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

In the Matter of	)	
	)	
Review of Quiet Zones Application Procedures	)	**WT Docket No. 01-319**
	)	
	)	

REPORT AND ORDER

Adopted: February 4, 2004 **Released: February 12, 2004**

By the Commission:

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I. INTRODUCTION

1. By this action, we adopt changes to our rules governing areas known as "Quiet Zones."[1] The amendments that we adopt today serve the dual purposes of streamlining requirements for applications affecting Quiet Zones, while protecting these sensitive areas from harmful interference. We believe that the record in this proceeding demonstrates that our rules have been largely successful in protecting Quiet Zones while facilitating the deployment of wireless services. Nevertheless, we believe there are certain modifications that will expedite the application process, reduce unnecessary or redundant requirements from Commission regulations, and promote the efficient use of spectrum within these protected areas. Accordingly, in this *Report and Order*, we:

- Amend our rules to provide for immediate processing of applications that may implicate Quiet Zones, in the event that the applicant indicates that it has obtained consent, if required by section 1.924, of the Quiet Zone entity.

- Amend our rules to clarify that applicants may provide notification to and begin coordination with Quiet Zone entities, where required, in advance of filing an application with the Commission.

- Amend section 101.31(b)(1)(v) to permit Part 101 applicants to initiate conditional operation, provided they have obtained prior consent of the Quiet Zone entity to the extent required, and are otherwise eligible to initiate conditional operations over the proposed facility; similarly, we clarify that, for services in which individual station licenses are not issued, licensees may initiate operations immediately upon receipt of the Quiet Zone entity's consent.

- Clarify that either the applicant or the applicant's frequency coordinator may notify and initiate any required coordination proceedings with the Quiet Zone entity.

II. BACKGROUND.

2. Section 1.924 of our rules sets forth procedures regarding coordination of Wireless Telecommunications Services applications and operations within areas known as "Quiet Zones."[2] Such zones are areas where "it is necessary to restrict radiation so as to minimize possible impact on the operations of radio astronomy or other facilities that are highly sensitive to interference."[3] The facilities covered by section 1.924 are: (1) the National Radio Astronomy Observatory (NRAO) site in Green Bank, Pocahontas County, West Virginia, and the Naval Radio Research Observatory (NRRO) site in Sugar Grove, Pendleton County, West Virginia;[4] (2) the Table Mountain Radio Receiving Zone of the

[1] *See* 47 C.F.R. § 1.924. For purposes of simplicity, all areas implicated by section 1.924 will be referred to in this order as "Quiet Zones." We note that the only area with the formal designation of "Quiet Zone" is the National Radio Quiet Zone, which encompasses the National Radio Astronomy Observatory and the Naval Radio Research Observatory. *See* Amendment of Part 2 of the Commission's Rules and Regulations to Give Interference Protection to Frequencies Utilized for Radio Astronomy; Amendment of Parts 3, 4, 5, 6, 7, 9, 10, 11, 16, 20, and 21 of the Commission's Rules and Regulations to Give Interference Protection to Frequencies Utilized for Radio Astronomy, *Report and Order*, 17 Rad. Reg. 1738 (1958). *See also* Manual of Regulations and Procedures for Federal Radio Frequency Management, U.S. Department of Commerce, National Telecommunications and Information Administration, May 2003 Edition, Section 8.3.9. In this regard, we clarify references in certain service specific rules to avoid confusion regarding the term "quiet zone." *See* Appendix A.

[2] 47 C.F.R. § 1.924.

[3] *Id*.

[4] 47 C.F.R. § 1.924(a).

Research Laboratories of the Department of Commerce (Table Mountain) in Boulder County, Colorado;[5] (3) FCC field offices used for monitoring activities;[6] and (4) the Arecibo Observatory (Arecibo) in Puerto Rico.[7] The record confirms that such facilities are sensitive to interference. For example, commenters have explained that the emissions that radio astronomy facilities are designed to receive are extremely weak; a typical radio telescope receives approximately one-trillionth of a watt from even the strongest cosmic source and can receive sources one million times weaker still.[8] Because radio astronomy receivers are designed to pick up such weak signals, these facilities are extremely vulnerable to interference from spurious and out-of-band emissions.

3. In order to protect Quiet Zones from harmful interference, section 1.924 sets forth a variety of required or recommended procedures for notifications to and/or coordination of proposed frequency use with an affected site. The facilities affected can be separated into two categories: areas in which applicants are required to provide notification of any proposed operations prior to authorization, and areas for which the Commission recommends advanced consultation.[9] For facilities requiring notification, specifically NRAO, NRRO and Arecibo, section 1.924 provides that notification must occur concurrently with the filing of the application, and that the affected facility must be given an opportunity to comment on the application.[10] For example, section 1.924(a) provides that an entity filing an application to operate a new or modified station in the NRAO or NRRO Quiet Zone areas must simultaneously provide notification to the applicable entity along with technical details of its proposed operation. The filing of the application triggers a 20-day comment period during which the applicable Quiet Zone is given an opportunity to file comments or objections in response to the notifications.[11] For other facilities, such as Table Mountain and FCC Field Monitoring Facilities, the Commission's rules do not require that notification and opportunity to object be afforded to the affected facility prior to grant of the application.[12] Rather than require notification and a 20-day comment period for the latter areas, the Commission urges that advance consultation be made with the applicable entity in order to avoid interference.

4. In January 2001, pursuant to the statutory mandate under section 11 of the Communications Act, as amended, requiring the periodic review of Commission rules, Commission staff completed an evaluation of regulations affecting telecommunications service providers, and issued a report regarding recommendations made as a result of that review.[13] In its comments to the 2000 Biennial Review, Alloy

[5] 47 C.F.R. § 1.924(b).

[6] 47 C.F.R. §§ 0.121, 1.924(c). These field offices are located in Allegan, Michigan; Anchorage, Alaska; Belfast, Maine; Canandaigua, New York; Douglas, Arizona; Ferndale, Washington; Grand Island, Nebraska; Kingsville, Texas; Laurel, Maryland; Livermore, California; Powder Springs, Georgia; Santa Isabel, Puerto Rico; Vero Beach, Florida; and Waipahu, Hawaii.

[7] 47 C.F.R. § 1.924(d). In the *NPRM,* the Commission noted that it was excluding section 1.924(e), 47 C.F.R. § 1.924(e), concerning Government Satellite Earth Stations located in the Denver, Colorado and Washington, D.C. areas, from consideration in this proceeding. This *Report and Order* likewise does not make any changes to section 1.924(f), 47 C.F.R. § 1.924(f), which limits operations in the 420-450 MHz band near certain military bases, or section 1.924(g), which seeks to limit interference to Geostationary Operational Environmental Satellite earth stations located at Wallops Island, Virginia; Fairbanks, Alaska; and Greenbelt, Maryland.

[8] *See* National Academy of Sciences (NAS) Comments at 2.

[9] 47 C.F.R. §§ 1.924(b)(2), (c)(4).

[10] *See* 47 C.F.R. §§ 1.924(a)(2), (d)(2).

[11] *See* 47 C.F.R. § 1.924(a).

[12] *See* 47 C.F.R. §§ 1.924 (b), (c).

[13] *2000 Biennial Regulatory Review Updated Staff Report* (rel. Jan. 17, 2001) (*2000 Biennial Review Staff Report*).

LLC, now Cingular Wireless LLP, argued that the Commission's rules add an excessive interval to the process of obtaining approval for wireless facilities located within Quiet Zone areas.[14] As an example, Alloy/Cingular stated that, although the Arecibo Observatory is often willing to provide written approval for wireless modifications, the Commission's rules delay final approval.[15] Alloy/Cingular asserted that the Commission's rules are burdensome and can be improved to address speed of service issues.[16] In response to these comments, the staff recommended that we reexamine the application procedures for Quiet Zone areas and determine whether we could make these procedures more efficient.[17] In the *2000 Biennial Review Report*, the Commission accepted the staff's recommendation to initiate a rulemaking to review the rules governing applications potentially affecting Quiet Zones.[18] Accordingly, in November 2001, the Commission issued a *Notice of Proposed Rulemaking* (*NPRM*) seeking to identify and address ways of streamlining the processing of such applications, while simultaneously ensuring the continued protection of these sensitive areas.[19]

III. DISCUSSION

A. Streamlining Quiet Zone application processing.

5. *Background*. In the *NPRM*, the Commission inquired whether, in situations in which Quiet Zone issues are implicated, it is appropriate to expedite application processing if the application provides written consent, where required, from the applicable Quiet Zone entity.[20] As noted, section 1.924(a) and 1.924(d) set out a 20-day period[21] during which the NRAO, NRRO or Arecibo may lodge a comment or objection in response to a notification regarding proposed operation.[22] The Commission suggested that in such situations, if a wireless operator obtains written consent as necessary from the applicable entity

[14] Alloy LLC 2000 Biennial Review Comments, FCC 00-346, at 8 (filed Oct. 10, 2000).

[15] *Id.*

[16] *Id.*

[17] *2000 Biennial Regulatory Review Staff Report* at Appendix IV: Rule Part Analysis at 9.

[18] *See Biennial Regulatory Review*, CC Docket No. 00-175, *Report*, 16 FCC Rcd 1207, 1231-32 (2001) (*2000 Biennial Review Report*).

[19] Review of Quiet Zones Application Procedures, *Notice of Proposed Rulemaking*, 16 FCC Rcd 20690 (2001) (*NPRM*). Subsequently, the Cellular Telecommunications & Internet Association (CTIA) filed a petition for rulemaking seeking amendment of rules relating to Quiet Zones as part of the Year 2002 Biennial Regulatory Review. *See* Cellular Telecommunications & Internet Association's Petition for Rulemaking Concerning the Biennial Review of Regulations Affecting CMRS Carriers, filed July 25, 2002 (CTIA 2002 Biennial Review Comments). The Rural Cellular Association (RCA) similarly filed comments in the 2002 Biennial Regulatory Review proceeding suggesting that certain rules regarding Quiet Zones be modified. RCA 2002 Biennial Review Comments at 3. The staff concluded that the rule changes proposed by CTIA and RCA are within the scope of review contemplated in the instant proceeding and recommended that the comments of CTIA and RCA be incorporated into this proceeding as well. *See* Federal Communications Commission 2002 Biennial Regulatory Review - Staff Report of the Wireless Telecommunications Bureau, 18 FCC Rcd 4243 (2003).

[20] *NPRM*, 16 FCC Rcd at 20693, para. 9.

[21] In its comments, NSF seeks clarification as to whether the 20-day period refers to calendar or business days. Section 1.4 of the Commission's rules provides that deadlines for filing periods of more than seven days are calculated according to calendar days. 47 C.F.R. § 1.4.

[22] 47 C.F.R. § 1.924(a), (d).

following consultation, the Commission could process the application without awaiting the end of the 20-day period.[23]

6. *Discussion*. We conclude that, in situations where notification is required, it is appropriate to amend our rules to provide for the immediate processing of applications where the applicant has obtained the prior written consent of the relevant Quiet Zone entity. We find that waiting for the expiration of the 20-day waiting period in cases in which the applicant has consulted with, and obtained approval from, the Quiet Zone entity, unduly delays the processing of applications. The underlying basis of the waiting period was to provide affected Quiet Zone entities an interval within which to lodge comments or objections regarding interference concerns with the Commission. Delaying the processing of applications until the expiration of the waiting period serves no purpose in situations in which the Quiet Zone entity has indicated that it has no objections to the technical details of the proposed operation. Accordingly, we adopt this proposal. Most of the parties commenting on this issue agree that the waiting period need not be exhausted if the affected Quiet Zone entity has provided written consent.[24] NRAO, however, argues that a reduction of the 20-day waiting period would place an undue administrative burden on the Quiet Zone entity and would jeopardize the thoroughness of an application evaluation.[25] NRAO states that an applicant should not expect a completed evaluation in advance of the 20-day period.[26] We note, however, that our decision to expedite application processing relates only to applicants that have obtained written consent from the applicable Quiet Zone entity. Where prior written consent is not obtained, Quiet Zone entities retain the full 20-day period to file comments or objections regarding a proposed operation. Further, in order to avoid any confusion as to the scope of a Quiet Zone entity's consent, the written consent from the Quiet Zone entity must include the same technical parameters specified in the application.[27]

B. Coordination in advance of application filing.

7. *Background*. In the *NPRM*, the Commission requested comment on whether to allow parties to provide notification to and begin coordination with affected entities, where required, in advance of filing an application with the Commission.[28] As noted, sections 1.924(a)(2) and 1.924(d)(2) require an applicant to notify NRAO, NRRO or the Arecibo Observatory at the same time it makes a filing with the Commission.[29] In the *NPRM*, the Commission tentatively concluded that advance coordination with these Quiet Zone entities would help to expedite application processing and the initiation of operations, while also ensuring that Quiet Zones are protected.[30]

8. *Discussion.* We conclude that applicants and Quiet Zone entities alike will benefit from advance notification and coordination. We agree with commenters who state that the simultaneous notification currently specified in the Commission's rules may have discouraged applicants from planning ahead and

[23] *NPRM*, 16 FCC Rcd at 20693, para. 9.

[24] *See* Cingular Comments at 5-6; Cornell Comments at 5; NAS Comments at 4; NSF Comments at 3; SBS Comments at 2; Verizon Wireless Comments at 2-3; CTIA 2002 Biennial Review Comments at 7; RCA 2002 Biennial Review Comments at 3.

[25] NRAO Comments at 1.

[26] *Id.*

[27] *See* NAS Comments at 4; Cornell Comments at 5-6.

[28] *NPRM*, 16 FCC Rcd at 20693, para. 10.

[29] 47 C.F.R. §§ 1.924(a)(2), 1.924(d)(2).

[30] *NPRM*, 16 FCC Rcd at 20693, para. 10.

obtaining the prior consent of the applicable Quiet Zone entity.[31] We find that prior notification and coordination between applicants and Quiet Zone entities should be encouraged because such coordination would allow parties to directly address any interference concerns prior to filing, thereby avoiding the possibility that a Quiet Zone entity will object after an application has been filed. This in turn would facilitate the expeditious processing of applications by the Commission. The commenters strongly support the idea of prior coordination, noting that advance notification and coordination has already been occurring on an informal basis, and emphasizing that, based on previous experience, the earlier that coordination occurs between carriers and Quiet Zone entities, the better the result for all parties. Given these considerations, we modify sections 1.924(a)(2) and 1.924(d)(2) to provide that notice may be provided to the affected Quiet Zone entity prior to, or simultaneously with, a Commission filing.

9. In addition to seeking comment on whether advance notification and coordination should be permitted, the Commission sought comment on the appropriate length of time that should be prescribed for such notification and coordination.[32] There was, however, little comment as to this issue. One commenter, the National Science Foundation (NSF), advocates early coordination with Quiet Zone entities, particularly within 30 to 60 days prior to a Commission filing, but feels that coordination between parties earlier than 60 days prior to a filing would not be productive.[33] Another commenter, NRAO, states that in light of the success of the "informal preliminary evaluations" it has provided to applicants in the past, the Commission should only encourage advance notification rather than mandating a specific time frame. NRAO believes that such coordination should remain informal.[34]

10. We agree with NRAO that the timing of advance coordination should be left to the parties. To the extent that prior coordination has been occurring informally between applicants and Quiet Zone entities, it appears that applicants have successfully coordinated with Quiet Zone entities and subsequently filed applications without formal direction from or involvement of the Commission. Given this success, we conclude that it is unnecessary to prescribe a specific timeline for advance notification and coordination. We will, however, continue to require that applicants serve notice to the relevant Quiet Zone entity that the application has actually been filed and that such notification include technical details of the proposed operation as set out in sections 1.924(a)(1) and 1.924(d). We conclude that continuing to require applicants to provide notice when an application is filed is reasonable to ensure consistency between technical specifications agreed upon pursuant to the advance coordination and what is actually filed in the application. Moreover, for situations in which an applicant has given advance notice but does not reach agreement with the Quiet Zone entity regarding proposed operations, such notice signals the Quiet Zone entity that the 20-day waiting/comment period has begun.

C. Conditional operation of stations.

11. *Background*. In its comments to the Commission's *2000 Biennial Review*, Alloy/Cingular argued that the Commission's rules imposed an excessive interval to the process of obtaining approval for wireless facilities within the vicinity of a Quiet Zone.[35] Alloy/Cingular asserted that the Commission's rules with respect to microwave operations in Quiet Zones are burdensome and can be improved to address speed of service issues.[36] Specifically, section 101.31(b) permits applicants for certain point-to-

[31] *See* Cingular Comments at 5; SBS Comments at 2.

[32] *NPRM*, 16 FCC Rcd at 20693, para. 10.

[33] NSF Comments at 4.

[34] NRAO Comments at 2.

[35] Alloy/Cingular 2000 Biennial Review Comments at 8.

[36] *Id.*

point microwave stations to operate on a conditional basis during the pendency of an associated application under certain conditions.[37] However, subsection (v) of that rule forbids conditional operation of facilities located in areas identified in section 1.924 in general.[38] Acknowledging this issue in the *NPRM*, the Commission sought comment on whether to allow Part 101 applicants to initiate conditional operation under section 101.31(b), notwithstanding the limitation contained in subsection (v), if they submit written consent from the applicable Quiet Zone entity, and otherwise are eligible to initiate conditional operations over the proposed facility.[39]

12. *Discussion*. We conclude that it is in the public interest to allow Part 101 applicants to operate on a conditional basis in Quiet Zones pending application processing if they obtain prior consent from the applicable Quiet Zone entity. Section 101.31(b)(1)(v)'s ban on conditional operation in Quiet Zones was established to ensure that such areas are adequately protected from interference. However, we conclude that the underlying goal of the ban against conditional operation in Quiet Zones would be served where, prior to submitting an application, an applicant has resolved interference and other coordination issues with an affected entity and has obtained consent. The Commission has previously recognized that permitting conditional operation pending the approval of an application provides greater flexibility to Part 101 entities and enables them to operate more efficiently.[40] In instances where applicants have obtained consent from the relevant entities and have satisfied other applicable conditions, we agree with commenters that precluding such Part 101 entities from operating on a conditional basis would unduly delay the construction and deployment of microwave networks. Indeed, all commenters responding to this issue indicate that we should permit conditional operation in such situations.[41] Accordingly, we will modify section 101.31(b)(1)(v) to permit conditional operation in Quiet Zones if the applicant has obtained written consent from the applicable entity and otherwise satisfies the criteria for conditional authorization found in section 101.31(b).

13. Verizon Wireless suggests that, although the vast majority of applications that are delayed as a result of Quiet Zones procedures are microwave authorizations, any decision on our part to permit conditional operation in a Quiet Zone area should also apply to other wireless services such as the Personal Communications Service (PCS) or cellular service.[42] We conclude that, for wireless services in which applicants are permitted to operate on a conditional basis prior to authorization, there is little basis to distinguish applicants of such services from Part 101 applicants so long as an applicant has coordinated with the applicable Quiet Zone entity and all other requirements for conditional operation have been met. As noted, once an applicant has coordinated with a Quiet Zone entity and has obtained consent, little benefit is gained from precluding conditional operation. However, we will not extend this to wireless services, such as cellular, which do not permit operation prior to authorization by the Commission.

[37] 47 C.F.R. § 101.31(b)(v).

[38] *See* 47 C.F.R. § 101.31(b)(v).

[39] *NPRM*, 16 FCC Rcd at 20693, para. 8.

[40] Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, *Report and Order*, 11 FCC Rcd 13449, 13461-13462, paras. 26-27.

[41] Cingular Comments at 3-4, Cornell Comments at 5; NAS Comments at 4; NSF Comments at 3; NRAO Comments at 3; Cornell Reply Comments at 2.

[42] Verizon Wireless Reply Comments at 2-3.

D. Rules cross-referencing section 1.924.

14. *Background*. There are a number of Commission rules that cross-reference section 1.924 or specify procedures that are contingent upon section 1.924.[43] In the *NPRM,* the Commission referenced sections 90.655,[44] 95.45(b),[45] 101.1009,[46] and 101.1329[47] as examples of rules that point out that certain sites may require individual station licenses or are the subject to other restrictions if they are located in Quiet Zones.[48] The Commission requested comments on any possible modifications of these or other rules that implement the Commission's goals regarding protection of Quiet Zones from unacceptable interference.[49] The commenters who addressed this issue advocate maintaining all references to section 1.924 of our rules, as well as adding additional references to section 1.924 in service-specific rules, particularly for services that are licensed according to geographic area markets.[50] Commenters argue that such cross-referencing is necessary because applicants are likely to read only those rules that refer to their own service, and may be unaware of the need to comply with Quiet Zone rules.[51]

15. *Discussion*. We find that augmenting our service-specific rules to ensure that applicants and licensees are aware of their section 1.924 obligations is not warranted. Applicants and licensees are required to be aware of and to comply with all applicable Commission rules.[52] We note that in the *ULS Report and Order*, the Commission consolidated all wireless procedural rules, including service-specific Quiet Zone rules, into Part 1 in order to provide consistent standards for all wireless services, eliminate unnecessary or redundant rules, and retain service-specific rules only where such rules are necessary due to technical, operational or policy considerations of the particular wireless service.[53] In consolidating all of the procedural rules in Part 1, the Commission established a single point of reference regarding our wireless licensing procedures.[54] We find the argument that applicants are unlikely to read applicable Part 1 rules unpersuasive to undo the harmony and consistency achieved by the *ULS Report and Order*. Moreover, we are not aware that there is a current problem with carriers not complying with section 1.924 requirements specifically because they are not aware of the obligation to do so. Therefore, we will not place additional references to section 1.924 in our service-specific rules.[55]

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[43] *NPRM*, 16 FCC Rcd at 20693, para. 11.

[44] 47 C.F.R. § 90.655.

[45] 47 C.F.R. § 95.45(b).

[46] 47 C.F.R. § 101.1009.

[47] 47 C.F.R. § 101.1329.

[48] *NPRM*, 16 FCC Rcd at 20693, para. 11.

[49] *Id.*

[50] Cornell Comments at 5-6; NAS Comments at 4-5; NRAO Comments at 2; NSF Comments at 2-3.

[51] Cornell Comments at 5-6; NAS Comments at 4; NSF Comments at 3.

[52] *See e.g.* Sitka Broadcasting Company, Inc., *Memorandum Opinion and Order,* 70 FCC 2d 2375, 2378 (1979), citing Lowndes County Broadcasting Company, *Memorandum Opinion and Order,* 23 FCC 2d 91 (1970) and Emporium Broadcasting Company, *Memorandum Opinion and Order,* 23 FCC 2d 868 (1970).

[53] *See* Amendment of Parts 0, 1, 12, 22, 24, 26, 27, 80, 87, 90, 95, 97, and 101 of the Commission's Rules To Facilitate the Development and Use of the Universal Licensing System in the Wireless Telecommunications Services, *Report and Order*, 13 FCC Rcd 21027 (1998) (*ULS Report and Order*).

[54] *Id.* at 21054-21055, para. 56.

[55] We note that we are not removing any current references to section 1.924 in service-specific rules.

16. Although we will not amend our service-specific rules to include additional cross-reference to section 1.924, we nonetheless will take other measures to publicize section 1.924 requirements. For example, we will evaluate whether it is possible to modify the Commission's application forms to make reference to section 1.924 obligations more explicit. We will also take outreach measures such as placing information on the Commission's website or issuing public notices to remind entities of their obligations.

E. Matters raised by commenters in response to the *NPRM*.

17. In the *NPRM,* the Commission requested comment on ways to improve the current procedures prescribed by section 1.924 that would streamline the applicable processes while continuing to ensure that areas are fully and adequately protected. In response, we received a number of proposals to modify the processes set out in section 1.924.

1. Proposals to institute 30-day automatic consent period.

18. *Background.* Two of the commenters in this proceeding advocate an advance 30-day notification period during which the failure of the Quiet Zone entity to comment or object will constitute approval of the terms of the proposed operation. First, Cingular suggests that the consent process regarding conditional authority for microwave services in Quiet Zones be combined with current frequency coordination procedures.[56] Part 101 applicants are required to provide notification to other Part 101 licensees and applicants of proposed frequency use prior to filing an application with the Commission.[57] If no comment or objection is received within 30 days, the applicant is deemed to have made reasonable efforts to coordinate and may file its application without a response.[58] Cingular proposes that this rule be extended to Quiet Zone situations so that the Quiet Zone entity would be required to respond in writing to an applicant's proposed operation within the same 30-day period. In Cingular's proposal, an applicant can satisfy the consent requirement by providing a statement that the Quiet Zone entity has been notified and no responses were received within 30 days of notification.[59] Cingular asserts that this change will reduce the need for Quiet Zone entities to formally respond in writing to every proposal while still providing operational flexibility to microwave applicants.[60]

19. Spanish Broadcasting System (SBS) also proposes a 30-day notification period, but seeks to apply the 30-day notification period across services.[61] In SBS's proposal, for situations in which notification is required prior to authorization, if a Quiet Zone entity does not respond to pre-application coordination efforts made by an applicant within 30 days of notification, then concurrence will be implied.[62] No comment period would occur after filing. SBS proposes that the Commission require that applicants file an application within 60 days of the end of the 30-day period to prevent the application from getting stale.[63]

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[56] Cingular Comments at 6.

[57] *See* 47 C.F.R. § 101.103(d).

[58] 47 C.F.R. § 101.103(d)(2)(iv).

[59] Cingular Comments at 6-7.

[60] Cingular Comments at 7.

[61] While Cingular's proposal is specific to Part 101 applicants seeking conditional authority, SBS's proposal appears to apply to all situations implicating Quiet Zones.

[62] SBS Comments at 2.

[63] *Id.*

20. *Discussion.* We decline to adopt the proposals advanced by Cingular and SBS to establish a process in which consent by a Quiet Zone entity is assumed if no objections are raised by the end of a 30-day period. As emphasized in the *NPRM,* we consider protection of the Quiet Zone areas from radiofrequency interference to be critically important and that in instituting this proceeding, we do not intend to reduce or eliminate applicant requirements to coordinate with Quiet Zones.[64] Our aim in this proceeding is to identify ways to streamline our application processes but only if the underlying objectives of the Quiet Zone rules are not compromised.[65] We believe that the protections set out in section 1.924 will be undercut if carriers may assume that failure by a Quiet Zone entity to respond to a notification within 30 days may automatically be construed as consent.[66] We continue to believe that actual coordination between applicants and Quiet Zone entities remains the most effective means for parties to ensure that Quiet Zone areas are protected from interference in the least burdensome manner to applicants.

21. While Cingular and SBS argue that allowing a 30-day automatic consent period is more desirable than the current coordination process,[67] we do not believe that a departure from our current coordination processes is warranted. The Commission cannot know what is occurring with respect to interactions between applicants and Quiet Zone entities, for example, whether notification was adequate or whether applicants are taking appropriate measures to avoid interference to Quiet Zone areas. Without explicit prior approval by the Quiet Zone entity or a time period during which a Quiet Zone entity may lodge objections to operational parameters set out in an application, we cannot assume consent. Further, the record makes apparent that applicants and Quiet Zone entities have been largely successful in resolving notification and coordination issues under our current rules. Although certain commenters assert that our rules regarding coordination are burdensome,[68] these commenters have not provided any specifics as to any difficulties or delays caused by our rules, nor are we aware that any applications have been unduly delayed as a result of our Quiet Zone rules. To the extent that there have been delays, we are confident that the rule changes that we are adopting in this proceeding will make the Quiet Zone application processes more efficient and will facilitate the rapid deployment of service.

2. Proposal requesting greater Commission oversight of guidelines and processes used by Quiet Zone entities.

22. *Background.* RCC Consultants (RCC) requests that the Commission set out specific Quiet Zone interference standards that must be followed by Quiet Zone entities, specifically NRAO and NRRO.[69] RCC states that, although pre-coordination with Quiet Zone facilities has been helpful in the past, pre-

[64] *NPRM*, 16 FCC Rcd at 20692, para. 5.

[65] *Id*.

[66] For example, an applicant could send a pre-application notification to a Quiet Zone entity, stating that it will begin conditional operations. Once the 30-day period has run, the applicant can file an application with the Commission and begin conditional operations without ever hearing from the Quiet Zone entity or without having to notify the Quiet Zone entity that an application has actually been filed.

[67] SBS argues that the 30-day period is necessary to provide applicants with a finite period of time in which to obtain some certainty of response from the Quiet Zone entity and to allow for a more rational and expedited application processing system, while Cingular argues that the 30-day period permits flexibility in coordination. Cingular Comments at 7.

[68] Alloy 2000 Biennial Review Comments at 8 (the Commission's rules are burdensome and delay final approval); SBS Comments at 1 (Commission's rules regarding Quiet Zones are time-consuming and burdensome).

[69] RCC Comments at 1.

coordination is a trial and error process that is unnecessary and burdensome for applicants.[70] Instead, RCC argues that the interference protection criteria used by these facilities should be set out in the Commission's rules, and a clear process for appeals regarding interference objections raised by NRAO and NRRO should be established to determine the reasonableness of existing criteria and any future changes.[71] RCC asserts that these facilities can and have changed their interference parameters at will with no opportunity for public comment or appeal, and that the present method of determining acceptable effective radiated power (ERP) with respect to the NRAO and NRRO facilities is subject to error.[72] RCC states that the interference criteria as presently established by NRAO generally makes use of the 700-800 MHz public safety frequency bands economically infeasible in several counties of Virginia, thereby denying public safety agencies in these areas the benefits of interoperability and mutual aid communications with other public safety agencies.[73]

23. *Discussion*. In the *Arecibo Report and Order*, the Commission established coordination procedures that would apply to operations potentially affecting the Arecibo Radio Astronomy Observatory. In establishing these procedures, the Commission explained its rationale for not adopting specific interference criteria. The Commission concluded that the large number of services --- each operating at differing power levels and frequencies --- as well as other variables such as terrain and propagation characteristics made it prohibitively difficult and time-consuming to establish interference standards that would apply to all applicants.[74] Given these considerations, the Commission did not establish interference limits, and instead directed Arecibo to establish technical guidelines to be used during coordination.[75] Although that order was specific to the Arecibo facility, the same rationale holds true for NRAO and NRRO as well.

24. We conclude that RCC has not demonstrated that circumstances now exist that warrant a change to our policies regarding Quiet Zones interference standards. The factors that caused the Commission to find in the *Arecibo Report and Order* that establishing specific interference criteria would be inordinately difficult and time-consuming remain valid. Although we do not rule out the possibility that in the future we may reconsider our position on this issue, we have not been presented with facts or circumstances sufficient to persuade us that it is now necessary to develop and codify interference standards for NRAO and NRRO.

25. Similarly, we do not find that it is desirable for the Commission to mandate a method of performing interference studies. We believe that specifying the precise method of conducting interference studies could actually run counter to the interests of applicants by taking flexibility out of the coordination process. For example, the Commission could prescribe a method that, depending on the particular circumstance, results in a more restrictive outcome to the applicant than that which may have occurred had the applicant and the Quiet Zone entity had an opportunity to work out a technical solution. Instead, we continue to believe that applicants and Quiet Zone entities should be given the flexibility to work out a solution as to how best to safeguard the affected entity's operations while minimizing burdens on the applicant. Although RCC argues that the parameters needed to perform the interference analyses

[70] *Id.*

[71] *Id.*

[72] *Id.*

[73] *Id.*

[74] *Arecibo Report and Order*, 12 FCC Rcd at 16532. The Commission later affirmed its decision on reconsideration. *See* Amendment of the Commission's Rules to Establish a Radio Astronomy Coordination Zone in Puerto Rico, *Memorandum Opinion and Order*, 13 FCC Rcd 13683 (1998).

[75] *Arecibo Report and Order*, 12 FCC Rcd at 16532.

should be published and should be replicable by a competent engineer, it appears that much of the information that RCC seeks is already being provided to the public. For example, NRAO specifies on its website how it evaluates proposed operations.[76] We note that, although RCC argues that NRAO can and has changed its interference parameters at will, it does not provide specific details[77] nor does the record reflect that other entities have had difficulties in coordinating with NRAO or other Quiet Zone entities.

26. We also find it unnecessary to establish a process for applicants to appeal interference objections raised by Quiet Zone entities. Although Quiet Zone entities are tasked with establishing technical guidelines regarding operations in Quiet Zone areas and are permitted to object to an applicant's proposed operations, the Commission remains the sole entity with authority to resolve service licensing issues.[78] We emphasize that the interference guidelines set by Quiet Zone entities are starting points from which the applicant and the applicable entity can begin discussions. If an applicant believes that a Quiet Zone entity's guidelines are incorrect or overly-stringent, it has the ability to raise the issue with the Commission for final resolution.[79]

3. Proposal to allow applicants to avoid coordination process if they provide self-certification regarding operational parameters.

27. *Background*. Similar to RCC, SBS also requests the Commission to establish specific Quiet Zone interference criteria. However, unlike RCC, which seeks technical standards that Quiet Zone entities would be required to follow during coordination, SBS seeks specific interference criteria as part of a safe harbor approach by which applicants could self-certify that they are operating below established interference limits.[80] SBS's proposal provides that no Quiet Zone coordination would be necessary for applicants that certify that their proposed facility produces a predicted field strength that is less than those established by the Commission.[81]

28. Further, SBS suggests that, in the event that the applicant's proposed operation produces a predicted field strength that exceeds the established limit, the applicant can still self-certify and avoid the coordination process if it submits a showing of terrain shadowing or other local propagation anomaly which results in a diminished field strength at the Quiet Zone location.[82] Alternatively, SBS proposes that, if the Commission determines that there must be actual coordination between applicants and Quiet

[76] *See* National Radio Quiet Zone webpage, <http://www.gb.nrao.edu/nrqz.html>. NRAO disputes RCC's assertion that NRAO changes its parameters, stating that NRAO's interference protection criteria has been employed for decades and has rarely changed.

[77] Both RCC and NRAO point to changes in parameters when the Robert C. Byrd Green Bank Telescope was constructed in 1999. However, other than this change, RCC does not provide details as to other instances.

[78] *See Arecibo Report and Order* at 16531-16533, paras. 31-33.

[79] *See Arecibo Report and Order*, 12 FCC Rcd at 16527, para. 14; *Arecibo MO&O*, 13 FCC Rcd at 13685, para. 6. RCC provides little detail as to how the current process makes the use of public safety frequency bands economically infeasible. Indeed, there was no comment in this proceeding from any public safety entity stating that the current process is unduly burdensome, or precludes or limits interoperability and mutual aid communications with other jurisdictions.

[80] SBS Comments at 3.

[81] SBS Comments at 4. SBS proposes that the Commission establish clear field strength limits for NRAO, NRRO and Arecibo such as that established in section 1.924(b)(1) for the Table Mountain Radio Receiving Zone.

[82] *Id.*

Zone entities, the Commission should find that no Quiet Zone consent is required where the applicant proposes a modified facility which is technically equivalent to an existing facility.[83]

29. *Discussion*. We find that SBS's proposals to permit self-certification would increase the risk of harmful interference to Quiet Zone operations. As an initial matter, we note that, similar to its 30-day coordination period proposal, the purpose of SBS's self-certification proposals is to bypass the requirement to coordinate with Quiet Zone entities, a proposal that we have rejected as running counter to the goals of this proceeding. This notwithstanding, even if we conclude that it is feasible and desirable for the Commission to establish appropriate interference criteria, there is still a risk that applicants may make errors in calculation, as one commenter asserts,[84] or that the established criteria is not appropriate for a given facility. For example, RCC describes a situation relating to an application for UHF facilities in Augusta County, Virginia in which RCC and NRAO both performed point-to-point propagation predictions over the same paths and arrived at different results. Both results also differed from actual measurements that were later conducted.[85] Although RCC cited this incidence as evidence that specific processes and criteria regarding interference should be codified, we believe that it is more aptly viewed as an example that there must be actual coordination between applicant and Quiet Zone entity where required in order to ensure that harmful interference to the operations of the Quiet Zone entity is avoided.

30. The likelihood that interference may occur is further enhanced if we were to adopt SBS's proposal to allow an applicant to avoid actual coordination even where its proposed operation produces a predicted field strength greater than the established limit. Under SBS's proposal, an applicant would be allowed to demonstrate that terrain shadowing results in a diminished filed strength in a Quiet Zone area. Although accounting for terrain shadowing may in certain cases yield a more accurate prediction of the level of interference to facilities, SBS does not provide any specifics on how such terrain shadowing would be calculated. As Cornell University (Cornell) notes, current terrain shadowing programs may be of use in calculating the reduction of interference to broadcast facilities, but are not designed to predict the impact on the extremely sensitive receivers used by radio astronomy observatories.[86] Rather than streamlining the application process, it appears that this proposal would in actuality impose an extra level of complexity by requiring the Commission to determine whether or not such a showing is accurate and a proposed facility is indeed operating below interference limits.

31. Similarly, SBS's proposal that coordination need not be required for modifications that are technically equivalent to current facilities is equally problematic. This proposal poses the problem of how to define technical equivalency. Under one scenario, the Commission could be required to establish a list of operating parameters that a service provider would be required to follow in order for the modified facility to be considered technically equivalent to its existing facility.[87] In such a situation, any deviation from the established parameters would negate technical equivalency. In another scenario, the Commission would be required to determine if a service provider's change in one operating parameter sufficiently accounts for a change made to a different parameter. For example, to account for a change in antenna height, a provider might make a change to its radiated power. The Commission would be required to determine if a modification to one parameter is adequately negated by a change to a different parameter.

[83] SBS Comments at 5.

[84] Cornell Reply Comments at 4.

[85] *See* RCC Comments at 1.

[86] *See* Cornell Reply Comments at 4, fn. 2.

[87] The parameters that must be addressed would include location of the antenna, antenna height, direction or gain of the transmitter, frequency or radiated power.

32. We conclude that the difficulties that SBS's proposals create far outweigh any benefits that would be gained. While SBS argues that its proposals will streamline the application process, we find that implementation of its proposals would bring complexities to the process that would delay application processing or increase the risk of harmful interference in Quiet Zone areas. As we have emphasized before, while we have a general goal of streamlining our rules and processes, we will not do so if the potential for harmful interference to Quiet Zones is increased.[88] Moreover, because it appears that, for the most part, applicants and Quiet Zone entities have been successful in timely resolving interference issues, we find little reason to allow applicants to bypass actual coordination with Quiet Zone entities.

4. Clarification of coordination obligations.

33. *Background*. Certain wireless services require frequency coordination prior to the filing of an application.[89] A few of the commenters request that for applications in these services, the Commission identify the entity that is responsible for Quiet Zone coordination, *i.e.* the applicant or the applicant's frequency coordinator.[90] The commenters state that, although they believe that frequency coordinators are better qualified to deal with coordination issues, they primarily wish to have certainty as to which entity is obligated.[91]

34. *Discussion*. Because we seek to provide for flexibility in the coordination process, we decline to specify an entity to perform the notifications required in section 1.924. The *Arecibo Report and Order* provided that an applicant is permitted to make its notification through a frequency coordinator, but is responsible for ensuring that any interference concerns of the Quiet Zone entity are accommodated.[92] To the extent that the Commission's decision in that proceeding was unclear, we clarify that an applicant has the option of notifying/coordinating with a Quiet Zone entity itself or satisfying the requirement through the use of a frequency coordinator. In the event that a frequency coordinator is used and the Quiet Zone entity has interference concerns, the frequency coordinator may continue to act on behalf of the applicant in order to resolve interference issues. However, the applicant retains the ultimate responsibility of ensuring that coordination has occurred and that the concerns of the Quiet Zone entity are addressed.

F. Administrative corrections.

35. The *NPRM* provided that the Commission's rules would be amended to correct certain ministerial errors.[93] First, we reinstate a limitation on the Arecibo Observatory coordination obligations that was inadvertently omitted when the Commission consolidated many of its wireless rules into Part 1 in the ULS proceeding. To correct this omission, we add a new section 1.924(d)(4) that states: "The provisions of this paragraph do not apply to operations that transmit on frequencies above 15 GHz." Similarly, the version of section 1.924(e) contained in the current volume of the Code of Federal Regulations includes two typographical errors from the rule adopted in 1997. Specifically, in section

[88] *See Arecibo Report and Order*, 12 FCC Rcd at 16526 ("Whenever possible, we attempt to streamline our processes and reduce the burden on licensees and license applicants, but in some instances a minimally increased burden must be imposed to allow the public the widest range of telecommunications benefits").

[89] Frequency coordination involves identifying the radio frequencies appropriate for the specific needs of each applicant and the environmental conditions in which the proposed station will be operating, while also minimizing interference to licensees already operating within a given frequency band.

[90] Cornell Comments at 6, NAS Comments at 5; NSF Comments at 3.

[91] *Id.*

[92] *Arecibo Report and Order*, 12 FCC Rcd at 16536, para. 46-47

[93] *NPRM*, 16 FCC Rcd at 20692, para. 6, fn 17.

1.924(e)(1), the first set of coordinates listed under Denver, CO Area, Rectangle 1 should be 41º 30' 00" North Latitude instead of 1º31'00" North. In section 1.924(e)(2), the longitude coordinates should read 76º 52' 00" instead of 78º 52' 00". Further, we change the Quiet Zones reference in sections 27.601(c)(iii) and 90.159(b)(5) from section 90.177 to section 1.924, to reflect the consolidation of wireless rules we adopted in the ULS proceeding.[94]

36. In addition to the errors identified in the *NPRM*, further review of the Quiet Zones rules reveals that other corrections are necessary. First, some of the power flux density values identified in the table entitled "Field Strength Limits for Table Mountain" in section 1.924(b)(1) are not listed correctly. All power flux density limits specified in the table and its accompanying footnote should have negative values.[95] For example, the power flux density value for signals in the 470 to 890 MHz range should read "-56.2" rather than the "56.2" currently listed in the table. Further, the coordinates in rule section 1.924(f)(1)(i) should be 41º 45' 00.2" North, 70º 30' 58.3" West, and coordinates in section 1.924(f)(4)(iii) should read 34º 08' 59.6" North, 119º 11' 03.8" West. Finally, section 1.924 currently lists both the former and current versions of section 1.924(g), and should be corrected to remove the former version. We therefore revise section 1.924 to reflect these corrections.

IV. PROCEDURAL MATTERS

A. Final Regulatory Flexibility Act

37. The Final Regulatory Flexibility Analysis for this *Report and Order,* as required by Section 604 of the Regulatory Flexibility Act of 1980, 5 U.S.C. § 604, is set forth in Appendix B.

B. Paperwork Reduction Act Analysis

38. The actions taken in the *Report and Order* have been analyzed with respect to the Paperwork Reduction Act of 1995 (PRA), Pub. L. No. 104-13, and found to impose new or modified reporting and recordkeeping requirements or burdens on the public. Implementation of these new or modified reporting and recordkeeping requirements will be subject to approval by the Office of Management and Budget (OMB) as prescribed by the PRA, and will go into effect upon announcement in the Federal Register of OMB approval.

V. ORDERING CLAUSES

39. Accordingly, IT IS ORDERED that, pursuant to Sections 1, 4(i), 303(r), and 309(j) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 303(r), and 309(j), the REPORT AND ORDER is ADOPTED.

40. IT IS FURTHER ORDERED that, pursuant to the authority of Sections 4(i), 7, 303(c), 303(f), 303(g), 303(r), and 332 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(c), 303(f), 303(g), 303(r), and 332, the rule changes specified in Appendix A ARE ADOPTED.

41. IT IS FURTHER ORDERED that the rule changes set forth in Appendix A WILL BECOME EFFECTIVE 60 days after publication in the *Federal Register.*

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[94] *See generally ULS Report and Order*; Amendment of Parts 0, 1, 12, 22, 24, 26, 27, 80, 87, 90, 95, 97, and 101 of the Commission's Rules To Facilitate the Development and Use of the Universal Licensing System in the Wireless Telecommunications Services, *Memorandum Opinion and Order on Reconsideration*, 14 FCC Rcd 11476 (1999).

[95] This error occurred when various service rules regarding field strength limits applicable to the Table Mountain Radio Receiving Zone were consolidated into Part 1 of the Commission's rules in the ULS proceeding.

42. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this *Report and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A

RULES

PART 1 – PRACTICE AND PROCEDURE

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

AUTHORITY: 47 U.S.C. 151, 154(i), 154(j), 155, 225, 303(r), 309 and 325(e).

2. Section 1.924 is amended by revising the title, the introductory paragraph, paragraphs 1.924(a)(2), 1.924(b)(1), 1.924(b)(3), 1.924(d)(2)(ii), 1.924(e)(1), 1.924(e)(2), 1.924(f)(1)(i), 1.924(f)(4)(iii) and 1.924(g) and by adding paragraph 1.924(d)(4) to read as follows:

§ 1.924 Notifications concerning interference to quiet zones, radio astronomy, research and receiving installations.

Areas implicated by this paragraph are those in which it is necessary to restrict radiation so as to minimize possible impact on the operations of radio astronomy or other facilities that are highly sensitive to interference. Consent throughout this paragraph means written consent from the quiet zone, radio astronomy, research, and receiving installation entity. The areas involved and procedures required are as follows:

(a) * * *

(1) * * *

(2) When an application for authority to operate a station is filed with the FCC, the notification required in paragraph (a)(1) of this section may be made prior to, or simultaneously with the application. The application must state the date that notification in accordance with paragraph (a)(1) of this section was made. After receipt of such applications, the FCC will allow a period of 20 days for comments or objections in response to the notifications indicated. If an applicant submits written consent from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory, the FCC will process the application without awaiting the conclusion of the 20-day period. For services that do not require individual station authorization, entities that have obtained written consent from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory may begin to operate new or modified facilities prior to the end of the 20-day period. In instances in which notification has been made to the National Radio Astronomy Observatory prior to application filing, the applicant must also provide notice to the quiet zone entity upon actual filing of the application with the FCC. Such notice will be made simultaneous with the filing of the application and shall comply with the requirements of paragraph (a)(1) of this section.

* * * * *

(b) * * *

(1) * * *

Field Strength Limits for Table Mountain [superscript 1]

Frequency range	Field strength (mV/m)	Power flux density (dBW/m **superscript 2**)
Below 540 kHz	10	-65.8
540 to 1600 kHz	20	-59.8
1.6 to 470 MHz	10	-65.8
470 to 890 MHz	30	-56.2
890 MHz and above	1	-85.8

superscript 1 Note: Equivalent values of power flux density are calculated assuming free space characteristic impedance of 376.7 Ω (120π Ω).

* * * * *

(3) Applicants concerned are urged to communicate with the Radio Frequency Management Coordinator, Department of Commerce, NOAA R/OM62, 325 Broadway, Boulder, CO 80305; telephone 303-497-6548, in advance of filing their applications with the Commission.

* * * * *

(d) * * *

* * * * *

(2) In services in which individual station licenses are issued by the FCC, the notification required in paragraph (d) of this section may be made prior to, or simultaneously with, the filing of the application with the FCC, and at least 20 days in advance of the applicant's planned operation. The application must state the date that notification in accordance with paragraph (d) of this section was made. In services in which individual station licenses are not issued by the FCC, the notification required in paragraph (d) of this section should be sent at least 45 days in advance of the applicant's planned operation. In the latter services, the Interference Office must inform the FCC of a notification by an applicant within 20 days if the Office plans to file comments or objections to the notification. After the FCC receives an application from a service applicant or is informed by the Interference Office of a notification from a service applicant, the FCC will allow the Interference Office a period of 20 days for comments or objections in response to the application or notification. If an applicant submits written consent from the Interference Office, the FCC will process the application without awaiting the conclusion of the 20-day period. For services that do not require individual station authorization, entities that have obtained written consent from the Interference Office may begin to operate new or modified facilities prior to the end of the 20-day period. In instances in which notification has been made to the Interference Office prior to application filing, the applicant must also provide notice to the Interference Office upon actual filing of the application with the FCC. Such notice will be made simultaneous with the filing of the application and shall comply with the requirements of paragraph (d) of this section.

* * * * *

(4) The provisions of paragraph (d) do not apply to operations that transmit on frequencies above 15 GHz.

(e) * * *

(1) * * *

Denver, CO Area

Rectangle 1:
41º 30' 00" N. Lat. on the north
103° 10' 00" W. Long. on the east
38° 30' 00" N. Lat. on the south
106° 30' 00" W. Long. on the west
Rectangle 2:
38° 30' 00" N. Lat. on the north
105° 00' 00" W. Long. on the east
37° 30' 00" N. Lat. on the south
105° 50' 00" W. Long. on the west
Rectangle 3:
40° 08' 00" N. Lat. on the north
107° 00' 00" W. Long. on the east
39° 56' 00" N. Lat. on the south
107° 15' 00" W. Long. on the west

Washington, DC Area

Rectangle
38° 40' 00" N. Lat. on the north
78° 50' 00" W. Long. on the east
38° 10' 00" N. Lat. on the south
79° 20' 00" W. Long. on the west; or

(2) Within a radius of 178 km of 38° 48' 00" N. Lat./76° 52' 00" W. Long.

* * * * *

(f) * * *

(1) * * *

(i) 41º 45' 00.2" N, 70º 30' 58.3" W.,

* * * * *

(4) * * *

(iii) 34º 08' 59.6" N, 119º 11' 03.8" W;

* * * * *

(g) GOES. The requirements of this paragraph are intended to minimize harmful interference to Geostationary Operational Environmental Satellite earth stations receiving in the band 1670-1675 MHz, which are located at Wallops Island, Virginia; Fairbanks, Alaska; and Greenbelt, Maryland.

(1) Applicants and licensees planning to construct and operate a new or modified station within the area bounded by a circle with a radius of 100 kilometers (62.1 miles) that is centered on 37E56'47" N, 75E27'37" W (Wallops Island) or 64E58'36" N, 147E31'03" W (Fairbanks) or within the area bounded by a circle with a radius of 65 kilometers (40.4 miles) that is centered on 39E00'02" N, 76E50'31" W (Greenbelt) must notify the National Oceanic and Atmospheric Administration (NOAA) of the proposed operation. For this purpose, NOAA maintains the GOES coordination web page at http:// www.osd.noaa.gov/radio/frequency.htm, which provides the technical parameters of the earth stations and the point-of-contact for the notification. The notification shall include the following information: requested frequency, geographical coordinates of the antenna location, antenna height above mean sea level, antenna directivity, emission type, equivalent isotropically radiated power, antenna make and model, and transmitter make and model.

(2) Protection.

(a) Wallops Island and Fairbanks. Licensees are required to protect the Wallops Island and Fairbanks sites at all times.

(b) Greenbelt. Licensees are required to protect the Greenbelt site only when it is active. Licensees should coordinate appropriate procedures directly with NOAA for receiving notification of times when this site is active.

(3) When an application for authority to operate a station is filed with the FCC, the notification required in paragraph (f)(1) of this section should be sent at the same time. The application must state the date that notification in accordance with paragraph (f)(1) of this section was made. After receipt of such an application, the FCC will allow a period of 20 days for comments or objections in response to the notification.

(4) If an objection is received during the 20-day period from NOAA, the FCC will, after consideration of the record, take whatever action is deemed appropriate.

3. Section 27.601 is amended by revising paragraph 27.601(c)(iii) as follows:

§ 27.601 Guard Band Manager authority and coordination requirements.

* * * * *

(c) * * *

(iii) Would affect areas described in § 1.924 of this chapter.

* * * * *

4. Section 27.803 is amended by revising paragraph 27.803(b)(3) as follows:

§ 27.803 Coordination requirements.

* * * * *

(b) * * *

(3) That operates in areas listed in part 1, § 1.924 of this chapter; or

* * * * *

5. Section 27.903 is amended by revising paragraph 27.903(b)(3) as follows:

§ 27.903 Coordination requirements.

* * * * *

(b) * * *

(3) That operates in areas listed under part 1, § 1.924 of this chapter.

* * * * *

6. Section 27.1003 is amended by revising paragraph 27.903(b)(3) as follows:

§ 27.1003 Coordination requirements.

* * * * *

(b) * * *

(3) That operates in areas listed in part 1, § 1.924 of this chapter;

* * * * *

7. Section 74.25 is amended by revising paragraph 74.25(a)(5) as follows:

§ 74.25 Temporary conditional operating authority.

* * * * *

(a) * * *

(5) The station site does not lie within an area identified in § 1.924 of this chapter.

* * * * *

8. Section 90.159 is amended by revising paragraph 90.159(b)(5) as follows:

§ 90.159 Temporary and conditional permits.

* * * * *

(b) * * *

* * * * *

(5) The applicant has determined that the proposed station affords the level of protection to radio quiet zones and radio receiving facilities as specified in § 1.924.

* * * * *

9. Section 90.1207 is amended by revising paragraph 90.1207(b)(1)(iii) as follows:

§ 90.1207 Licensing.

* * * * *

(b) * * *

(1) * * *

(iii) The station would affect areas identified in § 1.924 of this chapter.

* * * * *

10. Section 101.31 is amended by revising paragraph 101.31(b)(1)(v) as follows:

§ 101.31 Temporary and conditional authorizations.

* * * * *

(b) * * *

(1) * * *

(v) The station site does not lie within 56.3 kilometers of any international border, within areas identified in §§ 1.924(a) through (d) of this chapter unless the affected entity consents in writing to conditional operation or, if operated on frequencies in the 17.8-19.7 GHz band, within any of the areas identified in § 1.924 of this chapter;

* * * * *

11. Section 101.525 is amended by revising paragraph 101.525(a)(1)(iii) as follows:

§ 101.525 24 GHz system operations.

* * * * *

(a) * * *

(1) * * *

(iii) The station would affect areas identified in § 1.924 of this chapter.

* * * * *

12. Section 101.1009 is amended by revising paragraph 101.1009(a)(1)(iii) as follows:

§ 101.1009 System operations.

* * * * *

(a) * * *

(1) * * *

(iii) The station would affect areas identified in § 1.924 of this chapter.

* * * * *

13. Section 101.1009 is amended by revising paragraph 101.1329(c) as follows:

§ 101.1329 EA Station license, location, modifications.

* * * * *

(c) The station would affect areas identified in § 1.924 of this chapter.

APPENDIX B

FINAL REGULATORY FLEXIBILITY ANALYSIS

As required by the Regulatory Flexibility Act of 1980, as amended (RFA),[96] an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *Notice of Proposed Rulemaking* in WT Docket No. 01-319, released November 21, 2001 (*NPRM*).[97] The Commission sought written public comment on the proposals in the *NPRM*, including comment on the IRFA. This present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.[98]

A. Need for, and Objectives of, the Report and Order.

In January 2001, pursuant to the statutory mandate under section 11 of the Communications Act, as amended, requiring the periodic review of Commission rules, Commission staff completed an evaluation of regulations affecting telecommunications service providers, and issued a report regarding recommendations made as a result of that review.[99] In response to comments submitted by Alloy LLC, now Cingular Wireless LLP,[100] the staff recommended that the Commission reexamine the application procedures for Quiet Zones and determine whether these procedures could be made more efficient.[101] In the *2000 Biennial Review Report*, the Commission accepted the staff's recommendation to initiate a rulemaking to review the rules governing applications potentially affecting Quiet Zones.[102] Accordingly, in November 2001, the Commission issued a *Notice of Proposed Rulemaking* (*NPRM*) seeking to identify and address ways of streamlining the processing of such applications, while simultaneously ensuring the continued protection of these sensitive areas.[103]

In the *Report and Order*, we adopt changes to our rules governing Quiet Zone areas. The amendments serve the dual purposes of streamlining requirements for applications affecting Quiet Zones, while protecting these sensitive areas from harmful interference. While we believe that the record in this

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

[97] Review of Quiet Zones Application Procedures, WT Docket No. 99-266, *Notice of Proposed Rulemaking*, 16 FCC Rcd 20690 (2001).

[98] *See* 5 U.S.C. § 604.

[99] 2000 Biennial Regulatory Review Updated Staff Report (rel. Jan. 17, 2001) (*2000 Biennial Review Staff Report*).

[100] Biennial Review 2000 Comments of Alloy LLC, FCC 00-346, at 8 (filed Oct. 10, 2000).

[101] *Id*. at Appendix IV: Rule Part Analysis at 9.

[102] *See Biennial Regulatory Review*, CC Docket No. 00-175, *Report*, 16 FCC Rcd 1207, 1231-32 (2001) (*2000 Biennial Review Report*).

[103] Review of Quiet Zones Application Procedures, *Notice of Proposed Rulemaking*, 16 FCC Rcd 20690 (2001) (*NPRM*). Subsequently, the Cellular Telecommunications & Internet Association (CTIA) filed a petition for rulemaking seeking amendment of rules relating to Quiet Zones as part of the Year 2002 Biennial Regulatory Review. *See* Cellular Telecommunications & Internet Association's Petition for Rulemaking Concerning the Biennial Review of Regulations Affecting CMRS Carriers, filed July 25, 2002 (CTIA 2002 Biennial Review Comments). The Rural Cellular Association (RCA) similarly filed comments in the 2002 Biennial Regulatory Review proceeding suggesting that certain rules regarding Quiet Zones be modified. RCA 2002 Biennial Review Comments at 3. The staff concluded that the rule changes proposed by CTIA and RCA are within the scope of review contemplated in the instant proceeding and recommended that the comments of CTIA and RCA be incorporated into this proceeding as well. *See* Federal Communications Commission 2002 Biennial Regulatory Review - Staff Report of the Wireless Telecommunications Bureau, 18 FCC Rcd 4243 (2003).

proceeding demonstrates that our rules have been largely successful in protecting Quiet Zones while facilitating the deployment of wireless services, we believe there are certain modifications that will expedite the application process, reduce unnecessary or redundant requirements from Commission regulations, and promote the efficient use of spectrum within these protected areas. Accordingly, in this *Report and Order*, we: 1) amend our rules to provide for immediate processing of applications that may implicate Quiet Zones, in the event that the applicant indicates that it has obtained the prior consent of the Quiet Zone entity; 2) amend our rules to clarify that applicants may provide notification to and begin coordination with Quiet Zone entities (where required) in advance of filing an application with the Commission.; 3) amend section 101.31(b)(1)(v) to permit Part 101 applicants as well as applicants for other services that allow operation prior to authorization, to initiate conditional operation, provided they have obtained the prior consent of the Quiet Zone entity and are otherwise eligible to initiate conditional operations over the proposed facility; 4) clarify that either the applicant or the applicant's frequency coordinator may notify and initiate coordination proceedings with the Quiet Zone entity.

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA.

Only one commenter submitted comments in response to the IRFA. RCC argues that local governments and non-profit agencies that are located in the NRQZ pay more to install and operate radio communications systems.[104] RCC asserts that more antenna sites are needed to provide satisfactory radio coverage due to the NRQZ restrictions, and in the worst case, public safety agencies are forced to accept diminished radio system performance due to impractical limits on ERP that are required by NRAO.[105] In order to satisfy NRAO and NRRO guidelines, RCC states that licensees are forced to: 1) reduce operating power; 2) use directional antennas; and, 3) place their transmitters in less than optimal locations. RCC argues that these steps generally result in diminished radio system performance in the area where coverage is required. RCC also argues that the Quiet Zone requirements are, in effect, a de facto unfunded federal mandate because local governments and small entities receive no reimbursement or federal funds to compensate them for the additional expense that they incur in the process of meeting the NRAO and NRRO criteria. RCC argues that the federal government should compensate local governments and radio communications systems operators for the costs associated with complying with Quiet Zones requirements.[106]

We note that RCC's IRFA comments appear to challenge the Commission's existing notification and coordination procedures regarding Quiet Zone areas rather than any issues or proposals raised in the *NPRM* or in the IRFA. In the Final Regulatory Flexibility Analysis in the *Arecibo Report and Order*, the Commission noted that, while some parties argued that the coordination requirements were an unnecessary burden that would delay the provision of service and increase the costs of operation, the Commission determined that complying with the coordination procedures would be a minimal burden, and that the public benefit in protecting the Arecibo Observatory's operations from harmful interference justifies the minimal burden that may be created.[107] Although the proceeding related to the Arecibo Observatory, the same considerations are true for Quiet Zones in general. Further, we believe that the rule changes adopted in this *Report and Order* will benefit all carriers, including small businesses, by expediting the application process, reducing unnecessary or redundant requirements from Commission regulations, and promoting the efficient use of spectrum within Quiet Zone areas.

[104] RCC Comments at 2.

[105] *Id.*

[106] RCC Comments at 2.

[107] *Arecibo Report and Order*, 12 FCC Rcd at 16560.

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

The RFA directs agencies to provide a description of, and where feasible, an estimate of the number of small entities that may be affected by proposed rules.[108] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[109] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[110] A "small business concern" is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).[111]

In the following paragraphs, we further describe and estimate the number of small entity licensees that may be affected by the rules we adopt in the *Report and Order*. Since this rulemaking proceeding applies to multiple services, we will analyze the number of small entities affected on a service-by-service basis. Because the *Report and Order* does not revise any rules involving the Satellite Services, we do not provide an assessment of satellite-related small businesses.

Cellular Licensees. The SBA has developed a small business size standard for small businesses in the category "Cellular and Other Wireless Telecommunications."[112] Under that SBA category, a business is small if it has 1,500 or fewer employees.[113] According to the Bureau of the Census, only twelve firms out of a total of 1,238 cellular and other wireless telecommunications firms operating during 1997 had 1,000 or more employees.[114] Therefore, even if all twelve of these firms were cellular telephone companies, nearly all cellular carriers are small businesses under the SBA's definition.

220 MHz Radio Service – Phase I Licensees. The 220 MHz service has both Phase I and Phase II licenses. Phase I licensing was conducted by lotteries in 1992 and 1993. There are approximately 1,515 such non-nationwide licensees and four nationwide licensees currently authorized to operate in the 220 MHz band. The Commission has not developed a definition of small entities specifically applicable to such incumbent 220 MHz Phase I licensees. To estimate the number of such licensees that are small businesses, we apply the small business size standard under the SBA rules applicable to "Cellular and Other Wireless Telecommunications" companies. This category provides that a small business is a wireless company employing no more than 1,500 persons.[115] According to the Census Bureau data for 1997, only twelve firms out of a total of 1,238 such firms that operated for the entire year, had 1,000 or more employees.[116] If this general ratio continues in the context of Phase I 220

[108] 5 U.S.C. § 604(a)(3).

[109] 5 U.S.C. § 601(6).

[110] 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."

[111] 15 U.S.C. § 632.

[112] 13 C.F.R. § 121.201, North American Industry Classification System (NAICS) code 517212.

[113] *Id*.

[114] U.S. Census Bureau, 1997 Economic Census, Information – Subject Series, Establishment and Firm Size, Table 5 (Employment Size of Firms Subject to Federal Income Tax), NAICS code 517212 (2002).

[115] 13 C.F.R. § 121.201, NAICS code 517212.

[116] U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, Establishment and Firm Size (Including Legal Form Organization), Table 5, NAICS code 517212 (2002).

MHz licensees, the Commission estimates that nearly all such licensees are small businesses under the SBA's small business standard.

220 MHz Radio Service – Phase II Licensees. The 220 MHz service has both Phase I and Phase II licenses. The Phase II 220 MHz service is subject to spectrum auctions. In the *220 MHz Third Report and Order*, we adopted a small business size standard for defining "small" and "very small" businesses for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.[117] This small business standard indicates that a "small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding $15 million for the preceding three years.[118] A "very small business" is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that do not exceed $3 million for the preceding three years.[119] The SBA has approved these small size standards.[120] Auctions of Phase II licenses commenced on September 15, 1998, and closed on October 22, 1998.[121] In the first auction, 908 licenses were auctioned in three different-sized geographic areas: three nationwide licenses, 30 Regional Economic Area Group (EAG) Licenses, and 875 Economic Area (EA) Licenses. Of the 908 licenses auctioned, 693 were sold.[122] Thirty-nine small businesses won 373 licenses in the first 220 MHz auction. A second auction included 225 licenses: 216 EA licenses and 9 EAG licenses. Fourteen companies claiming small business status won 158 licenses.[123] A third auction included four licenses: 2 BEA licenses and 2 EAG licenses in the 220 MHz Service. No small or very small business won any of these licenses.[124]

Lower 700 MHz Band Licenses. We adopted criteria for defining three groups of small businesses for purposes of determining their eligibility for special provisions such as bidding credits.[125] We have defined a small business as an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding $40 million for the preceding three years.[126] A very small business is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than $15 million for the preceding three years.[127] Additionally, the lower 700 MHz Service has a third category of small business status that may be claimed for Metropolitan/Rural Service Area (MSA/RSA) licenses. The third category is entrepreneur, which is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than $3

[117] Amendment of Part 90 of the Commission's Rules to Provide For the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service, *Third Report and Order*, 12 FCC Rcd 10943, 11068-70, paras. 291-295 (1997).

[118] *Id.* at 11068 para. 291.

[119] *Id.*

[120] *See* Letter to Daniel Phythyon, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated January 6, 1998.

[121] *See generally* "220 MHz Service Auction Closes," *Public Notice*, 14 FCC Rcd 605 (WTB 1998).

[122] *See* "FCC Announces It is Prepared to Grant 654 Phase II 220 MHz Licenses After Final Payment is Made," *Public Notice*, 14 FCC Rcd 1085 (WTB 1999).

[123] *See* "Phase II 220 MHz Service Spectrum Auction Closes," *Public Notice*, 14 FCC Rcd 11218 (WTB 1999).

[124] *See* "Multi-Radio Service Auction Closes," *Public Notice*, 17 FCC Rcd 1446 (WTB 2002).

[125] *See* Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), *Report and Order*, 17 FCC Rcd 1022 (2002).

[126] *Id.* at 1087-88, para. 172.

[127] *Id.*

million for the preceding three years.[128] The SBA has approved these small size standards.[129] An auction of 740 licenses (one license in each of the 734 MSAs/RSAs and one license in each of the six Economic Area Groupings (EAGs)) commenced on August 27, 2002, and closed on September 18, 2002. Of the 740 licenses available for auction, 484 licenses were sold to 102 winning bidders. Seventy-two of the winning bidders claimed small business, very small business or entrepreneur status and won a total of 329 licenses. [130] A second auction commenced on May 28, 2003, and closed on June 13, 2003, and included 256 licenses: 5 EAG licenses and 476 CMA licenses.[131] Seventeen winning bidders claimed small or very small business status and won sixty licenses, and nine winning bidders claimed entrepreneur status and won 154 licenses.[132]

Upper 700 MHz Band Licenses. The Commission released a *Report and Order*, authorizing service in the upper 700 MHz band.[133] In that proceeding, the Commission defined a small business as any entity with average annual gross revenues for the three preceding years not in excess of $40 million, and a very small business as an entity with average annual gross revenues for the three preceding years not in excess of $15 million. The auction for Upper 700 MHz licenses, previously scheduled for January 13, 2003, has been postponed.[134]

700 MHz Guard Band Licenses. In the *700 MHz Guard Band Order*, we adopted a small business size standard for "small businesses" and "very small businesses" for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.[135] A "small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding $15 million for the preceding three years. Additionally, a "very small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than $3 million for the preceding three years. An auction of 52 Major Economic Area (MEA) licenses commenced on September 6, 2000, and closed on September 21, 2000. Of the 104 licenses auctioned, 96 licenses were sold to nine bidders. Five of these bidders were small businesses that won a total of 26 licenses. A second auction of 700 MHz Guard Band licenses commenced on February 13, 2001 and closed on February 21, 2001. All eight of the licenses auctioned were sold to three bidders. One of these bidders was a small business that won a total of two licenses.[136]

Paging. In the *Paging Second Report and Order*, we adopted a size standard for "small businesses" for purposes of determining their eligibility for special provisions such as bidding credits and

[128] *Id.* at 1088, para. 173.

[129] *See* Letter to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated August 10, 1999.

[130] *See* "Lower 700 MHz Band Auction Closes," *Public Notice*, 17 FCC Rcd 17272 (WTB 2002).

[131] *See* "Lower 700 MHz Band Auction Closes," *Public Notice*, 18 FCC Rcd 11873 (WTB 2003).

[132] *Id*.

[133] Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, WT Docket No. 99-168, *Report and Order*, 15 FCC Rcd 476 (2000).

[134] "Auction of Licenses for 747-762 and 777-792 MHz Bands (Auction No. 31) is Rescheduled," *Public Notice*, 16 FCC Rcd 13079 (WTB 2003).

[135] See Service Rules for the 746-764 MHz Bands, and Revisions to part 27 of the Commission's Rules, WT Docket No. 99-168, Second Report and Order, 15 FCC Rcd 5299 (2000), 65 FR 17599 (Apr. 4, 2000).

[136] Public Notice, "700 MHz Guard Band Auction Closes," DA 01-478 (rel. Feb. 22, 2001).

installment payments.[137] A small business is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding $15 million for the preceding three years.[138] The SBA has approved this definition.[139] An auction of Metropolitan Economic Area (MEA) licenses commenced on February 24, 2000, and closed on March 2, 2000. Of the 2,499 licenses auctioned, 985 were sold.[140] Fifty-seven companies claiming small business status won 440 licenses.[141] An auction of Metropolitan Economic Area (MEA) and Economic Area (EA) licenses commenced on October 30, 2001, and closed on December 5, 2001. Of the 15,514 licenses auctioned, 5,323 were sold.[142] 132 companies claiming small business status purchased 3,724 licenses. A third auction, consisting of 8,874 licenses in each of 175 EAs and 1,328 licenses in all but three of the 51 MEAs commenced on May 13, 2003, and closed on May 28, 2003. Seventy-seven bidders claiming small or very small business status won 2,093 licenses.[143] Currently, there are approximately 24,000 Private Paging site-specific licenses and 74,000 Common Carrier Paging licenses. According to the most recent *Trends in Telephone Service,* 608 private and common carriers reported that they were engaged in the provision of either paging or "other mobile" services.[144] Of these, we estimate that 589 are small, under the SBA-approved small business size standard.[145] We estimate that the majority of private and common carrier paging providers would qualify as small entities under the SBA definition.

Broadband Personal Communications Service (PCS). The broadband PCS spectrum is divided into six frequency blocks designated A through F, and the Commission has held auctions for each block. The Commission has created a small business size standard for Blocks C and F as an entity that has average gross revenues of less than $40 million in the three previous calendar years.[146] For Block F, an additional small business size standard for "very small business" was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than $15 million for the preceding three calendar years.[147] These small business size standards, in the context of broadband PCS auctions,

[137] Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, *Second Report and Order*, 12 FCC Rcd 2732, 2811-2812, paras. 178-181 (*Paging Second Report and Order*); *see also* Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, *Memorandum Opinion and Order on Reconsideration*, 14 FCC Rcd 10030, 10085-10088, paras. 98-107 (1999).

[138] *Paging Second Report and Order*, 12 FCC Rcd at 281, para. 179.

[139] *See* Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, from Aida Alvarez, Administrator, Small Business Administration, dated December 2, 1998.

[140] *See* "929 and 931 MHz Paging Auction Closes," *Public Notice*, 15 FCC Rcd 4858 (WTB 2000).

[141] *See id*.

[142] *See* "Lower and Upper Paging Band Auction Closes," *Public Notice*, 16 FCC Rcd 21821 (WTB 2002).

[143] *See* "Lower and Upper Paging Bands Auction Closes," *Public Notice*, 18 FCC Rcd 11154 (WTB 2003).

[144] *See Trends in Telephone Service,* Industry Analysis Division, Wireline Competition Bureau, Table 5.3 (Number of Telecommunications Service Providers that are Small Businesses) (May 2002).

[145] 13 C.F.R. § 121.201, NAICS code 517211.

[146] *See* Amendment of Parts 20 and 24 of the Commission's Rules – Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap, *Report and Order*, 11 FCC Rcd 7824, 7850-7852, paras. 57-60 (1996); *see also* 47 C.F.R. § 24.720(b).

[147] *See* Amendment of Parts 20 and 24 of the Commission's Rules – Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap, *Report and Order*, 11 FCC Rcd 7824, 7852, para. 60.

have been approved by the SBA.[148] No small businesses within the SBA-approved small business size standards bid successfully for licenses in Blocks A and B. There were 90 winning bidders that qualified as small entities in the Block C auctions. A total of 93 "small" and "very small" business bidders won approximately 40 percent of the 1,479 licenses for Blocks D, E, and F.[149] On March 23, 1999, the Commission reauctioned 155 C, D, E, and F Block licenses; there were 113 small business winning bidders.[150]

Narrowband PCS. The Commission held an auction for Narrowband PCS licenses that commenced on July 25, 1994, and closed on July 29, 1994. A second commenced on October 26, 1994 and closed on November 8, 1994. For purposes of the first two Narrowband PCS auctions, "small businesses" were entities with average gross revenues for the prior three calendar years of $40 million or less.[151] Through these auctions, the Commission awarded a total of forty-one licenses, 11 of which were obtained by four small businesses.[152] To ensure meaningful participation by small business entities in future auctions, the Commission adopted a two-tiered small business size standard in the *Narrowband PCS Second Report and Order*.[153] A "small business" is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than $40 million.[154] A "very small business" is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than $15 million.[155] The SBA has approved these small business size standards.[156] A third auction commenced on October 3, 2001 and closed on October 16, 2001. Here, five bidders won 317 (MTA and nationwide) licenses.[157] Three of these claimed status as a small or very small entity and won 311 licenses.

Rural Radiotelephone Service. We use the SBA definition applicable to cellular and other wireless telecommunication companies, *i.e.*, an entity employing no more than 1,500 persons.[158] There are approximately 1,000 licensees in the Rural Radiotelephone Service, and the Commission estimates

[148] *See* Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated December 2, 1998.

[149] FCC News, "Broadband PCS, D, E and F Block Auction Closes," No. 71744 (rel. January 14, 1997).

[150] *See* "C, D, E, and F Block Broadband PCS Auction Closes," *Public Notice*, 14 FCC Rcd 6688 (WTB 1999).

[151] Implementation of Section 309(j) of the Communications Act – Competitive Bidding Narrowband PCS, *Third Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, 10 FCC Rcd 175, 196, para. 46 (1994).

[152] *See* "Announcing the High Bidders in the Auction of ten Nationwide Narrowband PCS Licenses, Winning Bids Total $617,006,674," *Public Notice*, PNWL 94-004 (rel. Aug. 2, 1994); "Announcing the High Bidders in the Auction of 30 Regional Narrowband PCS Licenses; Winning Bids Total $490,901,787," *Public Notice*, PNWL 94-27 (rel. Nov. 9, 1994).

[153] Amendment of the Commission's Rules to Establish New Personal Communications Services, Narrowband PCS, *Second Report and Order and Second Further Notice of Proposed Rule Making*, 15 FCC Rcd 10456, 10476, para. 40 (2000).

[154] *Id*.

[155] *Id*.

[156] *See* Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission from Aida Alvarez, Administrator, Small Business Administration, dated December 2, 1998.

[157] *See* "Narrowband PCS Auction Closes," *Public Notice*, 16 FCC Rcd 18663 (WTB 2001).

[158] 13 C.F.R. § 121.201, NAICS code 517212.

that there are 1,000 or fewer small entity licensees in the Rural Radiotelephone Service that may be affected by the rules and policies adopted herein.

Air-Ground Radiotelephone Service. We use the SBA definition applicable to cellular and other wireless telecommunication companies, *i.e.*, an entity employing no more than 1,500 persons.[159] There are approximately 100 licensees in the Air-Ground Radiotelephone Service, and the Commission estimates that almost all of them qualify as small entities under the SBA definition.

Specialized Mobile Radio (SMR). The Commission awards "small entity" bidding credits in auctions for Specialized Mobile Radio (SMR) geographic area licenses in the 800 MHz and 900 MHz bands to firms that had revenues of no more than $15 million in each of the three previous calendar years.[160] The Commission awards "very small entity" bidding credits to firms that had revenues of no more than $3 million in each of the three previous calendar years.[161] The SBA has approved these small business size standards for the 900 MHz Service.[162] The Commission has held auctions for geographic area licenses in the 800 MHz and 900 MHz bands. The 900 MHz SMR auction began on December 5, 1995, and closed on April 15, 1996. Sixty bidders claiming that they qualified as small businesses under the $15 million size standard won 263 geographic area licenses in the 900 MHz SMR band. The 800 MHz SMR auction for the upper 200 channels began on October 28, 1997, and was completed on December 8, 1997. Ten bidders claiming that they qualified as small businesses under the $15 million size standard won 38 geographic area licenses for the upper 200 channels in the 800 MHz SMR band.[163] A second auction for the 800 MHz band was held on January 10, 2002 and closed on January 17, 2002 and included 23 BEA licenses. One bidder claiming small business status won five licenses.[164]

The auction of the 1,050 800 MHz SMR geographic area licenses for the General Category channels began on August 16, 2000, and was completed on September 1, 2000. Eleven bidders won 108 geographic area licenses for the General Category channels in the 800 MHz SMR band qualified as small businesses under the $15 million size standard. In an auction completed on December 5, 2000, a total of 2,800 Economic Area licenses in the lower 80 channels of the 800 MHz SMR service were sold. Of the 22 winning bidders, 19 claimed "small business" status and won 129 licenses. Thus, combining all three auctions, 40 winning bidders for geographic licenses in the 800 MHz SMR band claimed status as small business.

In addition, there are numerous incumbent site-by-site SMR licensees and licensees with extended implementation authorizations in the 800 and 900 MHz bands. We do not know how many firms provide 800 MHz or 900 MHz geographic area SMR pursuant to extended implementation authorizations, nor how many of these providers have annual revenues of no more than $15 million. One firm has over $15 million in revenues. We assume, for purposes of this analysis, that all of the remaining

[159] *Id.*

[160] 47 C.F.R. § 90.814(b)(1).

[161] *Id*.

[162] *See* Letter to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated August 10, 1999. We note that, although a request was also sent to the SBA requesting approval for the small business size standard for 800 MHz, approval is still pending.

[163] *See* "Correction to Public Notice DA 96-586 'FCC Announces Winning Bidders in the Auction of 1020 Licenses to Provide 900 MHz SMR in Major Trading Areas,'" *Public Notice*, 18 FCC Rcd 18367 (WTB 1996).

[164] *See* "Multi-Radio Service Auction Closes," *Public Notice*, 17 FCC Rcd 1446 (WTB 2002).

existing extended implementation authorizations are held by small entities, as that small business size standard is established by the SBA.

Multipoint Distribution Service, Multichannel Multipoint Distribution Service, and Instructional Television Fixed Service. Multichannel Multipoint Distribution Service (MMDS) systems, often referred to as "wireless cable," transmit video programming to subscribers using the microwave frequencies of the Multipoint Distribution Service (MDS) and Instructional Television Fixed Service (ITFS).[165] In connection with the 1996 MDS auction, the Commission defined "small business" as an entity that, together with its affiliates, has average gross annual revenues that are not more than $40 million for the preceding three calendar years.[166] The SBA has approved of this standard.[167] The MDS auction resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas (BTAs).[168] Of the 67 auction winners, 61 claimed status as a small business. At this time, we estimate that of the 61 small business MDS auction winners, 48 remain small business licensees. In addition to the 48 small businesses that hold BTA authorizations, there are approximately 392 incumbent MDS licensees that have gross revenues that are not more than $40 million and are thus considered small entities.[169] After adding the number of small business auction licensees to the number of incumbent licensees not already counted, we find that there are currently approximately 440 MDS licensees that are defined as small businesses under either the SBA's or the Commission's rules. Some of those 440 small business licensees may be affected by the proposals in the Further Notice.

In addition, the SBA has developed a small business size standard for Cable and Other Program Distribution,[170] which includes all such companies generating $12.5 million or less in annual receipts.[171] According to Census Bureau data for 1997, there were a total of 1,311 firms in this category, total, that had operated for the entire year.[172] Of this total, 1,180 firms had annual receipts of under $10 million, and an additional 52 firms had receipts of $10 million or more but less than $25 million.[173] Consequently, we estimate that the majority of providers in this service category are small businesses that may be affected by the rules and policies proposed in the Further Notice.

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[165] Amendment of Parts 21 and 74 of the Commission's Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act – Competitive Bidding, *Report and Order*, 10 FCC Rcd 9589, 9593, para. 7 (1995) (*MDS Auction R&O)*.

[166] 47 C.F.R. § 21.961(b)(1).

[167] *See* Letter to Margaret W. Wiener, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Bureau, from Gary M. Jackson, Assistant Administrator for Size Standards, Small Business Administration, dated March 20, 2003 (noting approval of $40 million size standard for MDS auction).

[168] Basic Trading Areas (BTAs) were designed by Rand McNally and are the geographic areas by which MDS was auctioned and authorized. *See MDS Auction R&O*, 10 FCC Rcd at 9608, para. 34.

[169] 47 U.S.C. § 309(j). Hundreds of stations were licensed to incumbent MDS licensees prior to implementation of Section 309(j) of the Communications Act of 1934, 47 U.S.C. § 309(j). For these pre-auction licenses, the applicable standard is SBA's small business size standard for "other telecommunications" (annual receipts of $12.5 million or less). *See* 13 C.F.R. § 121.201, NAICS code 517910.

[170] 13 C.F.R. § 121.201, NAICS code 517510.

[171] *Id.*

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

[173] *Id*.

Finally, while SBA approval for a Commission-defined small business size standard applicable to ITFS is pending, educational institutions are included in this analysis as small entities.[174] There are currently 2,032 ITFS licensees, and all but 100 of these licenses are held by educational institutions. Thus, we tentatively conclude that at least 1,932 ITFS licensees are small businesses.

Private Land Mobile Radio (PLMR). PLMR systems serve an essential role in a range of industrial, business, land transportation, and public safety activities. These radios are used by companies of all sizes operating in all U.S. business categories, and are often used in support of the licensee's primary (non-telecommunications) business operations. For the purpose of determining whether a licensee of a PLMR system is a small business as defined by the SBA, we could use the definition for "Cellular and Other Wireless Telecommunications." This definition provides that a small entity is any such entity employing no more than 1,500 persons.[175] The Commission does not require PLMR licensees to disclose information about number of employees, so the Commission does not have information that could be used to determine how many PLMR licensees constitute small entities under this definition. Moreover, because PMLR licensees generally are not in the business of providing cellular or other wireless telecommunications services but instead use the licensed facilities in support of other business activities, we are not certain that the Cellular and Other Wireless Telecommunications category is appropriate for determining how many PLMR licensees are small entities for this analysis. Rather, it may be more appropriate to assess PLMR licensees under the standards applied to the particular industry subsector to which the licensee belongs.[176]

The Commission's 1994 Annual Report on PLMRs[177] indicates that at the end of fiscal year 1994, there were 1,087,267 licensees operating 12,481,989 transmitters in the PLMR bands below 512 MHz. Because any entity engaged in a commercial activity is eligible to hold a PLMR license, the revised rules in this context could potentially impact every small business in the United States.

Amateur Radio Service. All Amateur Radio Service licenses are presumed to be individuals. Accordingly, no small business definition applies for this service.

Aviation and Marine Radio Service. Small businesses in the aviation and marine radio services use a marine very high frequency (VHF) radio, any type of emergency position indicating radio beacon and/or radar, a VHF aircraft radio, and/or any type of emergency locator transmitter. The Commission has not developed a definition of small entities specifically applicable to these small businesses. Therefore, the applicable definition of small entity is the definition under the SBA rules for radiotelephone wireless communications.[178]

Most applicants for recreational licenses are individuals. Approximately 581,000 ship station licensees and 131,000 aircraft station licensees operate domestically and are not subject to the radio carriage requirements of any statute or treaty. Therefore, for purposes of our evaluations and conclusions in this IRFA, we estimate that there may be at least 712,000 potential licensees that are individuals or small entities, as that term is defined by the SBA.

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[174] In addition, the term "small entity" under SBREFA applies to small organizations (nonprofits) and to small governmental jurisdictions (cities, counties, towns, townships, villages, school districts, and special districts with populations of less than 50,000). 5 U.S.C. §§ 601(4)-(6). We do not collect annual revenue data on ITFS licensees.

[175] *See* 13 C.F.R. § 121.201, NAICS code 517212.

[176] *See generally* 13 C.F.R. § 121.201.

[177] Federal Communications Commission, 60th Annual Report, Fiscal Year 1994, at para. 116.

[178] 13 C.F.R. § 121.201, NAICS code 513321, 513322, and 51333.

Fixed Microwave Services. Fixed microwave services include common carrier,[179] private-operational fixed,[180] and broadcast auxiliary radio services.[181] Currently, there are approximately 22,015 common carrier fixed licensees and 61,670 private operational-fixed licensees and broadcast auxiliary radio licensees in the microwave services. The Commission has not yet defined a small business with respect to microwave services. For purposes of this FRFA, we will use the SBA's definition applicable to "Cellular and Other Wireless Telecommunications" companies – that is, an entity with no more than 1,500 persons.[182] The Commission does not have data specifying the number of these licensees that have more than 1,500 employees, and thus is unable at this time to estimate with greater precision the number of fixed microwave service licensees that would qualify as small business concerns under the SBA's small business size standard. Consequently, the Commission estimates that there are 22,015 or fewer small common carrier fixed licensees and 61,670 or fewer small private operational-fixed licensees and small broadcast auxiliary radio licensees in the microwave services that may be affected by the rules and policies adopted herein. The Commission notes, however, that the common carrier microwave fixed licensee category includes some large entities.

Public Safety Radio Services. Public Safety radio services include police, fire, local government, forestry conservation, highway maintenance, and emergency medical services.[183] There are a total of approximately 127,540 licensees within these services. Governmental entities[184] as well as private businesses comprise the licensees for these services. As indicated *supra* in paragraph four of this

[179] 47 C.F.R. §§ 101 *et seq.* (formerly, part 21 of the Commission's Rules).

[180] Persons eligible under parts 80 and 90 of the Commission's rules can use Private Operational-Fixed Microwave services. *See generally* 47 C.F.R. parts 80 and 90. Stations in this service are called operational-fixed to distinguish them from common carrier and public fixed stations. Only the licensee may use the operational-fixed station, and only for communications related to the licensee's commercial, industrial, or safety operations.

[181] Auxiliary Microwave Service is governed by part 74 of Title 47 of the Commission's Rules. *See* 47 C.F.R. Part 74. Available to licensees of broadcast stations and to broadcast and cable network entities, broadcast auxiliary microwave stations are used for relaying broadcast television signals from the studio to the transmitter, or between two points such as a main studio and an auxiliary studio. The service also includes mobile TV pickups, which relay signals from a remote location back to the studio.

[182] 13 C.F.R. § 121.201, NAICS code 517212.

[183] With the exception of the special emergency service, these services are governed by Subpart B of part 90 of the Commission's Rules, 47 C.F.R. §§ 90.15-90.27. The police service includes 26,608 licensees that serve state, county, and municipal enforcement through telephony (voice), telegraphy (code) and teletype and facsimile (printed material). The fire radio service includes 22,677 licensees comprised of private volunteer or professional fire companies as well as units under governmental control. The local government service is currently comprised of 40,512 licensees that are state, county, or municipal entities that use the radio for official purposes not covered by other public safety services. There are 7,325 licensees within the forestry service, which is comprised of licensees from state departments of conservation and private forest organizations that set up communications networks among fire lookout towers and ground crews. The 9,480 state and local governments are licensed to highway maintenance service provide emergency and routine communications to aid other public safety services to keep main roads safe for vehicular traffic. The 1,460 licensees in the Emergency Medical Radio Service (EMRS) use the 39 channels allocated to this service for emergency medical service communications related to the delivery of emergency medical treatment. 47 C.F.R. §§ 90.15-90.27. The 19,478 licensees in the special emergency service include medical services, rescue organizations, veterinarians, handicapped persons, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities, and emergency repair of public communications facilities. 47 C.F.R. §§ 90.33-90.55.

[184] 47 C.F.R. § 1.1162.

IRFA, all governmental entities with populations of less than 50,000 fall within the definition of a small entity.[185]

Personal Radio Services. Personal radio services provide short-range, low-power radio for personal communications, radio signaling, and business communications not provided for in other services. The services include the citizen's band (CB) radio service, general mobile radio service (GMRS), radio control radio service, and family radio service (FRS).[186] Inasmuch as the CB, GMRS, and FRS licensees are individuals, no small business definition applies for these services. We are unable at this time to estimate the number of other licensees that would qualify as small under the SBA's definition.

Offshore Radiotelephone Service. This service operates on several ultra high frequency (UHF) TV broadcast channels that are not used for TV broadcasting in the coastal area of the states bordering the Gulf of Mexico. At present, there are approximately 55 licensees in this service. We use the SBA definition applicable to cellular and other wireless telecommunication companies, *i.e.*, an entity employing no more than 1,500 persons.[187] The Commission is unable at this time to estimate the number of licensees that would qualify as small entities under the SBA definition. The Commission assumes, for purposes of this FRFA, that all of the 55 licensees are small entities, as that term is defined by the SBA.

Wireless Communications Services. This service can be used for fixed, mobile, radiolocation, and digital audio broadcasting satellite uses. The Commission defined "small business" for the wireless communications services (WCS) auction as an entity with average gross revenues of $40 million for each of the three preceding years, and a "very small business" as an entity with average gross revenues of $15 million for each of the three preceding years.[188] The SBA has approved these definitions.[189] The FCC auctioned geographic area licenses in the WCS service. In the auction, which commenced on April 15, 1997 and closed on April 25, 1997, there were seven bidders that won 31 licenses that qualified as very small business entities, and one bidder that won one license that qualified as a small business entity. An auction for one license in the 1670-1674 MHz band commenced on April 30, 2003 and closed the same day. One license was awarded. The winning bidder was not a small entity.

Local Multipoint Distribution Service. An auction of the 986 Local Multipoint Distribution Service (LMDS) licenses began on February 18, 1998, and closed on March 25, 1998. The Commission defined "small entity" for LMDS licenses as an entity that has average gross revenues of less than $40 million in the three previous calendar years.[190] An additional classification for "very small business" was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more

[185] 5 U.S.C. § 601(5).

[186] Licensees in the Citizens Band (CB) Radio Service, General Mobile Radio Service (GMRS), Radio Control (R/C) Radio Service and Family Radio Service (FRS) are governed by Subpart D, Subpart A, Subpart C, and Subpart B, respectively, of part 95 of the Commission's rules. 47 C.F.R. §§ 95.401-95.428; §§ 95.1-95.181; §§ 95.201-95.225; §§ 95.191-95.194.

[187] *Id*.

[188] Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service (WCS), *Report and Order*, 12 FCC Rcd 10785, 10879, para. 194 (1997).

[189] *See* Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated December 2, 1998.

[190] *See* Rulemaking to Amend Parts 1, 2, 21, 25, of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, Reallocate the 29.5-30.5 Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, *Second Report and Order*, *Order on Reconsideration, and Fifth Notice of Proposed Rule Making,* 12 FCC Rcd 12545, 12689-90, para. 348 (1997).

than $15 million for the preceding three calendar years.[191] These regulations defining "small entity" in the context of LMDS auctions have been approved by the SBA.[192] There were 93 winning bidders that qualified as small entities in the LMDS auctions. A total of 93 small and very small business bidders won approximately 277 A Block licenses and 387 B Block licenses. On March 27, 1999, the Commission re-auctioned 161 licenses; there were 32 small and very small business winning bidders that won 119 licenses.

Incumbent 24 GHz Licensees. The rules that we adopt could affect incumbent licensees who were relocated to the 24 GHz band from the 18 GHz band, and applicants who wish to provide services in the 24 GHz band. The Commission did not develop a definition of small entities applicable to existing licensees in the 24 GHz band. Therefore, the applicable definition of small entity is the definition under the SBA rules for "Cellular and Other Wireless Telecommunications." This definition provides that a small entity is any entity employing no more than 1,500 persons.[193] The 1992 Census of Transportation, Communications and Utilities, conducted by the Bureau of the Census, which is the most recent information available, shows that only 12 radiotelephone (now Wireless) firms out of a total of 1,178 such firms that operated during 1992 had 1,000 or more employees.[194] This information notwithstanding, we believe that there are only two licensees in the 24 GHz band that were relocated from the 18 GHz band, Teligent[195] and TRW, Inc. It is our understanding that Teligent and its related companies have less than 1,500 employees, though this may change in the future. TRW is not a small entity. Thus, only one incumbent licensee in the 24 GHz band is a small business entity.

Future 24 GHz Licensees. With respect to new applicants in the 24 GHz band, we have defined "small business" as an entity that, together with controlling interests and affiliates, has average annual gross revenues for the three preceding years not exceeding $15 million.[196] "Very small business" in the 24 GHz band is defined as an entity that, together with controlling interests and affiliates, has average gross revenues not exceeding $3 million for the preceding three years.[197] The SBA has approved these definitions.[198] The Commission will not know how many licensees will be small or very small businesses until the auction, if required, is held.

39 GHz Service. The Commission defines "small entity" for 39 GHz licenses as an entity that has average gross revenues of less than $40 million in the three previous calendar years.[199] "Very small

[191] *Id*.

[192] *See* Letter to Daniel Phythyon, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated January 6, 1998.

[193] *See id.*

[194] *1992 Census, Series UC-92-S-1* at *Firm Size* 1-123.

[195] Teligent acquired the Digital Electronic Message Service (DEMS) licenses of FirstMark, the only licensee other than TRW in the 24 GHz band whose license has been modified to require relocation to the 24 GHz band.

[196] Amendments to Parts 1, 2, 87 and 101 of the Commission's Rules To License Fixed Services at 24 GHz, *Report and Order*, 15 FCC Rcd 16934, 16967, para. 77 (2000) (*24 GHz Report and Order*); *see also* 47 C.F.R. § 101.538(a)(2).

[197] *24 GHz Report and Order*, 15 FCC Rcd at 16967, para. 77; *see also* 47 C.F.R. § 101.538(a)(1).

[198] *See* Letter to Margaret Wiener, Deputy Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, from Gary Jackson, Assistant Administrator, Small Business Administration, dated July 28, 2000.

[199] *See* Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Band, *Report and Order*, 12 FCC Rcd 18600 (1997).

business" is defined as an entity that, together with its affiliates, has average gross revenues of not more than $15 million for the preceding three calendar years.[200] The SBA has approved these definitions.[201] 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.

218-219 MHz Service. The first auction of 218-219 MHz (previously referred to as the Interactive and Video Data Service or IVDS) spectrum resulted in 178 entities winning licenses for 594 Metropolitan Statistical Areas (MSAs).[202] Of the 594 licenses, 567 were won by 167 entities qualifying as a small business. For that auction, we defined a small business as an entity that, together with its affiliates, has no more than a $6 million net worth and, after federal income taxes (excluding any carry over losses), has no more than $2 million in annual profits each year for the previous two years.[203] In the *218-219 MHz Report and Order and Memorandum Opinion and Order*, we defined a small business as an entity that, together with its affiliates and persons or entities that hold interests in such an entity and their affiliates, has average annual gross revenues not exceeding $15 million for the preceding three years.[204] A very small business is defined as an entity that, together with its affiliates and persons or entities that hold interests in such an entity and its affiliates, has average annual gross revenues not exceeding $3 million for the preceding three years.[205] The SBA has approved of these definitions.[206] At this time, we cannot estimate the number of licenses that will be won by entities qualifying as small or very small businesses under our rules in future auctions of 218-219 MHz spectrum. Given the success of small businesses in the previous auction, and the prevalence of small businesses in the subscription television services and message communications industries, we assume for purposes of this FRFA that in future auctions, many, and perhaps all, of the licenses may be awarded to small businesses.

Location and Monitoring Service (LMS). Multilateration LMS systems use non-voice radio techniques to determine the location and status of mobile radio units. For purposes of auctioning LMS licenses, the Commission has defined "small business" as an entity that, together with controlling interests and affiliates, has average annual gross revenues for the preceding three years not exceeding $15 million.[207] A "very small business" is defined as an entity that, together with controlling interests and affiliates, has average annual gross revenues for the preceding three years not exceeding $3 million.[208]

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[200] *Id*.

[201] *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.

[202] *See* "Interactive Video and Data Service (IVDS) Applications Accepted for Filing," *Public Notice*, 9 FCC Rcd 6227 (1994).

[203] Implementation of Section 309(j) of the Communications Act – Competitive Bidding, *Fourth Report and Order*, 9 FCC Rcd 2330 (1994).

[204] Amendment of Part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service, *Report and Order and Memorandum Opinion and Order*, 15 FCC Rcd 1497 (1999).

[205] *Id*.

[206] *See* Letter to Daniel Phythyon, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated January 6, 1998.

[207] Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, *Second Report and Order*, 13 FCC Rcd 15182, 15192 ¶ 20 (1998); *see also* 47 C.F.R. § 90.1103.

[208] Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, *Second Report and Order*, 13 FCC Rcd at 15192 ¶ 20; *see also* 47 C.F.R. § 90.1103.

These definitions have been approved by the SBA.[209] An auction for LMS licenses commenced on February 23, 1999, and closed on March 5, 1999. Of the 528 licenses auctioned, 289 licenses were sold to four small businesses. We cannot accurately predict the number of remaining licenses that could be awarded to small entities in future LMS auctions.

Multiple Address Systems (MAS). Entities using MAS spectrum, in general, fall into two categories: (1) those using the spectrum for profit-based uses, and (2) those using the spectrum for private internal uses. With respect to the first category, the Commission defines "small entity" for MAS licenses as an entity that has average gross revenues of less than $15 million in the three previous calendar years.[210] "Very small business" is defined as an entity that, together with its affiliates, has average gross revenues of not more than $3 million for the preceding three calendar years.[211] The SBA has approved of these definitions.[212] The majority of these entities will most likely be licensed in bands where the Commission has implemented a geographic area licensing approach that would require the use of competitive bidding procedures to resolve mutually exclusive applications. The Commission's licensing database indicates that, as of January 20, 1999, there were a total of 8,670 MAS station authorizations. Of these, 260 authorizations were associated with common carrier service. In addition, an auction for 5,104 MAS licenses in 176 EAs began November 14, 2001, and closed on November 27, 2001.[213] Seven winning bidders claimed status as small or very small businesses and won 611 licenses.

With respect to the second category, which consists of entities that use, or seek to use, MAS spectrum to accommodate their own internal communications needs, we note that MAS serves an essential role in a range of industrial, safety, business, and land transportation activities. MAS radios are used by companies of all sizes, operating in virtually all U.S. business categories, and by all types of public safety entities. For the majority of private internal users, the definitions developed by the SBA would be more appropriate. The applicable definition of small entity in this instance appears to be the "Cellular and Other Wireless Telecommunications" definition under the SBA rules. This definition provides that a small entity is any entity employing no more than 1,500 persons.[214] The Commission's licensing database indicates that, as of January 20, 1999, of the 8,670 total MAS station authorizations, 8,410 authorizations were for private radio service, and of these, 1,433 were for private land mobile radio service

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

In the *Report and Order*, the Commission concluded that advance coordination between applicants and Quiet Zone entities would streamline the processing of applications by allowing the Commission to begin processing prior to the end of the 20-day waiting period set out in section 1.924 of the Commission's rules.

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[209] *See* Letter to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated February 22, 1999.

[210] *See* Amendment of the Commission's Rules Regarding Multiple Address Systems, *Report and Order*, 15 FCC Rcd 11956, 12008 ¶ 123 (2000).

[211] *Id*.

[212] *See* Letter to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated June 4, 1999.

[213] *See* "Multiple Address Systems Spectrum Auction Closes," *Public Notice*, 16 FCC Rcd 21011 (2001).

[214] *See* 13 C.F.R. § 121.201, NAICS code 517212.

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 developing its approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small Entities.[215]

In the *Report and* Order, the Commission adopts changes to its rules governing Quiet Zone areas that will streamline requirements for applications affecting Quiet Zones, while protecting these sensitive areas from harmful interference. In the *Report and Order*, the Commission: 1) provides for immediate processing of applications that may implicate Quiet Zones, in the event that the applicant indicates that it has obtained the prior consent of the Quiet Zone entity; 2) clarifies that applicants may provide notification to and begin coordination with Quiet Zone entities (where required) in advance of filing an application with the Commission; 3) amends section 101.31(b)(1)(v) to permit applicants of Part 101 and other services that permit operation prior to authorization to initiate conditional operation, provided they have obtained the prior consent of the Quiet Zone entity and are otherwise eligible to initiate conditional operations over the proposed facility; and 4) clarifies that either the applicant or the applicant's frequency coordinator may notify and initiate coordination proceedings with the Quiet Zone entity.

While the Commission does not implement alternatives specific to small entities, the purpose behind the rule modifications in the *Report and Order* is to expedite the application process, reduce unnecessary or redundant requirements from Commission regulations, and promote the efficient use of spectrum within Quiet Zones by all carriers, including small businesses.

Report to Congress: The Commission will send a copy of the *Report and Order*, including this FRFA, in a report to be sent to Congress pursuant to the *Congressional Review Act*.[216] In addition, the Commission will send a copy of the *Report and Order*, including this FRFA, to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the *Report and Order* and FRFA (or summaries thereof) will also be published in the Federal Register.[217]

[215] 5 U.S.C. § 603 (c).

[216] *See* 5 U.S.C. § 801(a)(1)(A).

[217] *See* 5 U.S.C. § 604(b).

APPENDIX C

COMMENTERS

Comments

Cingular Wireless LLC (Cingular)
Cornell University (Cornell)
National Academy of Sciences/Committee on Radio Frequencies of the National Research Council (NAS)
National Radio Astronomy Observatory (NRAO)
National Science Foundation (NSF)
RCC Consultants, Inc. (RCC)
Spanish Broadcasting System, Inc. (SBS)

Reply Comments

Cornell University (Cornell)
National Radio Astronomy Observatory (NRAO)
Verizon Wireless (Verizon)

Comments to the 2000 Biennial Review[218]

Alloy LLC (Alloy/Cingular)

Comments to the 2002 Biennial Review[219]

Cellular Telecommunications & Internet Association (CTIA)
Rural Cellular Association (RCA)

[218] *See* Federal Communications Commission 2000 Biennial Regulatory Review - Updated Staff Report (rel. Jan. 17, 2001).

[219] *See* Federal Communications Commission 2002 Biennial Regulatory Review - Staff Report of the Wireless Telecommunications Bureau, 18 FCC Rcd 4243 (2003).