

accepted programs based on current topographical maps. If the evaluated blockage is less than the missed objective, and therefore insufficient to meet the interference objective, the desired interference objective level of the original coordination would be reduced by the amount of the missed objective. For example, suppose the original interference objective is -170 dBW, the accepted incoming signal level is -120 dBW, and documented terrain blockage is 30 dB. The missed objective is the difference between -170 and -120, or 50 dB. Terrain accounts for 30 dB of that, leaving 20 dB unexplained. The interference objective for new terrestrial facilities would then be deemed to be 20 dB above the original objective of -170 dBW, or -150 dBW.

65. If the explanation for acceptance of the interference is a combination of terrain blockage and shielding by a local feature, FWCC then proposes that the level of attenuation of the local feature would be deemed to be the amount of the missed objective, less the terrain blockage calculated as above, and would apply over the entire azimuth subtended by the attenuating feature. If the earth station operator does not offer an explanation for acceptance of the interference, or if none of the other explanations applies, then FWCC suggests that the original objective would be reduced by the amount of the unexplained missed objective. For example, if the original interference objective was -170 dBW and the missed objective was 20 dB, the interference objective for new terrestrial facilities would be deemed to be $-170 + 20 = -150$ dBW.⁹³

66. FWCC proposes specific modifications to Part 25 of the Commission's Rules that would implement these provisions. FWCC's specific proposal would amend Section 25.203 by redesignating paragraphs (e) through (k) as (f) through (l), and by adding a new paragraph (e) that would read as follows:

(e)(1) An applicant for an earth station authorization may, during the frequency coordination process, choose to accept cases of potential interference into the earth station from terrestrial users. In that event, subsequent terrestrial applicants may coordinate with the earth station at the same level and under the same conditions as the earth station accepted in its coordination, subject to the following paragraphs.

(2) An applicant for an earth station authorization that accepts cases of potential interference from a terrestrial station, as in paragraph (1), may specify that it does so on the basis of frequency offset from the frequencies and bandwidth used by the terrestrial station. In that event, subsequent terrestrial applicants may coordinate in the frequency ranges accepted by the earth station without affording any protection to the earth station.

(3) An applicant for an earth station authorization that accepts cases of potential interference, as in paragraph (1), may specify that it relies on attenuation by a local feature, in which event it must identify the local feature and specify its location and the subtended azimuth. Subsequent terrestrial applicants may coordinate over the arc of azimuths passing through the local feature at the same level as the earth station accepted.

⁹³ FWCC Petitions at 12.

(4) An applicant for an earth station authorization that accepts cases of potential interference, as in paragraph (1), may specify that its waiver is based in whole or in part on terrain blockage. In that event the earth station applicant must evaluate the terrain blockage using industry-accepted programs based on current topographical maps. If the evaluated blockage is less than the difference between the desired and accepted interference objectives, and therefore insufficient to clear the interference case, subsequent terrestrial applicants may coordinate at the level that the earth station accepted in its waiver, reduced by the evaluated blockage.

(5) An applicant for an earth station authorization may accept cases of potential interference based on combinations of the factors addressed in paragraphs (2) through (4). In that event, subsequent terrestrial applicants may coordinate at the levels determined under paragraphs (2) and (3), which may depend on frequency and azimuth, as adjusted by terrain blockage as specified in paragraph (4).⁹⁴

67. **Oppositions.** Some opposing parties object to FWCC's proposal requiring an earth station licensee to grant interference exceptions to all future FS stations because the earth station waives a particular level of interference from one FS station.⁹⁵ They contend that such a rule would have the effect of discouraging licensees from granting any interference exceptions.⁹⁶ GE Americom asserts that there is no basis for the FCC to mandate that an existing earth station operator accept interference from a new applicant that could impair the earth station's ability to meet customer requirements.⁹⁷

68. Commenters also argue that serious damage could be caused to an earth station complex by adding multiple sources of potential interference⁹⁸ and find fault with specific technical parameters set out in the FWCC proposal.⁹⁹ Opposing parties further argue that a

⁹⁴ FWCC Petitions at Appendix C.

⁹⁵ *But see* TIA SCD Opposition at 4 (agreeing with FWCC that interference resolution should be fair and that initial case resolution should be considered in subsequent coordinations); SkyBridge Opposition at 4-5 (agreeing in principle with concept so long as applied to any coordination and to both services); Comsat Opposition at 12 n.6 (agreeing that earth station operators should coordinate with subsequent FS applicants in consistent manner).

⁹⁶ *See* HBO Opposition at 2, 6; TIA SCD Opposition at 3; MCI Worldcom Reply Comments at 4-5; SkyBridge Opposition at 5; Williams Opposition at 3.

⁹⁷ *See* GE Americom Opposition at 9.

⁹⁸ *See* SIA Opposition at 9-10; GE Americom Opposition at 9-10; HBO Opposition at 6; Comsat Opposition at 17; SCD TIA Opposition at 3-4.

⁹⁹ *See* SkyBridge Opposition at 5-6; ATC Reply Comments at 6; Williams Opposition at 2. For example, these commenters allege that, under FWCC's proposal, the additive effects of multiple exposures and the changing nature of the interference environment would degrade operations unacceptably. Commenters also contend that, if the only explanation for a waiver of performance objectives is frequency offset, under FWCC's proposal future FS stations would not be required to protect the earth station in the relevant frequencies, which ignores the potential impact of adjacent band interference.

coordination rule is unnecessary,¹⁰⁰ would cause regulatory delay,¹⁰¹ and would preempt existing industry fora.¹⁰²

69. **FWCC Reply Comments.** In its response, FWCC asserts that its petition merits public debate before the Commission as opposed to discussion in a less public industry forum.¹⁰³ FWCC also disputes that the additive effects of multiple interference exposures, the changing nature of the interference environment, or adjacent band interference will degrade operations unacceptably.¹⁰⁴

70. **Discussion.** The FWCC proposal raises a number of general and specific issues related to frequency coordination between FS stations and FSS earth stations. The first of these issues is whether the waiving of a particular level of interference from one FS station should be treated as an acceptance of that level of interference from all future coordinated FS stations. Commenters opposing the FWCC proposal note that an FSS earth station operator may accept a particular level of interference in one particular portion of the spectrum, recognizing that not all frequencies will have the same value to the earth station operator. In its reply, FWCC asserts that its purpose is only to ensure that like cases are treated alike.

71. When conducting an interference analysis as part of the coordination of an FSS earth station and an FS station, there are a number of factors to be considered. These include the transmitted power of the FS station, the pointing direction of the FS station antenna relative to the FSS earth station, the FS station antenna radiation pattern, and any anomalies over the propagation path that might attenuate the interfering signal (such as terrain shielding or attenuation by buildings). Additionally, the coordination would consider technical aspects of the FSS earth station, such as antenna gain and pointing direction, in determining whether interference from an FS station would result in the FSS earth station operating at below normally permissible interference objectives.

72. When an FSS earth station applicant enters into the coordination process with an FS station licensee, the FSS earth station applicant may consider mitigating factors such as terrain blockage, frequency offset, attenuation by buildings, or the importance of that particular set of frequencies (*e.g.*, the availability of those frequencies on the applicable satellite(s)) to determine whether it successfully can coordinate its earth station. An FSS earth station applicant also may be willing to accept higher than desired levels of interference in a part of the coordinated

¹⁰⁰ See GE Americom Opposition at 13 (would significantly complicate already difficult process of coordinating earth station and microwave facilities); Comsat Opposition at 17 (anecdotal information provided does not justify new rules when industry has sound track record of administering workable coordination procedures).

¹⁰¹ See HBO Opposition at 2.

¹⁰² See Comsat Opposition at 17; TIA SCD Opposition at 4 (citing National Spectrum Managers Association as proper forum); SIA Opposition at 9-10; ATC Reply Comments at 7. *But see* TIA FS/WCD Reply Comments at 4 (suggesting that FCC obtain input from NSMA in development of new coordination rules).

¹⁰³ FWCC Reply Comments at 17.

¹⁰⁴ FWCC Reply Comments at 18-20.

spectrum in order to complete its coordination successfully. The FSS earth station licensee, however, may have no incentive to apply those same mitigation factors when considering coordination requests from subsequent FS station applicants. In this situation, we believe, as stated by FWCC, “that like cases [should be] treated alike.”

73. Every coordination request is likely to differ from earlier requests in some respects. There are, however, elements that are often identical, or nearly identical, among coordinations. In situations where these elements are common, it would be reasonable, assuming no change in propagation models, for the quantitative effects of these elements on the interference analysis in later coordinations to be the same as in the initial coordination. By way of example, if an FSS earth station applicant successfully coordinates with an FS station licensee and, as part of the interference analysis, assumes a 30 dB attenuation of the interfering signal by an intervening building, then it would be reasonable for the FSS earth station licensee to accept the same 30 dB attenuation derived in the original propagation analysis in subsequent coordinations with FS station applicants if the latter stations are to be operated from the same tower as the first FS station (assuming operation in the same frequency band, *e.g.*, C-band). In this situation, the second interfering signal would be traveling along the same path as the first signal that was successfully coordinated, encountering the same building along its path. We note, however, that use of the same value of attenuation attributed to a building in the original analysis would not necessarily imply acceptance of the interference resulting from the second fixed service station. As noted above, there are many factors that must be considered when performing an interference analysis as part of a coordination procedure, and it is the effects of all of these factors that must be considered.

74. FWCC suggests that, if an FSS earth station accepts a level of interference that would degrade its performance below normally permissible interference objectives in one part of the spectrum in which it is operating, then it should be required to accept that same level on all frequencies. We cannot support the logic of FWCC’s argument. The objectionable interference that the earth station applicant may be willing to accept may affect only a relatively small portion of the spectrum that the earth station will use. We recognize that an earth station applicant may have to accept interference in one part of its licensed spectrum in order to gain access to the remainder. The sacrifice of the use of this small portion of its total bandwidth is one the earth station applicant should be free to make without sacrificing the viability of its entire system. Allowing the earth station applicant to proceed in this manner recognizes the realities of sharing a scarce resource among many users and services, and promotes the efficient use of the radio spectrum.

75. FWCC also suggests that acceptance of a particular level of interference from one source should imply acceptance of all subsequent interference sources at or below the level of the initial interference source. As pointed out by a number of the commenters, interference sources are cumulative, and it is the totality of that interference that must be considered in determining whether interference from subsequent sources is acceptable. In this respect, each subsequent coordination request must be evaluated on its own merits, and its effects on existing stations must be considered in the context of the entire interference environment. We must, therefore, reject this specific proposal of FWCC.

76. An additional problem noted by FWCC is the situation in which an FSS earth station applicant, in order to complete its coordination successfully, accepts interference from an existing FS station that would exceed the total interference allowance for the earth station, even after consideration of mitigating factors such as terrain shielding or building blockage. The question then becomes one of further protecting an earth station that has already accepted interference, on a particular set of frequencies, that is recognized will cause the earth station to operate below its normally permissible interference objectives. FWCC proposes that if the acceptance of this interference is based upon frequency offset, then subsequent FS station applicants may coordinate in the frequency ranges accepted by the FSS earth station without affording any protection to the earth station. Because our goal is efficient use of the spectrum, it would not seem reasonable to allow an FSS earth station licensee to preclude future FS station use of a part of the spectrum in which the earth station licensee has already accepted levels of interference from other FS stations that would preclude its use of that particular part of the spectrum. We recognize, however, that the earth station may experience these objectionable interference levels only when pointing at a limited set of geostationary satellite orbit locations, and that this factor also must be considered during the coordination process.

77. These varying scenarios, therefore, raise a number of issues:

- If an FSS earth station licensee accepts the use of particular interference mitigation factors during a coordination with an FS station, should the FSS earth station be required to accept the use of those same interference mitigation factors during subsequent coordinations if similar circumstances are present? More specifically, if terrain or building blockage was considered and accepted in one coordination, should the same amount of signal blockage be assumed for future coordinations over identical or nearly identical paths?
- If an FSS earth station licensee accepts a particular level of interference during coordination with an FS station, should the FSS earth station, once licensed, be required to accept the same level of interference or less from an FS station subsequently seeking coordination on the same frequency? On offset frequencies?
- Should a requirement for acceptance of a particular level of interference be dependent upon whether the FSS earth station's total interference allowance already has been exceeded in prior coordinations?
- Should similar coordination requirements apply to FS station applicants and licensees?

78. In order to better balance the competing needs of the FSS and FS services in shared bands and to promote, during the coordination process, the most efficient use of this shared radio spectrum, we propose that if an FSS earth station or FS station applicant employs certain interference mitigation techniques (such as terrain shielding or building blockage) in order to coordinate its station successfully, then to the extent that those same conditions exist for subsequent requests for coordination between an FSS and FS station applicant and licensee, the FSS earth station or FS station licensee must give those interference mitigation factors the same weight as in the original coordination. Additionally, if an FSS earth station applicant, during its

coordination, accepts a level of interference that is recognized to be below accepted interference objectives along a set of azimuths and elevation angles, then the FSS earth station licensee is not entitled to protection from interference from future FS applicants on those same frequencies within that same set of azimuths and elevation angles. Our proposal would amend Section 25.203 and Section 101.103(d)(1) of the rules, as set forth in Appendix C of this Notice. We propose that these amended rules would apply across all frequency bands where the FSS and FS share a primary service allocation.

79. We anticipate that these rules would be applied by the relevant frequency coordinators as they process requests for frequency coordination, and that the frequency coordinators will maintain records of these actions within their database, including information about interference models and assumptions used, including any updates to interference models over time.

80. We seek comment on the specific proposals presented in Appendix C, on the issues raised above, and on any other factors regarding rules or procedures that could facilitate coordination between FS stations and FSS earth stations, and promote the efficient use of such shared spectrum. Additionally, to ease the process of coordinating future requests, we seek comment on whether the Commission should place conditions on the license of an FS station or FSS earth station to specifically identify those particular frequencies and interference paths where the station has not successfully cleared coordination, and is therefore not entitled to protection. Finally, we are very interested in receiving information about actual experiences in which earlier and later applicants, that are similarly situated, have been treated differently in the coordination process.

V. DISCUSSION OF ONSAT PROPOSAL

81. The Telecommunications Act of 1996 requires the Commission to encourage the deployment of advanced telecommunications, on a reasonable and timely basis to all Americans.¹⁰⁵ It also requires the Commission to take action to accelerate deployment of that capability to all Americans. In our most recent report to Congress, we observed that although advanced telecommunications capability is generally being deployed in a reasonable and timely fashion, certain groups of consumers - including rural Americans and consumers in tribal areas - are not receiving such service in a timely fashion.¹⁰⁶ Last year we initiated an NPRM in which we sought comment on potential terrestrial wireless and satellite policy initiatives to address the telecommunications needs of Native Americans living on tribal lands.¹⁰⁷ In that Tribal Lands

¹⁰⁵ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, Section 706 (1996) ("advanced telecommunications capability" is defined as "high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology," Section 706 (c)(1)).

¹⁰⁶ Second Report, *Inquiry Concerning The Deployment Of Advanced Telecommunications Capability To All Americans In A Reasonable And Timely Fashion, And Possible Steps To Accelerate Such Deployment Pursuant To Section 706 of the Telecommunications Act of 1996*, FCC 00-290, CC Docket No. 98-146 (2000).

¹⁰⁷ *In the Matter of Extending Wireless Telecommunications Services to Tribal Lands*, Notice of Proposed Rulemaking, 14 FCC Rcd 13679, FCC 99-205 (1999) (*Tribal Lands NPRM*).

NPRM, we cited small aperture terminal earth station networks as one satellite technology increasingly being deployed for low-cost telephony that is also capable of providing advanced telecommunications services.¹⁰⁸ We sought comment on any satellite policies we could adopt to further the deployment of such networks on tribal lands and in other unserved areas.¹⁰⁹ The Report and Order that the Commission adopted in the proceeding concluded that, technical and administrative hurdles to the provision of satellite service to tribal lands are best considered on a case-by-case basis, with waivers granted as necessary to facilitate such deployment.¹¹⁰ In its instant petition, Onsat asks the Commission to issue a declaratory order that Section 25.115(c) of the Commission's Rules permits the licensing of very small aperture terminal (VSAT) satellite earth stations in the C-band.¹¹¹ Onsat avers that the rule interpretation it seeks is a response to our request, in the Tribal Lands NPRM, for proposals on satellite policies that would promote the deployment of satellite services in tribal lands and other unserved areas.¹¹² Onsat states that, if permitted to go forward in developing C-band small aperture terminal earth station networks, it will be able to serve rural institutional customers with the most advanced communications in a cost-effective manner.¹¹³

82. Onsat's petition raises the issue of whether we should authorize a network of small aperture terminal satellite earth stations in the C-band under a single license. As we observed in the *Tribal Lands NPRM*¹¹⁴, these types of satellite earth station networks employ cost-effective technology to reach sparsely populated areas, and thus could help to accelerate deployment of advanced telecommunications capability to Americans in tribal and rural areas. We propose to adopt changes to Part 25 of our rules to authorize, under a single license, networks of prior-

¹⁰⁸ *Id.* at ¶ 14.

¹⁰⁹ *Id.* at ¶ 39.

¹¹⁰ *In the Matter of Extending Wireless Telecommunications Services to Tribal Lands*, Report and Order and Further Notice of Proposed Rule Making, FCC 00-209, WT Docket No. 99-266 (2000) (*Tribal Lands Report and Order*) at ¶51.

¹¹¹ VSAT systems are networks of technically identical stations using very small aperture antennas that generally communicate via satellite with a larger hub station. *In the Matter of Streamlining the Commission's Rules and Regulations for Satellite Application and Licensing Procedures*, Report and Order, 11 FCC Rcd 21581, 21592, FCC 96-425 (1996). See also *In the Matter of Routine Licensing of Large Networks of Small Antenna Earth Stations Operating in the 12/14 GHz Frequency Bands*, Declaratory Order (rel. April 9, 1986), available at 1986 WL 291567 (*VSAT Order*). VSAT systems are private networks in which the hub station controls all remote transmissions. As we observed in the *Tribal Lands NPRM*, VSAT networks eliminate the need to lay miles of terrestrial infrastructure and hence are especially cost-effective in sparsely populated areas. *Tribal Lands NPRM* at ¶ 14. Early VSAT networks were used primarily by major national retailers, such as Seven-Eleven and Wal-Mart, for private, non-common carrier networks transmitting point-of-sale credit authorizations and inventory control. *VSAT Order* at ¶ 2. More recently, major corporations have developed innovative uses of VSAT systems to provide broadband and Internet applications. See Gino Picasso, *Data in Orbit*, 34 *Communications News* 46 (July 1, 1997).

¹¹² Onsat Petition at 2.

¹¹³ *Id.* at 7.

¹¹⁴ *Tribal Lands NPRM* at ¶ 14.

coordinated small aperture terminal satellite earth stations in the C-band. Our proposal to license this service is based on our current licensing rules for Very Small Aperture Terminals, or VSATs, in the Ku-band, with necessary modifications to reflect the prior frequency coordination required in the C-band because of FS/FSS co-primary frequency sharing in this band. To distinguish our licensing of these pre-coordinated C-band earth stations from the blanket licensing of VSATs in the Ku-band, we will refer to the C-band networks addressed in this Notice as C-band Small Aperture Terminals (CSATs).

83. Onsat's petition argues that blanket licensing of such CSATs is permissible in the C-band under existing Commission rules, and Onsat seeks a declaratory ruling to confirm its interpretation of the rules. We believe that such a declaratory ruling could expand the need for case-by-case evaluation of proposed CSAT networks and thus would not be the most efficient or effective means for regulating this service. We, therefore, deny Onsat's petition for declaratory ruling and, instead, initiate a rulemaking to propose modification to Part 25 of the Commission's Rules to permit licensing of CSAT networks in C-band frequencies under a single authorization.¹¹⁵ We believe that this Notice regarding licensing of CSAT networks is particularly relevant to our inquiry in the *Tribal Lands NPRM* because it will further the Commission's goal of serving rural customers with advanced communications.

1. General Considerations

84. When the Commission first licensed VSAT networks in 1986, the multiple applicants for the service requested frequencies only in the 12/14 GHz band, at least in part because there were no co-primary terrestrial users of those bands.¹¹⁶ The Commission stated that granting the applicants' requested blanket authorization procedures would result in more rapid use of the 12/14 GHz frequencies that had not been occupied.¹¹⁷ In addition, because this band was allocated solely to FSS on a primary basis, the Commission could grant one license to cover hundreds or thousands of Ku-band earth stations without regard to intra-band, inter-service coordination issues. The *VSAT Order* observed that while the lack of co-primary terrestrial users in the 12/14 GHz frequency bands eliminated the need for location and site-specific frequency exhibits, those exhibits would be necessary in the C-band where there are co-primary terrestrial users.¹¹⁸

85. Nevertheless, the Commission historically has sought to streamline the licensing process for networks of C-band earth stations as well. In 1984, the Commission implemented a simplified procedure for one licensee that was operating a network containing large numbers of small, technically-identical C-band earth stations.¹¹⁹ Under this streamlined approach, the

¹¹⁵ By C-band we are referring to the traditional C-band at 3700-4200 and 5925-6425 MHz, and not to what is called the extended C-band at 3650-3700 MHz.

¹¹⁶ *VSAT Order* at ¶ 5.

¹¹⁷ *Id.* at ¶ 6.

¹¹⁸ *Id.* at n.15.

¹¹⁹ *Equatorial Communications Services*, Mimeo No. 2831 (March 31, 1984).

licensee, Equatorial Communications Company, would still submit site-specific frequency coordination information and the Commission would still issue individual licenses for each earth station, but the individual applications would be submitted in an abbreviated form. The Commission further streamlined this procedure for Equatorial's successor-in-interest, GTE Spacenet Services Corporation, in 1992, when the Commission implemented a "blanket" licensing procedure for these same earth stations.¹²⁰ Under this procedure, the Commission granted GTE Spacenet a lead license to cover a specified number of identical earth stations (in this case, 30,000). To ensure that these earth stations do not interfere with co-primary FS operations, the Commission required GTE Spacenet to complete frequency coordination for each individual station before bringing it into service. Further, the Commission required GTE Spacenet to notify the Commission, on a monthly basis, of the number of earth stations brought into service.

86. The CSAT licensing procedures we propose in this Notice respond to concerns that individual licensing of each earth station in a network of small aperture terminal earth stations would result in longer overall license processing times, increased consumer costs, and additional administrative burdens. The procedures we propose also reflect our belief that "blanket" licensing is possible in the C-band but only if contingent on individual site coordination between FS facilities and the FSS earth station as required by our proposed rules.

2. Regulatory and Licensing Issues

87. We propose to model CSAT licensing procedures on the streamlined procedure successfully used since 1992 for licensing the small earth stations of the GTE Spacenet Services Corporation in the C-band. Most notably, these procedures will require CSAT applicants to complete frequency coordination for each individual earth station antenna, but will allow licensing for a system of technically-identical earth stations so coordinated, with simplified reporting to the FCC.

88. **Rule Governing Applications.** Our earth station application rule permits applications for license of small antenna network systems operating in the 12/14 GHz frequency band under blanket operating authority.¹²¹ The rule does not specifically provide for "blanket" licensing in other frequencies, although one licensee has been operating a comparable small antenna network system in the C-band frequencies both before and since the adoption of the *VSAT Order*.¹²² We therefore propose to amend Section 25.115 to specifically incorporate generic simplified processing procedures that will apply to any CSAT applicant instead of addressing "blanket" applications for earth station networks in the C-band on a case-by-case basis, as we have done in the past.

¹²⁰ *In the Matter of GTE Spacenet Corporation Streamlined Licensing Procedures for 4/6 GHz Earth Stations*, 7 FCC Rcd 5217 (1992).

¹²¹ 47 C.F.R. § 25.115(c).

¹²² GTE Spacenet Services Corporation, note 131, *supra*.

89. **Application Form.** We propose that existing application procedures in Section 25.115 will govern applications to license small antenna network systems operating in the 4/6 GHz frequency band. Applications for CSAT operating authority will be filed on FCC Form 312. The main portion of Form 312 and Schedule B shall be filed for each large hub station, and another Schedule B shall be filed for each representative type of small antenna station operating within the network. The initial or “lead” application will identify the requested spectrum to be used for communication channels. The Commission will place the “lead” application on Public Notice. Acceptable applications will be granted for a “lead” application to construct and operate the requested number of technically identical small antenna earth stations specified in the small antenna Schedule B included with the lead application. Further, we propose to require electronic filing of Form 312, Schedule B applications to add technically identical small antenna earth stations to a previously authorized CSAT system. After coordination and licensing, and before placing any earth station into operation, our rules would require the earth station licensee to file a coordination notification for each earth station with the Commission. This coordination notification will include the location of each station, as well as a certification that frequency coordination has been completed and that the earth station complies with all environmental and Federal Aviation Administration requirements. We would put the licensee’s coordination notification filing on public notice, and the licensee would be permitted to commence operation if no comments were received within the 30-day notice period. A commenter objecting to the earth station commencing operations would be required to serve the earth station licensee with a copy of its comments. We would permit the earth station to begin operations once the objection is removed. We seek comment on any alternative to the proposal that expedites the processing and minimizes the administrative burden on both the Commission and the CSAT licensee while providing adequate notice to affected parties.

90. **Fees.** Section 8(a) of the Communications Act sets forth fees the Commission must assess for filing applications to aid in recovering some of the administrative costs incurred in processing those applications. The fee structure in the Communications Act can only be amended by legislative action. Consequently, applications for CSAT networks may require the Commission to propose a new fee category to Congress.

91. Because the CSAT service most closely matches the GTE Spacenet system, the existing fee structure for Fixed-Satellite Transmit/Receive Earth Stations (2 meters or less and operating in the 4/6 GHz frequency band) is the fee most comparable to CSAT applications.¹²³ Because the underlying statute limits this fee category to earth stations that are two meters in diameter or less, we must pursue a statutory change in order to create a comparable fee structure for CSATs. We propose charging applicants for CSAT service a set fee for an initial, lead application, and charging an additional fee for coordination notification of each additional earth station. We request comment on the extent to which Commission review of the individual coordination of CSAT earth stations added to a network after the “lead” license would create administrative processing burdens and costs.

¹²³ 47 C.F.R. § 1.1107.4.

92. **Licensing Provisions.** We propose to amend Section 25.134 of our rules to make it applicable to CSAT networks.¹²⁴ We expect that routine processing will be possible for CSAT networks that meet the antenna performance standards in our present Section 25.209, and do not exceed the power levels specified in our present Sections 25.211(d) and 25.212(d).¹²⁵ Applications seeking to exceed these limits will be required to include a technical analysis demonstrating an ability to operate on a non-interference basis to adjacent fixed-satellite services or to provide a certification from the satellite operator that this operation has been successfully coordinated with adjacent satellite operators. We anticipate revisiting these rules in an earth station streamlining proceeding later this year, and will consider at that time whether these power and antenna size limits can or should be amended to allow routine processing of more applications.

93. **Frequency Coordination.** As discussed *supra*, the fixed wireless community has raised concerns that authorization of CSATs could add to coordination difficulties between the FS and FSS in the C-band. FWCC initially opposed Onsat's petition for declaratory order on the ground that Onsat's proposed service would further exacerbate frequency coordination difficulties in the C-band. FWCC later withdrew its opposition after Onsat agreed to limit both the amount of C-band spectrum its proposed system would use and the number of orbital positions toward which its remote earth stations would be directed.¹²⁶ We propose to adopt the parameters of the Onsat/FWCC agreement as a limit on spectrum use for CSATs.¹²⁷ Thus, we propose to license CSAT networks for no more than 20 MHz of C-band spectrum and for no more than three satellite locations within the visible geostationary satellite arc.¹²⁸ We seek comment on whether CSAT networks can be designed and implemented within these limitations. We also invite comment on whether we should propose to limit the licensing of all CSAT networks to a particular identified portion of the C-band and, if so, how much of a sub-band we should set aside for CSATs. We further ask whether such band restrictions would pose operational difficulties for CSAT networks.

94. Furthermore, in order to allow CSAT networks in the C-band frequencies, it is essential that each and every earth station facility be fully coordinated with co-primary terrestrial users of C-band frequencies. Accordingly, we propose that the Commission require every technically

¹²⁴ 47 C.F.R. § 25.134.

¹²⁵ 47 C.F.R. §§ 25.209, 25.211(d) and 25.212(d).

¹²⁶ Letter from Mitchell Lazarus, Counsel for FWCC, to Magalie Salas, Secretary of the FCC, dated Feb. 14, 2000.

¹²⁷ Onsat has agreed to limit its spectrum usage to 20 MHz of C-band spectrum, and to limit its flexibility within the visible geostationary orbital arc to just three satellite locations. Onsat states that it takes no position on FWCC's petition or on C-band earth station licensing parameters generally, and does not concede that the bandwidth accommodation it makes actually constitutes twice Onsat's actual needs, stating that, in fact, its accommodation is less than its need. See Letter from Ellen P. Goodman, Attorney for Onsat, to Magalie Salas, Secretary of the FCC, dated Feb. 10, 2000, at 2 n. 5.

¹²⁸ We note that C-band earth station applicants seeking individual licensing for each earth station under our current rules, as opposed to applying for a single CSAT network license under the proposed rules, are not subject to the frequency and orbit limitations we propose for CSATs.

identical earth station in any CSAT network to be coordinated under our existing rules for coordination of earth stations with terrestrial stations.¹²⁹ This coordination must be accomplished at the time applicants or licensees seek to place an individual earth station in service. We expect that applicants will request operating authority for a number of earth stations at the time their lead application is filed, and subsequently will coordinate and notify the Commission of each earth station implemented in the network authorized in accordance with the lead license. In other words, even though CSAT stations may be conditionally authorized under a lead license, each CSAT earth station must protect, and is not entitled to protection from, other earth stations or terrestrial stations that were coordinated prior to coordination of that particular CSAT earth station. The CSAT station also would not be permitted to operate until this coordination is completed, the Commission has been notified, and the 30-day notice period has elapsed.

95. We believe that the type of service proposed by Onsat and contemplated in our proposed CSAT rules is in the public interest because it facilitates advanced broadband communications for Americans in rural, underserved areas. Our *Tribal Lands* proceedings¹³⁰ and other Commission initiatives have sought to improve the delivery of broadband services to rural areas. We note that the required individual coordination with terrestrial users of C-band frequencies may, as a practical matter, effectively limit CSAT networks to rural areas where those frequencies are relatively underused. We seek comment, therefore, on whether our rules should limit the CSAT service to rural areas, or, alternatively, whether our rules should allow CSAT network service wherever frequency coordination allows the installation of an earth station. If rules limiting the service to rural areas are proposed, we request comment on how to define rural for this purpose, and how we can administer such a rural limitation.

96. **Reporting Requirements.** We propose that each CSAT licensee be required to provide the Commission an annually updated list of all operational earth stations in its system. This list would provide a definitive portrait of each licensee's operational CSAT system once a year, and would allow the Commission to verify the validity of its database. The CSAT licensees' annual report would also have to include a list of all earth stations planned for the next 12 months but not yet built, a list of all earth stations deactivated during the year, and a report of any changes in satellite location applicable to the CSAT network. We propose to seek only an estimate of all earth stations planned for the next 12 months but not yet built, because we recognize that businesses would have some difficulty projecting the number of CSATs they plan to deploy in the future. The annual reporting requirement would provide the FCC and frequency coordinators the opportunity to crosscheck database records for accuracy, and be useful in dispute resolution.

¹²⁹ 47 C.F.R. § 25.203. These existing rules apply to all earth stations operating in frequency bands shared on a co-primary basis between terrestrial and satellite services.

¹³⁰ See *Tribal Lands NPRM*, *supra* n.107, and *Tribal Lands Report and Order*, *supra* n. 110.

B. Conclusion

97. We propose to amend our rules to accommodate the licensing of CSAT service in the C-band frequencies. We propose rules to govern applications for CSAT service in C-band frequencies, and invite public comment on the tentative conclusions reached in this Notice, and comment on the proposed rules set forth in Appendix C.

VI. DISCUSSION OF HUGHES PROPOSAL

98. We ask for comment on a recent *ex parte* pleading¹³¹ filed by Hughes in the *18 GHz Proceeding*, see *supra* note 3, concerning the proposed deployment of earth stations for geostationary satellite orbit (GSO) FSS systems in the shared portion of the Ka-band without individual site-by-site licensing.¹³² Hughes contends that the Commission has the power to authorize GSO FSS earth stations under a “blanket” licensing approach in these shared bands. Hughes observes that GSO FSS earth stations would operate in the receive mode in the 18 GHz band and thus would not cause interference to terrestrial users sharing the band, but could receive harmful interference from FS transmissions operating in the band. Hughes urges the Commission to allow GSO FSS earth stations to receive signals in the 18 GHz shared band, with the option of registering for interference protection on a site-by-site basis in accordance with the coordination procedures of Sections 25.203 and 25.251. Hughes also suggests that any fees for such registration must be “consumer-tolerant” (such as a single low charge for a batch of 1000 registrations, e.g., \$295). In the 29.25-29.5 GHz band that is shared with MSS feeder links, Hughes contends that the provisions of Section 25.258 that deal with intersystem coordination and sharing between NGSO MSS feeder link stations and GSO FSS services are sufficient to allow the deployment of a large number of pre-coordinated GSO FSS earth stations under a single authorization.

99. We invite comment on whether such deployment of GSO FSS earth stations in both the 29.25-29.5 GHz and 18.3-18.58 GHz bands would be practicable. In particular, we seek comment on whether Hughes’ request for an expedited and simplified licensing procedure for satellite user earth terminals at Ka-band would raise the same kinds of concerns that FWCC has presented in its instant filings. In this regard, we note that one of the fundamental tenets of the 18 GHz band segmentation plan was to separate services that would be widely deployed. We also seek comment on how deployment of a large number of FSS earth stations over the entire shared portions of the Ka-band, with specific site location information, would impact existing and future MSS feeder link operations. If deployment would be practicable, we ask how such a licensing procedure could be implemented to ensure that the requirements of both the satellite and terrestrial users would be met in the 18 GHz band. We invite comment on whether we

¹³¹ *Ex parte* filing of Hughes Network Systems in CC Docket No. 98-172. See Letter from Joslyn Read, Assistant Vice President, Hughes Network Systems/Spaceway and John P. Janka, Counsel for HNS/Spaceway to Magalie Roman Salas, Secretary of the FCC, dated May 19, 2000.

¹³² These shared bands are 18.3-18.58 GHz and 29.25-29.5 GHz. In the 18 GHz band, GSO FSS (downlink) and FS share portions of the band. In the 28 GHz band, GSO FSS (uplink) and NGSO MSS feeder links share portions of the band. See *18 GHz Proceeding*, *supra* n. 3, Report and Order, FCC 00-212 (released June 22, 2000).

should apply to the portion of the 18 GHz band shared by the FSS and FS each of the rules that we propose in this Notice. We also invite comment on whether, if we were to allow deployment in the shared portion of the Ka-band of a large number of pre-coordinated GSO FSS earth stations under a single authorization, we should limit the earth stations to communications with only the specific satellites that are a part of a single satellite system.¹³³ This limitation on the number of satellite locations would be similar to our proposal, *see supra* Section V, to limit the authorization of CSAT networks in the C-band to only three satellite locations. Further, we ask for general comment on the issue of registration fees and, specifically, on Hughes' proposal that any registration fees for interference protection should be in the range of \$295 for a batch of 1000 registrants. We also invite alternative proposals to achieve the objectives of the Hughes proposal, within the scope and overall objectives of this proceeding.

VII. PROCEDURAL MATTERS

100. **Initial Regulatory Flexibility Analysis.** Appendix D to this document contains the analysis required by the Regulatory Flexibility Act of 1980, 5 U.S.C. § 603.

101. **Ex parte Presentations.** This is a permit-but-disclose rulemaking proceeding. *Ex parte* presentations are permitted, provided they are disclosed as provided in Sections 1.1202, 1.1203, and 1.1206(a) of the Commission's Rules, 47 C.F.R. Sections 1.1202, 1.1203, and 1.1206(a).

102. **Authority.** This action is taken pursuant to 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. Sections 154(i), 157(a), 303(c), 303(f), 303(g), and 303(r).

103. **Comment.** Pursuant to Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. Sections 1.415 and 1.419, interested parties may file comments on or before [30 days following publication in the Federal Register], and reply comments on or before [45 days following publication in the Federal Register]. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by paper copies. *See, Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 24,121 (1998).

104. 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, Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To obtain 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.

¹³³ For example, the two satellites that will constitute the Hughes Network Systems system at Ka-band.

105. Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, commenters must submit two additional copies for each additional docket or rulemaking number. All filings must be sent to the Commission's Secretary, Magalie Roman Salas, Office of the Secretary, Federal Communications Commission, The Portals, 445 Twelfth Street, S.W., Room TW-A325, Washington, D.C. 20554.

106. Parties who choose to file by paper should also submit their comments on diskette. These diskettes should be submitted to: Commission's Secretary, Magalie Roman Salas, Office of the Secretary, Federal Communications Commission, The Portals, 445 Twelfth Street, S.W., Room TW-A325, Washington, D.C. 20554. Such a submission should be on a 3.5-inch diskette formatted in an IBM compatible format using Word for Windows 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, IB Docket No. 00-XXX, 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 one party's pleading, preferably in a single electronic file. In addition, commenters must send diskette copies to the Commission's copy contractor, International Transcription Service, Inc., 1231 20th Street, N.W., Washington, D.C. 20037.

107. **Additional Information.** For general information concerning this rulemaking proceeding contact Ed Jacobs, International Bureau, at (202) 418-0624, internet: ejacobs@fcc.gov; for questions concerning the proposed licensing of C-band small aperture terminal earth stations, contact Mark Young at (202) 418-0762, internet: myoung@fcc.gov, International Bureau; Federal Communications Commission, Washington, DC 20554.

VIII. ORDERING CLAUSES

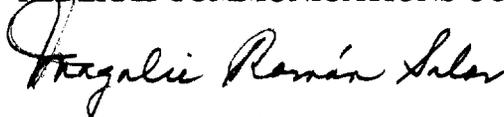
108. IT IS ORDERED, that pursuant to Sections 4(i), 7(a), 303(c), 303(f), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154(i), 157(a), 303(c), 303(f), 303(g), and 303(r), this Notice of Proposed Rulemaking is hereby ADOPTED.

109. IT IS FURTHER ORDERED that FWCC's Request for Declaratory Ruling is DENIED.

110. IT IS FURTHER ORDERED that Onsat's Petition for Declaratory Order is DENIED.

111. IT IS FURTHER ORDERED that the Commission's Consumer Information Bureau, Reference Information Center, SHALL SEND a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief, Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION



Magalie Roman Salas
Secretary

APPENDIX A: COMMENTS IN FWCC PROCEEDINGComments and Oppositions

Comsat Corporation (Comsat)
Corporate Satellite Communications, Inc. (CSC)
GE American Communications, Inc. (GE Americom)
Home Box Office (HBO)
Iridium LLC (Iridium)
McKibben Communications (McKibben)
Satellite Communications Division of Telecommunications Industry Association (TIA SCD)
Satellite Industry Association (SIA)
SkyBridge LLC (SkyBridge)
Sprint Corporation (Sprint)
Williams Communications, Inc. (Williams)

Reply Comments

Americasky Corporation (Americasky)
ATC Teleports, Inc. (ATC)
Comsat Corporation (Comsat)
Fixed Point-to-Point Communications Section of Wireless Communications Division of
Telecommunications Industry Association (TIA FS/WCD)
Fixed Wireless Communications Coalition (FWCC)
GE American Communications, Inc. (GE Americom)
MCI WorldCom, Inc. (MCI WorldCom)

Ex Parte Filings

Letter to Commission from Counsel for FWCC dated 11/4/99, with attachment.

APPENDIX B: LIST OF COMMENTS IN ONSAT PROCEEDING

Comments and Opposition

Fixed Wireless Communications Coalition (FWCC)
Home Box Office (HBO)
JDL Technologies Inc. (JDL)

Reply Comments

Onsat Network Communications, Inc. (Onsat)

Supplemental Letters

Letter to Commission from Attorney for Onsat dated 2/10/00
Letter to Commission from Counsel for FWCC dated 2/14/00

APPENDIX C: Proposed Rules

For the reasons set forth in the preamble, part 25 of title 47 of the Code of Federal Regulations is proposed to be amended as follows:

PART 25--SATELLITE COMMUNICATIONS

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

AUTHORITY: 47 U.S.C. 701-744. Interprets or applies sec. 303, 47 U.S.C. 303. 47 U.S.C. sections 154, 301, 302, 303, 307, 309 and 332, unless otherwise noted.

113. Section 25.115 is amended by redesignating paragraph (c) as (c)(1) and by adding a new paragraph (c)(2) to read as follows:

§ 25.115 Application for earth station authorizations.

* * * * *

(c)(2) Large Networks of Small Antennas operating in the 4/6 GHz frequency bands with U.S.-licensed or non-U.S. licensed satellites for domestic services. Applications to license small antenna network systems operating in the 4/6 GHz frequency band shall be filed electronically on FCC Form 312, Main Form and Schedule B.

(c)(2)(i) An initial lead application providing a detailed overview of the complete network shall be filed. Such lead applications shall fully identify the scope and nature of the service to be provided, as well as the complete technical details of each representative type of small antenna (less than 4.5 meters) that will operate within the network. Such lead applications shall not be licensed unless they identify no more than three discrete geostationary satellites to be accessed, identify a maximum of 20 MHz of spectrum to be used for communication channels, and identify the maximum number of earth station sites, the amount of frequency bandwidth sought, and the general geographic area in which each type of small antenna will operate.

(c)(2)(ii) Following the issuance of a license for the initial lead application, the licensee shall notify the Commission of the complete technical parameters of each individual earth station site before that site is brought into operation under the lead authorization. Full frequency coordination of each individual site shall be completed prior to filing Commission notification and conducted in accordance with Section 25.203. Such notification shall be done by electronic filing and shall be consistent with the technical parameters of Schedule B of FCC Form 312. These individual site notifications will be routinely processed. Operation of each individual site may commence if no comments are received within a 30-day period after public notice of the licensee's notification filing. Continuance of operation for the duration of the lead license term

of each individual site shall be dependent upon successful completion of the normal public notice process. If any objections are received to the newly added remote stations, the licensee shall not operate those particular stations until the coordination dispute is resolved and the licensee informs the Commission of the resolution. Each CSAT licensee shall provide the Commission an annually updated list of all operational earth stations in its system. The annual list also shall include a list of all earth stations planned for the next 12 months but not yet built, a list of all earth stations deactivated during the year, and a report of any changes in satellite location applicable to the CSAT network.

* * * * *

114. Section 25.134 is amended by revising the section title, by redesignating paragraph (a) as (a)(1) and adding an introductory heading, by adding a new paragraph (a)(2), and by adding a new heading to paragraph (b) to read as follows:

§ 25.134 Licensing provisions of Very Small Aperture Terminal (VSAT) and C-band Small Aperture Terminal (CSAT) networks.

(a)(1) *VSAT networks operating in the 12/14 GHz bands.* All applications for digital VSAT networks . . . * * *

(a)(2) *Large Networks of Small Antennas operating in the 4/6 GHz frequency bands.* All applications for digital and/or analog operations will be routinely processed provided the network employs antennas that are 4.5 meter or larger in diameter, that are consistent with §25.209, the power levels are consistent with §25.211(d) and §25.212(d), and frequency coordination has been satisfactorily completed. The use of smaller antennas or non-consistent power levels require the filing of an initial lead application (§25.115(c)(2)) that includes all technical analyses required to demonstrate operation on a non-interference basis or an affidavit from the satellite operator that such non-conforming operations have been successfully coordinated with any and all affected adjacent satellite operators.

(b) *VSAT networks operating in the 12/14 GHz bands.* Each applicant for digital and/or analog VSAT network . . . * * *

* * * * *

115. Section 25.203 is amended by redesignating paragraphs (e) through (k) as (f) through (l) and by adding a new paragraph (e) to read as follows:

§ 25.203 Choice of sites and frequencies.

* * * * *

(e) The following provisions shall apply to the coordination of a newly proposed terrestrial station with an existing or previously filed FSS earth station:

(1) When a terrestrial fixed service license applicant requests but is denied coordination in spectrum in the 3700-4200 MHz, 5925-6425 MHz, 6525-6875 MHz or 10.7-11.7 GHz band, a potentially affected earth station licensee must demonstrate to the frequency coordinator that it is actually using, has recently used, or has imminent plans to use the spectrum in question if the earth station licensee wishes, in the case of a receiving earth station, to be protected from interference from the new terrestrial fixed station on that spectrum, or, in the case of a transmitting earth station, not to have to protect the new terrestrial station. If the earth station licensee cannot make such a demonstration during the coordination, then the terrestrial fixed station may be successfully coordinated and the earth station must not cause unacceptable interference to, nor is it protected from interference from, the terrestrial fixed station on that spectrum in the future. In demonstrating use of the spectrum that has been denied coordination, the earth station licensee shall: 1) for recent use, identify the timeframes during which each satellite transponder frequency band was used within the past 24 months; 2) for current use, identify each satellite transponder frequency band in use at the time of the coordination request; and 3) for imminent use, certify the availability of some form of detailed information or planned use, *e.g.*, use to be initiated within the next six months and supported by contract(s) or other documentation. If, however, the earth station has been licensed for less than twenty-four months, all of its licensed bandwidth will be considered in use for purposes of the coordination. Earth stations licensed for 40 MHz or less in each direction would not be required to demonstrate use within any timeframe in order to retain protection for that spectrum.

(2) If an earth station licensee accepts a particular interference analysis model that employs certain interference mitigating factors, such as terrain or building blockage, in order to successfully coordinate its station with a terrestrial fixed station, then it must accept the use of that same model in subsequent coordinations.

(3) If an earth station applicant for spectrum in the 3700-4200 MHz, 5925-6425 MHz, 6525-6875 MHz or 10.7-11.7 GHz band, during its coordination, accepts a level of interference that is recognized to be below accepted interference objectives along a set of azimuths and elevation angles on part of the spectrum for which it is applying, and therefore insufficient to clear the interference case, then the earth station licensee is not entitled to protection from interference from future terrestrial fixed service applicants on those same frequencies within that same set of azimuths and elevation angles.

* * * * *

For the reasons set forth in the preamble, part 101 of title 47 of the Code of Federal Regulations is proposed to be amended as follows:

PART 101—FIXED MICROWAVE SERVICES

116. The authority citation for Part 101 continues to read as follows:

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

117. Section 101.103(d)(1) is amended by adding new text at the end of the section to read as follows:

§ 101.103 Frequency Coordination Procedures.

* * * * *

(d)(1) General Requirements.

* * * Additionally, if a fixed station licensee accepts a particular interference analysis model that employs certain interference mitigating factors, such as terrain or building blockage, in order to successfully coordinate its station with a fixed satellite service earth station in the 3700-4200 MHz, 5925-6425 MHz, 6525-6875 MHz or 10.7-11.7 GHz frequency band, then it must accept the use of that same model in subsequent coordinations.

* * * * *

118. Section 101.141 is amended by revising the text of note 3 in paragraph (a)(3) to read as follows:

§ 101.141 Microwave Modulation.

* * * * *

(a)(3) * * *

³ This loading requirement must be met within 24 months of licensing. * * *

* * * * *

APPENDIX D: INITIAL REGULATORY FLEXIBILITY ANALYSIS**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. We request written public comments on this IRFA. Commenters must identify their comments as responses to the IRFA and must file the comments by the deadlines for comments on the Notice of Proposed Rulemaking provided above in paragraphs 103-106. The Commission will send a copy of the Notice of Proposed Rulemaking, 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 of Proposed Rulemaking and IRFA (or summaries thereof) will be published in the Federal Register.

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

We initiate this rulemaking proceeding to obtain comment and develop a record on certain proposals in frequency bands shared between the space and terrestrial fixed services, as well as to provide for the blanket licensing of small aperture antenna terminals in the C-band (CSATs). Specifically, this *Notice* proposes to amend Section 25.203 to require an earth station licensed for 36 months or longer to demonstrate, in response to a request of a terrestrial fixed service applicant to coordinate spectrum, that the earth station is using, has recently used, or has imminent plans to use the requested spectrum. Additionally, the item proposes to amend Section 25.203 to require that an earth station licensee that accepted a particular interference analysis model in order to successfully coordinate location of its station must accept use of the same model in subsequent coordinations. Further, if an earth station licensee, during coordination, accepts a level of interference along a set of azimuths recognized to be below normally permissible interference objectives, the licensee may not subsequently claim protection from interference from future terrestrial fixed service applicants on those same frequencies within that same set of azimuths. With respect to licensing of CSATs in the C-band, we propose to amend Section 25.115 to model CSAT licensing procedures on the streamlined procedure successfully used since 1992 for licensing small earth stations to GTE Spacenet in the C-band. Additionally, the proposed rule changes will require CSAT applicants in the C-band to complete frequency coordination for each individual earth station antenna, but will allow blanket licensing for a system of technically-identical earth stations so coordinated, with simplified reporting to the Commission.

These proposals will facilitate the efficient and equitable use of the shared radio spectrum by satellite and terrestrial fixed service operators through a modification of the coordination and licensing procedures for earth station licensees. These proposals will promote efficient use of the spectrum shared between the satellite and terrestrial services, and will allow the efficient

¹ *See* 5 U.S.C. § 603. The RFA, *see*, 5 U.S.C. § 601 *et seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

introduction of new satellite technologies that will provide wide access to electronic commerce in underserved, rural areas of America.

B. Legal Basis

The proposed action is authorized under Sections 1, 4(i), 4(j), 301, and 303 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 154(j), 301, and 303.

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

The RFA directs agencies to provide a description of, and, where feasible, an estimate of, the number of small entities that may be affected by the proposed rules, if adopted.² 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 "Small governmental jurisdiction" generally means "governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than 50,000."⁸ As of 1992, there were approximately 85,006 such jurisdictions in the United States.⁹ This number includes 38,978 counties, cities, and towns; of these, 37,566, or 96 percent, have populations of fewer than 50,000.¹⁰ The Census Bureau estimates that this ratio is approximately

² 5 U.S.C. § 603(b)(3).

³ *Id.* § 601(6).

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

⁵ Small Business Act, 15 U.S.C. § 632 (1996).

⁶ 5 U.S.C. § 601(4).

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

⁸ 5 U.S.C. § 601(5).

⁹ U.S. Dept. of Commerce, Bureau of the Census, "1992 Census of Governments."

¹⁰ *Id.*

accurate for all governmental entities. Thus, of the 85,006 governmental entities, we estimate that 81,600 (91 percent) are small entities. Below, we further describe and estimate the number of small entity licensees that may be affected by the proposed rules, if adopted.

1. Cable Services. The SBA has developed a definition of small entities for cable and other pay television services, which includes all such companies generating \$11 million or less in revenue annually. This definition 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 the Census Bureau data from 1992, there were 1,788 total cable and other pay television services and 1,423 had less than \$11 million in revenue. The Commission has developed its own definition of a small cable system operator for the purposes of rate regulation. Under the Commission's rules, a "small cable company," is one serving fewer than 400,000 subscribers nationwide¹¹. Based on our most recent information, we estimate that there were 1,439 cable operators that qualified as small cable system operators at the end of 1995¹². 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, we estimate that there are fewer than 1,439 small entity cable system operators.

The Communications Act also contains a definition of a small cable system operator, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 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."¹³ The Commission has determined that there are 66,690,000 subscribers in the United States. Therefore, we found that an operator serving fewer than 666,900 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all of its affiliates, do not exceed \$250 million in the aggregate.¹⁴ Based on available data, we find that the number of cable operators serving 666,900 subscribers or less totals 1,450.¹⁵ We do not request nor do we collect information concerning whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250,000,000, and thus are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

2. International Services

¹¹ 47 CFR 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 (Feb. 27, 1995).

¹² Paul Kagan Associates, Inc., Cable TV Investor, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

¹³ 47 U.S.C. 543(m)(2).

¹⁴ 47 CFR 76.1403(b).

¹⁵ Paul Kagan Associates, Inc., Cable TV Investor, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

The Commission has not developed a definition of small entities applicable to licensees in the international services. Therefore, the applicable definition of small entity is generally the definition under the SBA rules applicable to Communications Services, Not Elsewhere Classified (NEC).¹⁶ This definition provides that a small entity is expressed as one with \$11.0 million or less in annual receipts.¹⁷ According to the Census Bureau, there were a total of 848 communications services providers, NEC, in operation in 1992, and a total of 775 had annual receipts of less than \$9.999 million.¹⁸ The Census report does not provide more precise data.

3. Fixed Satellite Transmit/Receive Earth Stations. Currently there are over 7500 authorized fixed satellite transmit/receive earth stations authorized for use in bands shared with the terrestrial fixed service. We do not request or collect annual revenue information, and thus are unable to estimate the number of the earth stations that would constitute a small business under the SBA definition.

4. Mobile Satellite Earth Station Feeder Links. There are two licensees operating in spectrum shared with terrestrial fixed services. We do not request or collect annual revenue information, and thus are unable to estimate of the number of mobile satellite earth stations that would constitute a small business under the SBA definition.

5. Space Stations (Geostationary). Commission records reveal that there are six space station licensees licensed in spectrum shared on a co-primary basis with the terrestrial fixed service in the C- and Ku-bands. We do not request or collect annual revenue information, and thus are unable to estimate of the number of geostationary space stations that would constitute a small business under the SBA definition.

6. Space Stations (Non-Geostationary). There are four Non-Geostationary Space Station licensees licensed in spectrum shared on a co-primary basis with the terrestrial fixed service in the C- and Ku-bands. We do not request or collect annual revenue information, and thus are unable to estimate of the number of non-geostationary space stations that would constitute a small business under the SBA definition.

7. Auxiliary, Special Broadcast and other program distribution services. This service involves 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 applicable to broadcast auxiliary licensees. Therefore, the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to radio broadcasting stations (SIC 4832) and television broadcasting stations (SIC 4833). These definitions provide that a small entity is one with either \$5.0 million or less in annual receipts for a radio broadcasting station or \$10.5 million in annual receipts for a TV station. 13 C.F.R.

¹⁶ An exception is the Direct Broadcast Satellite (DBS) Service, *infra*.

¹⁷ 13 C.F.R. § 120.121, SIC code 4899.

¹⁸ 1992 *Economic Census Industry and Enterprise Receipts Size Report*, Table 2D, SIC code 4899 (U.S. Bureau of the Census data under contract to the Office of Advocacy of the U.S. Small Business Administration).

§ 121.201, SIC CODES 4832 and 4833. There are currently 3,237 FM translators and boosters, 4913 TV translators.¹⁹ The FCC does not collect financial information on any broadcast facility and the Department of Commerce does not collect financial information on these auxiliary broadcast facilities. We believe, however, that most, if not all, of these 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. These stations would likely have annual revenues that exceed the SBA maximum to be designated as a small business (as noted, either \$5 million for a radio station or \$10.5 million for a TV station). Furthermore, they do not meet the Small Business Act's definition of a "small business concern" because they are not independently owned and operated.

8. Microwave Services. Microwave services includes common carrier, private operational fixed, and broadcast auxiliary radio services. At present, there are over 13,500 common carrier stations, and approximately 18,00 private operational fixed stations and broadcast auxiliary radio stations in the microwave services in spectrum that is potentially affected by this rulemaking. Additionally, these stations represent the following distinct licensees among the various radio services: LMDS (121), DEMS (2), Common Carrier Fixed (PTP and LTTS) (1028), Private Operational Fixed PTP (1511), and Fixed Broadcast Auxiliary (806).²⁰ Inasmuch as the Commission has not yet defined a small business with respect to microwave services, we will utilize the SBA's definition applicable to radiotelephone companies -- i.e., an entity with no more than 1,500 persons. 13 C.F.R. § 121.201, SIC CODE 4812. 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.

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

The Commission's existing Part 25 rules on FSS operations contain reporting requirements for FSS systems, and we propose to modify these reporting requirements to eliminate duplicative costs of filing multiple applications for one particular type of service at C-band. In addition, we propose to add an annual reporting requirement to indicate the number of satellite earth stations actually brought into service. The proposed blanket licensing procedures do not affect small entities disproportionately and it is likely no additional outside professional skills are required to complete the annual report indicating the number of small antenna earth stations actually brought into service. We seek comment on these proposed changes.

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

The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives: (1) the establishment of differing compliance or reporting requirements or timetables that take into

¹⁹ FCC News Release, Broadcast Station Totals as of September 30, 1999, No. 71831 (Jan. 21, 1999).

²⁰ Results of analysis by FCC ULS contractor in July 2000.

account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.

This Notice solicits comment on alternatives for more efficient spectrum sharing between satellite earth stations and terrestrial fixed service stations, as well as comment on licensing of small aperture antennas at C-band. This item should positively impact both large and small businesses by providing a more efficient and less economically burdensome coordination and licensing procedure for terrestrial fixed stations in spectrum shared with satellite services. Additionally, the proposed licensing service rules provide for consolidation of licensing for small antenna earth stations and minor reporting requirements to indicate the number of satellite earth stations brought into service.

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

None.

**SEPARATE STATEMENT OF
COMMISSIONER HAROLD FURCHTGOTT-ROTH**

Re: FWCC Request for Declaratory Ruling on Partial-Band Licensing of Earth Stations in the Fixed-Satellite Service that Share Terrestrial Spectrum, IB Docket No.00-369, RM-9649, et al (rel. Oct. 24, 2000)

Today's Notice of Proposed Rulemaking makes important strides to bring: (1) symmetrical efficiency obligations to terrestrial and satellite users that share spectrum, and (2) Onsat's service closer to reality. These initiatives are overdue and will improve and balance our regulatory approach to spectrum management.

Particularly regarding the FWCC's petition, I urge the parties to evaluate meticulously our proposals to ensure that the ultimate rules are the least intrusive necessary to achieve our regulatory goals. In these bands -- where both the terrestrial and satellite licensees received their spectrum for free -- it is important that we require symmetrical, technology-neutral, and reasonably efficient spectrum use. With that goal in mind, the FCC must also avoid rules that are too detailed and complicated to be effective. Specifically in defining "use" and "efficiency" the Commission should take great care to craft narrow, concise rules. In this regard, parties are encouraged to develop proposed "safe harbors" that may streamline the Commission's assessment of these factors. Burdensome regulatory obligations and showings will ultimately only obscure our goals and slow down the regulatory process. I look forward to developing a comprehensive record in this proceeding and adopting rules that are clear, straightforward, and enforceable.