

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

In the Matter of)	
)	
Amendment of the Commission's)	ET Docket No. 95-183
Rules Regarding the 37.0-38.6 GHz and)	RM-8553
38.6-40.0 GHz Bands)	
)	
Implementation of Section 309(j) of the)	PP Docket No. 93-253
Communications Act -- Competitive)	
Bidding, 37.0-38.6 GHz and 38.6-40.0 GHz)	
Bands)	

THIRD NOTICE OF PROPOSED RULEMAKING

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I. INTRODUCTION AND EXECUTIVE SUMMARY

1. In the Notice of Proposed Rule Making and Order that initiated the above-captioned proceeding in 1995, we proposed to amend the rules for fixed, point-to-point microwave service in the 38.6-40.0 GHz ("39 GHz") band, and to adopt a conforming set of new rules for the virtually unused 37.0-38.6 GHz ("37 GHz") band in order to allow for the expansion of 39 GHz-type service.¹ In this *Third Notice of Proposed Rule Making* ("Third NPRM"), we propose service rules for the 37 GHz and also for the 42.0-42.5 GHz ("42 GHz") ("37/42 GHz") bands that would substantially conform to the rules adopted for the 39 GHz band in the *Report and Order and Second Notice of Proposed Rule Making*² and the *Second Report and Order*³ in this proceeding. We recognize, however, that conditions have changed considerably over the past few years, and we are willing to consider alternatives if commenters demonstrate that a different regulatory framework would be more appropriate for the 37/42 GHz bands. Our goal is to establish a flexible regulatory and licensing framework that would promote seamless deployment of a host of services and technologies in the 37 GHz and 42 GHz bands. We seek to enhance opportunities for deployment of broadband wireless services, foster effective competition, promote innovation and further our efforts for consistent rule application regarding broadband wireless services.

2. Significant changes in spectrum allocations, technology, and market conditions have occurred since the adoption of the 39 GHz rules and auction. Consequently, we invite comments on all of the unresolved issues in this proceeding. We do not seek comment on issues that were decided in the allocation

¹ *Notice of Proposed Rule Making and Order*, 11 FCC Rcd 4930 (1995) ("*First NPRM and Order*").

² See Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, *Report and Order and Second Notice of Proposed Rule Making*, ET Docket No. 95-183, 12 FCC Rcd 18,600 (1997) (*Report and Order and Second NPRM*), on reconsideration, *Memorandum Opinion and Order*, 14 FCC Rcd 12,428 (1999) ("*Memorandum Opinion and Order*").

³ Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz, and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band; Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0-38.0 GHz and 40.0-40.5 GHz for Government Operations, *Second Report and Order*, IB Docket No. 97-95 (FCC 03-296, released Dec. 5, 2003) ("*36-51 GHz Second R&O*").

item in the *Second Report and Order*, such as the soft segmentation of the frequency bands for satellite and terrestrial services. Accordingly, we seek comment on proposed 37/42 GHz band service rules that are affected by these proposed changes, and in one case we propose to apply these rules to the 39 GHz band as well. Specifically:

- We propose to license the 37/42 GHz bands on a geographic basis using Economic Areas (“EAs”), consistent with the licensing scheme adopted for the 39 GHz band, but we invite comment on alternative approaches as well.
- We propose to permit point-to-point, point-to-multipoint, and future mobile operations.
- We propose to adopt a “substantial service” build-out requirement if the band is licensed using EA licenses, but we invite comment on alternative build-out requirements if we adopt a different licensing scheme.
- We propose technical rules designed to provide licensees with operational flexibility.
- We propose to permit 37/42 GHz band licensees to partition and disaggregate spectrum if the band is licensed by EAs.
- We seek comment on whether to adopt a channeling plan for the 37/42 GHz bands, and, if so, what plan to propose.
- We propose to require coordination whenever and wherever facilities have optical radio line-of-sight into another licensee’s geographic area or registered site license.
- We seek comment on the appropriate coordination method to employ between adjacent licensees and with the Federal government. We propose to apply these changes to the 39 GHz band as well as the 37/42 GHz bands.
- If we license the bands by EAs when awarding 37/42 GHz licenses, we propose to use the competitive bidding procedures set out in Part 1, Subpart Q of our rules.

II. BACKGROUND

3. On September 9, 1994, the Fixed Point-to-Point Microwave Section of the Telecommunications Industry Association (“TIA”) filed a Petition for Rulemaking proposing a channeling plan and technical rules for microwave service in the 37 GHz and 39 GHz bands.⁴ TIA requested the availability of this spectrum for broadband Personal Communications Service (“PCS”) operators, cellular operators and other common carrier and private operators in order to satisfy point-to-point communications needs. In response to the TIA Petition, on December 15, 1995, the Commission initiated this proceeding to facilitate operations that provide communications infrastructure.⁵ In this regard, the Commission decided to harmonize licensing and technical rules for the 37 and 39 GHz bands to improve the 39 GHz band licensing

⁴ See TIA Petition for Rulemaking, RM 8553 (filed Sept. 9, 1994); TIA Amendment to Petition for Rulemaking, RM-8553 (filed May 4, 1995) (“TIA Petition”). For a full description of the history of this proceeding, see *Report and Order and Second NPRM*, 12 FCC Rcd at 18,606-09 ¶¶ 4-11.

⁵ *First NPRM and Order*.

process and to allow interested parties to expand their operations to the 37 GHz band.⁶

4. After the release and adoption of the *NPRM and Order*, Motorola Satellite Systems, Inc. petitioned the Commission to permit the provision of satellite services in the 37 GHz band and in other high gigahertz frequency bands.⁷ Partially in response to this petition, the Commission initiated a proceeding to address the 36.0-51.4 GHz band *in toto*,⁸ including designating 4 GHz of spectrum for fixed-satellite services (“FSS”) on a primary basis, 4.6 GHz of spectrum for wireless services⁹ and amending the Federal Government allocations in the 37.0-38.0 GHz and 40.0-40.5 GHz bands to include space research and earth exploration satellite operations.¹⁰

5. The 39 GHz portion of the spectrum in the 36.0-51.4 GHz band already was partially licensed and subject to additional applications, and on November 3, 1997, the Commission released the *Report and Order and Second NPRM* in this proceeding, which established a new licensing approach for the 39 GHz spectrum.¹¹ This action amended Parts 1 and 101 of our rules to facilitate more effective use of the 39 GHz band by allowing existing and new licensees to provide a broader array of services to the public.¹² In this regard, the Commission noted that much wider uses of the spectrum were anticipated than were contemplated when it initiated this proceeding.¹³ Specifically, a number of commenters stated that 39 GHz band facilities are employed to provide wireless equal access, LAN-to-LAN communications, and other high capacity data transmission services.¹⁴

6. On December 17, 1998, the Commission adopted the *36-51 GHz Order* establishing a band segmentation plan for non- Federal Government operations in the 36.0-51.4 GHz frequency band.¹⁵ The Commission sought to create an overall framework for deployment of services and development of technologies in the bands, increase certainty in business planning, and clarify the relationship among various ongoing Commission proceedings.¹⁶ Due to the difficulty of sharing between area-wide terrestrial wireless systems and satellite systems, the *36-51 GHz Order* provided separate designations within the band for implementation of non- Federal Government wireless services and non- Federal Government

⁶ *Id.* at 4,937-38 ¶ 13.

⁷ See Motorola Satellite Systems, Inc. Application to Construct, Launch and Operate the M-Star System, File No. 157-SAT-P/LA-96(72) (filed Sept. 4, 1996); Motorola Petition for Rulemaking, RM-8811 (filed Mar. 4, 1996).

⁸ Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz, and 48.2-50.2 GHz Frequency Bands, *Notice of Proposed Rulemaking*, IB Docket No. 97-95, 12 FCC Rcd 10,130 (1997) (“*36-51 GHz NPRM*”).

⁹ *Id.* at 10,136-38 ¶ 14.

¹⁰ *Id.* at 10,44-45 ¶¶ 30-33.

¹¹ Amendment of the Commission’s Rules Regarding the 37.0-38.6 and 38.6-40.0 GHz Bands, *Report and Order and Second Notice of Proposed Rule Making*, 12 FCC Rcd 18,600 (1997) (“*Report and Order and Second NPRM*”).

¹² *Id.* at 18,604-05 ¶ 2.

¹³ *Id.* at 18,629 ¶ 59.

¹⁴ *Id.*

¹⁵ Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz, and 48.2-50.2 GHz Frequency Bands, *Report and Order*, IB Docket No. 97-95, 13 FCC Rcd 24,649 (1998) (“*36-51 GHz Order*”), *affirmed*, *Order on Reconsideration*, 15 FCC Rcd 1,766 (1999) (“*36-51 GHz Reconsideration Order*”).

¹⁶ *Id.* at 24,651 ¶ 1.

FSS.¹⁷ The *36-51 GHz Order* also reallocated the 37.6-38.6 GHz portion of the 37 GHz band for FSS use, and added new wireless designations on a primary basis in the 37/42 GHz, 46.9-47.0 GHz and 50.4-51.4 GHz bands.¹⁸

7. At the 2000 World Radiocommunication Conference (“WRC-2000”), the International Telecommunication Union (“ITU”) ¹⁹ adopted a “soft segmentation” plan that favored terrestrial wireless services in the 37 GHz, 39 GHz and 42.0-43.5 GHz bands, and favored satellite services in the 40.0-42.0 GHz band.²⁰ In response to this allocation, on May 31, 2001, the Commission issued the *36-51 GHz Further Notice*²¹ proposing to modify the allocation for the 36.0-51.4 GHz band to reflect the international sharing arrangement established at WRC-2000. Essentially, the Commission decided to allocate Fixed Service (“FS”) and FSS on a co-primary basis in most of the 37.0-43.5 GHz band.²² In addition, the Commission proposed to designate the 37.0-40.0 GHz band and the 42.0-42.5 GHz band for ubiquitous wireless services, considered the addition of fixed and mobile for non-Federal Government use to the 42.5-43.5 GHz band, proposed limiting the power flux density (“PFD”) at the surface of the earth for satellite transmissions, and restricting satellite earth stations in these bands to gateways.²³ The Commission determined that it would examine service and licensing rules for these bands in a future proceeding.²⁴

8. On December 5, 2003, the Commission released the *36-51 GHz Second R&O*, which predominantly affirmed the *36-51 GHz Further Notice* and shifted FS, FSS and Mobile Satellite Service (“MSS”) allocations and re-designated portions of the spectrum for FS and FSS so as to encourage FS use of the 37.0-40.0 GHz and 42.0-42.5 GHz bands, and a combination of FSS, MSS and Broadcast Satellite Service (“BSS”) in the 40.0-42.0 GHz band. The Commission also adopted PFD limits for satellites consistent with the PFD limits adopted at WRC-2000, restricted satellite earth stations in the 37 GHz band to gateways, and adopted the FS and FSS designations that support “soft segmentation” of these three bands from 37 GHz to 42.5 GHz.

¹⁷ *36-51 GHz Order*, 13 FCC Rcd at 24,654 ¶ 10, 24,671-72 ¶ 43.

¹⁸ *Id.* at 24,651 ¶ 2, 24,668 ¶¶ 34-36. The 46.9-47.0 GHz and 50.5-51.4 GHz bands will be addressed in a subsequent proceeding.

¹⁹ The ITU holds multi-national World Radiocommunication Conferences (WRCs) at two or three year intervals to establish international provisions governing the use of the electromagnetic spectrum.

²⁰ See CITEL Administrations, *Proposals for the Work of the Conference*, Doc. 14-E, Addendum 1 at 15 (Mar. 25, 2000 (CITEL Proposals)).

²¹ See Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands, *Further Notice of Proposed Rule Making*, IB Docket No. 97-95, 16 FCC Rcd 12,244 (2001) (“*36-51 GHz Further Notice*”).

²² See *36-51 GHz Further Notice*, 16 FCC Rcd at 12249 (citing Final Acts of the World Radiocommunication Conference (Istanbul, 2000) (“*WRC-2000 Final Acts*”), Article S5).

²³ *Id.* at 16 FCC Rcd 12244 ¶¶ 12-13, 12,250 ¶ 46. See ¶¶ 76 and 81, *infra*, for discussion of existing and proposed rules delineating methods by which earth station or satellite licensees may obtain access to spectrum in the 37/42 GHz bands, either by bidding competitively for licenses under Part 101, which governs terrestrial fixed microwave services, or by securing license agreements with Part 101 licensees. In paragraph 77, *infra*, we propose to apply the same coordination triggers to Part 101 earth station licensees and to terrestrial stations in the 37/42 GHz bands.

²⁴ *36-51 GHz Further Notice*, 16 FCC Rcd at 12,244 n.4.

III. THIRD NOTICE OF PROPOSED RULEMAKING

9. In keeping with the Commission's initial plan to establish licensing and technical rules to allow 39 GHz licensees to expand their operations to the 37 GHz band, in this NPRM we propose service rules for the 37/42 GHz bands that would be (1) substantially the same as those applicable to the 39 GHz band, and (2) consistent with the allocation and designation in the *36-51 GHz Second R&O* to propose parallel rules for the 37/42 GHz and 39 GHz bands.²⁵ We invite comment on alternative frameworks as well, including the possibility of using a first-come, first-served link-registration approach comparable to the regulations that we recently applied to the sparsely developed 70, 80, and 90 GHz bands.²⁶

10. The principal arguments in favor of applying a 39-GHz-style regulatory structure to the 37/42 GHz bands are proximity, similarity in anticipated uses, and comparable propagation characteristics of the bands.²⁷ Similar to 39 GHz, the 37/42 GHz bands likely will be used to provide such services as backhaul and backbone communications links for services such as broadband PCS, wireless local loops, connection and interconnection services to private networks and Internet access. In addition, operations in the 37/42 GHz bands and the 39 GHz band will be similar in path length, free space loss and degradation due to rain. The main difference between the 37/42 GHz band and the 39 GHz band is that the 37/42 GHz band does not have incumbent terrestrial wireless licensees, but does have some existing and proposed Federal Government installations. Non-Federal Government licensees are cautioned that the Federal government has a co-primary allocation in the 37.0-38.6 GHz band and has plans to operate stations in the band in the future.²⁸ Creating regulatory symmetry to the extent feasible for these bands arguably would facilitate spectrum aggregation, equipment development, and service planning and development for both the 39 GHz and 37/42 GHz bands. Applying policies favoring flexibility of use as embodied in the 39 GHz service rules to this nearby band could help encourage efficient spectrum use.²⁹ Finally, such rules could facilitate operations that provide communications infrastructure and fixed services. Appendix B provides the text of rules that could be used to regulate the 37/42 GHz bands under this approach, pursuant to Parts 1 and 101 of our rules.³⁰

11. The principal argument against applying 39 GHz-type rules is that those rules are premised on the assumption that service providers will be ready, willing, and able to build out fully and provide service on an EA-wide basis. Some companies raised substantial amounts of money under that business model but later experienced major difficulties, including bankruptcy. We do not know yet to what extent such service providers will develop the 39 GHz band, nor do we know to what extent they will require overflow capacity in the 37/42 GHz bands. While some potential licensees may lack the resources to develop entire geographic areas, or their business plans may call for a more focused pattern of deployment, however, the

²⁵ See *36-51 GHz Second R&O*, ¶¶ 12-17.

²⁶ See Allocations and Service Rules for the 71-76 GHz, 81-86 GHz, and 92-95 GHz Bands, *Report and Order* (FCC 03-248, released Nov. 4, 2003) (“*70/80/90 GHz Report and Order*”). Hereinafter, we refer to the channels involved as the “70/80/90 GHz bands.”

²⁷ See *Report and Order and Second NPRM*, 12 FCC Rcd at 18,619 ¶ 33.

²⁸ See discussion in ¶¶ 62-64 and ¶¶ 83-95.

²⁹ See Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium, *Policy Statement*, 14 FCC Rcd 19868, 19870 ¶ 9 (1999) (*Spectrum Reallocation Policy Statement*). When it amended Section 309(j) of the Communications Act to provide the Commission with expanded auction authority, Congress intended “to ensure that scarce spectrum is put to its highest and best use.” H.R. Conf. Rep. No. 105-217, 143 Cong. Rec. H6173 (daily ed. July 29, 1997).

³⁰ See Appendix C, reflecting proposed changes to 47 C.F.R. Parts 1 and 101.

Commission has increasingly provided its licensees with additional flexibility to address those concerns. For example, licensees in many wireless services may now make excess spectrum available through secondary markets, and spectrum users may be able to lease spectrum under streamlined processes without becoming Commission licensees.³¹

12. The 37/42 GHz spectrum has available one block of 1600 megahertz (37 GHz) and one block of 500 megahertz (42 GHz). Because we have such a large amount of spectrum available, we also wish to explore whether the Commission should license portions of these blocks by EAs and other portions on a site-by-site basis. By using this combined approach to licensing, the Commission may address more effectively the needs of large entities as well as the smaller businesses, including public safety entities, that may neither require large blocks of spectrum nor be able to afford the financial outlays for EAs. For example, we could license the 1600 megahertz in 50-megahertz channel pairs by EAs and use the 500 megahertz in the 42 GHz band for site-by-site licensing. It would also be possible to license the upper half (800 megahertz) of the 1600-megahertz block in the 37 GHz band by EAs and provide for site-by-site registration in the lower half of that block. One way to apply a site-by-site licensing approach would be to adopt the model used in the 70/80/90 GHz proceeding.³² Therefore, we seek comment on the benefits of having some spectrum licensed by geographic areas and some spectrum licensed on a site-by-site basis. We ask commenters to propose specific spectrum plans, including recommendations for the amount of spectrum to be licensed by geographic areas or registered on a site-by-site basis, and to describe in detail the potential benefits of each plan.

13. We ask commenters to evaluate the ways in which alternative licensing schemes may constrain or expand our ability to allow maximum operational flexibility. As discussed in paragraphs 24 through 30, below, this Commission has found it possible to authorize mobile and omnidirectional services when issuing licenses on a geographic area basis but has used link-by-link licensing primarily to support fixed point-to-point services.

14. We seek comment on the state of the market, the technology, and the investment climate for service in the 37/42 GHz bands, and on regulations that would be consistent with those conditions both present and future.

A. Service Areas

15. Background. When establishing geographic service areas and build-out requirements for any particular type of license, we seek to accommodate the sometimes competing objectives of diversity, economic efficiency, ubiquity, and innovation.³³ Smaller service areas make it easier for small businesses to bid successfully for licenses, but viable businesses may require larger service areas. We also seek to foster the delivery of services to rural areas³⁴ and to promote investment in and rapid deployment of new technologies and services.³⁵

16. In the *First NPRM and Order*, the Commission proposed to license all channel blocks in the

³¹ See Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, *Report and Order and Further Notice of Proposed Rulemaking*, WT Docket No. 00-230, FCC 03-113 (rel. Oct. 6, 2003) (“*Secondary Markets Report and Order*”).

³² See *70/80/90 GHz Report and Order*, cited at note 26, *supra*.

³³ See 47 U.S.C. §§ 309(j)(3)(B), (4)(C).

³⁴ See 47 U.S.C. § 309(j)(3)(A).

³⁵ See 47 U.S.C. § 309(j)(4)(C)(iii).

39 GHz band on the basis of exclusive licenses for geographic areas, using Rand McNally & Company's Basic Trading Area ("BTA") service areas.³⁶ Comments responsive to the *First NPRM and Order* supported the use of exclusive area-wide licenses using BTAs for the band.³⁷ The Commission adopted this proposal in the *Report and Order and Second NPRM*, because BTAs were representative of the geographic areas in which the types of services envisioned for the 39 GHz band were likely to be provided.³⁸ At that time, the Commission rejected the notion of permitting applicants to continue to define their own service areas on the basis that pre-defined service areas would provide a more orderly structure for the licensing process and foster efficient use of the spectrum in an expeditious manner.³⁹ In addition, for those interested in tailoring a service area to other smaller or larger markets, the Commission reasoned that its service rules permitted aggregation,⁴⁰ partitioning and disaggregation.⁴¹ The Commission also declined to license the 39 GHz band via larger geographic areas, such as Major Trading Areas, which are aggregations of BTAs.⁴² The Commission explained that although its rules allowed spectrum aggregation for those seeking larger geographic areas, the record did not support the notion that most licensees would seek to provide service over vast geographic regions.⁴³ Instead, based upon the services being proposed, the Commission anticipated that the 39 GHz band would be used for services that are local or regional in nature.⁴⁴

17. However, subsequent developments concerning Rand McNally's copyright interest in BTAs led the Commission to conclude that using BTAs as service areas could delay the 39 GHz licensing process.⁴⁵ It, therefore, reconsidered its service area definition and selected EAs.⁴⁶

18. We adopted a different approach in the *70/80/90 GHz Report and Order*. In that proceeding,

³⁶ *First NPRM and Order*, 11 FCC Rcd at 4941 ¶ 22.

³⁷ See, e.g., Advanced Radio Telecom Corporation (ART) Comments at 47; AT&T Wireless Services (AT&T Wireless) Comments at 5; BizTel Inc. (BizTel) Comments at 15; Commco, L.L.C. (Commco) Comments at 9; DCR Communications, Inc. (DCR) Comments at 6; GTE Service Corporation (GTE) Comments at 4; Milliwave Limited Partnership (Milliwave) Comments at 8; Pacific Bell Mobile Services (Pacific) Comments at 4; Personal Communications Industry Association (PCIA) Comments at 3; Telco Group, Inc. (TGI) Comments at 11; Telephone and Data Systems, Inc. (TDS) Comments at 5-6; Fixed Point-to-Point Communications Section, Network Equipment Division of the Telecommunications Industry Association (TIA Equipment) Comments at 9; U S West Inc. (U S West) Reply at 6.

³⁸ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,610 ¶ 14.

³⁹ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,610 ¶ 13. The Commission explained that applicant-defined service areas, while giving entities the opportunity to apply only for that area which they intended to serve, did not result in expeditious licensing of the spectrum because the mutually exclusive situations were complex and overlapping.

⁴⁰ *Id.* at 18,626-28 ¶¶ 52-57.

⁴¹ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,635 ¶ 71.

⁴² See, e.g., WinStar Communications, Inc. (WinStar) Comments at 12, Milliwave Reply Comments at 17 (supporting the use of MTAs).

⁴³ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,611 ¶ 15.

⁴⁴ *Id.*, 12 FCC Rcd at 18,610-11 ¶ 14.

⁴⁵ *Memorandum Opinion and Order*, 14 FCC Rcd at 12,452-53 ¶ 46.

⁴⁶ See *id.*

we decided to issue non-exclusive nationwide licenses conditioned upon site and path-specific coordination.⁴⁷ Because of the short path links and tightly focused beams that are necessary and feasible at those high frequencies, the Commission reasoned that many service providers would be able to engineer their systems to operate in close proximity to each other without causing mutual interference.⁴⁸ To facilitate coordination, the Commission adopted non-interference requirements and required all licensees to register their facilities in a database accessible to other licensees, on a first-come, first-served basis.⁴⁹ The Commission determined that it would impose no limit to the number of non-exclusive nationwide licenses that it would grant for the 70/80/90 GHz bands.⁵⁰ Consistent with its decision not to issue exclusive licenses for geographic areas, it did not adopt any area-wide substantial service requirements, deciding instead to require licensees to construct individual links within 12 months after registering them.⁵¹

19. Discussion. In reaching its decision to license all 39 GHz channel blocks using exclusive licenses for EAs, the Commission concluded that this service area designation would provide ample population coverage and allow licensees the flexibility to provide many different types of services, which would promote an equitable distribution of licenses and services among geographic areas, encourage economic opportunities among a wide variety of applicants, and foster investment and rapid deployment of new technologies and services.⁵² For the same reasons, and for consistency, we tentatively conclude that the most appropriate service area designation for licensing the 37/42 GHz bands would be EAs, if we decide to issue exclusive area-wide licenses or a combination of area-wide licenses and site-by site licenses.

20. The use of EAs as defined by the U.S. Department of Commerce Bureau of Economic Analysis as of February 1995 would provide a seamless overlay for entities that choose to provide services in both the 37/42 GHz and 39 GHz bands.⁵³ Accordingly, we propose to issue a total of 175 authorizations (172 EAs, and three additional areas, covering Guam and Northern Mariana Islands; Puerto Rico and the U.S. Virgin Islands; and American Samoa) for each 37/42 GHz channel block.⁵⁴ In order to be consistent with the 39 GHz EA service areas, we propose to utilize the 1995 EAs, as modified by the Commission, which were in effect on April 12, 2000, the start-date of the 39 GHz auction.⁵⁵ For entities desiring areas smaller than EAs, we would permit partitioning and disaggregation of EA licenses.⁵⁶ Adoption of a

⁴⁷ 70/80/90 GHz Report and Order at ¶¶ 43-60.

⁴⁸ *Id.* at ¶ 45.

⁴⁹ *Id.* at ¶¶ 48-60.

⁵⁰ *Id.* at ¶ 46.

⁵¹ *Id.* at ¶ 80.

⁵² See Memorandum Opinion and Order, 14 FCC Rcd at 12,452-53 ¶ 46.

⁵³ The Memorandum Opinion and Order, which set service areas for the 39 GHz band on the basis of EAs, was released in 1995. Thus the Commission utilized EAs as defined in 1995 by the U.S. Department of Commerce Bureau of Economic Analysis.

⁵⁴ See 47 C.F.R. § 90.7.

⁵⁵ The EA service areas used by the Commission are based on the Economic Areas delineated by the Regional Economic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce in 1995, with the following additions: Guam and the Northern Mariana Islands; Puerto Rico and the U.S. Virgin Islands; American Samoa; and the Gulf of Mexico. See <http://www.fcc.gov/oet/info/maps/areas/>.

⁵⁶ See paras. 44-49, *infra*.

geographic area licensing approach – in contrast to a station-defined (*i.e.*, site-by-site) licensing approach – for the 37/42 GHz band likely would result in the acceptance of mutually exclusive license applications, which would need to be assigned through competitive bidding under section 309(j) of the Communications Act, as amended (“Communications Act”).⁵⁷

21. We seek comment below on a number of issues relating to the competitive bidding procedures we should use in any auction of geographic-area licenses in this band.⁵⁸ The geographic license would constitute a blanket authorization to construct and operate stations at any available site within the licensed area on the licensed spectrum. In general, we propose to allow geographic area licensees to construct and operate their stations pursuant to the procedures set out in Section 1.2113 of our rules, and we seek comment on any clarifications, extensions, or exceptions to that rule that may be necessary. We propose to require geographic area licensees to license individually any station⁵⁹ that requires an Environmental Assessment pursuant to Section 1.1307 of our rules⁶⁰ or international coordination, or would affect the radio quiet zones described in Section 1.924 of our rules.⁶¹

22. In the alternative, if we choose to adopt the kind of regulatory approach that we have applied to the 70/80/90 GHz bands, we propose to issue multiple, non-exclusive nationwide licenses. We recognize, of course, that there are significant differences between the 37/42 GHz and 70/80/90 GHz bands with respect to propagation characteristics and engineering requirements,⁶² and that there likely will be more demand for the lower frequencies. For those reasons, we seek comments on whether an exclusive use, geographic area licensing approach, a 70/80/90 GHz-like framework, or a combination of both would be more appropriate for the 37/42 GHz bands. We seek comment on what modifications to the licensing structure adopted in the *70/80/90 GHz R&O* would be necessary to adapt it to the differing requirements of the 37/42 GHz bands.⁶³ We invite comment on other alternatives that commenters might care to recommend.

⁵⁷ 47 U.S.C. § 309(j); *see* Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended, *Report and Order and Further Notice of Proposed Rule Making*, WT Docket No. 99-87, 15 FCC Rcd 22709 (1999) (“*BBA Report and Order*”) (establishing the analytical framework for the Commission’s exercise of its auction authority).

⁵⁸ *See* para. 96, *infra*.

⁵⁹ *See* § 101.58 *System operations* in the Proposed Rules, Appendix C.

⁶⁰ *See* 47 C.F.R. § 1.1307.

⁶¹ *See* 47 C.F.R. § 1.924.

⁶² While it is generally true that an antenna of a given size produces tighter beamwidths for higher frequency transmissions, it does not necessarily follow that higher frequency operations create less interference than lower frequency operations. For example, a 70/80/90 GHz system may require two links (hops) to cover the same distance as a single link in a 37 GHz system. Because two successive links must operate on different frequencies from each other to avoid interference, the 70/80/90 GHz system might require twice as much spectrum as an equivalent 37 GHz system. Thirty-seven GHz systems offer a better potential for using antennas with wider patterns, such as beamwidths of 45 degrees, for multipoint operations. To reach the same number of points, a 70/80/90 GHz system might require multiple transmissions on different paths.

⁶³ Because the 37/42 GHz bands are so close to the 39 GHz band, applying the 39 GHz regulatory model to the 37/42 GHz bands probably would require less adaptation than applying the 70/80/90 GHz model.

B. Regulatory Framework

23. Background. The 37/42 GHz bands are allocated for both fixed and mobile services.⁶⁴ In the *First NPRM and Order*, the Commission requested comment on whether to permit point-to-multipoint systems and mobile services in addition to point-to-point operations.⁶⁵ Many parties commenting in this proceeding encouraged the Commission to allow licensees to determine the best uses of the band, and in particular requested the authority to provide point-to-multipoint and mobile services, as the technology to provide these services becomes available.⁶⁶ In the *Report and Order and Second NPRM*, the Commission concluded that it was imperative not to take any regulatory actions that would hamper the continued development and growth potential of the 39 GHz service.⁶⁷ Accordingly, the Commission adopted a flexible framework such that mixed use of the band was permitted by several service types, including point-to-point, point-to-multipoint, fixed, and, upon adoption of interference protection criteria, mobile operations in the 39 GHz band.⁶⁸

24. In contrast, the Commission adopted technical rules in its *70/80/90 GHz Report and Order* requiring “pencil-beam” transmissions that effectively preclude point-to-multipoint or mobile operations in that spectrum.⁶⁹ The Commission did not address the possibility of authorizing such operations, as the Commission foresaw that, unless it required tightly focused radiation patterns, legacy antennas with undesirable radiation patterns could pose serious obstacles to the growth of microwave links in heavily populated areas in the future.⁷⁰ In justifying its choice of a non-exclusive link-by-link regulatory framework for the 70/80/90 GHz band, the Commission cited several factors: (i) the unique propagation characteristics and nature of the spectrum resources involved, including the ability to engineer systems to operate in close proximity to each other without causing mutual interference, (ii) the characteristics of equipment being proposed by manufacturers, i.e., systems designed to concentrate radiated power in very narrow paths, and (iii) the need to share the bands involved with other services, including Federal government systems requiring prior coordination to avoid mutual interference.⁷¹ The Commission found that such an approach could be particularly beneficial in less-densely populated rural and suburban areas, where there is an even lower chance of interference.⁷²

25. Discussion. Because this spectrum is allocated for mobile and fixed use, we propose to allow mobile use in the future, if and when the technology develops, and a demand for mobile service in these bands exists. Until then, we propose to provide licensees with the flexibility that will eventually allow

⁶⁴ See 47 C.F.R. § 2.106.

⁶⁵ *First NPRM and Order*, 11 FCC Rcd at 4,937-38 ¶ 13.

⁶⁶ See, e.g., ART Comments at 44; Altron Communications L.C. (Altron) Comments at 2; Milliwave Comments at 27; Spectrum Communications, L.C. (Spectrum) Comments at 3; Bachow and Associates, Inc. (Bachow) Comments at 9; Columbia Millimeter Communications, L.P. (Columbia) Comments at 12-15; GHz Equipment Company (GEC) Comments at 3; WinStar Reply Comments at 9-10.

⁶⁷ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,613 ¶ 20.

⁶⁸ *Id.* at 18,613-15 ¶¶ 20-25.

⁶⁹ The Commission required that minimum antenna gain be 50 dBi and that maximum beamwidth to 3 dB points be 0.6 degrees. *70/80/90 GHz Report and Order* at ¶ 96.

⁷⁰ *Id.*

⁷¹ *Id.* at ¶ 45.

⁷² *Id.*

mobile terrestrial operations (upon adoption of interference protection criteria for mobile operations and specific coordination methods with the Federal Government), and fixed point-to-multipoint operations as well as fixed point-to-point operations in the 37/42 GHz bands. We seek comment below on what kind of regulatory framework, consistent with economic realities, would be most compatible with flexible operational rules. Parts 27 and 101 of our rules have provided regulatory frameworks for mixed-use operations in the past. We seek comment on whether such operations would only be feasible under a geographic area licensing approach, or whether provision for such flexibility would also be possible within a 70/80/90-type licensing framework. In addition, we ask commenters to consider the possibility that a combination of both regulatory models might provide the most effective framework.

26. The adoption of a mixed use regulatory framework for the 39 GHz service in 1997 is consistent with more recent Commission efforts to establish the maximum feasible flexibility in both allocations and service rules as a critical means of ensuring that spectrum is put to its most beneficial use. For example, in a 1999 *Policy Statement* on spectrum management, the Commission observed that “[i]n the majority of cases, efficient spectrum markets will lead to use of spectrum for the highest value end use,” and that “[f]lexible allocations may result in more efficient spectrum markets.”⁷³ In addition, the flexible framework is consistent with continued Commission efforts to move toward innovative approaches to spectrum policy that are designed to maximize the public interest benefits derived from the use of radio spectrum.⁷⁴

27. We believe that such a proposal to permit flexible use by all fixed and mobile services would promote the intensive and efficient use of this spectrum. Here, as in the 700 MHz and Advanced Wireless Service proceedings,⁷⁵ we believe this would allow the 37/42 GHz spectrum to be employed for a full range of allocated services. Accordingly, we propose that our service rules for these bands should permit a licensee to use this spectrum for any use permitted by the United States Table of Frequency Allocations contained in Part 2 of our rules (*i.e.*, fixed or mobile services). In this regard, we seek comment on what impact permitting flexible use of this spectrum would have on investment in new technology and communications services for these bands. Commenters advocating a less flexible approach should delineate what specific restrictions they would have us apply concerning how spectrum should be used by a licensee, and provide detailed analysis of the economic tradeoffs between flexibility and investment that justify any particular recommended use restriction. We also seek comment on types of uses that pose the greatest risk of interference to uses planned by parties interested in using this spectrum.

28. Given that we propose to permit flexible use of these bands for both mobile and fixed services, we seek comment on whether to do so under a 39-GHz-type, exclusive geographic area licensing approach or under a 70/80/90-type licensing framework where licensees “share” the spectrum resource on a first-come, first-served type arrangement with frequency coordinators.⁷⁶ Both of these services are licensed under our Part 101 rules. We also seek comment on whether the spectrum could be regulated more

⁷³ *Spectrum Policy Statement*, 14 FCC Rcd at 19870 ¶ 9.

⁷⁴ In 2002, for example, the Commission’s Spectrum Policy Task Force conducted a comprehensive and systematic review of spectrum policy. *See generally* Spectrum Policy Task Force, *Report*, ET Docket No. 02-135 (rel. Nov. 2002) (*Spectrum Policy Task Force Report*). This report is available at <http://www.fcc.gov/sptf>.

⁷⁵ *See* Reallocation and Service Rules for the 698-746 MHz Spectrum Band, GN Docket No. 01-74, *Memorandum Opinion and Order*, 17 FCC Rcd 11613, 11629 ¶ 39 (2002); 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, *Third Report and Order, Third Notice of Proposed Rulemaking and Second Memorandum Opinion and Order*, 18 FCC Rcd 2223 (2003) (“*AWS Third Report and Order*”).

⁷⁶ *See* 70/80/90 GHz *Report and Order* at ¶ 49.

productively under the flexible framework of our Part 27 rules, by creating a subpart for 37/42 GHz spectrum. Part 27 was established for the 2305-2320 MHz and 2345-2360 MHz bands,⁷⁷ and has since been applied to the Upper and Lower 700 MHz bands,⁷⁸ as well as to the Advanced Wireless Services.⁷⁹ Part 27 differs from rule parts applicable to more traditional services in that it does not attempt to provide a comprehensive set of licensing and operating rules for the spectrum. Instead, for each frequency band within its purview, Part 27 defines permissible uses and any limitations thereon, sets out technical limitations necessary to prevent cognizable interference, and specifies basic licensing requirements.⁸⁰ We generally seek comment on the advantages and disadvantages of extending our Part 27 framework to the 37/42 GHz bands or to portions of the bands.

29. In the alternative, commenters should address the possibility of a Part 101 framework where we would also propose to adopt a geographic area licensing scheme and permit mobile, point-to-point, and point-to-multipoint operations in the 37/42 GHz bands, for the same reasons that we permit them in the 39 GHz band.⁸¹ There, the Commission did not want to develop a regulatory framework that would hamper further growth and development of the nascent 39 GHz service.⁸² Moreover, there was no evidence in the record that point-to-point and point-to-multipoint operations are inherently incompatible in the same band or licensing area, if licenses were issued on the basis of geographic areas.⁸³ We inquire whether it would serve the public interest to afford 37/42 GHz licensees similar flexibility under Part 101 in the design of their systems to respond readily to consumer demand for their services, allowing the marketplace to dictate the best uses for this spectrum. We seek comment on the extent to which allowing point-to-multipoint operations could stimulate creative technology development and facilitate investment therein.⁸⁴ While technology to support mobile operations may not be available at present, permitting such flexibility could enable providers to modify their offerings quickly and efficiently to provide the services that consumers demand when technology makes it possible.⁸⁵ Thus, providers could be better positioned to respond quickly to the dictates of the marketplace.⁸⁶ Such flexibility under Part 101 could promote competition by increasing both the diversity of potential service offerings and the number of providers that can offer any service.⁸⁷ We seek comment on these issues.

30. If commenters disagree with our proposals to permit a licensee to use this spectrum for

⁷⁷ Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service (WCS), GN Docket No. 96-228, *Report and Order*, 12 FCC Rcd 10785 (1997) ("*Part 27 Report and Order*").

⁷⁸ See 47 C.F.R. § 27.5(b).

⁷⁹ See *AWS Third Report and Order*, *supra* note 75.

⁸⁰ Licensees of Part 27 spectrum must look to other parts of the Commission's rules for other applicable licensing and operating rules (to the extent they do not conflict with the specific provisions of Part 27), depending on the particular services they actually offer. See 47 C.F.R. § 27.3.

⁸¹ See *Report and Order and Second NPRM* at 18,613 ¶ 20.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ See *Policy Statement*, 14 FCC Rcd at 19,870 ¶ 7.

⁸⁵ See *Report and Order and Second NPRM*, 12 FCC Rcd at 18,614-15 ¶¶ 21-25.

⁸⁶ *Id.*

⁸⁷ *Id.*

flexible use, we seek comment on what rule provisions should be adopted in light of the services that may be offered in the 37/42 GHz bands. Commenters should consider the extent to which, and under what conditions, allowing both point-to-point and point-to-multipoint operations in the 37/42 GHz bands would cause any more harmful interference than only allowing point-to-point operations, if proper coordination were done with both FS and FSS operations. Further, they should consider to what extent, if any, permitting point-to-multipoint use would impact investment in communications services and systems, or in technology development. Similarly, we seek comment on whether and to what extent we should permit mobile operations in the 37/42 GHz bands. As noted above,⁸⁸ we seek comment on whether or not such operations would be feasible if we were to adopt a 70/80/90 GHz-type licensing approach.⁸⁹

C. Licensing Rules

31. If we adopt a geographic-area licensing approach, we propose to apply to the 37/42 GHz bands the same licensing rules that pertain to the 39 GHz band, i.e., to grant area-wide licenses with renewal based upon substantial service. Accordingly, we propose the following rules related to eligibility, license term, performance requirements, spectrum aggregation, and technical requirements. We seek comment on these proposals, but we also invite comment on alternative requirements that might be more appropriate, particularly if we were to adopt a regulatory framework like the one we have adopted for the 70/80/90 GHz bands.

1. Eligibility

32. Background. In the *First NPRM and Order*, the Commission tentatively concluded that no eligibility criteria (such as demonstrating a need for multiple service points or transmission paths) were needed for the 37.0-38.6 GHz band, because the use of competitive bidding to resolve mutually exclusive applications would ferret out applicants who were financially unqualified or engaging in speculation.⁹⁰ In the *Report and Order and Second NPRM*, the Commission retained open eligibility for 39 GHz spectrum, rather than impose restrictions on incumbent local exchange carriers (“LECs”) as a safeguard against potential anticompetitive abuses.⁹¹ The Commission also declined to impose eligibility restrictions in the *70/80/90 GHz Report and Order*.⁹²

33. Discussion. The use of eligibility restrictions can be an effective tool to ensure that spectrum does not become concentrated in the hands of any one licensee. In addressing the issue of whether to impose eligibility restrictions, we inquire whether open eligibility poses a significant likelihood of substantial competitive harm in specific markets, and, if so, whether eligibility restrictions are an effective way to address that harm.⁹³ An open eligibility approach would result in reliance on market forces to guide license assignment absent a compelling showing that regulatory intervention to exclude potential participants is necessary. Such an approach may be appropriate here because it best comports with our statutory guidance. When granting the Commission authority to auction spectrum licenses for wireless services, Congress

⁸⁸ Paragraph 30, *supra*.

⁸⁹ *See id.* at 18,603 ¶ 3, 18,616 ¶ 26.

⁹⁰ *First NPRM and Order*, 11 FCC Rcd at 4,957-56 ¶ 97.

⁹¹ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,619-20 ¶¶ 32-33.

⁹² *70/80/90 GHz Report and Order*, ¶ 70.

⁹³ *Report and Order and Second NPRM*, 12 FCC Rcd at 18619 ¶ 32.

acknowledged our authority in Section 309(j)(3) "to [specify] eligibility and other characteristics of such licenses."⁹⁴ However, Congress specifically directed that we exercise that authority so as to "promot[e] . . . economic opportunity and competition."⁹⁵ Congress also emphasized this pro-competitive policy in Section 257, where it articulated a "national policy" in favor of "vigorous economic competition" and the elimination of barriers to market entry by a new generation of telecommunications providers.⁹⁶ This approach also would be consistent with our analysis in the *LMDS Second Report and Order*.⁹⁷ Finally, implementation of this approach would also be consistent with the Court's treatment of eligibility issues in *Cincinnati Bell*. In that decision, the Court looked to statistical data and general economic theory as support for predictive judgments by the Commission such as that eligibility restrictions are required.⁹⁸

34. In the 39 GHz proceeding, commenters generally supported the Commission's proposal to allow open eligibility.⁹⁹ However, two entities argued in favor of eligibility restrictions for incumbent LECs, in order to prevent these entities from obtaining all of the desirable channel blocks in a given market,¹⁰⁰ to prevent incumbent LECs from frustrating viable alternatives for deployment of competitive local telecommunications services¹⁰¹ and to ensure an opportunity for competitive local exchange carriers ("CLECs") to obtain licenses.¹⁰² The Commission determined that it was unlikely that substantial anticompetitive effects would result from LEC eligibility because an increase in LEC services other than those provided in local exchange markets, such as point-to-point backhaul and backbone transmission, would not diminish the generally competitive environment in which those services were then available.¹⁰³ Second, even presuming that 39 GHz licenses would enable effective provision of services that can compete with local exchange service, such as wireless local loop, the Commission determined that incumbent LECs should have little or no incentive to acquire those licenses with the anticompetitive intent

⁹⁴ 47 U.S.C. § 309(j)(3).

⁹⁵ *Id.*

⁹⁶ 47 U.S.C. § 257.

⁹⁷ Rulemaking To Amend Parts 1, 2, 21, and 25 of the Commission's Rules To Redesignate the 27.5-29.5 GHz Frequency Band, To Reallocate the 29.5-30.0 GHz Frequency Band, To Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, Petitions for Reconsideration of the Denial of Applications for Waiver of the Commission's Common Carrier Point-to-Point Microwave Radio Service Rules, CC Docket No. 92-297, Suite 12 Group Petition for Pioneer Preference, PP-22, *Second Report and Order, Order on Reconsideration, and Fifth Notice of Proposed Rulemaking*, FCC 97-82, 12 FCC Rcd 12545, 12616 ¶ 160 (1997) (*LMDS Second Report and Order*), proposing Subpart L of Part 101 of the Commission's Rules, 47 C.F.R. §§ 101.1001-1112; *aff'd*, *Melcher v. FCC*, 134 F.3d (C.A.D.C. 1998); Erratum, released Apr. 7, 1997 ("*First Erratum*"); Erratum, released May 1, 1997 ("*Second Erratum*"); *Order on Reconsideration*, CC Docket No. 92-297, 12 FCC Rcd 6424 (1997) ("*First Reconsideration*"). We believe it is likely that the 37/42 GHz bands will be used for the same kinds of services that are provided by LMDS operators, i.e., backhaul services for carriers and service to large or medium-sized business customers. Such services are generally exposed to a significant amount of competition.

⁹⁸ *Cincinnati Bell Tel. Co. v. FCC*, 69 F.3d 752, 760 (6th Cir. 1995) ("*Cincinnati Bell*").

⁹⁹ *See, e.g.*, WinStar Comments at 36-37.

¹⁰⁰ Association for Local Telecommunications Services (ALTS) Comments at 2.

¹⁰¹ BizTel Comments at 21.

¹⁰² Association for Local Telecommunications Services (ALTS) Comments at 2.

¹⁰³ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,619 ¶¶ 32-33.

of foreclosing entry by other firms and preserving market power.¹⁰⁴ The Commission found that an incumbent strategy of preserving expected future profits by buying 39 GHz licenses could not succeed because of the numerous other sources of actual and potential competition.¹⁰⁵ As noted *supra* in paragraph 10, we have concluded that it would be appropriate to adopt parallel service rules for the 37/42 GHz and 39 GHz bands because of the proximity, similarity in anticipated uses and propagation characteristics of the bands, if we decide to pursue a geographic-area licensing approach for the 37/42 GHz bands. Given the similarities between the two bands, we believe that the same eligibility criteria should apply in both bands. For the same reasons why we concluded that open eligibility was appropriate for the 39 GHz band, we tentatively conclude that open eligibility is also appropriate for the 37/42 GHz spectrum. We seek comment on the extent to which the same factors that apply to the 39 GHz band might also apply to 37/42 GHz spectrum, and whether or not open eligibility is appropriate for the 37/42 GHz spectrum.

2. Performance Requirements and Renewal Expectancy

35. Background. In the *First NPRM and Order*, the Commission sought comment on appropriate build-out requirements for geographic licensees.¹⁰⁶ At that time, the Commission established the substantial service requirement for 39 GHz licensees, to assess meaningful service through a measure that was not based on population or geographic metrics.¹⁰⁷ We defined substantial service as “a service that is sound, favorable, and substantially above a level of mediocre service which might minimally warrant renewal.”¹⁰⁸ The Commission established substantial service for circumstances in which more flexible performance requirements, rather than fixed benchmarks, would more likely result in the efficient use of spectrum and the provision of service to rural, remote, and insular areas.¹⁰⁹ The Commission did not adopt a more specific standard because, given the variety of services that 39 GHz licensees could provide, an inflexible performance requirement might impair innovation and unnecessarily limit the types of service offerings.¹¹⁰ The Commission sought to avoid this pitfall by permitting licensees to make a showing tailored to their particular type of operation.¹¹¹ In addition, the Commission provided a “safe harbor” example of a substantial service showing as “four links per million population within a service area for a point-to-point licensee.”¹¹² The Commission also found that this approach satisfied the dictates of Section

¹⁰⁴ *Id.*

¹⁰⁵ For example, sources of actual or potential competition include Internet access and cable headend applications. *Id.* at 18,607 ¶ 5.

¹⁰⁶ *First NPRM and Order*, 11 FCC Rcd at 4,976 ¶ 98.

¹⁰⁷ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,622-26 ¶¶ 39-50.

¹⁰⁸ 47 C.F.R. § 22.940(a)(1)(i). See also *LMDS Second Report and Order*, 12 FCC Rcd at 12,660 ¶ 269; Amendment of the Commission’s Rules to Establish Part 27, the Wireless Communications Service, GN Docket No. 96-228, *Report and Order*, 12 FCC Rcd 10,785, 10,843-44 (1997) (“*WCS Report and Order*”); Amendment of Part 95 of the Commission’s Rules to Provide Regulatory Flexibility in the 218-219 MHz Service, WT Docket No. 98-169, *Report and Order and Memorandum Opinion and Order*, 15 FCC Rcd 1,497, 1,537-38 (1999) (“*218-219 MHz Service Report and Order*”).

¹⁰⁹ See, e.g., *WCS Report and Order*, 12 FCC Rcd at 10,843 ¶¶ 111-112; Amendment of the Commission’s Rules to Establish New Personal Communications Services, *Memorandum and Order*, GEN Docket No. 90-314, 9 FCC Rcd 4,957, 5,018-20 ¶¶ 154-58 (1994) (“*PCS MO&O*”).

¹¹⁰ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,623 ¶ 42.

¹¹¹ *Id.*

¹¹² *Report and Order and Second NPRM*, 12 FCC Rcd at 18,624 ¶ 46. We note that, although the Commission did not use the specific term of “safe harbor” in the 39 GHz band context, we believe the Commission intended for this

(continued...)

309(j)(4)(B) of the Communications Act,¹¹³ which requires us to propose effective safeguards and performance requirements in connection with any competitive bidding system, because the licensee's willingness to pay market value for its license at auction demonstrates its willingness to put the license to its best use.¹¹⁴ In the *70/80/90 GHz Report and Order*, the Commission did not adopt any performance requirements other than its requirement that a licensee construct a link within 12 months after registering it and operate at a bit rate equal to or greater than its bandwidth, with any unconstructed link to be removed from the database in accordance with Section 101.65.¹¹⁵

36. Neither the Part 21 rules nor the Part 101 rules directly provided for a renewal expectancy at the time of license expiration. However, in 1997, in the *Report and Order and Second NPRM*, the Commission determined that, in order to promote flexibility in system design and market development, it would combine the performance standards required for build-out with the requirements for renewal expectancy into one showing of substantial service at the time of license renewal, in accordance with Section 101.17(a).¹¹⁶

37. In the *70/80/90 GHz Report and Order*, the Commission followed a different approach consistent with its link-by-link registration framework. It adopted a requirement that a licensee construct a link within 12 months after registering it with a third-party database manager.¹¹⁷ The database manager is required to withdraw unconstructed links from the database after 12 months, and forfeiture and termination of a link is handled in accordance with Section 101.65 of our rules.¹¹⁸

38. Discussion. Based on the record thus far in this proceeding, we are inclined to believe that the substantial service standard would serve the public interest if we decide to license the 37/42 GHz bands by EAs.¹¹⁹ We propose to conduct performance reviews at the completion of licensees' ten-year license terms, as we do with respect to the 39 GHz band.¹²⁰ However, we also seek comment on the alternative possibility of conducting such reviews five years into the license period and ten years into the license period, as we do with respect to Multichannel Video Distribution and Data Services.¹²¹ A link-by-link

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example to serve, in fact, as a "safe harbor." This determination is consistent with similar examples the Commission has provided in other services. See Amendments to Parts 1, 2, 87, and 101 of the Commission's Rules to License Fixed Services at 24 GHz, WT Docket No. 99-327, *Report and Order*, 15 FCC Rcd 16,934, 16,951-52 ¶ 38 (2000) (*24 GHz Report and Order*); *218-219 MHz Service Report and Order*, 15 FCC Rcd at 1,537-38; Amendment of the Commission's Rules Concerning Maritime Communications, PR Docket No. 92-257, *Third Report and Order and Memorandum Opinion and Order*, 13 FCC Rcd 19,853, 19,870 (1998); *LMDS Second Report and Order*, 12 FCC Rcd at 12,660-61; *WCS Report and Order*, 12 FCC Rcd at 10,843-44 ¶ 113.

¹¹³ 47 U.S.C. § 309(j)(4)(B).

¹¹⁴ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,623 ¶ 41.

¹¹⁵ *Id.* at ¶ 80; 47 C.F.R. § 101.147(z)(3).

¹¹⁶ See *Report and Order and Second NPRM*, 12 FCC Rcd at 18,625 ¶ 47.

¹¹⁷ *70/80/90 GHz Report and Order* at ¶ 80.

¹¹⁸ *Id.*, citing 47 C.F.R. § 101.65.

¹¹⁹ See the comments cited at note 88 of the *Report and Order and Second NPRM*. The commenters supported the use of the substantial service standard.

¹²⁰ See *supra* note 116 and accompanying discussion.

¹²¹ See 47 C.F.R. § 101.1413 (West 2004 rev.).

construction deadline would probably be more appropriate if we adopt a 70/80/90 GHz-type regulatory framework. We propose to adopt a renewal expectancy if the licensee meets whatever performance standard we adopt. This would be consistent with the approach that we have taken in other services.¹²²

39. In addition to being consistent with the approach used in other wireless services, we believe that the substantial service standard is sufficiently flexible to foster expeditious development and deployment of diverse systems and ultimately would create competition among the service providers if the band is licensed by geographic areas. Given the similarities in propagation characteristics and proposed permitted uses of the 37/42 GHz and 39 GHz bands, we believe that it would be appropriate to apply the same "safe harbors" to both bands. We therefore propose the same safe harbor example here that we presented in the 39 GHz proceeding. Thus, a safe harbor for a 37/42 GHz EA licensee might consist of a showing of four links per million population within a service area.¹²³ We invite recommendations for alternative or additional safe harbors that take into account other variations in local conditions, such as population density. For each such recommendation, we invite commenters to indicate whether the safe harbor involved should provide more than a rebuttable presumption of renewal. In order to determine whether an EA licensee has provided substantial service at the end of the license term, we propose to consider factors such as: i) whether the licensee's operations serve niche markets or focus on serving populations outside of areas served by other licensees; ii) whether the licensee's operations serve populations with limited access to telecommunications services; and iii) a demonstration of service to a significant portion of the population or land area of the licensed area.¹²⁴ We emphasize that this list need not be exhaustive and that licensees could be permitted to satisfy the substantial service requirement in other ways. Hence, we propose to review licensees' showings on a case-by-case basis. If a licensee fails to meet the performance requirement, the subject license would not be renewed. We seek comment on these proposals and on alternative performance requirements that might be more appropriate if we adopt a link-by-link licensing approach, such as the 12-month construction requirement adopted in the *70/80/90 GHz Report and Order*.¹²⁵

40. We propose that, in order to claim a renewal expectancy under the geographic licensing framework, the geographic area licensee be required to provide the Commission with: 1) a description of its current service in terms of geographic coverage and population served or links installed and a description of how the service complies with the substantial service requirement; and 2) copies of any Commission Orders finding the licensee to have violated the Communications Act or any Commission rule or policy, and a list of any pending proceedings that relate to any matter described by the requirements for the renewal expectancy. We believe that these requirements would be in the public interest because these showings would ensure that the licensee operated its facilities in compliance with the Commission's rules and has the requisite qualifications to be a Commission licensee.

41. If we adopt a link-by-link registration approach, we propose to follow the approach adopted in the *70/80/90 GHz Report and Order*, i.e., that other licensed entities would be permitted to register and operate links in the same locations after the earlier entry is removed from the database. We propose that licensees links' be removed from the database using criteria like those that Section 101.65 applies to site licensees, i.e., the link registration would be removed from the database (i) immediately if the licensee provided notice that it was discontinuing service permanently on the link, (ii) upon the voluntary removal

¹²² See, e.g., *Report and Order and Second NPRM*, 12 FCC Rcd at 18,623.

¹²³ See *id.* at 18,625 ¶ 46.

¹²⁴ See *LMDS Second Report and Order*, 12 FCC Rcd at 12,660 ¶ 270; *WCS Report and Order*, 12 FCC Rcd at 10,843-44; *218-219 MHz Service Report and Order*, 15 FCC Rcd at 1,538 ¶ 70.

¹²⁵ See *70/80/90 GHz Report and Order* at ¶ 80.

or alteration of the facilities, so as to render the station not operational for a period of 30 days or more, or (iii) upon the station's discontinuing service for a period of one year.¹²⁶ However, we propose that the licensee be allowed to retain its nationwide non-exclusive license whether or not one, more, or even all of its links are removed from the database. We seek comment on these proposals.

3. License Term

42. *Background.* Historically, 39 GHz licensees authorized to provide service before August 1, 1996, received a five-year, fixed license term,¹²⁷ and licensees authorized after August 1, 1996, received a ten-year, fixed license term.¹²⁸ Moreover, the Commission eliminated a requirement for 39 GHz licensees to file for renewal eighteen months before the license expiration date¹²⁹ and adopted a requirement for 39 GHz licensees to file for renewal of station authorizations no later than the license expiration date and no earlier than ninety days before the expiration date.¹³⁰ In the *70/80/90 GHz Report and Order*, the Commission adopted a ten-year license term.¹³¹

43. *Discussion.* Those who commented on the issue of license term favored a ten-year license period for 39 GHz licensees.¹³² Moreover, we have made significant efforts to establish consistency and promote regulatory parity with respect to policies governing similar wireless services.¹³³ In other contexts, we have recognized the advantages of a ten-year license term.¹³⁴ Based on the record in this proceeding, we propose to adopt a ten-year license term.

4. Partitioning, Disaggregation, and Aggregation

44. *Background.* In the *First NPRM and Order*, the Commission sought comment on partitioning for rural telephone companies ("rural telco"), and on whether to broaden the scope of partitioning to include all applicants.¹³⁵ Most commenters supported permitting partitioning for rural telcos, as well as partitioning and disaggregation in the band generally.¹³⁶ In considering this issue in the *Report and Order*, the Commission concluded that it should make partitioning and disaggregation available to all 39 GHz licensees, because these capabilities would promote flexibility both in system design and service, and encourage new entrants into the market by creating smaller, less capital-intensive service areas that may be

¹²⁶ See 47 C.F.R. § 101.65.

¹²⁷ Former 47 C.F.R. § 21.45.

¹²⁸ 47 C.F.R. § 101.67.

¹²⁹ Former 47 C.F.R. § 101.15.

¹³⁰ 47 C.F.R. § 1.949.

¹³¹ *70/80/90 GHz Report and Order* at ¶ 77.

¹³² See, e.g., WinStar Comments at 36; Commco Comments at 11; GEC Comments at 6.

¹³³ See, e.g., *LMDS Second Report and Order*, 12 FCC Rcd at 12,656 ¶ 59; *Report and Order and Second NPRM*, 12 FCC Rcd at 18,620-21 ¶ 36.

¹³⁴ See, e.g., *Report and Order and Second NPRM*, 12 FCC Rcd at 18,623.

¹³⁵ See *First NPRM and Order*, 11 FCC Rcd at 4,972-73 ¶ 89-90.

¹³⁶ AT&T Wireless Comments at 10; DCR Comments at 2-6, 8; GTE Comments at 5; Pacific Comments at 6; U S West Reply at 6.

more accessible to small entities.¹³⁷

45. In the *70/80/90 GHz Report and Order*, the Commission noted that the use of partitioning and disaggregation is pertinent only in geographic licensing settings, where the licensee has exclusive use of a particular area. It determined that its decision to authorize the 70/80/90 GHz bands on the basis of nationwide non-exclusive licensing obviated the need for partitioning and disaggregation.¹³⁸

46. In the *First NPRM and Order*, the Commission sought comment on whether to adopt a limit on aggregation of channel blocks in the combined 37.0-38.6 GHz and 39 GHz bands within a single licensing area, in order to ensure that there are an adequate number of licenses available to meet the needs of broadband PCS licensees, as well as the needs of other competitors in the wireless marketplace.¹³⁹ Commenters generally opposed a spectrum aggregation limit due to the potential for multiple providers utilizing a variety of wireless services.¹⁴⁰ In the *Report and Order and Second NPRM*, the Commission decided against adopting a spectrum aggregation limit for the 39 GHz band.¹⁴¹ The Commission reasoned that 39 GHz licensees participate in a number of broad markets consisting of a host of short-range fixed communications provided by many operators who employ a range of different, but substitutable technologies, both radio and wire. The Commission did not see a need to guarantee a particular number of 39 GHz competitors to create competition within the 39 GHz band.¹⁴² Moreover, the Commission noted that there was no evidence that the 1400 megahertz of spectrum in the 39 GHz band was particularly important for the creation of competition in the two markets where market power still exists – local telecommunications services and multi-channel video program delivery.¹⁴³ The Commission concluded that an aggregation limit was not needed in order to foster competition in these two markets.¹⁴⁴ The Commission also concluded that permitting aggregation of channels might benefit the public through efficiencies and flexibility in the types of services this would allow, and might provide for lower costs or greater ability to compete with established service providers with large transmission capacity.¹⁴⁵

47. Discussion. If we adopt a geographic area licensing framework, we propose to permit 37/42 GHz licensees to partition and disaggregate spectrum freely within those bands. We inquire to what extent we should require licensees to preserve any channel pairs that we establish.¹⁴⁶ There will be no need for partitioning and disaggregation if we adopt a link-by-link registration approach.

48. For the geographic area approach, we propose to allow partitioning of any licensee-defined

¹³⁷ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,635-36 ¶¶ 71-73; see also *Memorandum Opinion and Order*, 14 FCC Rcd at 12,460-61 ¶¶ 61-63.

¹³⁸ *70/80/90 GHz Report and Order* at ¶ 87.

¹³⁹ *First NPRM and Order*, 11 FCC Rcd at 4983 ¶ 112.

¹⁴⁰ See, e.g., ART Comments at 27-38; Biztel Comments at 3, 11-14; Columbia Comments at 2-3; Milliwave Comments at 31-32.

¹⁴¹ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,626 ¶ 52.

¹⁴² *Id.* at 18,626-27 ¶¶ 52-55.

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.* at 18,627 ¶¶ 55.

¹⁴⁶ See paras. 47-68, *infra*.

service area, disaggregation of any amount of spectrum,¹⁴⁷ and combined partitioning and disaggregation. We propose to allow the 37/42 GHz band licensees to partition and/or disaggregate in either of two ways: (1) entities could form bidding consortia to participate in competitive bidding, and then partition or disaggregate the licenses won among consortia participants after the license grant; or (2) entities could acquire partitioned or disaggregated 37/42 GHz licenses from other licensees through private negotiation and agreement.

49. We consider partitioning and disaggregation effectively to be types of assignments, which would, therefore, require prior approval by the Commission. We would require a licensee planning to partition or disaggregate its license to file an assignment application, along with the partitionee and/or disaggregatee, to designate the specific areas and frequencies. For geographic area licenses in other bands, the Commission does not require individual licenses for each facility. After we grant either the original license or assignments for partitioning and/or disaggregation, and provided the licensees comply with all other rules, licensees may build out anywhere within their defined service areas without further authority from the Commission. Entities that receive partitioned or disaggregated licenses would hold their licenses for the remainder of the original licensee's license term, and would qualify for renewal expectancy if they provide substantial service and comply with the Commission's rules and policies and the Communications Act. In authorizing partitioning and disaggregation, we propose to follow these existing license assignment procedures.¹⁴⁸ We would permit parties with partitioning agreements to choose between two options for satisfying the performance requirements: (a) the parties may agree to meet the performance requirements for their respective portions of the service area,¹⁴⁹ or (b) the original licensee may certify that it has met or will meet the performance requirements for the entire market.¹⁵⁰ We believe that these requirements would prevent licensees from using partitioning and disaggregation to circumvent our rules governing performance requirements. Our Part 1 unjust enrichment provisions would govern partitioning and disaggregation arrangements involving licenses authorized to small businesses afforded a bidding credit, including those that later elect to partition or disaggregate their licenses to an entity that is not eligible for the same bidding credit.¹⁵¹

50. We also propose that 37/42 GHz licensees be allowed to aggregate their spectrum in order to provide greater flexibility of service. In some services, the Commission has permitted aggregation by implication, by not specifically prohibiting it. In other services, the Commission has adopted a rule expressly permitting aggregation.¹⁵² We believe that, in the interest of regulatory certainty, the latter is the better approach. Therefore, we propose to adopt a rule specifically permitting spectrum aggregation if we

¹⁴⁷ We propose to require licensees to maintain any channel pairs that we might establish for the 37/42 GHz bands when the licensees choose to disaggregate any of their licenses in this band, as we do for 39 GHz licensees. *See Report and Order and Second NPRM*, 12 FCC Rcd at 18,635 ¶ 72, and as herein proposed for application to the 37/42 GHz bands and codification at 47 C.F.R. § 101.149(e). We have not decided whether to adopt a channel plan. *See* ¶¶ 57-68, *infra*. We reserve discretion, in the event that we propose a channel plan for the 37/42 GHz bands, to require disaggregation of that spectrum by channel pairs.

¹⁴⁸ *See* 47 C.F.R. § 1.948.

¹⁴⁹ If either licensee failed to meet its substantial showing requirement, only the non-performing operator's license would not be renewed.

¹⁵⁰ If the original licensee fails to meet the substantial service standard for the entire market, the subject license would be cancelled automatically and would revert to the Commission. *See* 47 C.F.R. §§ 1.955(a)(2), 1.948, 101.56.

¹⁵¹ *See* Amendment of Part 1 of the Commission's Rules – Competitive Bidding, *Third Report and Order and Second Further Notice of Proposed Rule Making*, WT Docket No. 97-82, 13 FCC Rcd 374, 405 (1997); 47 C.F.R. § 1.2111.

¹⁵² *See, e.g.*, 47 C.F.R. § 101.535(b)(1).

decide to adopt a geographic area licensing structure.

51. As noted previously, commenters opposed a spectrum aggregation limit. Thus, we incline toward the view that the same reasoning that the Commission used to permit unlimited aggregation in the 39 GHz band also should apply to the 37/42 GHz bands. Accordingly, we propose not to limit aggregation of channel blocks in the 37/42 GHz bands, or in the combined 37/42 GHz and 39 GHz bands. We seek comment on all of these proposals.

5. Regulatory Status

52. In the *First NPRM and Order*, the Commission requested comment on whether to allow a new licensee to use the spectrum for private use and also to provide a common carrier service.¹⁵³ We did not receive any comments on this issue. The Commission concluded in the *Report and Order and Second NPRM* that it should permit licensees in the 39 GHz band to serve either as a common carrier or as a private licensee.¹⁵⁴ It reasoned that this approach would promote economic efficiencies by reducing construction and operating costs associated with having to provide separate facilities.¹⁵⁵ We tentatively conclude that the same benefits could apply to the 37/42 GHz bands, and, accordingly, we propose the same approach here. We propose to allow those licensees who select common carrier regulatory status to provide private service, and those licensees who select private service regulatory status to share the use of their facilities on a non-profit basis or offer service on a for-profit, private carrier basis¹⁵⁶ subject to Section 101.135 of our rules.¹⁵⁷ We also propose to allow licensees who select private regulatory status to lease excess capacity to common carriers in accordance with Part 101.603 of our rules.¹⁵⁸ Licensees would elect the status of the services they wish to offer and would be governed by the rules applicable to their status.¹⁵⁹ The Commission tentatively concludes that this approach would promote economic efficiencies by reducing construction and operating costs associated with having to provide separate facilities.¹⁶⁰ We seek comment on these proposals.

6. Foreign Ownership Restrictions

53. Background. Foreign ownership and citizenship requirements for 37/42 GHz band licensees are set out in Sections 310(a) and 310(b) of the Communications Act, which restrict the issuance of licenses to certain applicants.¹⁶¹ Section 310(a) prohibits any foreign government or representative from holding a station license. Section 310(b) prohibits certain defined foreign ownership interests in common

¹⁵³ *First NPRM and Order*, 11 FCC Rcd at 4,977 ¶ 99.

¹⁵⁴ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,636 ¶ 76.

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ 47 C.F.R. § 101.135.

¹⁵⁸ 47 C.F.R. § 101.603; *see* Amendment of Part 101 of the Commission's Rules to Streamline Processing of Microwave Applications in the Wireless Telecommunications Services, *Report and Order*, WT Docket No. 00-19, 17 FCC Rcd 15,040, 15,048 ¶ 12 (2002).

¹⁵⁹ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,636 ¶ 76.

¹⁶⁰ *Id.*

¹⁶¹ *See* 47 U.S.C. §§ 310(a), (b).

carrier licenses. Section 101.7(a) of the Commission's rules implements Section 310 of the Act¹⁶² and prohibits the granting of any license to a foreign government or its representative.¹⁶³ Section 101.7(b) prohibits the grant of a common carrier license to an applicant who fails any of the four citizenship requirements listed therein.¹⁶⁴

54. Discussion. We propose to apply Section 101.7 of our rules to the 37/42 GHz band. As the Commission has done in the case of Multipoint Distribution Service ("MDS"), satellite services, Local Multipoint Distribution Service ("LMDS") and the 24 GHz proceeding, we would require an applicant electing non-common carrier status also to submit the same information that common carrier applicants must submit in order to address the alien ownership restrictions under Section 310(b) of the Act.¹⁶⁵ Because we propose that 37/42 GHz band licensees be permitted to offer both common and non-common carrier services, we believe such a requirement will be necessary to enable us to ascertain compliance of all 37/42 GHz band licensees with the alien ownership restrictions set out in Section 101.7 of our rules. This information could be used whenever the licensee changes to common carrier status without imposing an additional filing requirement when the licensee makes the change.¹⁶⁶ We note, moreover, that we would not disqualify an applicant requesting authorization exclusively to provide non-common carrier service from obtaining a 37/42 GHz band license solely on the basis that its citizenship information would disqualify it from receiving a common carrier license.

55. Accordingly, we propose to require common carrier and non-common carrier licensees in the 37/42 GHz bands to provide the alien ownership information requested by FCC Form 601. We also propose to require common carriers and non-common carriers to amend their FCC Form 602 to reflect any changes in foreign ownership information. We seek comment on these proposals.

D. Technical Rules

56. In general, we believe that the technical rules that apply to the 39 GHz band would be appropriate for the 37/42 GHz bands if we decide to adopt a geographic area licensing approach. It would be necessary to develop a different set of standards if we decide to follow the 70/80/90 GHz model. Because the physical characteristics of the 70/80/90 GHz and 37/42 GHz bands differ significantly from each other, it would not be appropriate to apply the 70/80/90 GHz technical rules to the 37/42 GHz bands.¹⁶⁷ We seek comment on these general conclusions, and specific advice with respect to technical

¹⁶² *NPRM*, 14 FCC Rcd at 19,277 ¶¶ 23-24.

¹⁶³ 47 C.F.R. § 101.7(a).

¹⁶⁴ 47 C.F.R. § 101.7(b).

¹⁶⁵ See Revisions to Part 21 of the Commission's Rules regarding the Multipoint Distribution Service, *Report and Order*, CC Docket No. 86-179, 2 FCC Rcd at 4,253 ¶ 16 ("MDS Report and Order"); Streamlining the Commission's Rules and Regulations for Satellite Application and Licensing Procedures, IB Docket No. 95-117, *Report and Order*, 11 FCC Rcd 21,581, 21599 ¶ 43 (1996); *LMDS Second Report and Order*, 12 FCC Rcd at 12,651 ¶ 243; *24 GHz Report and Order*, 15 FCC Rcd at 16,957-58 ¶¶ 52-58.

¹⁶⁶ We note, however, that to the extent that a licensee's decision to change its regulatory status raises issues with respect to that licensee exceeding the benchmark contained in 47 C.F.R. § 310(b)(4), the rules require the Commission's prior approval before the licensee can make this change. Rules and Policies on Foreign Participation in the U.S. Telecommunications Market and Market Entry and Regulation of Foreign-Affiliated Entities, *Report and Order and Order on Reconsideration*, IB Docket Nos. 97-142 and 95-22, 12 FCC Rcd 23,891, 23,940-41 ¶¶ 111-118 (1997).

¹⁶⁷ See *70/80/90 GHz Report and Order* at ¶¶ 90-99 (adopting rules for interference protection criteria, frequency tolerance, restrictions on total radiated power, antenna directionality, and RF safety).

rules that would be appropriate if we adopt the 70/80/90 GHz model.

57. For the 39 GHz band, the Commission declined to apply a frequency tolerance standard that determines how accurately a transmitter must stay on its center frequency. It concluded that such a standard was unnecessary in light of the other interference safeguards in our rules, and that it would place detrimental limitations on the development of 39 GHz service.¹⁶⁸ We propose not to adopt a frequency tolerance standard for the 37/42 GHz bands if we adopt a geographic area licensing framework, based on the same reasoning that we followed when establishing the 39 GHz rules. Moreover, we believe that the existing out-of-band emission requirements contained in Section 101.111 of our rules would also be sufficient to prevent harmful interference to licensees in adjacent areas and thus further obviate the need for a frequency tolerance standard in the 37/42 GHz bands.¹⁶⁹ That emission rule requires that the frequencies at the outer edges of an assigned channel or the edges of aggregated channels must be significantly reduced such that interference to adjacent channels is unlikely.

58. With respect to setting a spectrum efficiency standard, many commenters argued that there is no reason to impose spectrum efficiency rules,¹⁷⁰ but others supported a minimum efficiency test.¹⁷¹ The Commission concluded that setting a mandatory spectrum efficiency standard in the 39 GHz band could harm the development and growth of the 39 GHz service by imposing costs in excess of any benefit, particularly given that such a rule would require updating as the technology advanced.¹⁷² The Commission also noted that as a general matter, whenever spectrum is exclusively assigned and licensees cannot expect to obtain additional spectrum at a price significantly below its market value, a mandatory efficiency standard is unnecessary and licensees can be expected to invest voluntarily in efficient technology up to the optimal economic level, so a mandatory standard either would have no effect (if it is at or below the voluntary level) or would impose unjustified costs that exceed any resulting gain.¹⁷³ We tentatively conclude, for the same reasons, that a spectrum efficiency standard in the 37/42 GHz bands would be unnecessary if we adopt a geographic area licensing model, and therefore, do not propose to adopt such a standard under that approach. However, we invite comment on any spectrum efficiency standards that might be appropriate if we adopt a 70/80/80 GHz-style framework or other regulatory structures.

59. In the *Report and Order and Second NPRM*, the Commission proposed to permit licensees to use various types of antennas in the 39 GHz band.¹⁷⁴ The Commission had proposed restrictions on antenna use in the *First NPRM and Order*,¹⁷⁵ but commenters generally averred that requiring licensees to

¹⁶⁸ *Id.* at 18,629 ¶ 59-60.

¹⁶⁹ *Id.* at 18,631 ¶ 63.

¹⁷⁰ WinStar Comments at 57; ART Comments at 20; Columbia Comments at 16; Commco Comments at 11.

¹⁷¹ For example, INNOVA Corporation ("INNOVA") supports the Commission's minimum digital efficiency of 1 bps/Hz for all those channel blocks which is available for use for broadband PCS or cellular services. INNOVA Comments at 4. Digital Microwave Corporation (DMC) avers that the spectrum efficiency standard set out for microwave transmitters employing digital modulation techniques in the 17.7-19.7 GHz band is preferable and suggests that we extend this standard to the 37 GHz band channels. DMC Comments at 2-3.

¹⁷² *Report and Order and Second NPRM*, 12 FCC Rcd at 18,629 ¶ 60.

¹⁷³ *See id.* at 18,630 ¶ 61.

¹⁷⁴ *See Report and Order and Second NPRM*, 12 FCC Rcd at 18,631-32 ¶ 65; *Memorandum Opinion and Order*, 14 FCC Rcd at 12,458 ¶¶ 55-56 (The Commission clarified the extent of this flexibility).

¹⁷⁵ *First NPRM and Order*, 11 FCC Rcd at 4,987 ¶ 119.

use only Category A antennas is too restrictive.¹⁷⁶ Thus, the Commission concluded that 39 GHz licensees should have the flexibility to employ antennas other than Category A types, because parties were contemplating a variety of system configurations that would require different types of antennas, characteristics of which are incompatible with the Category A standards.¹⁷⁷ The Commission provided that, should the use of an antenna other than a Category A model become the source of an interference problem, it would require that the licensee immediately resolve such interference by replacing the antenna with a Category A model or one with better performance characteristics.¹⁷⁸ Also in the *First NPRM and Order*, the Commission decided to propose a maximum equivalent isotropically radiated power (“EIRP”) of +55 dBW for the 39 GHz band.¹⁷⁹ Commenters generally supported this proposal.¹⁸⁰ The uses of the 39 GHz and 37/42 GHz bands would probably be similar if we issue EA-wide licenses and allow point-to-multipoint operations, which often require antennas with wide patterns. We tentatively conclude that the same flexibility would be appropriate for the 37/42 GHz bands if we issue geographic area licenses. Therefore, we propose a maximum EIRP of +55 dBW for the 37 GHz band if we issue exclusive EA licenses. We seek comment on this proposal and recommendations for alternative approaches, especially with respect to rules that would be appropriate if we adopt a 70/80/90 GHz-style approach.¹⁸¹

E. Band Plan

60. As noted above, we believe that the service rules for the 37/42 GHz bands generally should conform to the rules for the 39 GHz band if we adopt geographic licensing, given the similarity in anticipated uses and propagation characteristics. With regard to some matters, however, differences in spectrum allocations¹⁸² and developments subsequent to the adoption of the 39 GHz rules persuade us to propose different rules and procedures, on which we now seek comment.

61. In the *First NPRM and Order*, the Commission proposed dividing the 37.0-38.6 GHz band into fourteen 50 megahertz paired channels (a total of 1400 megahertz with a 700 megahertz separation between the transmit and receive frequencies) and four 50 MHz unpaired channels (a total of 200 megahertz), with licensees having the discretion to disaggregate their channel blocks as they deem appropriate.¹⁸³ The Commission proposed to place the unpaired channels at the upper end of the 37.0-38.6 GHz band, with the paired channels beginning from the lower end of the band.¹⁸⁴ Most commenters

¹⁷⁶ TIA Equipment Comments at 26; BizTel Comments at 40-43; INNOVA Comments at 3-5; WinStar Comments at 57-63.

¹⁷⁷ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,631-32 ¶ 65; see also *Memorandum Opinion and Order*, 14 FCC Rcd at 12,458 ¶ 56. Category A and B antennas are defined in, 47 C.F.R. § 101.115(c). Generally, Category A antennas are larger, more expensive, and have higher gains and narrower beamwidths than Category B antennas.

¹⁷⁸ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,632 ¶ 66.

¹⁷⁹ *First NPRM and Order*, 11 FCC Rcd at 4,984 ¶ 115.

¹⁸⁰ See, e.g., ALTS Comments at 2; AT&T Wireless Comments at 9; Columbia Comments at 12-15; Microwave Partners Comments at 11; Milliwave Comments at 23-25; WinStar Comments at 57-63.

¹⁸¹ As noted in ¶ 24, *supra*, the Commission adopted technical rules requiring tightly focused “pencil-beam” transmissions in the 70/80/90 GHz bands.

¹⁸² See 36-51 GHz *Second R&O* sections on designation changes and allocation changes.

¹⁸³ *First NPRM and Order*, 11 FCC Rcd at 4,940 ¶ 19. The Commission also proposed to allow licensees to subdivide (and retain the use of) channels in their discretion. *Id.* at ¶ 20.

¹⁸⁴ See Appendix B, Proposed Rules, § 101.147, Option 2.

supported this placement. The Commission tentatively found that the 50 megahertz channel plan would provide for efficient and effective use of the band for point-to-point operations by a variety of potential broadband users, *e.g.*, PCS, cellular, and other commercial and private mobile radio operations.¹⁸⁵ The Commission based this conclusion, in part, on the commonality of that channel plan with the channel plan for the 39 GHz band, which would permit manufacturers to provide lower cost equipment quickly for both bands.¹⁸⁶ The majority of commenters supported this plan.¹⁸⁷

62. Since the Commission began this proceeding, the allocation for the 37/42 GHz band has evolved.¹⁸⁸ For instance, the Commission recently added an FSS allocation to the 37.5-37.6 GHz band but applied specific PFD limits to FSS operations in the entire 37.5-40.0 GHz band, to protect terrestrial FS and other licensees, and required FSS operators to coordinate with Space Research Service (“SRS”) systems in the 37-38 GHz band.¹⁸⁹ Moreover, the Commission adopted criteria to protect the Goldstone, California SRS facility from FSS downlink transmissions.¹⁹⁰ In the “*36-51 Second R&O*,” we stated that we would seek comment in this proceeding on methods to mitigate the potential interference that may be caused by commercial fixed and mobile stations operating near the Goldstone SRS facility.¹⁹¹ We also stated that we would seek comment on whether to adopt a footnote to the Table of Allocations modeled after Footnote US311, which addresses circumstances similar to this situation. Footnote US311 establishes an 80 km (50 mile) radius around the Goldstone SRS facility in which the Commission endeavors to avoid the assignment of frequencies in the 1350-1400 MHz and 4950-4990 MHz bands to stations operating in the fixed and mobile services.¹⁹² If we do adopt a footnote to the Table of Allocations, we propose to place this requirement in Section 101.103 of our rules, as well. We seek comment on this coordination method.¹⁹³

63. The Commission received a letter from NTIA concerning this proceeding.¹⁹⁴ In its letter, NTIA indicates that the frequency bands 37.0-37.5 GHz and 40.0-40.5 GHz were identified in the *Space Exploration Initiative of 1989* for use by space research systems to be implemented in support of US goals to provide a permanent manned presence in Earth orbit (on or near the moon) and to initiate manned

¹⁸⁵ *First NPRM and Order*, 11 FCC Rcd at 4,940 ¶ 19.

¹⁸⁶ *Id.*

¹⁸⁷ *See, e.g.*, ART Comments at 45-47; Altron Comments at 2-3; AT&T Wireless Comments at 3-4; DMC Comments at 2; GEC Comments at 5-6; Milliwave Comments at 7; TIA Equipment Comments at 25; TDS Comments at 4; WinStar Comments at 10-11.

¹⁸⁸ *See supra*, ¶¶ 4-9.

¹⁸⁹ *36-51 Second R&O*, ¶ 39.

¹⁹⁰ *Id.*, ¶ 41; *See also*, Letter from William T. Hatch, Associate Administrator, Office of Spectrum Management, to Bruce Franca, Acting Chief, Office of Engineering and Technology, Federal Communications Commission pp. 1-2 (Aug. 31, 2002).

¹⁹¹ *36-51 Second R&O*, ¶ 41.

¹⁹² 47 C.F.R. § 2.106 n.US311 (2002).

¹⁹³ *See* Section E, beginning at para. 68 *infra* for more details.

¹⁹⁴ *See* letter from Frederick R. Wentland, Associate Administrator, Office of Spectrum Management, NTIA, dated March 24, 2004, to Mr. Edmond J. Thomas, Chief, Office of Engineering and Technology, FCC. (“*NTIA Letter*”).

exploration of the planet Mars.¹⁹⁵ The letter states that WARC 1992 resulted in allocations of these bands for space-to-Earth links in the 37.0-37.5 GHz band and for Earth-to-space links in the 40.0-40.5 GHz band as well as 37-38 GHz for use by space research systems to be implemented in support of Very Long Baseline Interferometry (VLBI) by satellite.¹⁹⁶ The letter further states that when operating manned spacecraft over distances as far removed from Earth as Mars, it might be necessary to combine the received signals simultaneously from more than one receiving site, e.g. Goldstone, CA, and Socorro, NM, in order to achieve mission objectives.¹⁹⁷ For those reasons, NTIA proposes that five sites be protected in addition to Goldstone, California and Green Bank, West Virginia, even though those five sites are not yet operational in these bands.¹⁹⁸ The additional sites that NTIA proposes to protect are located at Guam; Merritt Island, Florida; Wallops Island, Virginia; and White Sands and Socorro, New Mexico.¹⁹⁹ NTIA also indicates that it would accept -130 dBW/m² in any 1 MHz band as the interference protection criteria from non-Federal government terrestrial users in the 37-38 GHz to its earth stations at Goldstone, Socorro, Green Bank, Guam, Merritt Island, and Wallops Island, and White Sands.²⁰⁰ However, the Commission can not determine from NTIA's letter where this criteria is applied, but we assume NTIA meant at the boundary (for example, a circle with a 30 km radius or at the edges of a rectangular area) and not at the actual coordinate.

64. The Commission has also received information in the "*NTIA Letter*" indicating that the Federal government has future requirements for protection of fourteen military sites within a 30 km radius of each site (except for China Lake which is a rectangular area), and that it may have additional locations in the future.²⁰¹ None of these fourteen sites are built or operational, and protecting sites that are not yet operational would be a significant change from the traditional first-in-time policy that we are advocating in these co-primary bands. We propose that these sites are for information only and that they do not require our licensees to protect them until they become operational. The proposed sites are located at: China Lake, CA (actually a rectangular area); San Diego, CA; Nanakuli, HI; Fishers Island, NY; St. Croix, VI; Ft. Irwin, CA; Ft. Carson, CO; Ft. Hood, TX; Ft. Bliss, TX; Yuma Proving Grounds, AZ; Ft. Huachuca, AZ; White Sands Missile Range, NM; Moody Air Force Base, GA; and Hurlburt Air Force Base, FL.²⁰² We discuss these NASA and military sites and concerns further below.

65. Due to the evolution of the 37/42 GHz bands, we are not certain that the industry and public desire to have the same 50 megahertz channel plan as the Commission adopted for the 39 GHz band and proposed for the 37 GHz band, and as we propose herein for the 42 GHz band as well. Nor are we confident that the industry wishes to retain the location of the unpaired channels near the upper portion of the 37.0-38.6 GHz band. It is also possible that potential licensees would prefer that we impose no specific channel plan. Accordingly, we believe we should re-examine this matter and seek additional comment on the most appropriate band plan for these frequency bands.

¹⁹⁵ "*NTIA Letter*" p. 1

¹⁹⁶ *Id.* pp 1-2.

¹⁹⁷ *Id.*

¹⁹⁸ *Id.* p. 2 and Enclosure 1. The Commission believes that Goldstone is not yet operational in this band, however, the Commission stated that it would seek protection of this facility in its "*36-51 Second R&O.*" See ¶ 62, *supra*.

¹⁹⁹ *Id.*

²⁰⁰ *Id.*

²⁰¹ *Id.* p. 2 and Enclosure 2.

²⁰² *Id.* Enclosure 2.

66. Given the parameters of the 37/42 GHz bands, we could adopt a channel plan that closely parallels the 39 GHz band if we adopt geographic licensing.²⁰³ However, it may be easier or more beneficial to manufacture equipment if the paired channels are contiguous instead of being separated by unpaired channels. We also note that the record on this issue is now more than six years old. Thus, we seek comment on whether to place the unpaired channels at the lower end of the band, 37.0-37.2 GHz, and thus place paired channels from 37.2 GHz contiguously through 40.0 GHz,²⁰⁴ instead of placing the unpaired channels between the two paired bands at 38.4-38.6 GHz as originally proposed. This proposal would co-locate the unpaired channels in the 37-38 GHz range with the Federal Government's SRS, which may facilitate system planning because it may be easier to share and coordinate one-way spectrum with the Federal Government SRS than two-way spectrum where users must coordinate both frequencies. This plan would leave the 500 megahertz of spectrum from 42.0 GHz to 42.5 GHz available for five 50 megahertz paired channel separated by 250 megahertz.

67. Another possibility is to pair some of the channels in the 37.0-38.6 GHz portion with some of the channels in the 42.0-42.5 GHz portion. However, this plan may not be desirable because it is difficult to manufacture radios with such a large difference in frequencies and it thus would create other burdens such as requiring two separate radios and two different antennas due to the large spacing (about 5000 megahertz) between the frequency bands. We also could allocate channel sizes of 30 or 40 megahertz or even smaller. Perhaps smaller channels might allow for smaller businesses and private entities to effectively compete for spectrum needed for more limited applications without needing to obtain a larger amount of spectrum that would require substantial outlays of initial investment.²⁰⁵ At the same time, entities with larger demands would be able to bid on the smaller contiguous channels if they so desire and aggregate the smaller spectrum channels into larger ones.

68. Not having a specific channel plan may allow licensees more flexibility regarding the use of the spectrum, the services they would provide, and the technologies they would use,²⁰⁶ but we are concerned that the lack of an established channel plan might also deter the development and manufacture of equipment for the 37/42 GHz bands because of the various market uncertainties and the lack of economies of scale. Therefore, we seek comment on whether we should channelize the 37/42 GHz bands, and, if so, what channel framework and bandwidth would be appropriate. We seek comment on whether the benefits of allowing licensees to adopt any channel framework they choose outweighs the potential drawbacks. We also seek comment on whether, if we adopt a channel plan, we should permit disaggregation only by paired channels. As in other sections of this NPRM, we ask that commenters indicate whether different requirements should apply if we adopt a 70/80/90 GHz-style approach.

F. Coordination among Terrestrial Stations in the Fixed Service in the 37.0-40.0 GHz and 42.0-42.5 GHz Bands

69. In the *First NPRM and Order*, the Commission proposed to require 37.0-38.6 GHz and 39 GHz licensees to follow the frequency coordination process set out in Section 101.103(d) of our rules,²⁰⁷ and proposed to establish a maximum power flux density ("PFD") or field strength limit at licensees'

²⁰³ See *Report and Order and Second NPRM*, 12 FCC Rcd at 18,616-17 ¶¶ 27-28.

²⁰⁴ See Appendix B, Proposed Rules, § 101.147, Option 1.

²⁰⁵ See 47 U.S.C. § 309(j)(4)(D).

²⁰⁶ Declining to propose a channel plan would result in two large contiguous blocks of spectrum, one of 1600 megahertz from 37.0-38.6 GHz and one of 500 megahertz from 42.0-42.5 GHz.

²⁰⁷ 47 C.F.R. § 101.103(d).

geographic boundaries.²⁰⁸ In response, the National Spectrum Management Association (“NSMA”) explained that it had not completed an interference study concerning maximum field strength and PFD limits.²⁰⁹ In the *Report and Order and Second NPRM*, the Commission adopted interim frequency coordination procedures in order to facilitate coordination between 39 GHz band licensees licensed in adjoining areas, but declined to establish final rules concerning maximum field strength or PFD limits pending the results of the NSMA study.²¹⁰ Specifically, the Commission decided to continue to use the frequency coordination procedures in Section 101.103(d) with the following modifications: (1) neighboring co-channel and adjacent channel licensees must coordinate only within 16 kilometers of an adjacent service area boundary, and (2) licensees that receive coordination notifications must respond within ten days as opposed to the normal thirty days.²¹¹

70. Later, the Commission issued new coordination requirements for the 24 GHz service, which are similar to the coordination requirements for the 39 GHz band.²¹² The Commission eliminated the specific distance coordination requirement for the 24 GHz band, and instead required stations that have optical line of sight²¹³ into an adjacent area to contact the relevant licensee regarding mutually agreeable coordination of facilities.²¹⁴ In addition, the Commission completed two bilateral agreements on coordinating the 24 GHz, 28 GHz (LMDS), and 39 GHz frequency bands with Canada (“the Canadian Agreements”).²¹⁵ In these two agreements, the factor used to determine whether coordination is required is predominantly by a PFD at the border between the two countries. The PFDs accepted in these agreements were -114 dBW/m² in any 1 megahertz band for both 24 GHz and 28 GHz, and -125 dBW/m² in any 1 megahertz band for 39 GHz.

71. We now tentatively conclude that instead of specifying a fixed distance and having two requirements for coordination (the 16 kilometer distance and the PFD level in the Canadian Agreements), a general coordination requirement utilizing the PFD value set out in the Canadian Agreements for 39 GHz of -125 dBW/m² in any 1 megahertz band would be more appropriate for the 39 GHz and 37/42 GHz bands. We propose to require 39 GHz and 37/42 GHz band licensees to coordinate when their facilities

²⁰⁸ *First NPRM and Order*, 11 FCC Rcd at 4,986-87 ¶ 117.

²⁰⁹ NSMA Comments at 1-8. The NSMA is a private organization that leads efforts to develop and refine the frequency coordination procedures used by the point-to-point microwave industry.

²¹⁰ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,633-34 ¶¶ 68-69. That study has not been completed.

²¹¹ *Id.* at 18,634 ¶ 69.

²¹² *See 24 GHz Report and Order*, 15 FCC Rcd at 16987 ¶ 29 (citing 47 C.F.R. § 101.509).

²¹³ Optical line of sight is a visual path (an unobstructed straight line) from the transmitting antenna to another site or antenna. In effect, buildings, curvature of the earth, or mountains would block the path. Because frequencies in these ranges travel very short distances, we have chosen to use optical line of sight, which differs slightly from radio line of sight in that optical line of sight does not take into consideration the refraction of radio waves in the atmosphere, which would have an effect if these signals traveled longer distances. Optical line of sight can be calculated using the formula $d=3.57\sqrt{h}$, where d is the distance between the antenna and the horizon in kilometers and h is the antenna height in meters. The formula for radio or effective line of sight is $d=3.57\sqrt{Kh}$, where $K=4/3$ and is the adjustment for refraction. The maximum optical distance between two antennas where htx is the transmit antenna height and hrx is the receive antenna height is $d=3.09(\sqrt{htx} + \sqrt{hrx})$.

²¹⁴ *See* 47 C.F.R. § 101.509.

²¹⁵ These two agreements can be found at: http://www.fcc.gov/ib/sand/agree/can_nonbroad_agree.html in PDF format under “broadband wireless systems” for 24 GHz and 39 GHz and under “LMDS” for 28 GHz. Licensees in these bands are required to comply with the agreements.

(antennas) have optical line-of-sight into another licensee's geographic area.²¹⁶ This line of site should take into consideration all the possible relevant heights of the other licensee's antenna(s). The rule would also protect the operations of 39 GHz incumbent licensees' rectangular service areas within the same auctioned EA.²¹⁷ This proposal allows for blockage due to mountains or other terrain. If the licensee's system (antenna) has optical line of sight but the PFD generated at the boundary of another licensee's geographic area (or, if in the same geographic area due to an incumbent) at the other licensee's facility is below the level of -125 dBW/m² in any 1 megahertz band, coordination would not be necessary. Further, we propose to require such coordination for co-channel 39 GHz licensees and 37/42 GHz licensees in adjacent geographic areas or in the same geographic areas in the case of aggregation, disaggregation or partitioning.²¹⁸ Under our proposal, adjacent and co-channel coordination would have to be completed successfully before operation can commence.

72. In the event that no 39 GHz or 37/42 GHz licensee exists in an adjacent area or has not yet deployed stations in an adjacent area (or in the same geographic area in the case of partitioning), we propose that the first-mover licensee be allowed to construct and operate facilities without coordination. Both the first-mover and the second-mover licensees eventually would have to coordinate their stations before the second mover's stations are deployed, in order to achieve mutual accommodation of the licensees' rights and to ensure cooperative and effective use of the spectrum in each area. If existing facilities are operating above -125 dBW/ m² in any 1 megahertz level, we propose that its owner-licensee be required to lower its facilities to accommodate the licensee in the adjacent area unless the two licensees otherwise reach an agreement. We believe that such a coordination procedure would be superior to the specific, 16-kilometer fixed distance interim procedure adopted for the 39 GHz band, because it provides flexibility and can be adopted for any frequency range, environment or terrain conditions where the principal mode of interference is line-of-sight or near-line-of-sight propagation. This method could allow licensees the flexibility of determining their own coordination parameters between areas while not limiting industry groups such as NSMA from proposing a uniform set of standards. We also request comment on whether a PFD or field strength limit at a licensee's geographic area boundaries or facilities, when in the same geographic area, would facilitate the growth and development of the 37/42 GHz bands as well as the 39 GHz band.

73. In addition, we propose that 37/42 GHz licensees follow the technical criteria set out in the agreement reached with Canada for 39 GHz until such time as the United States can establish a formal or informal agreement with Canada on coordinating the 37/42 GHz bands. We also propose that 39 GHz and 37/42 GHz licensees follow the same technical criteria along the border with Mexico until a formal or informal agreement can be reached with Mexico. Licensees are required to comply with whatever formal agreements are reached with Canada and Mexico.

74. Because we propose to allow flexible bandwidths in the 37/42 GHz bands, one licensee may have a bandwidth of, *e.g.*, 25 megahertz while another may use 150 megahertz. The calculation for emission limitations needs to be adjusted accordingly, because there may not be a standard "authorized bandwidth maximum."²¹⁹ We have proposed under Section 101.109 of the rules to set the maximum bandwidth at 50 megahertz for 37/42 GHz, consistent with 39 GHz, irrespective of the actual bandwidth used. This proposal means that licensees would limit the emissions at the channels' edges using a value of

²¹⁶ Here, the geographic service areas are comprised of EAs or other defined geographical areas.

²¹⁷ 39 GHz incumbents have self-defined rectangular areas that will represent the boundary of the incumbent.

²¹⁸ At a minimum, stations whose radio horizon overlaps adjacent areas should contact the relevant licensees regarding coordination of facilities.

²¹⁹ See 47 C.F.R. § 101.111.

50 megahertz for B in the equations under Section 101.111 even if they were to use channels larger or smaller than 50 megahertz. We seek comment on how to adjust the emission limitations in Section 101.111 of our rules, if at all. We seek comment on these proposals.

G. Coordination among Fixed Service Terrestrial Stations and Fixed-Satellite Service Satellite Earth Stations in the 37.5-40.0 and 42.0-42.5 GHz Bands

75. In the *Memorandum Opinion and Order* adopted in the 39 GHz proceeding, the Commission maintained the possibility for satellite operators to gain access to the 39.5-40.0 GHz band.²²⁰ While rejecting TRW's request to reallocate the 39.5-40.0 GHz band exclusively for satellite services, the Commission nonetheless recognized that the existing allocation includes satellite services in the band and stated that entities with terrestrial wireless licenses would not be constrained from deploying satellite earth stations in the band.²²¹ The Commission determined that satellite operators would be free to provide service either through a terrestrial wireless geographic area license won at auction pursuant to Part 101 of the Commission's rules or through a post-auction arrangement reached with the winning bidder of a terrestrial license. The Commission clarified that a provider of satellite services in the 39.5-40.0 GHz band also would be required to obtain a license pursuant to Part 25, which governs satellite communications.²²² In the *Further Notice of Proposed Rulemaking* to establish the "soft segmentation" approach in the 37.5-40.0 GHz and 42.0-42.5 GHz band, the Commission proposed to apply the same coordination requirements to Part 101 FSS earth stations licenses that apply to the fixed wireless service in the 39 GHz band.²²³ The coordination requirements are specified in Section 101.103(i)(1). Specifically, the Commission sought comment on how it should apply its Part 101 Rules governing certain portions of the 36.0-51.4 GHz band to future operations of FSS earth stations where Part 101 EA licensees have blanket authority to construct and operate FS stations in a specified EA.²²⁴ Furthermore, incumbent Part 101 licensees have similar rights in their licensed areas, which are generally rectangular in shape and are defined based on the individual service requirements of the licensee. The Commission has stated that satellite earth station licensees "may eventually be afforded opportunities to use the spectrum designated for wireless services, consistent with the U.S. Table of Frequency Allocations," and the Wireless Bureau has addressed precisely how the Part 101 Rules would be applied to a satellite earth station licensee that obtains a Part 101 license.²²⁵ We now seek further comment on the appropriate method to coordinate

²²⁰ See Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, ET Docket No. 95-183, and Implementation of Section 309(j) of the Communications Act – Competitive Bidding, 37.0-38.6 GHz and 38.6-40.0 GHz Bands, PP Docket No. 93-253, *Memorandum Opinion and Order*, 14 FCC Rcd 12,428 at 12,453-12,454 ¶¶ 47-49 (1999) (39 GHz MO&O).

²²¹ *Id.*

²²² 36-51 GHz Reconsideration Order, 15 FCC Rcd at 1770 n.29.

²²³ Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands, IB Docket No. 97-95, 16 FCC Rcd 12,244, 12,261-62 ¶¶ 48-51 (2001) ("Allocation Further Notice").

²²⁴ *Id.* 47 C.F.R. § 101.147; see also 47 C.F.R. § 101.149 (explaining terms and conditions of EA licenses).

²²⁵ See 36-51 GHz Reconsideration Order, 15 FCC Rcd at 1,769 ¶¶ 6-8; cf. TRW Inc., Request for Waiver of the Commission's Rules to Provide Fixed Satellite Service in the 39 GHz Band, *Memorandum Opinion and Order*, 16 FCC Rcd 5,198, 5,202 ¶ 11 (WTB 2001) ("amplify[ing] what is permitted under the Commission's Part 101 Rules"). The Commission clarified that all operations under a 39 GHz EA license, including future operations of any FSS earth stations, must comply with the Part 101 rules governing the operation of the 39 GHz band. With regard to coordination, the same criteria as applied to terrestrial stations would be applied to earth stations. For example, adjacent EA licensees and incumbents must coordinate only their stations within 16 kilometers of the boundary of their areas, regardless of whether an earth station may require greater consideration. Likewise, an EA

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satellite earth stations that receive signals from satellites transmitting in the 37.5-40.0 GHz band with terrestrial fixed stations.

76. Under the current rules, an FSS earth station applicant may obtain authority to operate within the 39 GHz band by securing a Part 101 EA license through competitive bidding or through partitioning in an area in which it wants to operate its earth station.²²⁶ An FSS earth station operator also can apply for a Part 25 license, provided that the earth station applicant has secured an agreement with all affected Part 101 licensees prior to filing an application. To address interference concerns, the Commission proposed to apply to earth stations the same coordination rules that apply to terrestrial stations operating under Part 101 of our rules.²²⁷ Under this proposal, and according to the FS rules explained above, a Part 101 earth station licensee would be required to coordinate all earth stations located within 16 km of the boundary of its Part 101 licensed area. An earth station would not receive interference protection from other Part 101 EA licensed stations that are further than 16 km from its EA boundary. Likewise, a terrestrial fixed station Part 101 licensee in another EA would be required to coordinate all of its proposed stations within 16 km of the boundary of its licensed area with all FSS earth stations within 16 km of the boundaries of adjacent areas. In the case of an FSS earth station operating in an EA under agreement with the Part 101 EA licensee of that area, the affected parties would address the resolution of any interference between the earth station and stations of the EA licensee or incumbent self-defined areas under the terms of their agreement.

77. As with terrestrial fixed coordination, the sufficiency of the 16 km coordination distance remains debatable, and current licensing policy in the 24 GHz Service favors replacing the coordination distance with a PFD coordination trigger.²²⁸ We propose to apply the same coordination trigger to Part 101 earth station licensees in the 37.5-40.0 GHz and 42.0-42.5 GHz bands as the trigger that we have proposed for terrestrial stations in the fixed service in the same bands, based upon the PFD level in the Canadian Agreements so that terrestrial coordination parameters are the same everywhere.²²⁹ In that manner, earth station licensees will not be conveyed greater rights than terrestrial stations and will not be able to claim interference from fixed terrestrial stations at distances greater than the fixed terrestrial stations can. Specifically, Part 101 earth station licensees are required to coordinate with existing terrestrial stations when there is optical line of sight between the earth station and an existing terrestrial station in the same or adjacent geographic area, and terrestrial stations in the fixed service are required to coordinate with a Part 101 earth station licensee when a terrestrial station exceeds the threshold PFD level of -125 dBW/m² in any 1 megahertz band at the boundary of the Part 101 earth station licensee's geographic area. Here, we seek comment on whether to apply either the 16 km distance or the PFD standard to earth stations in the 37.5-40.0 GHz and 42.0-42.5 GHz bands for the geographic area licensing approach.²³⁰ We also seek

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licensee (or a party it has reached agreement with) is not entitled to protection (vis-a-vis the incumbent licensee's operations) for earth stations deployed in areas inside the rectangular boundaries of incumbents license areas, even if that license area is completely or partially located inside the licensed EA. The Commission explained that this requirement may necessitate locating earth stations away from the EA or incumbent boundaries. Furthermore, an EA licensee, whether providing terrestrial or FSS earth station operations, must demonstrate substantial service at the time of its license renewal. Once the Commission considers and adopts technical standards for terrestrial and FSS to share this spectrum, an EA licensee may satisfy this and any other Part 101 build-out requirements through the operation of satellite earth stations. *Id.* at ¶ 12.

²²⁶ As noted above, the satellite operator also must obtain authorization pursuant to Part 25. *See supra* text accompanying note 222.

²²⁷ *See Allocation Further Notice*, 16 FCC Rcd at 12,262 at ¶ 49.

²²⁸ *See* 47 C.F.R. § 101.509(e)

²²⁹ *See* note 215, *supra*, and accompanying text.

comment on standards that would be appropriate if we adopt a 70/80/90 GHz-style framework or other approach for 37/42 GHz.

H. Fixed Satellite Earth Station Operators That Obtain Part 101 Licenses or Agreements in the 37/42 GHz Band.

78. Generally, we regulate satellite earth stations under Part 25 of our rules. In this regard, we note that we must take further action under Part 25 of our rules before FSS earth stations can operate and receive signals in the 37.5-40.0 GHz and 42.0-42.5 GHz bands. This section concerns FSS entities that seek to obtain terrestrial licenses in the 37/42 GHz band in accordance with the Commission's Part 101 rules.

79. We note that FSS licensees may construct earth stations with technical characteristics that vary significantly from those of Part 101 terrestrial licensees. Satellite earth stations may obtain certain frequency rights within an operational area either by competitive bidding for a geographic area license (and become a Part 101 licensee), or by obtaining an agreement with an existing geographic area licensee.²³¹ Because we have designated the spectrum below 40.0 GHz for wireless services, we concluded that some type of restriction should be placed upon the type of earth station that will receive protection from interference in the 37.5-40.0 GHz band,²³² and the Commission further concluded that FSS earth stations in this portion of the spectrum should be limited to "gateways."²³³

80. At present, the U.S. does not have any fixed satellite service allocation in the 42.0-42.5 GHz band. The International Table of Allocations does have an FSS allocation in this band.²³⁴ Licensees in the 42.0-42.5 GHz band should be aware that satellites may be allocated to the 42.0-42.5 GHz band in the future and further coordination procedures would need to be developed at that time.²³⁵

81. We propose that all 37/42 GHz FSS earth stations that obtain a Part 101 geographic area license through competitive bidding or other license option must comply with the same coordination and buildout criteria as terrestrial licensees and with the Part 101 rules governing the operation of the 37/42 GHz band.²³⁶ With regard to the buildout requirements, a Part 101 licensee, whether providing terrestrial or FSS earth station operations in its EA, would demonstrate substantial service at the time of its license renewal.²³⁷ A licensee may satisfy Part 101 buildout requirements through the operation of satellite earth stations. FSS earth station licensees that only obtain a Part 25 license and operate through an agreement

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²³⁰ See *supra* ¶¶ 66-69.

²³¹ Thus we may have a Part 25 earth station licensee who also holds a Part 101 license as compared to a Part 25 licensee who secures agreement with a Part 101 licensee.

²³² See *36-51 GHz Second R&O* at ¶ 32.

²³³ *Id.* at ¶ 33 and new rule 25.202 note 16 ("Use of this band by the fixed-satellite service is limited to 'gateway' earth station operations, provided the licensee under this Part obtains a license under Part 101 of this Chapter or an agreement from a Part 101 licensee for the area in which an earth station is to be located. Satellite earth station facilities in this band may not be ubiquitously deployed and may not be used to serve individual consumers").

²³⁴ See 47 C.F.R. § 2.106, pp. 76-77.

²³⁵ See *36-51 GHz Second R&O* at ¶ 67.

²³⁶ Earth stations must also comply with 47 C.F.R. Part 25.

²³⁷ See *39 GHz R&O*, 12 FCC Rcd at 18,623-26 ¶¶ 41-50.

with an existing FS Part 101 licensee²³⁸ would only be subject to the construction requirements of Part 25.

82. While we believe that these proposals are appropriate in the context of geographic area licensing, for the 37/42 GHz bands different rules might be required if we adopt a link-by-link site registration process with nationwide licenses. We seek comment on these proposals and suggestions for other rules that might be appropriate depending upon circumstances.

I. Sharing & Coordination Between Non-Federal Government and Federal Government Services at 37.0-38.6 GHz and 39.5-40.0 GHz

83. The Commission has been negotiating with the National Telecommunications and Information Administration (“NTIA”) on sharing and coordination between the non-Federal government and Federal government stations in this band. These negotiations were generally premised on the assumption that we would apply the same kind of regulatory framework to the 37/42 GHz bands as we have applied to the 39 GHz band, i.e., geographic area licensing. However, independent of the licensing approach that the Commission chooses for these bands, the basic coordination procedures with NTIA will be the same because they are based on a site-by-site method. Comparable procedures could be applied if we adopt a 70/80/90 GHz model with a nation-wide license and individual registration of sites, though under that approach our proposals might need to be modified to take into account the differing roles to be played by third-party non-Federal government database managers and how they would exchange data with NTIA.

84. The following are the procedures that we propose for implementing the necessary rules and process. Sharing between non-Federal government and Federal government users in the 37.0-38.6 GHz and 39.5-40.0 GHz bands would follow a "first-in-time" principle for co-primary services. This means that stations of a co-primary service would not be allowed to cause harmful interference to stations of other co-primary services to which frequencies are already assigned and properly authorized. Existing stations would be entitled to claim protection from harmful interference from other co-primary stations assigned at a later date. Last-filed stations would have the burden of relieving the harmful interference.

85. Consistent with Section IV(6) of the Memorandum of Understanding (“MOU”) between the Commission and NTIA, dated January 31, 2003, the Commission and NTIA would maintain current lists of their authorized frequency assignments on the Universal Licensing System (“ULS”) and the Federal government Master Frequency File (“GMF”), respectively, in the 37.0-38.6 GHz band, including site-based facilities, and exchange such information as appropriate to coordinate spectrum use.²³⁹ The site-based coordination procedures proposed here involve the Interdepartment Radio Advisory Committee (“IRAC”) and contacts between our licensees and Federal government agencies through the Commission, which represents the non-Federal government facilities, and the NTIA, which represents the Federal government agencies. Problems would be referred by the Commission back to its licensees/applicants and by the NTIA to Federal government agencies for resolution. Consistent with the *FCC/NTIA MOU*, Sections IV (3) & (4), cooperation, timely resolution, and notice by the Commission and the NTIA would govern final action.

86. We propose that non-Federal government operators/licensees in the 37.0-38.6 GHz frequency band be responsible for maintaining databases of their fixed stations, including sufficient data for other licensees, coordinators, and the Federal government to make a determination of potential interference. This information would also be useful for coordination with adjacent area operators and for formulating

²³⁸ For example, an FS licensee could partition an area or disaggregate spectrum to a satellite earth station licensee or just complete a coordination agreement with the earth station.

²³⁹ Memorandum of Understanding between the Federal Communications Commission and the National Telecommunications and Information Administration (Jan. 31, 2003)(“*FCC/NTIA MOU*”).

sharing agreements. Non-Federal government licensees would have the option of maintaining their own databases for their facilities or of selecting third-party database managers, frequency coordinators, or other entities (collectively "database manager") to maintain their database of facilities. The database manager would be responsible to the licensee and would share the technical data with the Commission and other database managers as needed for proper coordination, and retain records of the coordination agreements with other parties. All coordination agreements would remain in force in the event the licensee transfers its license, partitions its service area, or disaggregates its spectrum, until new agreements are reached.

87. We also propose that, upon request, the non-Federal government operators/licensees be required to make available all necessary technical database information to the Commission in a timely and convenient manner sufficient for resolving interference complaints with NTIA in the event of disputes. In addition to maintaining their own databases, the non-Federal government licensees would be required to register their technical data electronically into the ULS for each station in their authorized service areas in order to make available accurate information on the use of the facilities and also to implement the "first-in-time" principle for coordination with Federal government facilities. This data should include: 1) the date of the initial operating capability ("IOC") of each station, 2) specific information identifying the station locations, 3) technical operating capabilities of the stations, including all of the power and antenna characteristics specified in Section 101.103(d)(2)(ii) of our rules, and 4) whether the station has optical line-of-site to another facility with which it is being coordinated, if known at the time. This site-based information would be entered into the record of the area license in the ULS database by electronically registering notifications to the initial Commission Form 601 using Schedule I, but not more than twelve (12) months before operations are scheduled to begin.

88. Further, we propose that the regular fee schedule for microwave services would apply to all requests, applications and licenses, except as noted below. Licensees would be required to follow existing practices and precedents regarding fees associated with initial licenses, and to file notifications in the ULS to supply the technical information needed to coordinate each station with Federal government facilities. The Commission would require no additional filing or regulatory fees for the registering of notifications of additional technical information, if the technical information entered into the ULS is only needed for coordination with Federal government facilities. When revisions to ULS are developed for adding the capability to handle licensees in the 37.0-38.6 GHz band, the capability to collect this additional site-based information for notifications would be added to the capability to handle "initial" auction winners as licensees.

89. For geographic area licensees, notification and response for site-by-site coordination for these stations would require variations in the general coordination procedures as given in Section 101.103 of our rules, which otherwise generally applies. We propose that geographic area licensees select site frequencies within their assigned blocks of spectrum and initiate the coordination process by notifying the other parties with whom they must coordinate. Presently the Federal government does not have any authorized and operating stations in the 37.0-38.6 GHz band, but does want to be able to operate future stations if a need arises. Because NTIA has agreed to encourage federal agencies to satisfy their fixed and mobile requirements through commercial services, or by using the 36.0-37.0 GHz and 42.5-43.5 GHz bands,²⁴⁰ we do not anticipate that the Federal government will add many stations in the 37.0-38.6 GHz band. Registrations of licensee sites on Schedule I of Form 601 must include, in addition to the relevant technical details as shown in Section 101.103(d)(2)(ii), the licensee's determination of whether possible optical line-of-site exists to relevant (future) Federal government facilities.²⁴¹ If it determines that optical line-of-site does not exist, the applicant should explain the determination. The Commission would note the activation

²⁴⁰ *36-51 GHz Order*, 13 FCC Rcd 24,649 ¶ 42.

²⁴¹ The licensee must make this optical line-of-site calculation with only the partial information available in Appendix B.

date of the station, but would not make a determination that any of the information is correct or acceptable for filing. Coordination involving existing and future Federal government facilities would require licensees and applicants to ensure that their data is accurately reflected in the ULS.

90. New Federal government stations in the 37.0-38.6 GHz band should be coordinated consistent with these procedures. We anticipate that the Federal government will maintain its own database of facilities and coordinate through the Commission. The Commission will rely on the data in ULS supplied by our licensees/applicants to conduct coordination, but may also need to contact the licensee(s) for specific information concerning protection from the Federal government facilities. Federal government operators with facilities in the 37.0-38.6 GHz band should cooperate in the coordination process by responding to non-Federal government coordination notifications from the Commission. Federal government operators with new stations to coordinate can identify and directly access the technical information of the non-Federal government licensees through the ULS. Examining the data in the ULS before formally coordinating with the Commission in the appropriate frequency band and geographic service area may speed up the frequency selection process. Federal government operators with new stations should notify the Commission through the IRAC process with sufficient technical detail to determine whether potential interference is possible with facilities of our licensees/applicants.

91. Again, we emphasize that these proposals were negotiated on the assumption that we would be applying a 39 GHz-style geographic area licensing approach to the 37/42 GHz bands. We seek comment on these proposals, and in particular we seek comment on modifications that would be required if we decide to apply a 70/80/90 GHz-style link-by-link registration approach.

1. Non-Federal Government Operations Coordinating with Existing Federal Government Operations

92. We propose that non-Federal government terrestrial users in the band 37.0-38.6 GHz, and also operators who wish to protect an FSS (downlink) earth station in the band 37.5-38.6 GHz, be required to coordinate only with existing and operational Federal government SRS (downlink space research antennas in the 37-38 GHz band) at Goldstone, California, and Green Bank, West Virginia, by contacting the Federal Points of Contact for Frequency Coordination identified in Appendix C for these two facilities and obtain letters of approval for their operations as is presently done for Greenbank under 1.924(a)(1) of our rules.²⁴² We also propose that the coordination triggers for non-Federal government terrestrial stations be whether they are to be located within 80 km of the coordinates for Goldstone, California²⁴³, or within the rectangular area given for Green Bank, West Virginia. We propose that the interference protection criterion for these earth station facilities is -130 dBW/m² in any 1 MHz band at the relevant boundary.²⁴⁴ Non-Federal government terrestrial users in the band 37.0-38.6 GHz, and also operators who wish to protect an FSS (downlink) earth station in the band 37.5-38.6 GHz, are also required to coordinate with the existing terrestrial Federal government facilities in 37.0-38.6 GHz (no stations presently exist) through the ULS and IRAC process. The proposed coordination triggers for non-Federal government stations are that the antenna must have optical line-of-sight to the Federal government terrestrial facilities, as discussed in paragraphs [71-72 and 77-77], *supra*, and that the PFD at the site exceed a threshold of -125 dBW/m² in any 1 MHz band. Harmful interference is not anticipated if neither of these conditions exists. The Commission and NTIA would resolve interference problems referred to them to their mutual satisfaction on a first-in-time sharing basis. We seek comment on this proposal.

²⁴² NTIA requests that within the band 37-38 GHz we protect a Goldstone rectangular area bounded by the coordinates between latitudes 34-21 N and 35-59 N and between longitudes 115-26 W and 118-21 W (approx 200 km by 280 km), a Socorro, Very Large Array, rectangular area bounded by the coordinates between latitudes 32-30 N and 35-30 N and between longitudes 106-00 W and 109-00 W (approx. 260 km by 350 km), three tracking
(continued...)

2. Non-Federal Government Operations Coordinating with Future Federal Government Operations

93. Non-Federal government terrestrial users in the band 37.0-38.6 GHz, and also operators who are required to protect an FSS (downlink) earth station in the band 37.5-38.6 GHz, are required to coordinate with future Federal government SRS (downlink space research antennas) operations and Federal government terrestrial facilities in the band 37.0-38.6 GHz at locations not identified at this time. We propose that the coordination triggers for non-Federal government stations be that the antenna must be within optical line-of-sight of an authorized Federal government site (the site to be protected could be a circle or a rectangle) and that the station have a PFD at the site exceeding a threshold of -130 dBW/m² in any 1 MHz band for the SRS (downlink) earth station operations and -125 dBW/m² in any 1 MHz band for the terrestrial facilities. Licensees must include calculations or other representations in their registration of each site and coordination material that indicate whether the PFD and/or optical line-of-site conditions exist at a previously coordinated Federal government facility. This information will be used by the Commission and NTIA through the IRAC process to coordinate the stations. We do not expect harmful interference to occur if neither of these conditions exists. We will expect the coordinating parties to resolve interference protection to their mutual satisfaction based on first-in-time sharing, or to negotiate written sharing agreements. We seek comment on this proposal.

3. Federal Government Operations Coordinating with Future Non-Federal Government Operations

94. We expect Federal government SRS (downlink space research antennas) users in the band 37.0-38.0 GHz and Federal government terrestrial users in the 37.0-38.6 GHz band to coordinate with existing and future non-Federal government operations. We propose that the coordination triggers for Federal government SRS stations (these are receive earth stations) be that the antenna have optical line-of-sight to an authorized non-Federal government site and have a vulnerability threshold PFD at the SRS receiver site of -130 dBW/m² in any 1 MHz band. The coordinating parties will be expected to resolve interference protection to their mutual satisfaction based on first-in-time sharing. The proposed coordination triggers for Federal government terrestrial stations would be that the transmitting antenna have optical line-of-sight to the site of an authorized non-Federal government facility and have a PFD at

(...continued from previous page)

stations within a 30 km radius of 13-36-55 N, 144-51-22 E (Guam); 28-21-28 N 80-42-13 W (Meritt Island); and 37-55-45- N 75-28-35 W (Wallops Island); and one tracking station within 80 km of 32-20-59 N 106-36-31 W (White Sands). See "NTIA Letter," Enclosure 1. NTIA has also notified the Commission that the military has identified fourteen (14) planned sites within a 30 km radius of each set of coordinates (except for China Lake located at: China Lake, CA (actually a rectangular area); San Diego, CA; Nanakuli, HI; Fishers Island, NY; St. Croix, VI; Ft. Irwin, CA; Ft. Carson, CO; Ft. Hood, TX; Ft. Bliss, TX; Yuma Proving Grounds, AZ; Ft. Huachuca, AZ; White Sands Missile Range, NM; Moody Air Force Base, GA; and Hurlburt Air Force Base, FL. See "NTIA Letter," Enclosure 2. NTIA notes that the military may have requirements for additional sites in the future.

²⁴³ In the "NTIA Letter," it now proposes that the protection around Goldstone be a rectangular area 200 km tall by 280 km wide with the southwest corner resting on Los Angeles. In paragraph 41 of the "36-51 GHz Second R&O" the Commission indicated that it would seek comments on methods to protect Goldstone in this proceeding and among the possibilities would be to adopt a footnote to the Table Of Allocations modeled after Footnote US311 which establishes an 80 km radius around Goldstone for protection from stations operating in the fixed and mobile services in the 1350-1400 MHz and 4950-4990 MHz bands.

²⁴⁴ See "NTIA letter," p.2.

the non-Federal government site exceeding a threshold of -125 dBW/m² in any 1 MHz band. The Commission and NTIA would resolve interference problems referred to them to their mutual satisfaction based on first-in-time sharing.

95. Existing geographic area licenses were auctioned in the 38.6-40 GHz band, and the Commission does not require these licensees to inform us of the locations of their facilities or maintain database information because these stations do not presently have to coordinate with NTIA. Therefore, ULS does not contain any technical parameters or the locations of these facilities. We propose that any possible future Federal government operators²⁴⁵ that would be required to coordinate and protect non-Federal government terrestrial stations or FSS (downlink) earth stations in the 39.5-40 GHz band coordinate directly with the existing non-Federal government licensee in whose service area the Federal government earth station is to be located, and with respect to other nearby service area licensees. All parties concerned should resolve the coordination problems on a first-in-time sharing basis and obtain coordination agreements with prior licensed facility operators. Specifically, if existing non-Federal government licensees do not already have facilities in or near an area where the Federal government wishes to place an earth station, we propose that the non-Federal government licensee would be required to accommodate the Government's request and allow the earth station to be built and protected as mutually agreed. We seek comment on all these proposals.

J. Competitive Bidding Procedures

96. If we decide to adopt a geographic area licensing scheme under which we would receive mutually exclusive applications for initial licenses in the 37/42 GHz band, we would be required, pursuant to section 309(j) of the Communications Act, to resolve such applications by competitive bidding.²⁴⁶ In this connection, we note that the Commission has previously concluded that Section 647 of the Open-Market Reorganization for the Betterment of International Telecommunications Act ("ORBIT Act") does not bar the use of competitive bidding to award licenses to provide terrestrial services merely because such terrestrial services operate on the same frequencies as global or international satellite communications services.²⁴⁷ Any licenses we might auction in the 37/42 GHz band would authorize terrestrial use only; any licensee wishing to use the subject frequencies to operate an earth station would be required to obtain an authorization pursuant to Part 25 of our rules in order to do so. Thus, if a 37/42 GHz band geographic area licensee decides to operate an earth station as part of an international or global FSS system, it would be required to do so under a license issued pursuant to the Part 25 procedures that apply to FSS. Accordingly, we request comment on a number of issues relative to the competitive bidding procedures we should use if we decide to conduct an auction of exclusive geographic area licenses in the 37/42 GHz band.

²⁴⁵ See discussion in reference to NATO requirement of NTIA in the *36-51 GHz Second R&O* at ¶¶ 42-49.

²⁴⁶ 47 U.S.C. § 309(j); see *BBA Report and Order*, 15 FCC Rcd 22709.

²⁴⁷ See, e.g., *First R&O and Further Notice*, 16 FCC Rcd at 4218 ¶ 326; Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band, ET Docket No. 98-237; The 4.9 GHz Band Transferred from Federal Government Use, WT Docket No. 00-32, *First Report and Order and Second Notice of Proposed Rule Making*, 15 FCC Rcd 20488 at ¶ 20 n.64 (2000) (stating that the assignment of licenses for terrestrial services by competitive bidding is not prohibited by the ORBIT Act); *24 GHz Report and Order*, 15 FCC Rcd 16934 (proposing rules to award licenses for terrestrial fixed service by competitive bidding in the 24 GHz band, which is also allocated to satellite services); *39 GHz R&O*, 12 FCC Rcd 18600; *39 GHz Band Auction Closes, Public Notice*, DA 00-1035, Report No. AUC-30-E (rel. May 10, 2000) (assigning terrestrial fixed service licenses by auction in the 39 GHz band, which is also allocated to satellite services). See also TRW Inc., Request for Waiver of the Commission's Rules to Provide Fixed Satellite Service in the 39 GHz Band, *Memorandum Opinion and Order*, DA 01-371, File No. 0000137436 (rel. March 12, 2001). See also ORBIT Act, Pub. L. No. 106-180, 114 Stat. 48 § 647 (codified at 47 U.S.C. § 765f).

1. Incorporation by Reference of the Part 1 Standardized Auction Rules

97. We propose to conduct any auction of initial exclusive area licenses in the 37/42 GHz band in conformity with the general competitive bidding rules set out in Part 1, Subpart Q, of our rules, and substantially consistent with the bidding procedures that have been employed in previous auctions.²⁴⁸ Specifically, we propose to employ the Part 1 rules governing competitive bidding design, designated entities, application and payment procedures, reporting requirements, collusion issues, and unjust enrichment.²⁴⁹ Under this proposal, such rules would be subject to any modifications that the Commission may adopt in its Part 1 proceeding.²⁵⁰ We seek comment on whether any of our Part 1 rules or other auction procedures are inappropriate or should be modified for an auction of licenses in this band.

2. Provisions for Designated Entities

98. In authorizing the Commission to use competitive bidding, Congress mandated that the Commission “ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services.”²⁵¹ In addition, Section 309(j)(3)(B) of the Communications Act provides that, in establishing eligibility criteria and bidding methodologies, the Commission shall promote “economic opportunity and competition . . . by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned

²⁴⁸ See, e.g., Amendment of Part 1 of the Commission’s Rules - Competitive Bidding Procedures, WT Docket No. 97-82, Second Order on Reconsideration of the Third Report and Order, and Order on Reconsideration of the Fifth Report and Order, 18 FCC Rcd 10180 (2003) (“*Second Order on Reconsideration of the Third Report and Order and Order on Reconsideration the Fifth Report and Order*”); Amendment of Part 1 of the Commission’s Rules -- Competitive Bidding Procedures, Eighth Report and Order, 17 FCC Rcd 2962 (2002); Amendment of Part 1 of the Commission’s Rules -- Competitive Bidding Procedures, Seventh Report and Order, 16 FCC Rcd 17546 (2001); Amendment of Part 1 of the Commission’s Rules – Competitive Bidding Procedures, *Order on Reconsideration of the Third Report and Order, Fifth Report and Order, and Fourth Further Notice of Proposed Rule Making*, 15 FCC Rcd 15293 (2000) (“*Part 1 Recon. Order and Part 1 Fifth Report and Order, Fourth Further Notice of Proposed Rule Making*”); Amendment of Part 1 of the Commission’s Rules — Competitive Bidding Procedures, Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, Third Report and Order and Second Further Notice of Proposed Rule Making, 13 FCC Rcd 374 (1997) (modified by Erratum, DA 98-419 (rel. March 2, 1998)) (Part 1 Third Report and Order); Amendment of Part 1 of the Commission’s Rules — Competitive Bidding Procedures, WT Docket No. 97-82, Order, Memorandum Opinion and Order and Notice of Proposed Rule Making, 12 FCC Rcd 5686 (1997).

²⁴⁹ See 47 C.F.R. § 1.2101 *et. seq.* We note that in the *First NPRM and Order*, the Commission sought comment on competitive bidding design and procedures for the 37 GHz band. However, since release of the *36-51 GHz First NPRM and Order* in 1995, the Commission has made substantial amendments and modifications to its Part 1 general competitive bidding rules for all auctionable services. See *Part 1 Third Report and Order*, 13 FCC Rcd 374; *Part 1, Recon. Order and Part 1 Fifth Report and Order*, 15 FCC Rcd 15293; *Second Order on Reconsideration of the Third Report and Order and Order on Reconsideration of the Fifth Report and Order*, 18 FCC Rcd 10180. In addition, many of the auction procedures upon which the *First NPRM and Order* sought comment are matters on which the Wireless Telecommunications Bureau regularly seeks comment and makes a determination under its delegated authority. Amendment of Part 1 of the Commission’s Rules – Competitive Bidding Procedures, *Order, Memorandum Opinion and Order and Notice of Proposed Rulemaking*, 12 FCC Rcd 5686, 5697-98, ¶ 16 (1997) (citing 47 C.F.R. § 0.131).

²⁵⁰ See *Part 1, Recon. Order and Part 1 Fifth Report and Order*, 15 FC Rcd 15293 (2000), *aff’d in part and modified in part, Second Order on Reconsideration of the Third Report and Order and Order on Reconsideration the Fifth Report and Order*, WT Docket No. 97-82, 18 FCC Rcd 10,180 (2003).

²⁵¹ See 47 U.S.C. § 309(j)(4)(D).

by members of minority groups and women.”²⁵²

99. Section 1.2110(c)(1) of our rules provides that the definition of a small business is established on a service-specific basis, taking into account the capital requirements and other characteristics of each particular service in establishing the appropriate threshold.²⁵³ As explained above, if we apply a geographic area licensing model to the 37/42 GHz bands, we propose to apply service rules for the 37/42 GHz band that are substantially the same as the rules for the 39 GHz band.²⁵⁴ Thus, to the extent feasible, based upon the proximity, similarity, anticipated use (*e.g.*, point-to-point, point-to-multipoint, fixed and mobile terrestrial operations), and propagation characteristics of these bands, we would have established regulatory symmetry. Accordingly, we anticipate that any services that geographic area licensees deploy in these bands would be similar to those services deployed in the 39 GHz band and would have comparable capital requirements. We also believe that geographic area licensees in these bands would be presented with issues and costs similar to those presented to 39 GHz band licensees, including those involved in developing markets, technologies, and services.

100. In light of the similarities we have identified, we therefore propose here the same small business size standards the Commission adopted for the 39 GHz band.²⁵⁵ Accordingly, we propose to define a small business as an entity with average annual gross revenues for the preceding three years not exceeding \$40 million, and a very small business as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million.²⁵⁶ We believe that our proposed approach would provide a variety of businesses with the opportunity to participate in an auction of licenses in this band and afford licensees substantial flexibility for the provision of services with varying capital costs. If we ultimately adopt our proposed small business definitions for the 37/42 GHz band, we further propose to provide small businesses with a bidding credit of fifteen percent and very small businesses with a bidding credit of twenty-five percent. The bidding credits we propose here are those set out in the standardized schedule in Part 1 of our rules.²⁵⁷ Accordingly, we seek comment on the use of these standards and associated bidding credits for applicants to be licensed in the 37/42 GHz band, with particular focus on the appropriate definitions of small and very small businesses as they relate to the size of the geographic area to be covered and the spectrum allocated to each license. In discussing these issues, we invite commenters to address the expected capital requirements for services in these bands and other characteristics of the service. Additionally, we invite commenters to use comparisons with other services for which the Commission has already established auction procedures as a basis for their comments regarding the appropriate small business size standards.

101. We believe that the small business size standards and corresponding bidding credits proposed above would provide a variety of businesses with opportunities to participate in the auction of

²⁵² See 47 U.S.C. § 309(j)(3)(B).

²⁵³ 47 U.S.C. § 1.2110(c)(1); Implementation of Section 309(j) of the Communications Act – Competitive Bidding, PP Docket No. 93-253, *Second Memorandum Opinion and Order*, 9 FCC Rcd 7245, 7269 ¶ 145 (1994).

²⁵⁴ See *supra*, para. 9.

²⁵⁵ *Report and Order and Second NPRM*, 12 FCC Rcd at 18661-64 ¶¶ 149-54.

²⁵⁶ We are coordinating these proposed small business size standards with the U.S. Small Business Administration.

²⁵⁷ In the *Part 1 Third Report and Order*, the Commission adopted a standard schedule of bidding credits, the levels of which were developed based on the Commission’s auction experience. *Part 1 Third Report and Order*, 13 FCC Rcd at 403-04 ¶ 47; see also 47 C.F.R. § 1.2110(f)(2). We note, however, that the standardized bidding credits are not the same as those adopted for the 39 GHz band. *Report and Order and Second NPRM*, 12 FCC Rcd at 18,661-64 ¶¶ 149-54.

licenses for this band and afford licensees substantial flexibility for the provision of services with varying capital costs.²⁵⁸ In developing these proposals, however, we acknowledge the difficulty in accurately predicting the market forces that will exist at the time we license these frequencies. Thus, our forecasts of types of services that licensees will offer over these bands may require adjustment depending upon ongoing technological developments and changes in market conditions. Accordingly, to the extent commenters support a different bidding credit regime, or believe that there are any distinctive characteristics to the 37/42 GHz band that suggest we should not employ bidding credits in this instance, commenters should support their proposals with relevant information. For example, commenters should provide information on the types of system architecture that licensees are likely to deploy in these bands, the availability of equipment, market conditions, and other factors that may affect the capital requirements or the types of services that licensees may provide.²⁵⁹

102. We also seek comment on whether the small business provisions we propose today are sufficient to promote participation by businesses owned by minorities and women, as well as rural telcos. To the extent that commenters propose additional provisions to ensure participation by minority-owned or women-owned businesses, they should address how we should craft such provisions to meet the relevant standards of judicial review.²⁶⁰

IV. PROCEDURAL MATTERS

A. Regulatory Flexibility Analysis

103. As required by the Regulatory Flexibility Act (“RFA”) of 1980,²⁶¹ the Commission has prepared an Initial Regulatory Flexibility Analysis (“IRFA”), with respect to this *Third Notice of Proposed Rule Making*, of the possible significant economic impact on small entities of the policies and rules proposed in this document. The IRFA is set out in Appendix B. We request written public comment on the IRFA. Comments must be filed in accordance with the same filing deadlines as comments filed in this rulemaking proceeding and must have a separate and distinct heading designating them as responses to the Initial Regulatory Flexibility Analysis.

B. Paperwork Reduction Analysis

104. This *Third Notice of Proposed Rule Making* contains a proposed information collection. As part of our 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 *Third Notice of Proposed Rule Making*, as required by the Paperwork Reduction Act of 1995, Pub. L. No. 104-13. Public and agency comments are due at the same time as other comments on this *Third Notice of Proposed Rule Making*; OMB comments are due sixty days from the date of publication of the *Third Notice of Proposed Rule Making* in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the

²⁵⁸ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,661-64 ¶¶ 149-54.

²⁵⁹ See 47 U.S.C. § 1.2110(c)(1) (provides factors used to determine the appropriate threshold for the use of bidding credits).

²⁶⁰ See *United States v. Virginia*, 518 U.S. 515 (1996) (applying an intermediate standard of review to a state program based on gender classification); *Adarand Constructors v. Peña*, 515 U.S. 200 (1995) (requiring a strict scrutiny standard of review for Congressionally mandated race-conscious measures).

²⁶¹ See 5 U.S.C. § 603.

information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

105. Written comments by the public on the proposed information collections are due sixty days after the date of publication in the Federal Register. Written comments must be submitted by the OMB on the proposed information collections on or before sixty days after the date of publication in the Federal Register. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Judy Boley Herman, Federal Communications Commission, Room 1-C804, 445 12th Street, S.W., Washington, D.C. 20554, or via the Internet to jbHerman@fcc.gov, and to Kristy LaLonde, OMB Desk Officer, Room 10234 New Executive Office Building, 725 17th Street, N.W., Washington, D.C. 20503, or via the Internet to Kristy_LaLonde@omb.eop.

C. Ex Parte Presentations

106. For purposes of this permit-but-disclose notice and comment rulemaking proceeding, members of the public are advised that *ex parte* presentations are permitted, provided they are disclosed under the Commission's rules.²⁶²

D. Comment Dates

107. 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 [thirty days from publication in the Federal Register], and reply comments on or before [forty-five days from publication in the Federal Register]. Comments may be filed using the Commission's Electronic Comment Filing System ("ECFS") or by filing paper copies.²⁶³

108. 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, *i.e.*, PP Docket No. 93-253, 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 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. 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. 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

²⁶² See generally 47 C.F.R. §§ 1.1202, 1.1203, 1.1206(a).

²⁶³ See Electronic Filing of Documents in Rulemaking Proceedings, *Report and Order*, GC Docket No. 97-113, 13 FCC Rcd 11,322 (1998); Electronic Filing of Documents in Rulemaking Proceedings, *Memorandum Opinion and Order*, GC Docket No. 97-113, 13 FCC Rcd 21,517 (1998).

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, Office of the Secretary, Federal Communications Commission.

E. Further Information

109. For further information concerning this rulemaking proceeding, contact Charles Oliver (legal) or Michael Pollak (engineering) at (202) 418-2487, TTY (202) 418-7233, Wireless Telecommunications Bureau, Federal Communications Commission, Washington, D.C. 20554.

110. 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) 418-7365, or via e-mail to bmillin@fcc.gov. This *Notice of Proposed Rulemaking* can be downloaded at <http://www.fcc.gov/Wireless/Orders/2003/>.

V. ORDERING CLAUSES

111. Accordingly, IT IS ORDERED that, pursuant to Sections 1, 4(i), 7, 301, 303, 308 and 309(j) of the Communications Act of 1934, 47 U.S.C. §§ 151, 154(i), 157, 301, 303, 308, 309(j), NOTICE IS HEREBY GIVEN of the proposed regulatory changes described above and as specified in Appendix A, and that comment is sought on these proposals.

112. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this *Third 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**

Parts 0, 2, and 101 of title 47 of the Code of Federal Regulations would be amended as follows if the Commission decides to issue licenses on the basis of exclusive geographic areas. Some of these proposed rules would need to be modified, augmented, or eliminated if we decide to issue multiple non-exclusive nationwide licenses with registration of links on a first-in-time registration basis:

PART 0

1. The authority citation for part 0 would continue to read as follows:

AUTHORITY: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

2. Section 0.331(d) would be amended to read as follows:

§ 0.331 Authority delegated.

* * * * *

(d) *Authority concerning rulemaking proceedings.* The Chief, Wireless Telecommunications Bureau shall not have the authority to act upon notices of proposed rulemaking and inquiry, final order in rulemaking proceedings and inquiry proceedings, and reports arising from any of the foregoing except such orders involving ministerial conforming amendments to rule parts, or order conforming any of the applicable rules to formally adopted international conventions or agreements where novel question of fact, law, or policy are not involved. Updates to the list of NTIA facilities in § 101.147 need not be referred to the Commission if they do not involve novel questions of fact, policy or law. Also the addition of new Marine VHF frequency coordination committee(s) to § 80.514 of this chapter need not be referred to the Commission if they do not involve novel questions of fact, policy or law, as well as requests by the United States Coast Guard to:

(1) * * *

* * * * *

**PART 2 – FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS;
GENERAL RULES AND REGULATIONS**

1. The authority citation for part 2 would continue to read as follows:

AUTHORITY: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

2. Section 2.106, the Table of Frequency Allocations, would be amended as follows:

- a. Revise pages 76 and 77.

- b. In the list of United States footnotes, add footnote USxxx. (Here and below, “USxxx” indicates that the Commission will determine the U.S. footnote number if and when it adopts the proposed rule).

- c. In the list of non-Federal government footnotes, add footnote NGxxx (Here and below, “NGxxx” indicates that the Commission will determine the non-government footnote number if and when it adopts the proposed rule).

The proposed revisions and additions read as follows:

§ 2.106 Table of Frequency Allocations.

* * * * *

<p>36-37 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149</p>	<p>36-37 EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) US263 US342</p>		
<p>37-37.5 FIXED MOBILE SPACE RESEARCH (space-to-Earth) 5.547</p>	<p>37-37.5 FIXED MOBILE SPACE RESEARCH (space-to-Earth) USxxx</p>	<p>37-37.5 MOBILE USxxx</p>	<p>Fixed Microwave (101)</p>
<p>37.5-38 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547</p>	<p>37.5-38 FIXED MOBILE SPACE RESEARCH (space-to-Earth) USxxx</p>	<p>37.5-38.6 FIXED FIXED-SATELLITE (space-to-Earth) NGxxx MOBILE</p>	<p>Satellite Communications (25) Fixed Microwave (101)</p>
<p>38-39.5 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Earth exploration-satellite (space-to-Earth) 5.547</p>	<p>38-38.6 FIXED MOBILE USxxx 38.6-39.5</p>	<p>USxxx 38.6-39.5 FIXED FIXED-SATELLITE (space-to-Earth) NGxxx MOBILE NG175</p>	
<p>39.5-40 FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547</p>	<p>39.5-40 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) US382 G117</p>	<p>39.5-40 FIXED FIXED-SATELLITE (space-to-Earth) NGxxx MOBILE NG175 US382</p>	
<p>40-40.5 EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth)</p>	<p>40-40.5 EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth) G117</p>	<p>40-40.5 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth)</p>	<p>Satellite Communications (25)</p>

International Table			United States Table		FCC Rule Part(s)
Region 1	Region 2	Region 3	Federal Government	Non-Federal Government	
40.5-41 FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE Mobile	40.5-41 FIXED FIXED-SATELLITE (space-to-Earth) 5.516B BROADCASTING BROADCASTING-SATELLITE Mobile Mobile-satellite (space-to-Earth)	40.5-41 FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE Mobile	40.5-41 FIXED-SATELLITE (space-to-Earth) Mobile-satellite (space-to-Earth)	40.5-41 FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE Fixed Mobile Mobile-satellite (space-to-Earth)	Satellite Communications (25)
5.547	5.547	5.547	US211 G117	US211	
41-42.5 FIXED FIXED-SATELLITE (space-to-Earth) 5.516B BROADCASTING BROADCASTING-SATELLITE Mobile			41-42.5	41-42 FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE MOBILE US211	Fixed Microwave (101)
5.547 5.551F 5.551H 5.551I			US211	42-42.5 FIXED BROADCASTING BROADCASTING-SATELLITE MOBILE US211	
42.5-43.5 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile RADIO ASTRONOMY			42.5-43.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile RADIO ASTRONOMY	42.5-43.5 RADIO ASTRONOMY	
5.149 5.547			US342	US342	
43.5-47 MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE			43.5-45.5 MOBILE-SATELLITE (Earth-to-space) FIXED-SATELLITE (Earth-to-space) G117	43.5-45.5	
5.554			45.5-46.9 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION-SATELLITE 5.554		

		46.9-47 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION- SATELLITE	46.9-47 MOBILE MOBILE-SATELLITE (Earth-to-space) RADIONAVIGATION- SATELLITE FIXED	
		5.554	5.554	
47-47.2 AMATEUR AMATEUR-SATELLITE		47-48.2	47-47.2 AMATEUR AMATEUR-SATELLITE	Amateur (97)
47.2-47.5 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE			47.2-48.2 FIXED FIXED-SATELLITE (Earth-to-space) US297 MOBILE US264	Satellite Communications (25)
5.552A				
47.5-47.9 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B MOBILE	47.5-47.9 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE			
47.9-48.2 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE				
5.552A				
48.2-48.54 FIXED FIXED-SATELLITE (Earth-to- space) 5.552 (space-to-Earth) 5.516B 5.554A 5.555A MOBILE	48.2-50.2 FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.552 MOBILE	48.2-50.2 FIXED FIXED-SATELLITE (Earth-to-space) US297 MOBILE US264		
48.54-49.44 FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE				
5.149 5.340 5.555 See next page	5.149 5.340 5.555		5.555 US342	

* * * * *

UNITED STATES (US) FOOTNOTES

* * * * *

USxxx In the band 37-38 GHz, the following Government receiving earth stations have been coordinated with the FCC and shall be protected from non- operations in the fixed and mobile services in the band 37-38 GHz and from non-Government earth stations in the fixed-satellite service (space-to-Earth) in the sub-band 37.5-38 GHz. Non-Government applications for fixed and mobile service use of frequencies in the band 37-38 GHz shall be coordinated with NTIA through the Frequency Assignment Subcommittee within the following coordination areas/distances. The coordinates listed below are specified in terms of the North American Datum of 1983.

In the band 37-38 GHz, the following stations in the space research service (space-to-Earth) have been coordinated:

Site	Coordination Area
NASA Goldstone Deep Space Communications Complex, Goldstone, California	30 kilometer (18.64 mile) radius centered on latitude 35° 9' 00" N, longitude 116° 50' 06" W.
National Radio Astronomy Observatory, Green Bank, West Virginia	Rectangle between latitudes 37° 30' N and 39° 15' N and between longitudes 78° 30' W and 80° 30' W (National Radio Quiet Zone)

NON-FEDERAL GOVERNMENT (NG) FOOTNOTES

* * * * *

NGxxx The use of the band 37.5-40 GHz by the fixed-satellite service (space-to-Earth) is limited to gateway earth station operations as set out in 47 C.F.R. Part 25.

* * * * *

PART 101 - FIXED MICROWAVE SERVICES

1. The authority citation for Part 101 would continue to read as follows:

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

2. Section 101.17 would be revised to read as follows:

§101.17 Performance requirements for the 37.0-40.0 GHz and 42.0-42.5 GHz frequency bands.

(a) All 37.0-40.0 GHz and 42.0-42.5 GHz band licensees must demonstrate substantial service at the time of license renewal. A licensee's substantial service showing should include, but not be limited to, the following information for each channel for which they hold a license, in each EA or portion of an EA covered by their license, in order to qualify for renewal of that license. The information provided will be judged by the Commission to determine whether the licensee is providing service which rises to the level of "substantial." Licensees, whether the license was obtained through competitive bidding or partitioning/aggregation/disaggregation, may build facilities anywhere within the authorized service area without further authority from the Commission, provided that they have complied with applicable

Commission requirements. The Commission does not require individual licenses for each terrestrial fixed facility.

(1) A description of the 37.0-40.0 GHz, or 42.0-42.5 GHz band licensee's current service in terms of geographic coverage;

(2) A description of the 37.0-40.0 GHz, or 42.0-42.5 GHz band licensee's current service in terms of population served, as well as any additional service provided during the license term;

(3) A description of the 37.0-40.0 GHz, or 42.0-42.5 GHz band licensee's investments in its system(s) (type of facilities constructed and their operational status is required);

(b) Any 37.0-40.0 GHz and 42.0-42.5 GHz band licensees adjudged not to be providing substantial service will not have their licenses renewed.

* * * * *

3. Sections 101.56(a)(1), (a)(2)(ii), (b), (f), (g), (h) and (i) would be amended to read as follows:

§ 101.56 Partitioned services areas (PSAs) and disaggregated spectrum.

(a)(1) The holder of an EA authorization to provide service pursuant to the competitive bidding process areas in the 37.0-40.0 GHz and 42.0-42.5 GHz bands and any incumbent licensee of rectangular service areas in the 38.6-40.0 GHz band may enter into agreements with eligible parties to partition any portion of its service area as defined by the partitioner and partitionee. Alternatively, licensees may enter into agreements or contracts to aggregate/disaggregate any amount of spectrum, provided acquired spectrum is aggregated/disaggregated in frequency pairs.

(a)(2)(i) * * *

(a)(2)(ii) The contracts must include descriptions of the areas being partitioned or spectrum being aggregated/disaggregated. The partitioned service area shall be defined by coordinate points at every 3 seconds along the partitioned service area unless an FCC recognized service area is utilized (i.e., Metropolitan Service Area or Rural Service Area) or county lines are followed. If geographic coordinate points are used, they must be specified in degrees, minutes, and seconds to the nearest second of latitude and longitude and must be based upon the 1983 North American Datum (NAD83). In the case where an FCC recognized service area or county lines are utilized, applicants need only list the specific area(s) (through use of FCC designations or county names) that constitute the partitioned area.

(b) The eligibility requirements applicable to EA authorization holders also apply to those individuals and entities seeking partitioned or aggregated/disaggregated spectrum authorizations.

(c) * * *

(d) * * *

(e) * * *

(f) The duties and responsibilities imposed upon EA authorization holders in this part, apply to those licensees obtaining authorizations by partitioning or spectrum aggregation/disaggregation.

(g) The build out requirements for the partitioned service area or aggregated/disaggregated spectrum shall be the same as applied to the EA authorization holder.

(h) The license term for the partitioned service area or aggregated/disaggregated spectrum shall be the remainder of the period that would apply to the EA authorization holder.

(i) Licensees, including those using bidding credits in a competitive bidding procedure, shall have the authority to partition service areas or aggregated/disaggregate spectrum.

* * * * *

4. New Section 101.58 would be added to read as follows:

§ 101.58 System operations.

(a) The licensee in the 37.0-40.0 GHz and 42.0-42.5 GHz bands may construct and operate any number of fixed stations anywhere within the area authorized by the license without prior authorization, except as follows:

(1) A station is required to be individually licensed under Part 101 if:

(i) International agreements require coordination;

(ii) Submission of an Environmental Assessment is required under § 1.1307 of this chapter.

(iii) The station would affect the radio quiet zones under § 1.924 of this chapter.

(2) Any antenna structure that requires notification to the Federal Aviation Administration (FAA) must be registered with the Commission prior to construction under § 17.4 of this chapter.

(3) Frequencies in the 37.0-38.6 GHz band are co-primary and shared with the Government. All parties concerned should complete coordination based on a first in time sharing basis and obtain coordination agreements with prior licensed facility operators before operating.

(b) Whenever a licensee constructs or makes system changes as described in paragraph (a) of this section, the licensee is required to notify the Commission within 30 days of the change under § 1.947 of this chapter and include a statement of the technical parameters of the changed station.

5. Section 101.63 would be amended by revising paragraph (a) to read as follows:

§ 101.63 Period of construction; certification of completion of construction.

(a) Each station, except in Local Multipoint Distribution Services, 24 GHz Service, the 37.0-40.0 GHz and 42.0-42.5 GHz bands, authorized under this part must be in operation within 18 months from the initial date of grant. For the 70 GHz, 80 GHz, and 90 GHz bands, each 18-month construction period will commence on the date of each registration of each individual link; adding links will not change the overall renewal period of the license.

* * * * *

6. Section 101.64 would be revised to read as follows:

§ 101.64 Service areas.

Service areas for 37.0-40.0 GHz and 42.0-42.5 GHz service are Economic Areas (EAs) as defined below and in effect as of April 12, 2000. EAs are delineated by the Regional Economic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce, 1995. The Commerce Department organizes the 50 States and the District of Columbia into 172 EAs. Additionally, there are four EA-like areas: Guam and Northern Mariana Islands; Puerto Rico and the U.S. Virgin Islands; American Samoa and the Gulf of Mexico. A total of 175 authorizations (excluding the Gulf of Mexico EA-like area) will be issued for each channel block in the 37.0-40.0 GHz and 42.0-42.5 GHz bands.

7. Section 101.101 would be amended by adding to the table entries for 37,000-38,600 MHz and 42,000-42,500 MHz to read as follows:

§ 101.101 Frequency availability.

FREQUENCY BAND (MHz)	RADIO SERVICE				
	COMMON CARRIER (Part 101)	PRIVATE RADIO (Part 101)	BROADCAST AUXILIARY (Part 74)	OTHER (Parts 15, 21, 22, 24, 25, 74 78 & 100)	NOTES

37,000-38,600	CC	OFS		25	F/M/TF
38,600-40,000	CC	OFS	TV BAS	25	F/M/TF
42,000-42,500	CC	OFS			F/M/TF
***	***	***	***	***	***

8. Section 101.103(i) would be amended and new sections 101.103(j) and (k) would be added to read as follows:

§ 101.103 Frequency coordination procedures.

(i)(1)(a) When fixed microwave or fixed satellite earth station facilities licensed under Part 101 are to be operated in the band 37,000 MHz to 40,000 MHz or 42,000 MHz to 42,500 MHz, the following coordination procedures shall apply:

(b) All harmful interference to other users and blocking of adjacent channel use in the same or adjacent geographical area is prohibited. In areas near the border between two licensees' service areas, careful consideration should be given to minimum power requirements and to the location, height, and radiation pattern of the transmitting antenna. Licensees are expected to cooperate fully in attempting to resolve problems of potential interference before bringing the matter to the attention of the Commission.

(c) Each licensee must engineer its system to be reasonably compatible with adjacent and co-

channel operations in the same or adjacent areas, and cooperate fully and in good faith to resolve whatever potential interference and transmission security problems may be present in adjacent and co-channel operations.

(d) A licensee shall coordinate its facilities whenever the facilities have optical line-of-sight (calculated using the formula $d=3.57\sqrt{h}$, where d is the distance between the antenna and the horizon in kilometers and h is the antenna height in meters) into another licensee's geographic area where that licensee's facilities may be located or into another licensee's facilities within the same or adjacent geographic area, and the power flux density of the licensee's system calculated at the service area boundary of the neighboring service area(s) exceeds -125 dBW/m² in any 1 megahertz band. This line of site should take into consideration all the possible relevant heights of the other licensee's antenna(s). Power flux density is calculated using accepted engineering practices, taking into account such factors as propagation loss, atmospheric loss, curvature of the Earth, and gain of the antenna in the direction of the service area boundary. Licensees are encouraged to develop operational agreements with relevant licensees in the same or adjacent areas.

(e) In the event no licensee in the bands 37,000 MHz to 40,000 MHz or 42,000 MHz to 42,500 MHz is immediately available in an adjacent or same area, the first-in-time licensee would have to coordinate its stations when future licensees appear in order to accommodate other licensees' rights and to ensure cooperative and effective use of the spectrum in each area. This may include reducing powers to levels which are agreeable to both parties.

(i)(2) Response to notification should be made as quickly as possible, even if no technical problems are anticipated. Any response to notification indicating potential interference must specify the technical details and must be provided to the licensee, either electronically or in writing, within 10 days of notification. Every reasonable effort should be made by all licensees to eliminate all problems and conflicts. If no response to notification is received within 10 days, the licensee will be deemed to have made reasonable efforts to coordinate and may commence operation without a response. The beginning of the 10-day period is determined pursuant to §101.103(d)(2)(v).

(i)(3) Licensees shall comply with the appropriate coordination agreements between the United States and Canada and the United States and Mexico concerning cross-border sharing and use of the 37.0-40. GHz and 42.0-42.5 GHz bands.

(j) *Special consideration for coordinating with Government stations in the 37-38.6 GHz band:* (1) In the band 37-38 GHz, use of the space research service (space-to-Earth) shall be on a primary basis only at Goldstone, California. Stations in the fixed and mobile services within 80 kilometers (50 miles) of 35° 18' North Latitude and 116° 54' West Longitude shall be coordinated through through contacting the facility directly. Stations in the 37.0-38.6 GHz band in the vicinity of Green Bank, West Virginia must also coordinate as required by Section 1.924. The interference protection criterion to these facilities is -130 dBW/m² in any 1 MHz, and licensees must obtain letters of approval for their operations from the relevant Government facility. Other uses of the space research service (space-to-Earth) in the band 37-38 GHz shall be on a secondary basis.

(2) Non-Government licensees the 37-38.6 GHz band must register their technical data electronically into the ULS for each station in each of their geographic areas in order to make available accurate information on the use of the facilities and also to implement the "first-in-time" principle for coordination with Government facilities. This data shall include: 1) the date of the initial operating capability (IOC) of each station, 2) specific information identifying the station locations, 3) technical operating capabilities of the stations, including all of the power and antenna characteristics specified in Section 101.103(d)(2)(ii) of this section, and 4) whether the station has optical line-of-site to another facility with which it is being coordinated, if known at the time. If it is determined that optical line-of-site does not exist, the applicant should explain the determination. This site-based information shall be entered into the record of the area license in the ULS database by electronically registering notifications to the initial FCC Form 601 using Schedule I, but not more than twelve (12) months before operations are scheduled to begin.

(3) The FCC will note the activation date of the station, but will not make a determination that any of the information is correct or acceptable for filing. Coordination involving current and future Government facilities will require licensees and applicants to ensure that their data is accurately reflected

in the ULS.

(4) Government operators with existing facilities in the 37.0-38.6 GHz band should cooperate in the coordination process by responding to non-Government coordination notifications. Government operators with new stations to coordinate can identify and directly access the technical information of the non-Government licensees through the ULS. Examining the data in the ULS before formally coordinating with the FCC in the appropriate frequency band and geographic service area may speed up the frequency selection process. Government operators with new stations should notify the FCC through the IRAC process with sufficient technical detail to determine whether potential interference is possible with facilities of our licensees/applicants.

(5) *Non-Government Operations Coordinating with Existing Government Operations.* Non-Government terrestrial users in the band 37.0-38.6 GHz, and also operators who wish to protect an FSS (downlink) earth station in the band 37.5-38.6 GHz, shall coordinate with the existing military terrestrial Government facilities in 37.0-38.6 GHz (existing stations are identified in Appendix E) through the ULS and IRAC process. The proposed coordination triggers for non-Government stations are that the antenna must have optical line-of-sight to the Government facilities and that the PFD at the site exceeds a threshold of -125 dBW/m^2 in any 1 MHz band. Harmful interference is not anticipated if neither of these conditions exist. The FCC and NTIA will resolve interference problems referred to them to their mutual satisfaction based on first-in-time sharing basis.

(6) *Non-Government Operations Coordinating with Future Government Operations.* Government terrestrial users in the band 37.0-38.6 GHz, and also operators who are required to protect an FSS (downlink) earth station in the band 37.5-38.6 GHz, are required to coordinate with future Government SRS (downlink space research antennas) operations and Government terrestrial facilities in the band 37.0-38.6 GHz at locations not identified at this time. The coordination triggers for non-Government stations are that the antenna must be within optical line-of-sight of an authorized Government site and that the station have a PFD at the site exceeding a threshold of -130 dBW/m^2 in any 1 MHz band for the SRS (downlink) operations and -125 dBW/m^2 in any 1 MHz band for the terrestrial facilities. Harmful interference is not anticipated if neither of these conditions exist. The coordinating parties are expected to resolve interference protection to their mutual satisfaction based on first-in-time sharing or to derive written sharing agreements.

(7) *Government Operations Coordinating with Future Non-Government Operations.* Government SRS (downlink space research antennas) users and Government terrestrial users in the 37.0-38.6 GHz band are expected to coordinate with existing and future non-Government operations. The coordination triggers for Government SRS stations are that the antenna have optical line-of-sight to an authorized non-Government site and have a vulnerability threshold PFD at the SRS receiver of -130 dBW/m^2 in any 1 MHz band. The coordinating parties are expected to resolve interference protection to their mutual satisfaction based on first-in-time sharing. The coordination triggers for Government terrestrial stations are that the transmitting antenna have optical line-of-sight to the site of an authorized non-Government facility and have a PFD at the non-Government site exceeding a threshold of -125 dBW/m^2 in any 1 MHz band. The FCC and NTIA will resolve interference problems referred to them to their mutual satisfaction based on first-in-time sharing.

(k) *Special consideration for coordinating Government stations in the 39.5-40.06 GHz band.* Government operators who are required to coordinate and protect non-Government terrestrial stations or FSS (downlink) earth stations in the band 39.5-40 GHz shall coordinate directly with the existing non-Government licensee for any earth stations located on military bases, and with the non-Government terrestrial licensee in whose service area the Government earth station is to be located. All parties concerned should resolve the coordination problems based on a first in time sharing basis and obtain coordination agreements with prior licensed facility operators.

* * * * *

9. Section 101.107 would be amended by revising note 9 to the table in paragraph (a) to read as follows:

§ 101.107 Frequency tolerance.

(a) * * *

/9/ Equipment authorized to be operated in the 37,000-40,000 MHz, 42,000-42,500 MHz, 71,000-76,000 MHz, 81,000-86,000 MHz, 92,000-94,000 MHz and 94,100-95,000 MHz bands is exempt from the frequency tolerance requirement noted in the above table.

* * * * *

10. Section 101.109 would be amended by removing the entry for 38,600-40,000 MHz and adding entries for 37,000-40,000 MHz and for 42,000-42,500 MHz and revising footnote 7 to read as follows:

§ 101.109 Bandwidth.

* * * * *

(c) * * *

Frequency Band (MHz)	Maximum Authorized Bandwidth
* * *	* * *
37,000 to 40,000	50 MHz /7/
42,000 to 42,500	50 MHz /7/
* * *	* * *

/7/ For channel block assignments in the 24,250-25,250 MHz, 37,000-40,000 MHz, and 42,200-42,500 MHz bands, the authorized bandwidth is equivalent to an unpaired channels block assignment or to either half of a symmetrical paired channel block assignment. When adjacent channels are aggregated, equipment is permitted to operate over the full channel block aggregation without restriction.

Note to Footnote 7: * * *

* * * * *

11. Section 101.113(a) would be amended by removing the entry for 38,600-40,000 MHz and adding entries in the table for 37,000-40,000 MHz and for 42,000-42,500 MHz to read as follows:

§ 101.113 Transmitter power limitations.

(a) * * *

Frequency Band (MHz)	Maximum allowable EIRP ^{1 2}	
	Fixed (dBW)	Mobile (dBW)
* * *	* * *	* * *
37,000 to 40,000	+55
42,000 to 42,500	+55

Frequency Band (MHz)	Maximum allowable EIRP ^{1 2}	
	Fixed (dBW)	Mobile (dBW)
***	***	***

12. Section 101.115 would be amended by adding entries in the table for 37,000-40,000 MHz and 42,000-42,500 MHz, deleting the entry for 38,600-40,000 MHz, and by revising footnote 14 in paragraph (c) to read as follows:

§ 101.115 Directional antennas.

(c) *****

31,000 to 31,300 ^{12,13}	n/a	4.0	38	n/a	n/a	n/a	n/a	n/a	n/a	n/a
37,000 to 40,000 ¹⁴	A	n/a	38	25	29	33	36	42	55	55
	B	n/a	38	20	24	28	32	35	36	36
42,000 to 42,500 ¹⁴	A	n/a	38	25	29	33	36	42	55	55
	B	n/a	38	20	24	28	32	35	36	36

¹⁴Stations authorized to operate in these bands may use antennas other than those meeting the Category A standard. However, the Commission may require the use of higher performance antennas where interference problems can be resolved by the use of such antennas.

13. Section 101.147(v) would be amended to read as follows:

§ 101.147 Frequency Assignments

(v)(1) Assignments in the bands 37,000-40,000 MHz and 42,000-42,500 MHz must be according to the following frequency plan:

[Option 1] unpaired channels are at lower end of 37.0-38.6 GHz

Paired Channel Blocks

Channel Group A		Channel Group B	
Channel No.	Frequency Block (MHz)	Channel No.	Frequency Block (MHz)
1-A	38,600-38,650	1-B	39,300-39,350
2-A	38,650-38,700	2-B	39,350-39,400
3-A	38,700-38,750	3-B	39,400-39,450
4-A	38,750-38,800	4-B	39,450-39,500
5-A	38,800-38,850	5-B	39,500-39,550
6-A	38,850-38,900	6-B	39,550-39,600
7-A	38,900-38,950	7-B	39,600-39,650
8-A	38,950-39,000	8-B	39,650-39,700
9-A	39,000-39,050	9-B	39,700-39,750
10-A	39,050-39,100	10-B	39,750-39,800
11-A	39,100-39,150	11-B	39,800-39,850
12-A	39,150-39,200	12-B	39,850-39,900
13-A	39,200-39,250	13-B	39,900-39,950
14-A	39,250-39,300	14-B	39,950-40,000
19-A	37,200-37,250	19-B	37,900-37,950
20-A	37,250-37,300	20-B	37,950-38,000
21-A	37,300-37,350	21-B	38,000-38,050
22-A	37,350-37,400	22-B	38,050-38,100
23-A	37,400-37,450	23-B	38,100-38,150
24-A	37,450-37,500	24-B	38,150-38,200
25-A	37,500-37,550	25-B	38,200-38,250
26-A	37,550-37,600	26-B	38,250-38,300
27-A	37,600-37,650	27-B	38,300-38,350
28-A	37,650-37,700	28-B	38,350-38,400
29-A	37,700-37,750	29-B	38,400-38,450
30-A	37,750-37,800	30-B	38,450-38,500
31-A	37,800-37,850	31-B	38,500-38,550
32-A	37,850-37,900	32-B	38,550-38,600
33-A	42,000-42,050	33-B	42,250-42,300
34-A	42,050-42,100	34-B	42,300-42,350
35-A	42,100-42,150	35-B	42,350-42,400
36-A	42,150-42,200	36-B	42,400-42,450
37-A	42,200-42,250	37-B	42,450-42,500

Unpaired Channel Blocks	
Channel No.	Frequency Block (MHz)
15	37,000-37,050
16	37,050-37,100
17	37,100-37,150
18	37,150-37,200

[Option 2] unpaired channels are at upper end of 37.0-38.6 GHz

Paired Channel Blocks			
Channel Group A		Channel Group B	
Channel No.	Frequency Block (MHz)	Channel No.	Frequency Block (MHz)
1-A	38,600-38,650	1-B	39,300-39,350
2-A	38,650-38,700	2-B	39,350-39,400
3-A	38,700-38,750	3-B	39,400-39,450

4-A	38,750-38,800	4-B	39,450-39,500
5-A	38,800-38,850	5-B	39,500-39,550
6-A	38,850-38,900	6-B	39,550-39,600
7-A	38,900-38,950	7-B	39,600-39,650
8-A	38,950-39,000	8-B	39,650-39,700
9-A	39,000-39,050	9-B	39,700-39,750
10-A	39,050-39,100	10-B	39,750-39,800
11-A	39,100-39,150	11-B	39,800-39,850
12-A	39,150-39,200	12-B	39,850-39,900
13-A	39,200-39,250	13-B	39,900-39,950
14-A	39,250-39,300	14-B	39,950-40,000
15-A	37,000-37,050	15-B	37,700-37,750
16-A	37,050-37,100	16-B	37,750-37,800
17-A	37,100-37,150	17-B	37,800-37,850
18-A	37,150-37,200	18-B	37,850-37,900
19-A	37,200-37,250	19-B	37,900-37,950
20-A	37,250-37,300	20-B	37,950-38,000
21-A	37,300-37,350	21-B	38,000-38,050
22-A	37,350-37,400	22-B	38,050-38,100
23-A	37,400-37,450	23-B	38,100-38,150
24-A	37,450-37,500	24-B	38,150-38,200
25-A	37,500-37,550	25-B	38,200-38,250
26-A	37,550-37,600	26-B	38,250-38,300
27-A	37,600-37,650	27-B	38,300-38,350
28-A	37,650-37,700	28-B	38,350-38,400
33-A	42,000-42,050	33-B	42,250-42,300
34-A	42,050-42,100	34-B	42,300-42,350
35-A	42,100-42,150	35-B	42,350-42,400
36-A	42,150-42,200	36-B	42,400-42,450
37-A	42,200-42,250	37-B	42,450-42,500

Unpaired Channel Blocks	
Channel No.	Frequency Block (MHz)
29	38,400-38,450
30	38,450-38,500
31	38,500-38,550
32	38,550-38,600

(v)(2) Channel Blocks 1 through 37 are assigned for use within Economic Areas (EAs). Applicants are to apprise themselves of any licensed rectangular service areas in the band 38,6000-40,000 MHz within the EA for which they seek a license and comply with the requirements set out in § 101.103. All of the channel blocks may be subdivided as desired by the licensee as frequency pairs and used within its service area as desired without further authorization subject to the terms and conditions set out in § 101.149.

* * * * *

14. Section 101.149 would be revised by revising the title and introductory paragraph and adding subparagraphs (d) and (e) to read as follows:

§ 101.149 Special requirements for operation in the bands 37,000-40,000 MHz, and 42,000-42,500 MHz.

Assigned frequency channels in the bands 37,000-40,000 MHz, and 42,000-42,500 MHz may be aggregated/disaggregated with no limits and used anywhere in the authorized service area, subject to the following terms and conditions:

* * *

(d) Point-to-point, point-to-multipoint, fixed and mobile terrestrial operations (upon adoption of interference protection criteria for mobile operations) shall be permitted in the bands 37,000-40,000 MHz, and 42,000-42,500 MHz. Fixed satellite earth station operations may also be permitted if the license is obtained through competitive bidding, partitioning, and/or aggregation/disaggregation under Part 101.

(e) For the frequency bands 37,000-40,000 MHz, and 42,000-42,500 MHz, spectrum must be aggregated/disaggregated by frequency pairs.

* * * * *

15. Subpart N of Part 101 would be amended by revising the title to read as follows:

Competitive Bidding Procedures for the 37.0-40.0 GHz and 42.0-42.5 GHz Bands

* * *

16. Section 101.1201 would be revised to read as follows:

§ 101.1201 37.0-40.0 GHz and 42.0-42.5 GHz subject to competitive bidding.

Mutually exclusive initial applications for 37.0-40.0 GHz and 42.0-42.5 GHz band licenses are subject to competitive bidding. The general competitive bidding procedures set forth in 47 CFR Part 1, Subpart Q will apply unless otherwise provided in this subpart.

17. Section 101.12XX as added (rule number to be determined later) would read as follows:

§ 101.12XX Designated Entities.

(a) Eligibility for small business provisions.

(1) A small business is an entity that, together with its affiliates, its controlling interests and the affiliates of its controlling interests, has average gross revenues that are not more than \$40 million for the preceding three years.

(2) A very small business is an entity that, together with its affiliates, its controlling interests and the affiliates of its controlling interests, has average gross revenues that are not more than \$15 million for the preceding three years.

(b) Bidding credits.

(1) A winning bidder that qualifies as a small business, as defined in this section, or a consortium of small businesses may use a bidding credit of 15 percent, as specified in § 1.2110(f)(2)(iii), to lower the cost of its winning bid on any of the licenses in this part.

(2) A winning bidder that qualifies as a very small business, as defined in this section, or a consortium of very small businesses may use a bidding credit of 25 percent, as specified in § 1.2110(f)(2)(ii), to lower the cost of its winning bid on any of the licenses in this part.

* * * *

APPENDIX B

Initial Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act of 1980, as amended (RFA),¹ the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in this *Third Notice of Proposed Rule Making (Third NPRM)*. 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 this *Third NPRM* provided in Section IV, (Procedural Matters), of the item. The Commission will send a copy of the *Third NPRM*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.² In addition, the *Third Notice* and IRFA (or summaries thereof) will be published in the Federal Register.³

A. Need for, and Objectives of, the Notice of Proposed Rulemaking

This rulemaking action is being undertaken to propose a licensing plan, a channeling plan, certain technical rules, and competitive bidding procedures for the 37.0-38.6 and 42.0-42.5 (“37/42”) GHz spectrum bands. Currently, there are no such rules in place for these bands. Our objective is to facilitate spectrum aggregation, equipment development and service planning, and otherwise to create rules that will maximize efficient use of these bands, and that are in the public interest. We note specifically that, as described below, we propose to provide bidding credits to small and very small businesses.

B. Legal Basis for Proposed Rules

The proposed action is authorized under Sections 1, 4(i), 7, 301, 303, 308 and 309(j) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 157, 301, 303, 308, 309(j).

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

The RFA requires that an initial regulatory flexibility analysis be prepared for notice and comment rulemaking proceedings, unless the Agency certifies that “the rule will not, if promulgated, have a significant impact on a substantial number of small entities.”⁴ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”⁵ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.⁶ A “small business concern” is one which: (1) is

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

² See 5 U.S.C. § 603(a)

³ See *id.*

⁴ 5 U.S.C. § 603(b)(3).

⁵ *Id.* at § 601(6)

⁶ 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 definition(s) in the Federal Register.” 5 U.S.C. § 601(3).

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).⁷ A small organization is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”⁸ This IRFA describes and estimates the number of small entity licensees that may be affected if the proposals in this *Third NPRM* are adopted.

When identifying small entities that could choose to participate in an auction and be affected by our new rules, we provide information describing auctions results, including the number of small entities that are winning bidders. We note, however, that the number of winning bidders that qualify as small businesses at the close of an auction does not necessarily reflect the total number of small entities currently in a particular service. The Commission does not generally require, post-auction, that applicants provide business size information, except in the context of an assignment or transfer of control application where unjust enrichment issues are implicated. Consequently, to assist the Commission in analyzing the total number of potentially affected small entities, we request commenters to estimate the number of small entities that may be affected by any rule changes resulting from this *Third NPRM*.

National Figures:

1. **Small Businesses.** Nationwide, there are a total of 22.4 million small businesses, according to SBA data.⁹

2. **Small Organizations.** Nationwide, there are approximately 1.6 million small organizations.¹⁰

3. **Small Governmental Jurisdictions.** 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.”¹¹ As of 1997, there were approximately 87,453 governmental jurisdictions in the United States.¹² 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.

Wireless Service Providers.

The SBA has developed a small business size standard for wireless small businesses within the two separate categories of **Paging**¹³ and **Cellular and Other Wireless Telecommunications**.¹⁴ Under both

⁷ 15 U.S.C. § 632.

⁸ 5 U.S.C. § 601(4).

⁹ See SBA, *Programs and Services*, SBA Pamphlet No. CO-0028, at page 40 (July 2002).

¹⁰ Independent Sector, *The New Nonprofit Almanac & Desk Reference* (2002).

¹¹ 5 U.S.C. § 601(5).

¹² U.S. Census Bureau, *Statistical Abstract of the United States: 2000*, Section 9, pages 299-300, Tables 490 and 492.

¹³ 13 C.F.R. § 121.201, North American Industry Classification System (NAICS) code 517211 (changed from 513321 in October 2002).

¹⁴ 13 C.F.R. § 121.201, North American Industry Classification System (NAICS) code 517211 (changed from 513321 in October 2002).

SBA categories, a wireless business is small if it has 1,500 or fewer employees. According to Commission data,¹⁵ 1,387 companies reported that they were engaged in the provision of wireless service. Of these 1,387 companies, an estimated 945 have 442 or fewer employees and 586 have more than 1,500 employees.¹⁶ Consequently, the Commission estimates that most wireless service providers are small entities that may be affected by the rules and policies adopted herein

39 GHz Service. The Commission created a special small business size standard for 39 GHz licenses – an entity that has average gross revenues of \$40 million or less in the three previous calendar years.¹⁷ An additional size standard for “very small business” is: an entity that, together with affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years.¹⁸ The SBA has approved these small business size standards.¹⁹ The auction of the 2,173 39 GHz licenses began on April 12, 2000 and closed on May 8, 2000. The 18 bidders who claimed small business status won 849 licenses. Consequently, the Commission estimates that 18 or fewer 39 GHz licensees are small entities that may be affected by the rules and policies proposed herein.

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

Generally, all applicants are required to seek authorizations to construct and operate and to adhere to the technical criteria set out in the final rules. However, this *Third NPRM* proposes service rules and auction rules for the 37.0-38.6 GHz band and the 42.0-42.5 GHz band (“37/42 GHz bands”) either by a geographic area licensing approach or the first-come, first-served link-by-link registration approach, in order to coordinate spectrum use that will affect reporting, recordkeeping and other compliance requirements. Each of these changes is described below:

The *Third NPRM* proposes to require users in the 37/42 GHz bands to coordinate procedures with the National Telecommunications and Information Administration (NTIA) in negotiations with non-Government and Government stations in the band and that these negotiations would apply the geographic area licensing regulatory framework. However, independent of the licensing approach the Commission chooses, the basic coordination procedures with NTIA will be the same because they are based on a site-by-site method, consistent with Section IV(6) of the Memorandum of Understanding (MOU) between the Commission and NTIA dated January 31, 2003, wherein the Commission and NTIA would maintain current lists of authorized frequency assignments on the ULS and the Government Master File (GMF) and exchange information as appropriate to coordinate spectrum use.²⁰ Also, the site-based coordination

¹⁵ FCC, Wireline Competition Bureau, Industry Analysis and Technology Division, “Trends in Telephone Service” at Table 5.3, page 5-5 (Aug. 2003). This source uses data that are current as of December 31, 2001.

¹⁶ *Id.*

¹⁷ See Amendment of the Commission’s Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, ET Docket No. 95-183, *Report and Order*, 12 FCC Rcd 18600 (1997), 63 Fed.Reg. 6079 (Feb. 6, 1998).

¹⁸ *Id.*

¹⁹ See Letter to Kathleen O’Brien Ham, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, FCC, from Aida Alvarez, Administrator, SBA (Feb. 4, 1998) (VoIP); See Letter to Margaret Wiener, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, from Hector Barreto, Administrator, Small Business Administration, dated January 18, 2002 (WTB).

²⁰ Memorandum of Understanding between the Federal Communications Commission and the National Telecommunications and Information Administration (Jan. 31, 2003)(“*FCC/NTIA MOU*”).

procedures proposed here involve coordination between the Interdepartment Radio Advisory Committee (IRAC), Commission licensees, and Government agencies through the Commission, which represents the non-Government facilities, and the NTIA, which represents the Government agencies. Problems would be referred by the Commission back to its licensees/applicants and by the NTIA to Government agencies for resolution.

The *Third NPRM* proposes to require non-Government operators/licensees in the 37.0-38.6 GHz frequency band to maintain databases of their fixed stations, including sufficient data for other licensees, coordinators, and the Government to make a determination of potential interference. Non-Government licensees would have the option of maintaining their own databases for their facilities or of selecting third-party database managers, frequency coordinators, or other entities to maintain their database of facilities. The database manager would be responsible to the licensee and would share the technical data with the Commission and other database managers as needed for proper coordination, and retain records of the coordination agreements with other parties. All coordination agreements would remain in force in the event the licensee transfers its license, partitions its service area, or disaggregates its spectrum, until new agreements are reached.

The *Third NPRM* proposes to require the non-Government operators/licensees to make available all necessary technical database information to the Commission in a timely and convenient manner sufficient for resolving interference complaints with NTIA in the event of disputes. The *Third NPRM* also proposes to require non-Government licensees to register their technical data electronically into the ULS for each station in their authorized service areas in order to make available accurate information with Government facilities such as, the date of the initial operating capability of each station, specific information identifying the station locations, technical operating capabilities of the stations, and, if known, whether the station has optical line-of-site to another facility with which it is being coordinated. This site-based information would be entered into the record of the area license in the ULS database by electronically registering notifications to the initial Commission Form 601 using Schedule I, but not more than twelve (12) months before operations are scheduled to begin. The *Third NPRM* also proposes that notification and response for site-by-site coordination for geographic area licensees requires variations in the general coordination procedures as given in Section 101.103 of our rules. The *Third NPRM* further proposes that geographic area licensees must select site frequencies within their assignment blocks of spectrum and initiate the coordination process by notifying the other parties with whom they must coordinate and that registrations of licensee sites on Schedule I of Form 601 must include the licensees determination of whether possible optical line-of-site exists to relevant (future) Government facilities. If it is determined that optical line-of-site does not exist, the applicant is required to explain the determination. Coordination involving existing and future Government facilities would require licensees and applicants to ensure that their data is accurately reflected in ULS.

The *Third NPRM* also proposes that licensees would be required to follow existing practices and precedents regarding fees associated with initial licenses, and to file notifications in the ULS to supply the technical information needed to coordinate each station with Government facilities. When revisions to ULS are developed for adding the capability to handle licensees in the 37.0-38.6 GHz band, the capability to collect this additional site-based information for notifications would be added to the capability to handle “initial” auction winners as licensees.

The *Third NPRM* proposes to conduct an auction of initial exclusive area licenses in the 37/42 GHz band which would be required to conform with general competitive bidding rules set out in Part 1, Subpart Q, of our rules, substantially consistent with the bidding procedures that have been employed in previous auctions, and specifically, rules governing competitive bidding design, designated entities, application and payment procedures, reporting requirements, collusion issues, and unjust enrichment.²¹ In

²¹ See Section III-J, *supra*.

this connection, the *Third NPRM* also would require, pursuant to Section 309(j) of the Communications Act, resolution of such applications by competitive bidding.

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

The RFA requires an agency to describe any significant, specifically small business, alternatives that it has considered in reaching its proposed approach, which may include the following three alternatives (among others): “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.”²²

In the *Third NPRM*, we propose service and auction rules for the 37/42 GHz bands in order to establish a flexible regulatory and licensing framework that would promote seamless deployment of a host of services and technologies. We seek comment on the possibility of conducting an auction – where applications are mutually exclusive and issuing exclusive licenses for the 37/42 GHz bands on a geographic basis. We believe that our proposed approach would provide a variety of businesses with the opportunity to participate in an auction of licenses in this band and afford licensees substantial flexibility for the provision of services with varying capital costs. We also believe that geographic area licensees in these bands would be presented with issues and costs similar to those presented to 39 GHz band licensees, including those involved in developing markets, technologies, and services. Smaller service areas make it easier for small businesses to bid successfully for licenses, but viable businesses may require larger service areas. We believe that the technical rules that apply to the 39 GHz band would also be appropriate for the 37/42 GHz bands, if we decide to adopt a geographic area licensing approach. It would be inappropriate to apply the 70/80/90 GHz technical rules to the 37/42 GHz bands because the bands differ significantly from each other. Because the 37/42 GHz band has such a large amount of spectrum, license portions of these blocks by Economic Areas (EAs) or other portions on a site-by-site basis could be other alternatives. By using this combined approach to licensing, the Commission may address the needs of large entities, as well as smaller businesses, including public safety entities. Therefore, we also seek comment on the benefits of having some spectrum licensed by geographic areas and some spectrum licensed on a site-by-site basis. As an alternative, we could also pair some of the channels in the 37.0-38.6 GHz portion with some of the channels in the 42.0-42.5 GHz portion or allocate channel sizes of 30 or 40 megahertz or even smaller. Perhaps smaller channels might allow for smaller businesses and private entities to effectively compete for spectrum needed for more limited applications without needing to obtain a larger amount of spectrum that would require substantial outlays of initial investment.²³ We hope that these alternatives, which might especially affect small entity participation in the auction, will be addressed by commenters.

We note that if we adopt a geographic area licensing framework, we propose to permit 37/42 GHz licensees to partition and disaggregate spectrum freely within those bands. These options tend to assist small entities. For the geographic area approach, we propose to allow partitioning of any licensee-defined service area, disaggregation of any amount of spectrum²⁴ and combined partitioning and

²² 5 U.S.C. §§ 603(c)(1)-(c)(4).

²³ See 47 U.S.C. § 309(j)(4)(D)

²⁴ We propose to require licensees to maintain any channel pairs that we might establish for the 37/42 GHz bands when the licensees choose to disaggregate any of their licenses in this band, as we do for 39 GHz licensees. See *Report and Order and Second NPRM*, 12 FCC Red at 18,635 ¶ 72, and as herein proposed for application to the 37/42 GHz bands and codification at 47 C.F.R. § 101.149(e). We have not decided whether to adopt a channel plan.

disaggregation. The *Third NPRM* proposes to permit the 37/42 GHz bands to partition and disaggregate spectrum if the Commission adopts a geographic area licensing framework using EAs by competitive bidding and through private negotiation and agreement. Our Part 1 unjust enrichment provisions would govern partitioning and disaggregation arrangements involving licenses authorized to small businesses afforded a bidding credit, including those that later elect to partition or disaggregate their licenses to an entity that is not eligible for the same bidding credit. In addition, Section 309(j)(3)(B) of the Communications Act provides that, in establishing eligibility criteria and bidding methodologies, the Commission shall promote “economic opportunity and competition . . . by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women.”²⁵ The Commission concluded in the *First NPRM and Order*, that it should make partitioning and disaggregation available to all 39 GHz licensees, because these capabilities would promote flexibility both in system design and service, and encourage new entrants into the market by creating smaller, less capital-intensive service areas that may be more accessible to small entities.²⁶

In contrast, in the *70/80/90 GHz Report and Order*, the Commission noted that the use of partitioning and disaggregation is pertinent only in geographic licensing settings, where the licensee has exclusive use of a particular area. It determined that its decision to authorize the 70/80/90 GHz bands on the basis of nationwide non-exclusive licensing obviated the need for partitioning and disaggregation.²⁷ A viable alternative to the geographic area licensing approach would be to issue an unlimited number of non-exclusive nationwide licenses, with licensees authorized to deploy point-to-point “pencil beam” links on a first-come-first-served basis. Thus, there will be no need for partitioning and disaggregation if we adopt a non-exclusive link-by-link registration approach. We seek comment on all of these proposals.

Also, as an alternative, and in the interest of regulatory certainty, if we adopt a geographic area licensing structure, we propose to adopt a rule specifically permitting spectrum aggregation. The Commission has also concluded that permitting aggregation of channels might benefit the public through efficiencies and flexibility in the types of services this would allow, and might provide for lower costs or greater ability to compete with established service providers with large transmission capacity.²⁸ We also propose that 37/42 GHz licensees be allowed to aggregate their spectrum in order to provide greater flexibility of service. In other services, the Commission has adopted a rule expressly permitting aggregation.

The *Third NPRM* proposes competitive bidding procedures if we license bands by EAs when awarding 37/42 GHz licensees set out in Part 1, Subpart Q of our rules. Small businesses that choose to participate in the competitive bidding for these services and utilize a bidding credit are required to demonstrate that they meet the criteria set out to qualify as small businesses,²⁹ as required under Part 1,

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See ¶¶ 57-68, *infra*. We reserve discretion, in the event that we propose a channel plan for the 37/42 GHz bands, to require disaggregation of that spectrum by channel pairs.

²⁵ See 47 U.S.C. § 309(j)(3)(B).

²⁶ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,635-36 ¶¶ 71-73; see also *Memorandum Opinion and Order*, 14 FCC Rcd at 12,460-61 ¶¶ 61-63.

²⁷ *70/80/90 GHz Report and Order* at ¶ 87.

²⁸ *Id.* at 18,627 ¶¶ 55.

²⁹ See 47 C.F.R. § 1.2101 *et. seq.* We note that in the *First NPRM and Order*, the Commission sought comment on competitive bidding design and procedures for the 37 GHz band. However, since release of the *36-51 GHz First NPRM and Order* in 1995, the Commission has made substantial amendments and modifications to its Part 1 general competitive bidding rules for all auctionable services. See *Part 1 Third Report and Order*, 13 FCC Rcd 374; *Part 1*,

(continued...)

Subpart Q of the Commission's rules, 47 C.F.R. Part 1, Subpart Q. We believe that the small business size standards and corresponding bidding credits proposed would provide a variety of businesses with opportunities to participate in the auction of licenses for the 37/42 GHz band and afford licensees substantial flexibility for the provision of services with varying capital costs.³⁰ We further propose to provide small businesses with a bidding credit of fifteen percent and very small businesses with a bidding credit of twenty-five percent. The bidding credits we propose here are those set out in the standardized schedule in Part 1 of our rules.³¹ We also seek comment on the use of these standards and associated bidding credits for applicants to be licensed in the 37/42 GHz band, with particular focus on the appropriate definitions of small and very small businesses as they relate to the size of the geographic area to be covered and the spectrum allocated to each license. In developing these proposals, however, we acknowledge the difficulty in accurately predicting the market forces that will exist at the time we license these frequencies. Thus, our forecasts of types of services that licensees will offer over these bands may require adjustment depending upon ongoing technological developments and changes in market conditions. Accordingly, to the extent commenters support a different bidding credit regime, or believe

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Recon. Order and Part 1 Fifth Report and Order, 15 FCC Rcd 15293; *Second Order on Reconsideration of the Third Report and Order and Order on Reconsideration of the Fifth Report and Order*, 18 FCC Rcd 10180. In addition, many of the auction procedures upon which the *First NPRM and Order* sought comment are matters on which the Wireless Telecommunications Bureau regularly seeks comment and makes a determination under its delegated authority. Amendment of Part 1 of the Commission's Rules – Competitive Bidding Procedures, *Order, Memorandum Opinion and Order and Notice of Proposed Rulemaking*, 12 FCC Rcd 5686, 5697-98, ¶ 16 (1997) (citing 47 C.F.R. § 0.131).

³⁰ *Report and Order and Second NPRM*, 12 FCC Rcd at 18,661-64 ¶¶ 149-54.

³¹ In the *Part 1 Third Report and Order*, the Commission adopted a standard schedule of bidding credits, the levels of which were developed based on the Commission's auction experience. *Part 1 Third Report and Order*, 13 FCC Rcd at 403-04 ¶ 47; see also 47 C.F.R. § 1.2110(f)(2). We note, however, that the standardized bidding credits are not the same as those adopted for the 39 GHz band. *Report and Order and Second NPRM*, 12 FCC Rcd at 18,661-64 ¶¶ 149-54.

that there are any distinctive characteristics to the 37/42 GHz band that suggest we should not employ bidding credits in this instance, commenters should support their proposals with relevant information. For example, commenters should provide information on the types of system architecture that licensees are likely to deploy in these bands, the availability of equipment, market conditions, and other factors that may affect the capital requirements or the types of services that licensees may provide.³²

F. Federal Rules That Overlap, Duplicate, or Conflict with These Proposed Rules

None.

³² See 47 U.S.C. § 1.2110(c)(1) (provides factors used to determine the appropriate threshold for the use of bidding credits).

APPENDIX C**Existing Government Operations in 37.0-38.6 GHz Band**

<u>Frequency band</u>	<u>Location (Federal Agency)</u>	<u>Coordinates</u>
37-38 GHz	Goldstone, CA (NASA)	35° 09' 00" N, 116° 50' 06 " W
	Green Bank, WV (NSF) ¹	37° 30' 00" N, 78° 30' 00" W
	to	39° 15' 00" N, 80° 30' 00" W

¹ These are the northwest and southeast corners of the National Radio Quiet Zone, established in IRAC Document 3867/2 dated March 26, 1958, and in FCC Docket No. 11745 dated November 1958.

APPENDIX D

List of Commenters

Advanced Radio Telecom Corporation
Altron Communications L.C.
Association for Local Telecommunications Services
AT&T Wireless Services
Bachow and Associates, Inc.
BizTel Inc.
Columbia Millimeter Communications, L.P.
Commco, L.L.C.
DCR Communications, Inc.
Fixed Point-to-Point Communications Section, Network Equipment Division of the
Telecommunications Industry Association
GHz Equipment Company
GTE Service Corporation
Microwave Partners d/b/a Astroline Communications
Milliwave Limited Partnership
National Spectrum Managers Association
Pacific Bell Mobile Services
Personal Communications Industry Association
Spectrum Communications, L.C.
Telco Group, Inc.
Telephone and Data Systems, Inc.
U S West
WinStar Communications, Inc.