result in mutual interference with other licensees in the same area. Applicants may consult local frequency coordination committees, where they exist, for information on frequencies available in the area. In selecting frequencies, consideration should be given

to the relative location of receive points, normal transmission paths, and the nature of the contemplated operation.

PART 78 – CABLE TELEVISION RELAY SERVICE

6. The authority for part 78 continues to read as follows:

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

7. Section 78.11 is proposed to be amended by adding two clauses to the end of paragraph (e) to read as follows:

§ 78.11 Permissible service.

* * * * *

(e) * * *

(1) * * *: *And provided, further*, that prior to such operation, the licensee shall, for the intended location or area-of-operation, notify the appropriate frequency coordination committee or any licensee(s) assigned the use of the proposed operating frequency, including licensees of fixed-satellite service earth stations, concerning the particulars of the intended operation, and shall provide the name and telephone number of a person who may be contacted in the event of interference, except that this notification provision shall not apply where an unanticipated need for immediate short-term mobile station operation would render this notification provision impractical.

* * * * *

8. Section 78.36 is proposed to be amended to revise paragraph (a), the introductory text of paragraph (b), paragraph (b)(1), the introductory text of paragraph (c), and paragraph (d) to read as follows:

§ 78.36 Frequency coordination.

(a) Coordination of all frequency assignments for fixed stations in all bands above 2110 MHz, and for mobile (temporary fixed) stations in the bands 6425-6525 MHz and 17.7-19.7 GHz, will be in accordance with the procedure established in paragraph (b) of this section, except that the prior coordination process for mobile (temporary fixed) assignments may be completed orally and the period allowed for response to a coordination notification may be less than 30 days if the parties agree. Coordination of all frequency assignments for all mobile (temporary fixed) stations in all bands above 2110 MHz, except the bands 6425-6525 MHz and 17.7-19.7 GHz, will be conducted in accordance with the procedure established in paragraph (b) of this section or with the procedure in paragraph (d) of this section. Coordination of all frequency assignments for all fixed stations in the band 1990-2110 MHz will be in accordance with the procedure established in paragraph (c) of this section. Coordination of all frequency assignments for all mobile (temporary fixed) stations in the band 1990-2110 MHz will be conducted in accordance with the procedure in paragraph (d) of this section.

(b) For each frequency coordinated under this part, the interference protection criteria in § 101.105(a), (b), and (c) of this chapter and the following frequency usage coordination procedures will apply:

(1) General requirements. Proposed frequency usage must be prior coordinated with existing licensees, permittees, and applicants in the area, and other applicants with previously filed applications,

whose facilities could affect or be affected by the new proposal in terms of frequency interference on active channels, applied-for channels, or channels coordinated for future growth. Coordination must be completed prior to filing an application for regular authorization, or a major amendment to a pending application, or any major modification to a license. In coordinating frequency usage with stations in the fixed satellite service, applicants must also comply with the requirements of § 101.21(f). In engineering a system or modification thereto, the applicant must, by appropriate studies and analyses, select sites, transmitters, antennas and frequencies that will avoid interference in excess of permissible levels to other users. All applicants and licensees must cooperate fully and make reasonable efforts to resolve technical problems and conflicts that may inhibit the most effective and efficient use of the radio spectrum; however, the party being coordinated with is not obligated to suggest changes or re-engineer a proposal in cases involving conflicts. Applicants should make every reasonable effort to avoid blocking the growth of systems as prior coordinated. The applicant must identify in the application all entities with which the technical proposal was coordinated. In the event that technical problems are not resolved, an explanation must be submitted with the application. Where technical problems are resolved by an agreement or operating arrangement between the parties that would require special procedures be taken to reduce the likelihood of interference in excess of permissible levels (such as the use of artificial site shielding) or would result in a reduction of quality or capacity of either system, the details thereof may be contained in the application.

* * * * *

(c) For each frequency coordinated under this part, the following frequency usage coordination procedures will apply:

* * *

(d) For each frequency coordinated under this part, applicants are responsible for selecting the frequency assignments that are least likely to result in mutual interference with other licensees in the same area. Applicants may consult local frequency coordination committees, where they exist, for information on frequencies available in the area. In selecting frequencies, consideration should be given to the relative location of receive points, normal transmission paths, and the nature of the contemplated operation.

APPENDIX B: INITIAL REGULATORY FLEXIBILITY ANALYSIS

As required by the Regulatory Flexibility Act ("RFA"),¹ 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 of Proposed Rulemaking ("Notice"). 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 above. The Commission will send a copy of the Notice, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration. See 5 U.S.C. § 603(a). In addition, the Notice and IRFA (or summaries thereof) will be published in the Federal Register.

Need for, and Objectives of, the Proposed Rules

By this action (Notice), we propose to modify our frequency coordination rules to promote sharing between non-geostationary satellite orbit (NGSO) and geostationary satellite orbit (GSO) fixed-satellite service (FSS) operations and various terrestrial services operating in several frequency bands. Specifically, we consider a joint proposal by SkyBridge L.L.C.) and the Fixed Wireless Communications Coalition (Skybridge/FWCC Growth Zone Proposal) to supplement our existing coordination procedures to promote sharing between new NGSO FSS space-to-Earth (downlink) operations and existing Fixed Service (FS) operations in the 10.7-11.7 GHz (10 GHz) band.² We also set forth proposals for amending our frequency coordination rules to address situations where NGSO FSS and GSO FSS operations share spectrum with terrestrial operations in the FS, Broadcast Auxiliary Service (BAS) and Cable Television Relay Service (CARS) in various bands. Specifically, we:

- Propose to apply the principles of the Skybridge/FWCC Growth Zone Proposal to our coordination rules for NGSO FSS downlink operations sharing with FS operations in the 10 GHz band;
- Propose to apply the existing Parts 25 and 101 coordination rules for coordination of new FSS (both NGSO and GSO) earth stations with mobile BAS/CARS operations in the 6875-7075 MHz (7 GHz) and 12750-13250 MHz (13 GHz) bands, and consider whether any additions or modifications to the rules are needed to address the operating characteristics of mobile services;
- Propose to allow either the Parts 74 and 78 informal *ad hoc* coordination rules or the Part 101 coordination rules to be used for the coordination of mobile BAS/CARS operations with FSS (both NGSO and GSO) earth stations, in the 7 GHz and 13 GHz bands, and consider whether any additions or modifications of these rules are needed; and,
- Propose to apply the existing Parts 25 and 101 coordination rules for sharing between new NGSO FSS earth stations and fixed BAS/CARS operations in the 7 GHz and 13 GHz bands.

¹ See 5 U.S.C. § 603. The RFA, see 5 U.S.C. §§ 601-612, 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).

² See SkyBridge/FWCC *Ex Parte* Comments in ET Docket No. 98-206, filed December 8, 1999, at 3. These *ex parte* comments are included in the docket file for this proceeding. SkyBridge filed one of the petitions for rulemaking (RM-9147) to which ET Docket No. 98-206 responds and is one of four applicants for NGSO FSS satellite systems in the 10 GHz band. The FWCC is a coalition of microwave equipment manufacturers, licensees, and their associations, and communications service providers and their associations, interested in terrestrial fixed microwave communications.

We undertake this proceeding to facilitate the introduction of new satellite and terrestrial services while promoting interference protection among the various users in these bands.

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), 303(c), 303(f), 303(g), and 303(r).

Description and Estimate of the Number of Small Entities To Which the Proposed Rules May Apply

The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."³ In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.⁴ 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").⁵ A small organization is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."⁶ Nationwide, as of 1992, there were approximately 275,801 small organizations.⁷ The term "small governmental jurisdiction" is defined as "governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand."⁸ As of 1997, there were about 87,453 governmental jurisdictions in the United States.⁹ This number includes 39,044 county governments, municipalities, and townships, of which 37,546 (approximately 96.2%) have populations of fewer than 50,000, and of which 1,498 have populations of 50,000 or more. Thus we estimate the number of small governmental jurisdictions overall to be 84,098 or fewer.

Regarding incumbent cable television operations in the affected bands, the SBA has developed a small business size standard for Cable and Other Program Distribution, which consists of all such firms having \$12.5 million or less in annual receipts.¹⁰ This category includes cable systems operators, closed circuit television services, direct broadcast satellite services, multipoint distribution systems, satellite master antenna systems, and subscription television services. According to Census Bureau data for 1997, there were a total of 1,311 firms in this category, total, that had operated for the entire year.¹¹ Of this total, 1,180 firms had annual receipts of under \$10 million and an additional 52 firms had receipts of \$10 million or more but less than \$25 million. Consequently, the Commission estimates that the majority

³ 5 U.S.C. § 601(6).

⁴ *See Id.* § 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. § 632). Pursuant to the RFA, the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the 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." *Id.*

⁵ *See* Small Business Act, 15 U.S.C. § 632.

⁶ 5 U.S.C. § 601(4).

⁷ U.S. Census Bureau, 1992 Economic Census, Table 6 (special tabulation of data under contract to the Office of Advocacy of the U.S. Small Business Administration).

⁸ 5 U.S.C. 601(5).

⁹ U.S. Census Bureau, Statistical Abstract of the United States: 2000, Section 9, pages 299-300, Tables 490 and 492.

¹⁰ 13 C.F.R. § 121.201, NAICS code 517510 (changed from 513220 in October 2002).

¹¹ U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)", Table 4, NAICS code 513220 (issued October 2000).

of providers in this service category are small businesses that may be affected by the rules and policies adopted herein.

In addition, the Commission has developed its own small business size standard for cable system operators, for purposes of rate regulation. Under the Commission's rules, a "small cable company" is one serving fewer than 400,000 subscribers nationwide.¹² Estimates indicate that there were 1,439 cable operators who qualified as small cable system operators at the end of 1995.¹³ Since then, some of those companies may have grown to serve over 400,000 subscribers, and others may have been involved in transactions that caused them to be combined with other cable operators. Consequently, the Commission estimates that there are now fewer than 1,439 small entity cable system operators that may be affected by the rules and policies adopted herein.

Further, the Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000."¹⁴ The Commission has determined that there are 67,700,000 subscribers in the United States.¹⁵ Therefore, an operator serving fewer than 677,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed \$250 million in the aggregate.¹⁶ Based on available data, the Commission estimates that the number of cable operators serving 677,000 subscribers or fewer, totals 1,450.¹⁷ The Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million,¹⁸ and therefore are unable, at this time, to estimate more accurately the number of cable system operators that would qualify as small cable operators under the size standard contained in the Communications Act of 1934.

Regarding incumbent GSO FSS satellite use and the proposed NGSO FSS use in these requested bands, the Commission has not developed a definition of small entities specifically directed toward geostationary or non-geostationary orbit fixed-satellite service applicants or licensees. The SBA has developed a size standard for a small business within the category of Satellite Telecommunications. Under that SBA size standard, such a business is small if it has \$12.5 million or less in average annual receipts.¹⁹ According to Census Bureau data for 1997, in this category there was a total of 324 firms that operated for the entire year.²⁰ Of this total, 273 firms had annual receipts of under \$10 million, and an

¹² 47 C.F.R. § 76.901(e). The Commission developed this definition based on its determination that a small cable system operator is one with annual revenues of \$100 million or less. *Implementation of Sections of the 1992 Cable Act: Rate Regulation, Sixth Report and Order and Eleventh Order on Reconsideration*, 10 FCC Rcd 7393 (1995), 60 FR 10534 (February 27, 1995).

¹³ Paul Kagan Associates, Inc., *Cable TV Investor*, February 29, 1996 (based on figures for December 30, 1995).

¹⁴ 47 U.S.C. § 543(m)(2).

¹⁵ See *FCC Announces New Subscriber Count for the Definition of Small Cable Operator*, Public Notice DA 01-158 (January 24, 2001).

¹⁶ 47 C.F.R. § 76.901(f).

¹⁷ See *FCC Announces New Subscriber Count for the Definition of Small Cable Operators*, Public Notice, DA-01-0158 (released January 24, 2001).

¹⁸ The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority's finding that the operator does not qualify as a small cable operator pursuant to § 76.901(f) of the Commission's rules. See 47 C.F.R. § 76.909(b).

¹⁹ 13 C.F.R. § 121.201, NAICS code 517410 (changed from 513340 in October 2002).

²⁰ U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 513340 (issued October 2000).

additional twenty-four firms had receipts of \$10 million to \$24,999,999.²¹ Thus, under this size standard, the majority of firms can be considered small. Generally, these NGSO and GSO FSS systems cost several millions of dollars to construct and operate. Therefore the NGSO and GSO FSS companies, or their parent companies, rarely qualify under this definition as a small entity.

Auxiliary, Special Broadcast and other program distribution services involve a variety of transmitters, generally used to relay broadcast programming to the public (through translator and booster stations) or within the program distribution chain (from a remote news-gathering unit back to the station). The Commission has not developed a definition of small entities specific to broadcast auxiliary licensees. The U.S. Small Business Administration (SBA) has developed small business size standards, as follows: 1) For TV BAS, we will use the size standard for Television Broadcasting, *infra*;²² 2) For Aural BAS, we will use the size standard for Radio Stations, *infra*;²³ 3) For Remote Pickup BAS we will use the small business size standard for Television Broadcasting when used by a TV station and that for Radio Stations when used by such a station.

The SBA has developed a small business sized standard for television broadcasting, which consists of all such firms having \$12 million or less in annual receipts.²⁴ Business concerns included in this industry are those “primarily engaged in broadcasting images together with sound.”²⁵ According to Commission staff review of BIA Publications, Inc. Master Access Television Analyzer Database as of May 16, 2003, about 814 of the 1,220 commercial television stations in the United States had revenues of \$12 million or less. We note, however, that, in assessing whether a business concern qualifies as small under the above definition, business (control) affiliations²⁶ must be included.²⁷ Our estimate, therefore, likely overstates the number of small entities that might be affected by our action, because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies. There are also 2,127 low power television stations (LPTV).²⁸ Given the nature of this service, we will presume that all LPTV licensees qualify as small entities under the SBA size standard.

The SBA has developed a small business size standard for Radio Stations, which consists of all such firms having \$6 million or less in annual receipts.²⁹ Business concerns included in this industry are those “primarily engaged in broadcasting aural programs by radio to the public.”³⁰ According to

²¹ *Id.*

²² 13 C.F.R. § 121.201, NAICS code 515120 (changed from 513120 in October 2002).

²³ *Id.* at NAICS code 515112 (changed from 513112 in October 2002).

²⁴ *Id.* at NAICS code 515120 (changed from 513120 in October 2002).

²⁵ OMB, North American Industry Classification System: United States, 1997, at 509 (1997). This category description continues, “These establishments operate television broadcasting studios and facilities for the programming and transmission of programs to the public. These establishments also produce or transmit visual programming to affiliated broadcast television stations, which in turn broadcast the programs to the public on a predetermined schedule. Programming may originate in their own studios, from an affiliated network, or from external sources.” Separate census categories pertain to businesses primarily engaged in producing programming. *See id.* at 502-05, NAICS code 512120, Motion Picture and Video Production; code 512120, Motion Picture and Video Distribution; code 512191, Teleproduction and Other Post-Production Services; and code 512199, Other Motion Picture and Video Industries.

²⁶ “Concerns are affiliates of each other when one concern controls or has the power to control the other or a third party or parties controls or has to power to control both.” 13 C.F.R. § 121.103(a)(1).

²⁷ “SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic concern’s size.” 13 C.F.R. § 121.103(a)(4).

²⁸ FCC News Release, “Broadcast Station Totals as of September 30, 2002” (Nov. 6, 2002).

²⁹ 13 C.F.R. § 121.201, NAICS code 515112 (changed from 513112 in October 2002).

³⁰ *Id.*

Commission staff review of BIA Publications, Inc., Master Access Radio Analyzer Database, as of May 16, 2003, about 10,427 of the 10,945 commercial radio stations in the United States had revenue of \$6 million or less. We note, however, that many radio stations are affiliated with much larger corporations with much higher revenue, and, that in assessing whether a business concern qualifies as small under the above definition, such business (control) affiliations³¹ are included.³² Our estimate, therefore, likely overstates the number of small businesses that might be affected by our action.

We believe, however, that most, if not all, of the auxiliary facilities could be classified as small businesses by themselves. We also recognize that most translators and boosters are owned by a parent station which, in some cases, would be covered by the revenue definition of small business entity discussed above.

Incumbent microwave services in the 7 GHz, 10 GHz, and 13 GHz bands include common carrier, private operational fixed, and BAS services. Presently there may be up to 22,015 common carrier fixed licensees and 61,670 private operational-fixed licensees and broadcast auxiliary radio licensees in the microwave services. The SBA has developed a small business size standard for Cellular and other Wireless Telecommunications, which consists of all such companies having 1,500 or fewer employees.³³ According to Census Bureau data for 1997, there were 977 firms in this category, total, that operated for the entire year.³⁴ Of this total, 965 firms had employment of 999 or fewer employees, and an additional 12 had employment of 1,000 employees or more.³⁵ Thus, under this standard, the majority of firms can be considered small. We estimate, for this purpose, that all of the Fixed Microwave licensees (excluding broadcast auxiliary licensees) would qualify as small entities under the SBA definition for radiotelephone companies.

Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements

We propose changes to the Part 74, 78, and 101 rules governing coordination between NGSO FSS and other terrestrial services. Specifically, certain obligations will be imposed on NGSO FSS licensees in order to protect potential growth opportunities for terrestrial services in the 10 GHz band, and proposed coordination rules will govern the use of shared frequencies between FSS and BAS/CARS terrestrial services in the 7 and 13 GHz bands.³⁶ As noted in the section entitled “Need for, and Objectives of, the Proposed Rules”, *supra*, in the 7 and 13 GHz bands, we are applying existing Parts 25 and 101 coordination rules for coordination of new FSS earth stations with mobile BAS/CARS operations; allowing either existing Part 74/78 *ad hoc* coordination rules or Part 101 coordination rules for coordination of new BAS/CARS mobile operations with FSS earth stations; and applying existing Parts 25 and 101 coordination rules for coordination of new FSS earth stations and new fixed BAS/CARS operations.³⁷

³¹ “Concerns are affiliates of each other when one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.” 3 C.F.R. § 121.103(a)(1).

³² “SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic and foreign affiliates, regardless of whether the affiliates are organized for profit, in determining the concern’s size.” 13 C.F.R. § 121.103(a)(4).

³³ 13 C.F.R. § 121.201, NAICS code 513322.

³⁴ U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, “Employment Size of Firms Subject to Federal Income Tax: 1997,” Table 5, NAICS code 513310 (issued Oct. 2000).

³⁵ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is “Firms with 1,000 employees or more.”

³⁶ See Notice ¶¶ 11-14, *supra*. See list of obligations at Notice ¶ 9, *supra*.

³⁷ See Notice ¶¶ 22, 34, *supra*.

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 rule for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities.”³⁸

We propose to adopt or seek comment on adequate spectrum sharing criteria to minimize the potential for interference of these new NGSO FSS operations on incumbent operations, many of which qualify as small entities. Further, to promote system growth for the fixed microwave service, we are proposing to establish obligations on NGSO FSS licensees to ensure flexible growth potential. This proposal should permit FS small entities some level of assurance that future terrestrial links can be established without hindrance from NGSO FSS earth stations. Further, our coordination rules will ensure that BAS, CARS, and NGSO FSS services can operate sharing these bands without impacting other services’ operations. We also note that, in the Discussion Section of the Notice, we have requested comment from small businesses and other small entities concerning the alternatives proposed for our coordination rules.³⁹ We request comment on our conclusions and any alternatives to our proposals that could minimize the impact of this action on small entities.

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

None.

³⁸ 5 U.S.C. § 603(c)(1) – (c)(4).

³⁹ See Notice ¶¶ 28, *supra*.