

aeronautical mobile, in the 2385-2390 MHz band.<sup>192</sup> In addition, the *Reallocation Report and Order* provides conditional allocation for NGSO MSS Feeder Uplinks - conditioned on a similar international allocation - in the 1390-1392 MHz band, and NGSO MSS Feeder downlinks -also conditioned on a similar international allocation- in the 1430-1432 MHz band. To the extent necessary, we will address Little LEO licensing issues, including terrestrial and satellite sharing, in a separate proceeding once the ongoing sharing studies are completed and an international allocation of this spectrum is secured.<sup>193</sup> We now turn our attention to our proposed application, licensing, and processing rules pertinent for new terrestrial services.

### 1. Regulatory Status

78. The Commission's current mobile service license application requires an applicant for mobile services to indicate whether the service it intends to offer will be CMRS, Private Mobile Radio Service (PMRS), or both.<sup>194</sup> The Commission has adopted a similar licensing framework for Part 27 of our Rules.<sup>195</sup> Thus, under Part 27, the Commission permits applicants to request common carrier status as well as non-common carrier status for authorization in a single license, rather than to require the applicant to choose between common carrier and non-common services.<sup>196</sup> Accordingly, we propose to adopt the same procedure for licensing new services in the paired 1392-1395 MHz and 1432-1435 MHz bands and unpaired 1390-1392 MHz, 1670-1675 MHz and 2385-2390 MHz bands. The licensee will be able to provide all allowable services anywhere within its licensed area at any time, consistent with its regulatory status. We tentatively conclude that, in the case of new services offered in these bands, this approach is likely to achieve efficiencies in the licensing and administrative process.

79. We further propose that applicants and licensees with respect to new services in the paired 1392-1395 MHz and 1432-1435 MHz bands and the unpaired 1390-1392 MHz, 1670-1675 MHz and 2385-2390 MHz bands be required to indicate a regulatory status based on any services they choose to provide. As the Commission stated in adopting Part 27, apart from this designation of regulatory status, we would not require applicants to describe the services they seek to provide.<sup>197</sup> In providing guidance on this issue to applicants, the Commission pointed out that an election to provide service on a common carrier

(Continued from previous page) \_\_\_\_\_

<sup>191</sup> *Id.* at ¶ 64.

<sup>192</sup> *Id.* at ¶ 71.

<sup>193</sup> *Id.* at ¶¶ 52-56 and 59.

<sup>194</sup> In the *LMDS Second Report and Order*, the Commission required applicants for fixed services to indicate if they planned to offer services as a common carrier, a non-common carrier, or both, and to notify the Commission of any changes in status without prior authorization. *LMDS Second Report and Order, Order on Reconsideration, and Fifth Notice of Proposed Rulemaking*, 12 FCC Rcd 12545, 12636-38, 12644-45, 12652-53 ¶¶ 205-208, 225-226, 245-251 (1997) (*LMDS Second Report and Order*) (*Fifth NPRM*); *aff'd, Melcher v. FCC*, 134 F.3d 1143 (D.C. Cir. 1998).

<sup>195</sup> 47 C.F.R. Part 27.

<sup>196</sup> *Part 27 Report and Order*, 12 FCC Rcd at 10846, 10848 ¶¶ 119, 122.

<sup>197</sup> *See Part 27 Report and Order*, 12 FCC Rcd at 10848 ¶ 121; *see also LMDS Second Report and Order*, 12 FCC Rcd at 12644 ¶ 223; 47 C.F.R. § 101.1013.

basis requires that the elements of common carriage be present;<sup>198</sup> otherwise, the applicant must choose non-common carrier status.<sup>199</sup> The Commission advised potential applicants that, if they are unsure of the nature of their services and their classification as common carrier services, they may submit a petition with their applications, or at any time, request clarification and including service descriptions for that purpose.<sup>200</sup>

80. We also propose that if a licensee were to change the service or services it offers, such that its regulatory status would change, the licensee must notify the Commission.<sup>201</sup> Although a change in a licensee's regulatory status would not require prior Commission authorization, we propose that a licensee be required to notify the Commission within 30 days of the change.<sup>202</sup> We note, however, that a different time period may apply, as determined by the Commission, where the change results in the discontinuance, reduction, or impairment of the existing service.<sup>203</sup> In summary, under our proposal, a licensee in the paired 1392-1395 MHz and 1432-1435 MHz bands, or the unpaired 1390-1392 MHz, 1670-1675 MHz and 2385-2390 MHz bands would be authorized to provide a variety or combination of fixed, mobile, common carrier, and non-common carrier services. We seek comment on these proposals.

## 2. Eligibility

81. We believe that opening this spectrum to as wide a range of applicants as possible would encourage entrepreneurial efforts to develop new technologies and services, while helping to ensure efficient use of this spectrum. Accordingly, we propose that there be no restrictions on eligibility for a license, other than the foreign ownership restrictions set forth in Section 310 of the Communications Act.<sup>204</sup> We seek comment on this proposal. Commenters are requested to comment on whether open eligibility poses a significant likelihood of substantial competitive harm in specific markets, and, if so, whether eligibility restrictions are an effective method to address that harm.

82. We believe that this approach is consistent with our statutory guidance. Specifically, in granting the Commission authority in Section 309(j) of the Communications Act to auction wireless

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<sup>198</sup> See 47 U.S.C. § 153(44) ("A telecommunications carrier shall be treated as a common carrier under this Act ..."); see also 47 U.S.C. § 332(C)(1)(A) ("A person engaged in the provision of a service that is a commercial mobile service shall, insofar as such person is so engaged, be treated as a common carrier for purposes of this Act ...").

<sup>199</sup> *Part 27 Report and Order*, 12 FCC Rcd at 10790-91 ¶ 121. The Commission examined services in the *LMDS Second Report and Order* and explained that any video programming service would be treated as a non-common carrier service. *LMDS Second Report and Order*, 12 FCC Rcd at 12639-41 ¶¶ 213- 215.

<sup>200</sup> *Part 27 Report and Order*, 12 FCC Rcd at 10848 ¶ 121.

<sup>201</sup> See 47 C.F.R. §§ 27.66 (a)-(b).

<sup>202</sup> A change in regulatory status would require Commission prior authorization, however, if the change raised issues concerning the benchmark contained in Section 310(b)(4) of the Act.

<sup>203</sup> See 47 C.F.R. §§ 27.66 (a)-(b).

<sup>204</sup> See 47 U.S.C. §§ 310(a), 310(b), and 310(d).

spectrum and to impose eligibility requirements as appropriate, Congress also directed the Commission to exercise that authority so as to "promot[e] . . . economic opportunity and competition."<sup>205</sup>

### 3. Foreign Ownership Restrictions

83. Sections 310(a) and 310(b) of the Communications Act, as modified by the Telecommunications Act of 1996, impose foreign ownership and citizenship requirements that restrict the issuance of licenses to certain applicants.<sup>206</sup> Section 27.12 of the Commission's Rules, which implements Section 310 of the Act,<sup>207</sup> would by its terms apply to applicants for licenses in the bands subject to this proceeding.<sup>208</sup> An applicant requesting authorization only for non-common carrier or non-broadcast services would be subject to Section 310(a) but not to the additional prohibitions of Section 310(b). An applicant requesting authorization for broadcast or common carrier services would be subject to both Sections 310(a) and 310(b).

84. Further, we note that in response to the commitments under the World Trade Organization (WTO) Basic Telecommunications Agreement, the Commission recently liberalized its policy for applying its discretion with respect to foreign ownership of common carrier radio licensees under Section 310(b)(4).<sup>209</sup> Under our new policy, the Commission now presumes that ownership by entities from countries that are WTO members serves the public interest.<sup>210</sup> Ownership by entities from countries that are not WTO members continues to be subject to the "effective competitive opportunities" test established earlier by the Commission.<sup>211</sup>

85. In the filing of an application under the proposed service rules, we do not believe that common carriers and non-common carriers should be subject to varied reporting obligations. Rather, as a matter of fostering regulatory parity and transparency, we believe that all applicants should be required to file changes in foreign ownership information to the extent required by Part 27 of our Rules. In light of Part 27 licensees' potential ability to provide broadcast, common carrier, and non-common carrier services, Commission rules require all licensees, even non-common carriers, to report alien ownership on a consistent basis, to better enable the Commission to monitor compliance.<sup>212</sup> By establishing parity in

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<sup>205</sup> See 47 U.S.C. § 309(j)(3).

<sup>206</sup> 47 U.S.C. §§ 310(a), 310(b).

<sup>207</sup> 47 C.F.R. § 27.12; see also Section 27.302 of the Commission's Rules, 47 C.F.R. § 27.302.

<sup>208</sup> See 47 C.F.R. § 27.12.

<sup>209</sup> The commitments are incorporated into the General Agreement of Trade in Services (GATS) by the Fourth Protocol to the GATS. See Fourth Protocol to the General Agreement on Trade in Services (WTO 1997), 36 I.L.M. 366 (1997).

<sup>210</sup> See Rules and Policies on Foreign Participation in the U.S. Telecommunications Market and Market Entry and Regulation of Foreign-Affiliated Entities, *Report and Order and Order on Reconsideration*, 12 FCC Rcd 23891, 23935-47 ¶¶ 97-132 (1997).

<sup>211</sup> *Id.*

<sup>212</sup> See Streamlining the Commission's Rules and Regulations for Satellite Application and Licensing Procedures, *Report and Order*, IB Docket No. 95-117, 11 FCC Rcd 21581, 21599 ¶ 43 (1996).

reporting obligations, however, we do not propose a single, substantive standard for compliance. Thus, by way of example, we do not and would not disqualify an applicant requesting authorization exclusively to provide non-common carrier and non-broadcast services from a license simply because its citizenship information would disqualify it from a common carrier or broadcast license. We request comment on this proposal.

#### 4. License Term and Renewal Expectancy

86. We propose that the license term for new licensees in the paired 1392-1395 MHz and 1432-1435 MHz bands and unpaired 1390-1392 MHz, 1670-1675 MHz and 2385-2390 MHz bands be 10 years, with a renewal expectancy similar to that afforded PCS and cellular licensees. In the case of either a cellular or PCS licensee, a renewal applicant shall receive a preference or renewal expectancy if the applicant has provided substantial service during its past license term and has complied with the Communications Act and applicable Commission rules and policies.<sup>213</sup> While preferring a substantial service requirement, we also invite comment on whether a build-out requirement is more appropriate for this service.<sup>214</sup> We believe that this 10-year license term, combined with renewal expectancy, will help to provide a stable regulatory environment that will be attractive to investors and, thereby, encourage development of this frequency band. We also seek comment on whether a license term longer than 10 years is appropriate to achieve these goals and better serve the public interest. Commenters who favor a license term in excess of ten years should specify a reasonable license term and include a basis for the period proposed.

87. We propose that the renewal application of a licensee in the paired 1392-1395 MHz and 1432-1435 MHz bands and unpaired 1390-1392 MHz, 1670-1675 MHz and 2385-2390 MHz bands must include, at a minimum, the following showings in order to claim a renewal expectancy:<sup>215</sup>

- A description of current service in terms of geographic coverage and population served or links installed and a description of how the service complies with the substantial service requirement.
- Copies of any Commission Orders finding the licensee to have violated the Communications Act or any Commission rule or policy, and a list of any pending proceedings that relate to any matter described by the requirements for the renewal expectancy.<sup>216</sup>
- If applicable, a description of how the licensee has complied with the build-out requirement.

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<sup>213</sup> See 47 U.S.C. § 151 *et seq.* Substantial service is service that is sound, favorable, and substantially above a level of mediocre service which might just minimally warrant renewal. See 47 C.F.R. § 22.940(a)(1)(i).

<sup>214</sup> See *infra* at Section III.C.1., regarding performance requirements.

<sup>215</sup> These proposed requirements are based on those we ordered for LMDS. See Section 101.1011 of the Commission's Rules, 47 C.F.R. § 101.1011.

<sup>216</sup> See Section 22.940(a)(2)(i) through Section 22.940(a)(2)(iv) of the Commission's Rules, 47 C.F.R. §§22.940(a)(2)(i)-(iv).

88. Under our proposal, in the event that a license in the subject bands is partitioned or disaggregated, any partitionee or disaggregatee would be authorized to hold its license for the remainder of the partitioner's or disaggregator's original license term. Further, the partitionee or disaggregatee would be required to demonstrate that it has met the substantial service requirements, or build-out standard, in any renewal application. This approach is similar to the partitioning provisions the Commission adopted for MDS<sup>217</sup> and for current broadband PCS licensees.<sup>218</sup> Specifically, we do not believe that a licensee, by partitioning or disaggregation, should be able to confer greater rights than it was awarded under the terms of its license grant.

## 5. Partitioning and Disaggregation

89. If geographic area licensing is used in any of these bands, we seek comment on allowing licensees to partition their service areas and to disaggregate their spectrum.<sup>219</sup> We believe that Section 27.15 of the Commission's Rules<sup>220</sup> would apply if we allow partitioning and disaggregation. Section 27.15 provides that licensees may apply to partition their licensed geographic service areas or disaggregate their licensed spectrum at any time following the grant of their licenses.<sup>221</sup> We seek comment on the benefits and costs of this approach, and whether it promotes the public interest.

90. In addition, pursuant to Section 27.15, the partitioning licensee must include with its request a description of the partitioned service area and a calculation of the population of the partitioned service area and the licensed geographic service area.<sup>222</sup> Section 27.15 also contains provisions against unjust enrichment.<sup>223</sup> We propose to adopt these provisions, as well as the remaining provisions governing partitioning and disaggregation set forth in Section 27.15 if we allow partitioning and disaggregation. We seek comment on our proposal.

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<sup>217</sup> See 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, *Report and Order*, 10 FCC Rcd 9589, 9614 ¶ 46 (1995).

<sup>218</sup> See Geographic Partitioning and Spectrum Disaggregation by Commercial Mobile Radio Services Licensees and Implementation of Section 257 of the Communications Act – Elimination of Market Barriers, *Report and Order and Further Notice of Proposed Rulemaking*, WT Docket No. 96-1148, 11 FCC Rcd 21831, 21870 ¶¶ 76-77 (1996) (*Partitioning and Disaggregation Report and Order*).

<sup>219</sup> “Partitioning” is the assignment of geographic portions of a license along geopolitical or other boundaries. “Disaggregation” is the assignment of discrete portions of “blocks” of spectrum licensed to a geographic licensee or qualifying entity. Disaggregation allows for multiple transmitters in the same area operated by different companies (thus the possibility of harmful interference increases).

<sup>220</sup> 47 C.F.R. § 27.15.

<sup>221</sup> *Part 27 Report and Order*, 12 FCC Rcd at 10836-39 ¶¶ 96-103.

<sup>222</sup> 47 C.F.R. § 27.15(b)(1).

<sup>223</sup> 47 C.F.R. § 27.15(c)(1)(2); see also 47 C.F.R. § 1.2111.

## 6. Individual Station Licenses

91. We have proposed geographic area licensing for several bands. Under geographic area licensing, the licensee has exclusive use to operate within its geographic service area. Ordinarily licensees may operate without filing an application for individual stations within its service area. Nonetheless, we believe there are situations in which we should require licensees to obtain an individual station license for a particular station within their geographic service area.

92. The licensee will need to apply for an individual station license to the Commission for those individual stations that (1) require submission of an Environmental Assessment under Section 1.1307 of our Rules;<sup>224</sup> (2) require international coordination;<sup>225</sup> (3) would operate in the quiet zones listed in Section 1.924 of our Rules;<sup>226</sup> or (4) require coordination with the Frequency Assignment Subcommittee (FAS) of the Interdepartment Radio Advisory Committee (IRAC).<sup>227</sup>

93. We propose that the licensee be responsible for determining whether an individual station needs an individual station license. We further propose that this requirement will apply to both new stations and station modifications. We ask for comment on this proposal.

### C. Operating Rules

#### 1. Performance Requirements

94. We seek comment on whether licensees in the paired 1392-1395 MHz and 1432-1435 MHz bands and unpaired 1390-1392 MHz, 1670-1675 MHz and 2385-2390 MHz bands should be subject to a substantial service requirement or a minimum coverage requirement as a condition of license renewal. We have imposed such requirements on licensees in other services to ensure that spectrum is used effectively and service is implemented promptly.<sup>228</sup> We seek comment on whether licensees should be required to provide "substantial service" to the geographic license area within ten years or any other license term which we adopt for this service.<sup>229</sup> We have defined substantial service as "service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal."<sup>230</sup> Further, we seek comment on whether there should be a construction requirement as an alternative, safe harbor standard. Under the safe harbor, the licensee would be required to reach a minimum of one-third of the population in its licensed area, no later than the mid-point of the license term

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<sup>224</sup> 47 C.F.R. § 1.1307.

<sup>225</sup> See, e.g., 47 C.F.R. § 1.928 (regarding frequency coordination arrangements between the U.S. and Canada).

<sup>226</sup> 47 C.F.R. § 1.924.

<sup>227</sup> We will discuss FAS coordination in the section describing coordination with Government incumbents. See *infra* at Section III.E.3.

<sup>228</sup> Cf. Section 22.940(a)(2)(i) through Section 22.940(a)(2)(iv) of the Commission's Rules, 47 C.F.R. §§ 22.940(a)(2)(i)-(iv).

<sup>229</sup> See *LMDS Second Report and Order*, 12 FCC Rcd at 12659 ¶¶ 263-267.

<sup>230</sup> See, e.g., 47 C.F.R. § 22.940(a)(1)(i).

and two-thirds of the population by the end of the license term. We also seek comment on whether, in the event that a license is partitioned or disaggregated, a partitionee or disaggregatee should be bound by the standard (either substantial service or a construction requirement) that we may adopt in this proceeding.

95. If a licensee does not comply with whichever performance requirement we adopt, the Commission must consider what action to take. We could adopt a standard under which a licensee who does not comply with the appropriate standard, either substantial service or minimum coverage, is subject to license termination upon action by the Commission or, alternatively, the license would automatically cancel. We seek comment on whether to adopt an automatic cancellation standard or cancellation only upon action by the Commission. If the geographic area licensee loses its license for failure to comply with coverage requirements, should the licensee be prohibited from bidding on the geographic area license for the same territory in the future? Is there a sanction more appropriate than automatic cancellation? We seek comment on these issues.

## 2. Application of Title II Requirements to Common Carriers

96. We also seek comment on whether we should forbear from applying certain obligations on common carrier licensees in the bands subject to this proceeding pursuant to Section 10 of the Act.<sup>231</sup> In the case of commercial mobile radio service (CMRS) providers, the Commission concluded that it was appropriate to forbear from Sections 203, 204, 205, 211, 212, and most applications of Section 214.<sup>232</sup> The Commission, however, declined to forbear from enforcing other provisions, including Sections 201 and 202.<sup>233</sup> The Commission has also exercised its forbearance authority in permitting competitive access providers (CAPS) and competitive local exchange carriers (CLECs) to file permissive tariffs.<sup>234</sup> We seek comment on whether it is appropriate to forbear from enforcing any provisions of the Act or the Commission's rules in the bands subject to this proceeding.

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<sup>231</sup> See 47 U.S.C. § 160(a)(1-3). Section 10 provides the Commission with authority to forbear from application of virtually any regulation or any provision of the Act to a telecommunications carrier or telecommunications service, or a class of carriers or services. But, the Commission may not forbear from applying the requirements of Sections 251(c) or 271 until it determines that those requirements have been fully implemented. See 47 U.S.C. § 160(d).

<sup>232</sup> See Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, *Second Report and Order*, 9 FCC Rcd 1411, 1463-93 (1994). The Commission decided to forbear Sections 203, 204, 205, 211, 212, and most applications of section 214. *Id.* at 1478-80.

<sup>233</sup> See *CMRS Second Report and Order* at 1478 (declining to forbear Sections 201 and 202 of the Communications Act); In the Matter of Personal Communications Industry Association's Broadband Personal Communications Services Alliance's Petition for Forbearance for Broadband Personal Communications Services, Forbearance from Applying Provisions of the Communications Act to Wireless Telecommunications Carriers, WT Docket No. 98- 100, *Memorandum Opinion and Order and Notice of Proposed Rulemaking*, 13 FCC Rcd 16857, 16914 (1998) (declining to forbear from applying Section 20.12(b) of the Commission's Rules (resale rule) and Sections 201 and 202 of the Communications Act).

<sup>234</sup> See In the Matters of Hyperion Telecommunications, Inc. Petition Requesting Forbearance, Time Warner Communications Petition for Forbearance, Complete Detariffing for Competitive Access Providers and Competitive Exchange Carriers, *Memorandum Opinion and Order and Notice of Proposed Rulemaking*, 12 FCC Rcd 8596, 8608-10 (1997).

#### D. Technical Rules

97. *General Technical Rules.* We seek comment on the appropriateness of adopting Part 27 of our Rules, for new services in the paired 1392-1395 MHz and 1432-1435 MHz bands and the unpaired 1390-1392 MHz, 1670-1675 MHz and 2385-2390 MHz bands. The application of general provisions of Part 27 would include technical standards relating to equipment authorization,<sup>235</sup> Radiofrequency (RF) safety standards,<sup>236</sup> frequency stability,<sup>237</sup> antenna structures and air navigation safety,<sup>238</sup> and disturbance of AM broadcast station antenna patterns.<sup>239</sup> In addition, other technical restrictions contained in other sections of the Commission's rules would apply to licensees including Part 17 (antenna registration), and as discussed earlier, Sections 1.924 (quiet zones), and 1.1307 (environmental requirements).<sup>240</sup> We seek similar comment with respect to the Part 90 technical rules for telemetry in the 1429.5-1432 MHz frequency band.<sup>241</sup>

98. *In-Band Interference Control.* We request comment on additional technical restrictions to limit co-channel interference protection between licensees operating in adjacent geographic service areas. We recognize that licensees will be permitted to implement a broad range of services and technologies in this spectrum, and that the implementation of these services and technologies must take into account the potential for interference between licensees using the same spectrum in adjacent service areas. Under our proposed rules, licensees will have the flexibility to provide fixed and mobile services including land mobile.

99. In the past, we have primarily utilized an approach to limit co-channel interference between geographic service areas that includes field strength limits or frequency coordination.<sup>242</sup> Field strength limits have generally been adopted for land mobile services,<sup>243</sup> while frequency coordination requirements have primarily been used in fixed services.<sup>244</sup> We request comment if either or both of these approaches are appropriate in this case or if other methods should be used for interference protection.

100. We believe that either method, when properly applied, can provide a satisfactory means of controlling harmful interference between systems, although, on balance, there may be reasons to prefer one

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<sup>235</sup> 47 C.F.R. § 27.51.

<sup>236</sup> 47 C.F.R. § 27.52.

<sup>237</sup> 47 C.F.R. § 27.54.

<sup>238</sup> 47 C.F.R. § 27.56.

<sup>239</sup> 47 C.F.R. § 27.63.

<sup>240</sup> See 47 C.F.R. §§ 1.924, 1.1307.

<sup>241</sup> See *supra* ¶¶ 66-69.

<sup>242</sup> See 47 C.F.R. §§ 24.236, 27.55(a). See also 47 C.F.R. § 101.103.

<sup>243</sup> See 47 C.F.R. § 24.236 for PCS. See also 47 C.F.R. § 27.55 for 2.3 GHz band.

<sup>244</sup> See 47 C.F.R. § 101.103 for fixed microwave services.

method over the other. For example, a general coordination requirement may minimize the potential for interference to coordinated facilities but may also impose unnecessary coordination costs for facilities with a low potential for interference, and increase the potential for undesirable strategic or anti-competitive behavior.

101. A field strength limit, on the other hand, may reduce the need for coordination by giving licensees the ability unilaterally to deploy facilities in boundary areas as long as the limit is met, but by itself may provide insufficient assurance against interference to such facilities. Even with a boundary field strength limit, some degree of coordination and joint planning between bordering licensees appears likely to be needed to ensure efficient spectrum use on each side of the boundary.<sup>245</sup> Parties are therefore asked to provide their analysis of the advantages and disadvantages of both approaches or, possibly, an approach that combines the elements of both a boundary field strength limit and a coordination requirement.

102. If commenters believe that the Commission should apply a field strength limit, as a means to control interference to neighboring systems in the paired 1392-1395 MHz and 1430-1432 MHz bands and unpaired 1390-1392 MHz, 1670-1675 MHz and 2385-2390 MHz bands, then an analysis should be presented to justify the use of any proposed value. Various maximum field strengths have been prescribed by the Commission for other services. These include 47 dBuV/m for PCS,<sup>246</sup> 47 dBuV/m for WCS licensees in the 2.3 GHz band<sup>247</sup> and 55 dBuV/m for licensees in the 4660-4685 MHz band.<sup>248</sup> Therefore, commenters who support a boundary limit should propose a specific value and explain the method they have used in deriving it.

103. If we do adopt a general coordination approach, we request comment on how such coordination would be triggered between licensees in adjacent geographic areas. We note that for 28 GHz LMDS and 39 GHz licensees, the need for coordination is triggered based on the distance that the station will be located from the licensees' service area boundary.<sup>249</sup> We solicit comment on these coordination procedures and criteria.

104. We also seek comment on what, if any, power limits and antenna height limits are necessary or appropriate under either a coordination or field strength limit approach. We observe that transmitters used in the private land mobile service, cellular radio service, and point-to-point microwave services typically employ substantially different output powers. Accordingly, we invite comments as to what those limits should be and the basis for the suggested limits. We also solicit views on output power limits for base and mobile equipment.

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<sup>245</sup> See Amendment of Parts 2, 15, and 97 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications, *Memorandum Opinion and Order on Reconsideration and Notice of Proposed Rulemaking*, ET Docket No. 94-124, 13 FCC Rcd 16947, 16994-97 (1998).

<sup>246</sup> 47 C.F.R. § 24.236.

<sup>247</sup> 47 C.F.R. § 27.55.

<sup>248</sup> 47 C.F.R. § 26.55.

<sup>249</sup> 47 C.F.R. § 101.103.

105. *Out-of-Band Interference Control.* We seek comment on appropriate out-of-band emission limits, and/or emission masks, and whether one or both of these methods is necessary to protect services operating adjacent to the paired 1392-1395 MHz and 1432-1435 MHz bands and unpaired 1390-1392 MHz, 1670-1675 MHz and 2385-2390 MHz bands. We seek comment on corresponding measurement procedures to confirm emission levels. We also seek comment on what power limits and antenna height limits are necessary or appropriate to protect services operating in adjacent bands.

106. Finally, when commenting on technical limitations, including those discussed above, parties are asked to provide either in their analyses or in their comments how proposed limits will prevent licensees from causing harmful interference to Government incumbents.

107. *Technical Restrictions for the 1670-1675 MHz Band.* In comments to the *Reallocation Notice*, AeroAstro, ArrayComm and MicroTrax propose technical limits for the 1670-1675 MHz band. Each commenter proposes an out-of-band emission limit.

108. AeroAstro believes that an out-of-band emission limit of  $-80$  dBW/Hz will protect adjacent band radioastronomy.<sup>250</sup> It states that technical rules should specify an absolute out-of-band limit, rather than a maximum in-band limit and emission mask, because an absolute out-of-band limit will permit a provider that uses low in-band power to specify an emission mask that is not as steep.<sup>251</sup>

109. ArrayComm proposes an out-of-band emission limit similar to PCS service, except with an adjustment for “adaptive antenna” systems, a type of technology they propose.<sup>252</sup> ArrayComm states that where the output of multiple power amplifiers operating at comparable per-carrier powers are coherently combined, the out-of-band emission limit should be  $43+10\log(P)-10\log(M)$ , where “P” is the per-carrier, per-power-amplifier power serving a carrier and “M” is the number of power amplifier/antenna elements serving a carrier.

110. MicroTrax suggests an out-of-band limit, in any 1 MHz bandwidth, of  $55+10\log(P)$  where “P” is the highest emission in watts of the transmitter inside the authorized bandwidth.<sup>253</sup>

111. We seek comment on all three of these proposals. Parties who comment on this issue should be aware that in the following section we explain that protection of radioastronomy operations in the lower-adjacent band will be accomplished through technical limits established for equipment operating in the 1670-1675 MHz band.<sup>254</sup>

112. We note, that of the three proposals for out-of-band emission limits, ArrayComm’s proposal appears to be the most flexible, although possibly the least restrictive. We believe that licensees should have as much flexibility as possible to aid in the viability of their service. Nonetheless, the out-of-band emission limit should be sufficient to protect lower-adjacent band radioastronomy operations from harmful interference. Because of its flexibility, we tentatively propose to adopt ArrayComm’s limit. We

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<sup>250</sup> See AeroAstro Comments at 4.

<sup>251</sup> *Id.* at 5.

<sup>252</sup> See ArrayComm Comments at 21.

<sup>253</sup> See MicroTrax Comments at 3.

<sup>254</sup> See *infra* ¶ 123.

seek comment, however, on whether ArrayComm's proposal will sufficiently protect lower-adjacent band radioastronomy operations from harmful interference. We also welcome comments regarding MicroTrax's and AeroAstro's proposals.

113. Each commenter also recommends power limits. AeroAstro proposes a peak output power of 1 watt and a peak equivalent isotropic radiated power (EIRP) of 10 watts.<sup>255</sup> MicroTrax proposes a peak output power limit of 4 watts and a maximum of 0.25 watts average output power limit over a 60-second time interval.<sup>256</sup> ArrayComm proposes an EIRP limit of 1640 watts for base stations and 4 watts for portable units<sup>257</sup>. We request comment on all of these power limits as they relate to protecting lower-adjacent radioastronomy operations.

114. *Cellular Architecture*. We seek comment on whether to prohibit cellular architecture in any of these bands. Specifically, as noted in the *Guard Band Second Report and Order*, the Commission indicated that the cellular architecture produces a large number of base stations within a relatively small geographic area -- each with the capability of causing interference.<sup>258</sup> Therefore, given the need to protect Government incumbents and sensitive radio astronomy operations we request comment on whether it would be prudent to ban cellular architecture in any of these bands.

## E. Coordination

### 1. Incumbent Government Operations

115. The *Reallocation Report and Order* identifies the Federal Government incumbents who will remain in these bands on a co-primary basis by geographic location and operating frequency.<sup>259</sup> In addition, the *Reallocation Report and Order*, outlines a framework that requires non-Federal Government users to coordinate with co-primary Federal Government incumbents.<sup>260</sup>

116. Specifically, under this coordination framework, all licensees proposing to construct a facility within an NTIA-designated protected zone, as determined by protection radii coordinates, must submit an application on the Universal Licensing System containing all the technical information about the proposed facility.<sup>261</sup> The Commission will refer these applications to the Frequency Assignment Subcommittee (FAS) of the Interdepartment Radio Advisory Committee (IRAC). Once FAS approval is

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<sup>255</sup> See AeroAstro Comments at 5.

<sup>256</sup> See MicroTrax Comments at 3.

<sup>257</sup> See ArrayComm Comments at 20.

<sup>258</sup> See *Guard Band Second Report and Order*, *supra* note 102, at ¶ 19.

<sup>259</sup> 47 C.F.R. § 2.106, footnotes US229, US352, US361, US352, US362 and US363. See also *Reallocation Report and Order* at Appendix C.

<sup>260</sup> *Reallocation Report and Order* at ¶ 73.

<sup>261</sup> *Id.*

received, the Commission will issue an individual station license for each application referred to FAS. These procedures will apply to both fixed and mobile non-Government operations.<sup>262</sup>

117. We take this opportunity to summarize briefly the Federal Government incumbents identified in the *Reallocation Report and Order*.

118. *SPASUR*. The U.S. Navy operates a Space Surveillance (SPASUR) Radar system in the 216-217 MHz band.<sup>263</sup> SPASUR transmitter sites transmit on frequency 216.98 MHz and SPASUR receiver sites receive on frequencies 216.965-216.995 MHz. NTIA indicates that SPASUR sites will continue to operate on a co-primary basis indefinitely.<sup>264</sup> The location of SPASUR transmit and receive sites is listed in footnote US229 of Section 2.106.<sup>265</sup> Footnote US229 contains the NTIA recommended protection radii.<sup>266</sup> Non-Government licensees operating in the sub-band 216.88-217.08 MHz must receive FAS approval prior to construction of fixed sites or prior to operation of mobile units within the SPASUR protection radii.<sup>267</sup>

119. *Military Airborne Operations*. NTIA indicates that 14 military airborne operations will continue to operate in the 1427-1432 MHz band on a co-primary basis until 2004.<sup>268</sup> The location of these military airborne operations is provided in footnote US352 of Section 2.106.<sup>269</sup> The NTIA recommended protection radii for these airborne operations are listed in footnote US352.<sup>270</sup> Non-Government licensees operating in the 1427-1432 MHz band must receive FAS approval prior to operation of fixed sites or mobile units within the NTIA recommended protection radii of these military airborne operations. NTIA also indicates that 23 military airborne operations will continue to operate in the 1432-1435 MHz band on a co-primary basis indefinitely.<sup>271</sup> The location of these military airborne operations is provided in footnote US361 of Section 2.106.<sup>272</sup> The NTIA recommended protection radii for these airborne operations are listed in footnotes US361.<sup>273</sup> Non-Government licensees operating in the 1432-1435 MHz band must

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<sup>262</sup> *Id.*

<sup>263</sup> *Id.* at ¶ 14.

<sup>264</sup> See 1998 NTIA Spectrum Reallocation Report, § 3, at 3-18 and Table 3-2.

<sup>265</sup> 47 C.F.R. § 2.106, footnote US229. See also *Reallocation Report and Order* at Appendix C.

<sup>266</sup> See *Reallocation Report and Order* at Appendix C.

<sup>267</sup> *Id.*

<sup>268</sup> See 1995 NTIA Spectrum Reallocation Report, § 4, p. 5 and Table 4-2.

<sup>269</sup> 47 C.F.R. § 2.106, footnote US352. See also *Reallocation Report and Order* at ¶ 38.

<sup>270</sup> See *Reallocation Report and Order* at ¶ 38.

<sup>271</sup> See 1998 NTIA Spectrum Reallocation Report, § 3, at 3-37 and Table 3-4.

<sup>272</sup> 47 C.F.R. § 2.106, footnote US361. See also *Reallocation Report and Order* at ¶ 40.

<sup>273</sup> See *Reallocation Report and Order* at ¶ 40.

receive FAS approval prior to operation of fixed sites or mobile units within the NTIA recommended protection radii of these military airborne operations.

120. *Other Military Operators.* NTIA indicates that 17 military sites will continue to operate in the 1390-1395 MHz band on a co-primary basis until 2009.<sup>274</sup> The location of these military sites is listed in footnote US351 of Section 2.106.<sup>275</sup> The NTIA recommended protection radii for these military operations are listed in footnotes US361. Non-Government licensees operating in the 1390-1392 MHz band or the 1392-1395 MHz band must receive FAS approval prior to operation of fixed sites or mobile units within the NTIA recommended protection radii of these military sites.

121. *Aeronautical Flight Test Telemetry.* NTIA indicates that Government aeronautical flight test telemetry operations will continue in the 2385-2390 MHz band on a co-primary basis until 2007.<sup>276</sup> The locations of these aeronautical flight test telemetry operations are listed in footnote US363 of Section 2.106.<sup>277</sup> The NTIA-recommended protection radii are also listed in footnote US363.<sup>278</sup> Non-Government licensees operating in the 2385-2390 MHz band must receive FAS approval prior to operation of fixed sites or mobile units within the NTIA recommended protection radii of these aeronautical flight test telemetry operations.

122. *Meteorological-Satellite Earth Stations.* The meteorological-satellite earth stations (METSAT) located at Wallop's Island, VA, Fairbanks, AK and Greenbelt, MD will continue to receive satellite downlink data in the 1670-1675 MHz band.<sup>279</sup> NTIA indicates that the METSAT stations at Wallops Island, VA and Fairbanks, AK will need protection indefinitely.<sup>280</sup> The NTIA-recommended protection radii for these stations are listed in footnote US362.<sup>281</sup> Thus, licensees in the 1670-1675 MHz band will need to coordinate fixed and mobile operations within the protection radii of the Wallops Island, VA and Fairbanks, AK METSAT stations. The METSAT coordination procedures are listed in Section 1.924(f) of the Commission's Rules.<sup>282</sup> NTIA also requests protection of the METSAT station located at Greenbelt, MD.<sup>283</sup> The Greenbelt, MD station serves as a back up to the Wallops Island, VA station. Accordingly, the 1670-1675 MHz licensee will need to coordinate operation in the vicinity of the METSAT

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<sup>274</sup> See *1995 NTIA Spectrum Reallocation Report*, § 4, p. 3 and Table 4-1.

<sup>275</sup> 47 C.F.R. § 2.106, footnote US351.

<sup>276</sup> See *1998 NTIA Spectrum Reallocation Report*, § 3, at 3-47 and Table 3-6.

<sup>277</sup> 47 C.F.R. § 2.106, footnote 363. See also *Reallocation Report and Order* at ¶ 68.

<sup>278</sup> See *Reallocation Report and Order* at ¶ 68.

<sup>279</sup> See 47 C.F.R. § 2.106, footnote US362. See also *Reallocation Report and Order* at ¶ 61.

<sup>280</sup> See *1995 NTIA Spectrum Reallocation Report*, § 4, p. 6.

<sup>281</sup> 47 C.F.R. § 2.106, footnote US362.

<sup>282</sup> 47 C.F.R. § 1.924(f). See also *Reallocation Report and Order* at Appendix C.

<sup>283</sup> See Letter to Bruce Franca, Acting Chief, Office of Engineering and Technology, Federal Communications Commission, from William T. Hatch, Associate Administrator, Office of Spectrum Management (Nov. 19, 2001) (NTIA Letter).

station located at Greenbelt, MD. We discuss the coordination requirements for the METSAT stations located at Greenbelt, MD, in a following section.<sup>284</sup>

123. *Radioastronomy.* Pursuant to footnote US311 of Section 2.106, radioastronomy is performed throughout the 1350-1400 MHz band.<sup>285</sup> The location of these radioastronomy sites is listed in footnote US311.<sup>286</sup> Pursuant to footnote US311, licensees in the 1.4 GHz band will need to make every practicable effort to avoid causing interference to these extremely sensitive radioastronomy receivers.<sup>287</sup> Radioastronomy operations will continue to operate in the 1660-1670 MHz band.<sup>288</sup> This band is lower-adjacent to the 1670-1675 MHz band. Protection of radioastronomy operations in this lower-adjacent band will be accomplished through technical limits established for equipment operating in the 1670-1675 MHz band.

## 2. FAS Coordination of LPRS and WMTS

124. We have adopted procedures for applicants and licensees in the subject bands for coordination with incumbent Government operations in the *Reallocation Report and Order*. Because these procedures contemplate coordination in a regulatory environment with applications for licenses, we believe we must further address how to apply these procedures to the low power radio service (LPRS). In LPRS, we receive no applications, and we issue no licenses. Operation is authorized by rule. LPRS is subject to FAS coordination within the protection radii of SPASUR sites as described above because it operates between 216-217 MHz. Thus, an individual LPRS station operating within the NTIA recommended SPASUR protection radii is required to coordinate with incumbent Government operations. But given that there are no applications, no licenses, and thus, no Commission database for LPRS operations, we believe that the standard coordination procedures would be overly burdensome, impractical, or ineffective. Instead, we propose an alternative approach that protects SPASUR and at the same time acknowledges LPRS's versatility and promotes its utility to the public. Specifically, we propose a blanket coordination approach that would allow LPRS to operate within SPASUR protection radii. In other words, we propose to ask the Federal Government one time for coordination for all future LPRS operations in this band contemplated by rule. We believe that this approach is especially viable in this instance, given that LPRS operates at a maximum transmitter output power of 100 milliwatts<sup>289</sup> and thus poses little threat of interference to SPASUR. We seek comment on this proposal.

125. We note that this proposal refers exclusively to LPRS coordination with co-primary Government incumbents in the 216-217 MHz band. By way of contrast, WMTS coordination with co-primary Government incumbents will be accomplished pursuant to Section 95.1121 of Part 95 of our Rules,<sup>290</sup> as amended, in the *Reallocation Report and Order*.<sup>291</sup> Although LPRS and WMTS are both

<sup>284</sup> See *infra* ¶¶ 130-135.

<sup>285</sup> 47 C.F.R. § 2.106, footnote US311. See also the *Reallocation Report and Order* at Appendix C.

<sup>286</sup> See *Reallocation Report and Order* at Appendix C.

<sup>287</sup> *Id.* See also *Reallocation Report and Order* at ¶ 37.

<sup>288</sup> 47 C.F.R. § 2.106, footnote US74.

<sup>289</sup> 47 C.F.R. § 95.639(e).

<sup>290</sup> 47 C.F.R. § 95.1121.

licensed by rule, our current rules require WMTS operators to register their devices with a designated frequency coordinator who maintains this information in a database.<sup>292</sup> Our current rules for LPRS do not provide for such procedures nor do we believe that such an approach would be feasible for LPRS. Consequently, we believe that these different services require us to chart different coordination approaches.

### 3. FAS Coordination of Fixed and Mobile Sites

126. As established in the *Reallocation Report and Order*, non-Government licensees are required to coordinate fixed and mobile operations with co-primary Government incumbents.<sup>293</sup> We recognize, however, that the practical application of the coordination procedures established in the *Reallocation Report and Order* will vary depending on the licensing scheme adopted for a given band. In this proceeding we propose to authorize services via site-by-site licensing<sup>294</sup> and geographic area licensing.<sup>295</sup> We take this opportunity to seek comment on the following proposals.

127. *Site-by-site licensing.* For services assigned on a site-by site basis, the Commission will review all ULS applications to determine if the fixed or mobile operation is located within the protection radii of a co-primary Government incumbent. If the operation is located within the protection radii of a co-primary Government incumbent, then the Commission will refer the application to FAS as described in the *Reallocation Report and Order*.<sup>296</sup> We believe that this proposal achieves our regulatory objectives and is also compatible with current procedures that require site-by-site licensees to file an application for each operation. We seek comment on this proposal.

128. *Geographic Area Licensing.* Unlike site-by-site services, services that are authorized using geographic area licensing are not required to file an application for each individual operation. Rather, geographic area licensees, as prescribed by technical parameters of our Rules, operate throughout their area of operation without needing prior consent of the Commission for each individual station. Taking into consideration this distinction, we believe that the process described above for site-by-site licensees would not be efficient or administratively feasible. We therefore propose a separate coordination process for geographic area licensees. Specifically, under our proposal, geographic licensees, by virtue of the nature of their operations, would be responsible to make a determination of whether a particular operation requires FAS approval on a case-by-case basis.

129. By way of guidance, we further propose to require that FAS coordination for any fixed station located within the protection radii of a co-primary Government incumbent prior to activation. Similarly, we also propose to require FAS coordination for mobile units prior to any operation within the  
(Continued from previous page)

<sup>291</sup> See *Reallocation Report and Order* at Appendix C.

<sup>292</sup> See 47 C.F.R. § 95.1111. Prior to operation, our Rules require authorized health care providers to register all WMTS devices with a designated frequency coordinator. *Id.* The frequency coordinator is required to maintain a database of WMTS use. 47 C.F.R. § 95.1113(b)(2).

<sup>293</sup> See *Reallocation Report and Order* at ¶ 73.

<sup>294</sup> This refers to telemetry in 216-220 MHz, 1427-1429.5 MHz and 1429.5-1432 MHz bands.

<sup>295</sup> This refers to those services in the paired 1392-1395 MHz and 1432-1435 MHz bands and unpaired 1390-1392 MHz, 1670-1675 MHz and 2385-2390 MHz bands.

<sup>296</sup> See *Reallocation Report and Order* at ¶ 73.

protection radii of co-primary Government incumbents. Thus, a geographic area licensee that proposes to construct a base station with associated mobile units would need to examine both the location of the base station and the operational area of the associated mobile units. Accordingly, under our proposal, a base station would be exempt from FAS coordination if it is located outside the protection radii. Mobile units, however, would need FAS coordination if their operational area were to overlap the protection radii of the co-primary Government incumbent. We seek comment on our proposals.

#### 4. Coordination with METSAT Station Located at Greenbelt, MD.

130. We now address coordination procedures relevant to licensees in the 1670-1675 MHz band operating near the METSAT station located at Greenbelt, MD.<sup>297</sup> As mentioned previously, the Greenbelt, MD facility serves as a back up to the Wallops Island, VA facility and is therefore inactive most of the time. This facility is operational for testing purposes approximately once per month.

131. As an initial matter, we note that NTIA has indicated that a 65-kilometer (40-mile) protection radii would be necessary to protect the Greenbelt, MD facility.<sup>298</sup> We seek comment on NTIA's protection radii. Further, should we ultimately decide to adopt NTIA's recommended protective radii, we propose to require all fixed and mobile licensees operating in the 1670-1675 MHz band to coordinate operations within the NTIA protection radii. Under this scheme, we envision that coordination would take place before the activation of new facilities or any modifications to existing facilities. We seek comment on this approach.

132. We believe that the coordination procedures we propose for the METSAT facilities located at Wallops Island, VA and Fairbanks, AK would also suffice for the Greenbelt, MD facility. Under the procedures established in the *Reallocation Report and Order*, the 1670-1675 MHz licensee must notify the National Oceanic and Atmospheric Administration (NOAA) of operations which require coordination. The 1670-1675 MHz licensee must then file an application with the Commission requesting an individual station license. The Commission allows a 20-day period for objections to be filed. We seek comment on whether these procedures would be appropriate for both fixed and mobile operations located within the protection radii of the Greenbelt, MD facility.

133. In addition, we note that protection of the Greenbelt, MD facility is necessary only while the station is in operation. Therefore, we propose that the 1670-1675 MHz licensee would be required to reduce power or shut down any fixed site or mobile unit located within the coordination zone and which could cause interference to the Greenbelt, MD facility, only when the Greenbelt, MD facility is active. Conversely, when this facility is inactive, the 1670-1675 MHz licensee would be permitted to operate fixed and mobile units that exceed the designated protection criteria without prior coordination. We believe that these procedures strike an appropriate balance that both supports existing Federal Government operations and promotes the opportunity for new licensees to offer services in this band to the Washington, DC-Baltimore, MD metropolitan areas. We seek comment on this proposal.

134. Consistent with the proposed procedures outlined above, ArrayComm has suggested certain additional refinements to facilitate the overall coordination process, especially with regard to the

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<sup>297</sup> LLOYD APIRIAN, DEPARTMENT OF DEFENSE, JOINT SPECTRUM CENTER, GSFC B/U PROTECTION FROM POTENTIAL ENVIRONMENTAL RF TRANSMITTERS (2001).

<sup>298</sup> See NTIA letter, *supra* note 283.

Greenbelt, MD facility.<sup>299</sup> Under ArrayComm's proposal, prior to operation of any site within the protection radii, the 1670-1675 MHz licensee would prepare a plan or model, based on a generally accepted cellular planning tool, of all proposed base stations and mobile units.<sup>300</sup> The results of this modeling plan would be submitted to NOAA prior to operation for verification and testing at the Greenbelt, MD facility.<sup>301</sup> The Government operator would then have 30 days to complete and verify the measurements.<sup>302</sup>

135. Under ArrayComm's proposal, the Government Operator would also notify the 1670-1675 MHz licensee within 30 days of any scheduled Government operation at the Greenbelt, MD facility.<sup>303</sup> Additionally, in the event that the Greenbelt, MD facility is activated unexpectedly, the ArrayComm proposal would require the Government Operator to alert the 1670-1675 MHz licensee.<sup>304</sup> In those instances where the facility is activated unexpectedly, ArrayComm suggests that the 1670-1675 MHz licensee be afforded 120 minutes to transition to a mode where protection is provided to the Greenbelt, MD facility.<sup>305</sup> We seek comment on ArrayComm's proposals. Additionally, we encourage commenters to submit other proposals or counter proposals that would enhance implementation and effectiveness of our proposed coordination procedures near the Greenbelt, MD facility.

## 5. Non-Government Incumbents

### a. Aeronautical Flight Test Radio Coordinating Council

136. In response to the *Reallocation Notice*, the Aerospace and Flight Test Radio Coordinating Council (AFTRCC) indicates that ten additional sites should be protected until 2007.<sup>306</sup> AFTRCC identifies ten sites that conduct non-Government aeronautical flight test telemetry and states that aeronautical flight test telemetry cannot coexist with other uses of the spectrum because the sharing of flight test telemetry frequencies with other services risks safety of life and property.<sup>307</sup> Therefore, AFTRCC requests a 160 kilometer exclusion zone around the ten sites.<sup>308</sup>

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<sup>299</sup> See attachment to *Ex Parte* Letter from Randall S. Coleman, ArrayComm, to Magalie Roman Salas, Secretary, Federal Communications Commission, dated December 21, 2001.

<sup>300</sup> *Id.* at 3.

<sup>301</sup> *Id.* at 3-4.

<sup>302</sup> *Id.*

<sup>303</sup> *Id.* at 3.

<sup>304</sup> *Id.* at 2.

<sup>305</sup> *Id.*

<sup>306</sup> See Aerospace and Flight Test Radio Coordinating Council Comments filed March 8, 2001 at 4. AFTRCC is an association of aerospace companies engaged in the design, development, manufacture and testing of commercial and military aircraft, space vehicles, missiles and weapons systems.

<sup>307</sup> *Id.* at 5-6.

<sup>308</sup> *Id.* at 6.

137. In the *Reallocation Report and Order*, we indicated that new entrants to the 2385-2390 MHz band would need to protect nine of the ten sites.<sup>309</sup> The location of these sites is also listed in footnote US363 of Section 2.106.<sup>310</sup> We declined to extend protection to the Fairfield, Connecticut site in the interest of allowing new service in this band in the New York City metropolitan area.<sup>311</sup> We seek comment on the best method to coordinate 2385-2390 MHz licensees with incumbent non-Government aeronautical flight test telemetry operations.

138. We believe coordination with AFTRCC could be conducted in a similar manner to FAS coordination. Specifically, licensees in the 2385-2390 MHz band would be required to coordinate fixed and mobile operations within the protection radii of the non-Government aeronautical flight test sites listed in footnote US363 of Section 2.106. Coordination would be performed by the Commission after the 2385-2390 MHz licensee submits an application on the Universal Licensing System containing all the technical information about the proposed operation. The Commission will refer these applications to AFTRCC. Once AFTRCC approval is received, the Commission will issue an individual station license for each application referred to AFTRCC. We seek comment on these proposed coordination procedures. We also note that licensees in the 2385-2390 MHz band may pursue market-based mechanisms to facilitate relocation of and coordination with non-Government aeronautical flight test operations.

## 5. Canadian and Mexican Coordination

139. Section 2.301 of our Rules requires stations using radio frequencies to identify their transmissions with a view to eliminate harmful interference and generally enforce applicable radio treaties, conventions, regulations, arrangements, and agreements.<sup>312</sup> At this time, international agreements between and among the United States, Mexico and Canada concerning the reallocation of this spectrum are not complete. One option would be to propose certain interim requirements for terrestrial licenses along these borders, and to provide that these licensees will be subject to the provisions contained within future agreements between and among the three countries. Until such time as agreements between the United States, Mexico and Canada become effective, we propose to apply the same technical restrictions at the border that we adopt for operation between geographic service areas. Operations must not cause harmful interference across the border. We note that further modification might be necessary in order to comply with future agreements with Canada and Mexico regarding the use of this band. We seek comments on this issue.

### F. Competitive Bidding Procedures

140. As discussed above, consistent with our statutory mandate, we will resolve any mutually exclusive initial applications for licenses for the unpaired 1390-1392 MHz portion, the unpaired 1427-1432 MHz portion, and the paired 1392-1395 MHz and 1432-1435 MHz portions of the 1.4 GHz band,

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<sup>309</sup> *Reallocation Report and Order* at ¶ 71.

<sup>310</sup> 47 C.F.R. § 2.106, footnote US363. See also *Reallocation Report and Order* at Appendix C.

<sup>311</sup> See *Reallocation Report and Order* at ¶ 71.

<sup>312</sup> See 47 C.F.R. § 2.301.

the unpaired 1670-1675 MHz band and the unpaired 2385-2390 MHz band through the use of competitive bidding.<sup>313</sup>

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

141. We propose to conduct the auction of initial licenses in the unpaired 1390-1392 MHz portion, the unpaired 1427-1432 MHz portion,<sup>314</sup> and the paired 1392-1395 MHz and 1432-1435 MHz portions of the 1.4 GHz band, the unpaired 1670-1675 MHz band and the unpaired 2385-2390 MHz band in conformity with the general competitive bidding rules set forth in Part 1, Subpart Q, of the Commission's rules, and substantially consistent with the bidding procedures that have been employed in previous auctions.<sup>315</sup> Specifically, we propose to employ the Part 1 rules governing competitive bidding design, designated entities, application and payment procedures, reporting requirements, collusion issues, and unjust enrichment.<sup>316</sup> Under this proposal, such rules would be subject to any modifications that the Commission may adopt in the Part 1 proceeding.<sup>317</sup> In addition, consistent with current practice, matters such as the appropriate competitive bidding design for the auction of these licenses, as well as minimum opening bids and reserve prices, would be determined by the Wireless Telecommunications Bureau (Bureau) pursuant to its delegated authority.<sup>318</sup> We seek comment on whether any of our Part 1 rules or other auction procedures would be inappropriate in an auction of licenses in these bands.

### 2. Provisions for Designated Entities

142. In authorizing the Commission to use competitive bidding, Congress mandated that the Commission "ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based

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<sup>313</sup> See *supra* ¶¶ 70-76.

<sup>314</sup> This proposal applies to initial licenses for primary telemetry services in the 1429.5-1432 MHz band as well as initial licenses for primary telemetry services in the seven geographic "carve-out" areas in the 1427-1429.5 MHz band. See *supra* ¶¶ 50-52.

<sup>315</sup> See, e.g., Amendment of Part 1 of the Commission's Rules — Competitive Bidding Procedures, WT Docket No. 97-82, *Order, Memorandum Opinion and Order and Notice of Proposed Rule Making*, 12 FCC Rcd 5686 (1997); Amendment of Part 1 of the Commission's Rules — Competitive Bidding Procedures, Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, *Third Report and Order and Second Further Notice of Proposed Rule Making*, 13 FCC Rcd 374 (1997) (modified by Erratum, DA 98-419 (rel. March 2, 1998)) (*Part 1 Third Report and Order*); Amendment of Part 1 of the Commission's Rules — Competitive Bidding Procedures, *Order on Reconsideration of the Third Report and Order, Fifth Report and Order, and Fourth Further Notice of Proposed Rule Making*, 15 FCC Rcd 15293 (2000) (*Part 1 Recon Order and Part 1 Fifth Report and Order, Fourth Further Notice of Proposed Rule Making*); Amendment of Part 1 of the Commission's Rules — Competitive Bidding Procedures, *Seventh Report and Order*, FCC 01-270 (rel. Sept. 27, 2001).

<sup>316</sup> See 47 C.F.R. Section 1.2101 *et. seq.*

<sup>317</sup> See *Fourth Further Notice of Proposed Rule Making*, 15 FCC Rcd 15293 (2000). See also *Part 1 Recon Order and Part 1 Fifth Report and Order*, 15 FCC Rcd 15293 (2000) (recons. pending).

<sup>318</sup> See *Part 1 Third Report and Order*, 13 FCC Rcd 374, 448-49, 454-55 ¶¶ 125, 139 (directing the Bureau to seek comment on specific mechanisms relating to auction conduct pursuant to the Balanced Budget Act).

services.<sup>319</sup> In addition, Section 309(j)(3)(B) of the Act provides that in establishing eligibility criteria and bidding methodologies the Commission shall promote “economic opportunity and competition . . . by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women.”<sup>320</sup>

143. In the *Competitive Bidding Second Memorandum Opinion and Order*, the Commission stated that it would define eligibility requirements for small businesses on a service-specific basis, taking into account the capital requirements and other characteristics of each particular service in establishing the appropriate threshold.<sup>321</sup> The *Part 1 Third Report and Order*, while it standardizes many auction rules, provides that the Commission will continue a service-by-service approach to defining small businesses.<sup>322</sup>

144. Certain commenters, in response to the *Reallocation Notice*, suggested a variety of services such as satellite-enabled notification service, personal location and monitoring service, and broadband data services for the unpaired 1670-1675 MHz band.<sup>323</sup> We do not know precisely the type of services that a licensee may seek to provide in the unpaired 1390-1392 MHz portion and the paired 1392-1395 MHz and 1432-1435 MHz portions of the 1.4 GHz band, the unpaired 1670-1675 MHz band and the unpaired 2385-2390 MHz band. Nonetheless, we anticipate that the services that will be deployed in all the above-mentioned bands are likely to have capital requirements comparable to those of the WCS spectrum in the 2.3 GHz band, because in this *Notice* we propose for all of these bands flexibility to offer a broad range of fixed and mobile services that is similar to the flexible use permitted WCS licensees in the 2.3 GHz band.<sup>324</sup> Moreover, in this *Notice* we also propose that all service providers in these bands would operate under Part 27 of the Commission’s rules, which also governs WCS licensees in the 2.3 GHz band. Therefore, we propose to use the same small business size standards that the Commission applied to the WCS 2.3 GHz band. In the 2.3 GHz *WCS Report and Order* we defined a “small business” as an entity with average annual gross revenues not exceeding \$40 million for the preceding three years and a “very

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<sup>319</sup> See 47 U.S.C. § 309(j)(4)(D).

<sup>320</sup> See 47 U.S.C. § 309(j)(3)(B).

<sup>321</sup> Implementation of Section 309(j) of the Communications Act – Competitive Bidding, PP Docket No. 93-253, *Second Memorandum Opinion and Order*, 9 FCC Rcd 7245, 7269 ¶ 145 (1994) (*Competitive Bidding Second Memorandum Opinion and Order*).

<sup>322</sup> *Part 1 Third Report and Order*, 13 FCC Rcd at 388 ¶ 18.

<sup>323</sup> See AeroAstro Comments at 2-3; MicroTrax Comments at 2; ArrayComm Comments at 10.

<sup>324</sup> See *supra* ¶ 15. See also Amendment of the Commission’s Rules to Establish Part 27, the Wireless Communications Service (WCS), GN Docket No. 96-228, *Report and Order*, 12 FCC Rcd 10785 (1997) (*WCS Report and Order*).

small business” as an entity with average annual gross revenues not exceeding \$15 million for the preceding three years.<sup>325</sup>

145. The small business size standards that we propose to adopt here were also adopted for the 700 MHz Guard Bands,<sup>326</sup> which lend themselves to the provision of services similar to those that may be offered in the unpaired 1390-1392 MHz portion and the paired 1392-1395 MHz and 1432-1435 MHz portions of the 1.4 GHz band, the unpaired 1670-1675 MHz band and the unpaired 2385-2390 MHz band. Moreover, the 700 MHz Guard Bands were licensed to Guard Band Managers, and in this *Notice* we seek comment on whether any of the bands under consideration should be licensed to band managers.<sup>327</sup> Such band managers would lease spectrum under service rules similar to those of the 700 MHz Guard Bands. Thus, the capital requirements for the unpaired 1390-1392 MHz portion and the paired 1392-1395 MHz and 1432-1435 MHz portions of the 1.4 GHz band, the unpaired 1670-1675 MHz band and the unpaired 2385-2390 MHz band may also be comparable to those of the 700 MHz Guard Bands. Therefore, we think that it is appropriate to use the same small business size standards for these bands that we adopted in the 700 MHz Guard Bands.<sup>328</sup> We believe that our proposed approach would provide a variety of businesses with opportunities to participate in the auction of licenses for these bands and afford licensees substantial flexibility for the provision of services with varying capital costs.

146. Accordingly, we propose to adopt the same tiered small business size standards that we have used for the WCS 2.3 GHz band and the 700 MHz Guard Bands for the unpaired 1390-1392 MHz portion and the paired 1392-1395 MHz and 1432-1435 MHz portions of the 1.4 GHz band, the unpaired 1670-1675 MHz band and the unpaired 2385-2390 MHz band. However, to be consistent with the small business definitions proposed below for the 1427-1432 MHz band, we will use the term “entrepreneur” for entities with average annual gross revenues not exceeding \$40 million for the three preceding years. We will use the term “small business” for entities with average annual gross revenues not exceeding \$15 million for the three preceding years. We seek comment on our proposal.

147. With respect to the 1427-1432 MHz band, we do not know exactly what kind of telemetry services a licensee might seek to provide.<sup>329</sup> Although the capital costs of providing general telemetry services may vary, we believe that such capital costs will, in general, be lower than those for the other bands discussed above. Therefore, we propose to adopt tiered small business size standards for primary telemetry services in the 1427-1432 MHz band<sup>330</sup> that are smaller than those proposed for the other bands. Specifically, we propose to define a “small business” as any entity with average annual gross revenues not exceeding \$15 million for the three preceding years, and a “very small business” as any entity with average annual gross revenues not exceeding \$3 million for the three preceding years. We seek comment on

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<sup>325</sup> See *WCS Report and Order*, 12 FCC Rcd 10785, 10879 ¶ 194.

<sup>326</sup> See *Guard Band Second Report and Order*, 15 FCC Rcd 5299, 5343-5345 ¶¶ 106-110.

<sup>327</sup> See *supra* ¶¶ 36-42.

<sup>328</sup> See *Guard Band Second Report and Order*, 15 FCC Rcd 5299, 5343-5345 ¶¶ 106-110.

<sup>329</sup> Examples of current uses of this band include utility telemetry as well as other forms of telemetry.

<sup>330</sup> This proposal applies to primary general telemetry services in the 1429.5-1432 MHz band as well as primary general telemetry services in the seven geographic “carve-out” areas in the 1427-1429.5 MHz band.

whether our proposed small business definitions are appropriate for the 1427-1432 MHz portion of the 1.4 GHz band.

148. If we ultimately adopt our proposed small business definitions for the 1.4 GHz band, the 1670-1675 MHz band and the unpaired 2385-2390 MHz band auction, we further propose to provide entrepreneurs with a bidding credit of 15 percent, small businesses with a bidding credit of 25 percent, and very small businesses with a bidding credit of 35 percent. The bidding credits we propose here are those set forth in the standardized schedule in Part 1 of our Rules.<sup>331</sup> We believe that these bidding credits will provide adequate opportunities for small businesses to participate in the 1.4 GHz band, the 1670-1675 MHz band and the unpaired 2385-2390 MHz band auction.<sup>332</sup>

149. In developing these proposals, we acknowledge the difficulty in accurately predicting the market forces that will exist at the time these frequencies are licensed. Thus, our forecasts of types of services that will be offered over these bands may require adjustment depending upon ongoing technological developments and changes in market conditions. For these reasons, we invite interested parties to submit detailed information on the types of system architectures that are likely to be deployed in these bands, the availability of equipment, market conditions, and other factors that may affect the capital requirements of the type of services a licensee may seek to provide.

150. We also seek comment on whether the small business provisions we propose today are sufficient to promote participation by businesses owned by minorities and women, as well as rural telephone companies. To the extent that commenters propose additional provisions to ensure participation by minority-owned or women-owned businesses, they should address how such provisions should be crafted to meet the relevant standards of judicial review.<sup>333</sup>

151. We note that in response to the *Reallocation Notice* MicroTrax proposes that the Commission create a new category of designated entity that would be eligible for a bidding credit.<sup>334</sup> MicroTrax argues that we should provide bidding credits to commercial entities that propose to use their spectrum to benefit public safety and assist tax-supported public service institutions such as police and fire departments.<sup>335</sup> MicroTrax suggests that such entities receive a bidding credit similar in scope to that provided to small businesses in the broadband PCS auctions.<sup>336</sup> Several commenters disagree with MicroTrax's proposal.<sup>337</sup> We note that in authorizing the Commission to use competitive bidding,

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<sup>331</sup> In the *Part 1 Third Report and Order*, we adopted a standard schedule of bidding credits, the levels of which were developed based on our auction experience. *Part 1 Third Report and Order*, 13 FCC Rcd at 403-04 ¶ 47. See also 47 C.F.R. § 1.2110(f)(2).

<sup>332</sup> *Part 1 Third Report and Order*, 13 FCC Rcd at 403-04 ¶ 47.

<sup>333</sup> See *Adarand Constructors v. Peña*, 515 U.S. 200 (1995) (requiring a strict scrutiny standard of review for Congressionally mandated race-conscious measures); *United States v. Virginia*, 518 U.S. 515 (1996) (applying an intermediate standard of review to a state program based on gender classification).

<sup>334</sup> MicroTrax Comments at 18-19.

<sup>335</sup> *Id.*

<sup>336</sup> *Id.*

<sup>337</sup> See, e.g., ArrayComm Reply at 8; AeroAstro Reply at 2-3.

Congress mandated that the Commission promote the objectives of Section 309(j)(3) and ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services. In order to promote these objectives Congress allowed the Commission to consider the use of certain procedures such as bidding credits.<sup>338</sup> Our small business bidding credits, including the ones provided in the broadband PCS auctions, are designed to promote economic opportunities for a wide variety of applicants. We seek comment on MicroTrax's proposal and whether such bidding credits would promote the public interest objectives described in Section 309(j)(3). Commenters should specifically address whether provision of a bidding credit to commercial entities proposing public safety use of the spectrum would be inconsistent with the purpose of Section 309(j) in light of the express exemption from competitive bidding provided to public safety radio services licensees.<sup>339</sup> Commenters in favor of MicroTrax's proposed bidding credit should also propose eligibility standards and methods by which the Commission would determine entities' eligibility for such bidding credits.<sup>340</sup>

#### IV. PROCEDURAL MATTERS

##### A. Initial Regulatory Flexibility Analysis

152. The Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules proposed in the Notice of Proposed Rule Making; it is contained in Appendix A. We request written public comment on the analysis. Comments must be filed in accordance with the same filing deadlines as comments filed in response to the Notice of Proposed Rule Making, and must have a separate and distinct heading designating them as responses to the IRFA. The Commission's Consumer Information Bureau, Reference Information Center, will send a copy of this Notice of Proposed Rule Making, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

##### B. Paperwork Reduction Analysis

153. This Notice of Proposed Rule Making contains either a proposed or modified information collection. As part of our continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget (OMB) to take this opportunity to comment on the information collections contained in this Notice of Proposed Rule Making, as required by the Paperwork Reduction Act of 1995.<sup>341</sup> Public and agency comments are due 60 days from the date of publication of this Notice in the Federal Register; OMB comments are due 120 days from the date of publication of this Notice in the Federal Register. Comments should address:

- Whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility.
- The accuracy of the Commission's burden estimates.

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<sup>338</sup> See 47 U.S.C. § 309(j)(4)(D).

<sup>339</sup> See 47 U.S.C. § 309(j)(2).

<sup>340</sup> See *BBA Report and Order*, 15 FCC Rcd at 22750 ¶ 83.

<sup>341</sup> See Pub. L. No. 104-13.