

FEDERAL COMMUNICATIONS COMMISSION

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[WT Docket No. 00–230; FCC 04–167]

Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: In this document, the Commission seeks comment on additional policies that could facilitate the development of advanced technologies, such as cognitive radio and “opportunistic use” devices. In particular, we request comment on whether additional revisions should be made to the spectrum leasing and private commons regulatory models, or whether other types of arrangements can better enable more users to gain spectrum access.

DATES: Comments by the public on the proposals set forth in the Second Further Notice of Proposed Rulemaking (*Second Further Notice*) are due January 18, 2005. Reply comments are due February 17, 2005.

FOR FURTHER INFORMATION CONTACT: Paul Murray, Wireless Telecommunications Bureau, at (202) 418–7240, or via the Internet at Paul.Murray@fcc.gov; for additional information concerning the information collections contained in this document, contact Judith-B. Herman at (202) 418–0214, or via the Internet at Judith.B-Herman@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission’s *Second Further Notice* portion of the Commission’s *Second Report and Order*, *Order on Reconsideration*, and *Second Further Notice of Proposed Rulemaking*, FCC 04–167, in WT Docket No. 00–230, adopted on July 8, 2004, and released on September 2, 2004. Contemporaneous with this document, the Commission issues a *Second Report and Order* and *Order on Reconsideration* (published elsewhere in this publication). The full text of this document is available for inspection and copying during normal business hours in the FCC Reference Information Center, 445 12th Street, SW., Washington, DC 20554. The complete text may be purchased from the FCC’s copy contractor, Qualex International, 445 12th Street, SW., Room CY–B402, Washington, DC 20554. The full text may also be downloaded at: <http://www.fcc.gov>. Alternative formats are

available to persons with disabilities by contacting Brian Millin at (202) 418–7426 or TTY (202) 418–7365 or at Brian.Millin@fcc.gov.

Synopsis of the Second Further Notice

I. Introduction and Background

1. In the *Second Report and Order*, which is set forth elsewhere in this publication, we provide examples of the ways in which advanced technologies, such as opportunistic devices, may be utilized within the context of current spectrum leasing policies. We observe that these do not comprise an exhaustive list of all permissible ways in which these advanced technologies may be utilized, but instead help illustrate the relevant regulatory issues before the Commission. We recognize that, due to the transaction costs associated with leasing or other market factors, licensees and other parties may wish to utilize other types of arrangements involving opportunistic use of licensed spectrum. To that end, we adopt a “private commons” option distinct from either spectrum leases or other existing arrangements.

II. Second Further Notice of Proposed Rulemaking

2. Because there may be many arrangements that would involve opportunistic use of spectrum and that would be consistent with Commission rules, we seek comment on additional ways in which licensees and spectrum lessees may enter into arrangements in which other users may employ advanced technologies to opportunistically use licensed spectrum. We wish to build on the examples listed in the *Second Report and Order* to provide licensees, spectrum lessees, and other parties with greater certainty as to the types of opportunistic use arrangements that would be permitted. To that end, we encourage commenters to describe additional means to increase spectrum access, how they might fit within the framework of the Commission’s rules, or the extent to which we should consider revising our rules so as to accommodate these uses.

3. With regard to spectrum access through spectrum leasing arrangements, we seek comment on additional ways in which licensees and spectrum lessees may utilize advanced technologies, such as opportunistic devices, within the context of the Commission’s spectrum leasing policies and rules. What types of uses have not been addressed by the Commission but nonetheless merit consideration due, for example, to an ability to enhance access? We encourage

commenters to be specific as to the nature of the relationship between the licensees and spectrum lessee(s) in such arrangements, especially with regard to their responsibility for compliance with Commission rules.

4. With regard to spectrum access through private commons, we seek comment on the potential for this approach to improve access as well as the regulatory distinctions that are necessary to make this an effective regulatory model. Does the private commons established in the *Second Report and Order* sufficiently accommodate the wide variety of ways in which licensees (and spectrum lessees) and other users may wish to enter cooperative arrangements that employ “smart” or “opportunistic” devices? Should the private commons be modified or expanded so as to better accommodate the variety of arrangements that may be desired by the market? For example, should we adopt an approach to private commons that would allow intermediaries to facilitate transactions with users, design and set up communications networks for users or provide value-added services or applications? Are there alternative regulatory constructs that might help promote such arrangements? If so, how should these arrangements be structured, both in terms of licensees’ reporting requirements before the Commission and the nature of the licensee’s relationship with opportunistic users?

5. In addition, we seek comment on the technical parameters necessary to distinguish private commons from spectrum leasing arrangements or other arrangements. For example, at what point is a licensee with no physical infrastructure to use the spectrum engaged in providing a private commons to users, as opposed to a spectrum leasing arrangement with spectrum lessees? To what extent should a licensee (or spectrum lessee) with a private commons be permitted to grant access to another spectrum licensee (or spectrum lessee)? Should a licensee with an existing physical network and subscribers (e.g., a CMRS provider) be permitted to be a subscriber in another licensee’s private commons? If so, what would distinguish such use from a spectrum leasing arrangement?

6. We seek comment on the examples of private commons set forth in the *Second Report and Order* as well as other types of private commons arrangements. We also stated in the *Second Report and Order* that the licensee or spectrum lessee establishing and managing a private commons must retain both *de facto* control of the use

of the spectrum within the private commons and direct responsibility for the users' compliance with the Commission's rules. Are there any additional policies or requirements that are necessary to clarify the nature of this control or that could help ensure compliance? What is an efficient way to enforce users' compliance with the rules? For instance, would it be appropriate to require users to employ smart devices that include certain technologies (e.g., a microchip set) that would enable private commons managers to shut down any devices found to be causing harmful interference?

7. Finally, we seek comment on the appropriate notification process for licensees or *de facto* transfer lessees that choose to offer a private commons. In the *Second Report and Order* above, we stated that a licensee or spectrum lessee managing the private commons must notify the Commission prior to permitting users to begin operating within the private commons. We propose here to give the licensee or spectrum lessee the option of notifying the Commission directly or, in the alternative, providing a URL that posts the terms and conditions. In the event these terms and conditions change, the licensee would have to make this information available on its website or, if this is not possible, by providing this information directly to the Commission. Is this an efficient notification procedure, and are there alternative means by which the Commission could collect this information in a less burdensome manner?

III. Procedural Matters

A. Initial Regulatory Flexibility Analysis Regarding the *Second Further Notice*

8. As required by the Regulatory Flexibility Act of 1980, as amended (RFA), see 5 U.S.C. 603, the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in this *Second Further Notice* of Proposed Rulemaking (*Second Further Notice*). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the *Second Further Notice*. The Commission will send a copy of the *Second Further Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA). In addition, the *Second Further Notice* and

IRFA (or summaries thereof) will be published in the **Federal Register**.

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

9. In the *Second Report and Order*, we adopt changes that further facilitate the leasing of spectrum usage rights and enhancing the functioning of the secondary spectrum marketplace generally. However, we believe that there may be additional measures that we might take to improve efficiency and promote access to a secondary spectrum market in order to ensure the greatest benefit to spectrum users and consumers. Thus, in the *Second Further Notice*, we seek comment on evaluating additional policies that could facilitate the development of advanced technologies through secondary market arrangements, such as spectrum leasing and private commons, and obtaining further clarification regarding the private commons options. We discuss the potential impact of these on small entities in the paragraphs that follow.

2. Legal Basis

10. The potential actions on which comment is sought in this *Second Further Notice* would be authorized under sections 1, 4(i), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i), and 303(r).

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

11. The RFA directs agencies to provide a description of, and, where feasible, an estimate of, the number of small entities that may be affected by the rules adopted herein. The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction." In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act. 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).

12. 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 *Second Further Notice*. Since this rulemaking proceeding applies to multiple services, we will analyze the number of small entities affected on a service-by-service basis.

13. As adopted, the *Second Report and Order* will create new opportunities and obligations for Wireless Radio Service's licensees and other entities that may lease spectrum usage rights from these licensees. When identifying small entities that could be affected by our new rules, we provide information describing auctions results, including the number of small entities that were winning bidders. We note, however, that the number of winning bidders that qualify as small businesses at the close of an auction does not necessarily reflect the total number of small entities currently in a particular service. The Commission does not generally require that applicants provide business size information, except in the context of an assignment or transfer of control application where unjust enrichment issues are implicated. Consequently, to assist the Commission in analyzing the total number of potentially affected small entities, we requested commenters to estimate the number of small entities that may be affected by any rule changes resulting from this *Second Further Notice*.

14. In the *Second Further Notice*, we seek comment on possible further refinements to our existing policies and rules for spectrum leasing arrangements and for private commons arrangements. If any revisions were adopted, such revisions potentially could affect small entity licensees holding licenses in the Wireless Radio Services identified below.

15. *Cellular Licensees*. The SBA has developed a small business size standard for small businesses in the category "Cellular and Other Wireless Telecommunications." Under that SBA category, a business is small if it has 1,500 or fewer employees. According to the Bureau of the Census, only twelve firms out of a total of 977 cellular and other wireless telecommunications firms that operated for the entire year in 1997 had 1,000 or more employees. Therefore, even if all twelve of these firms were cellular telephone companies, nearly all cellular carriers are small businesses under the SBA's definition.

16. *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. According to the Census Bureau data for 1997, only twelve firms out of a total of 977 such firms that operated for the entire year in 1997, had 1,000 or more employees. If this general ratio continues in the context of Phase I 220 MHz licensees, the Commission estimates that nearly all such licensees are small businesses under the SBA's small business standard.

17. 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. 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. 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. 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. The SBA has approved these small size standards. Auctions of Phase II licenses commenced on September 15, 1998, and closed on October 22, 1998. 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. 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. 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.

18. 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. 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. 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. 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 million for the preceding three years. The SBA has approved these small size standards. 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. 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. 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.

19. Upper 700 MHz Band Licenses. The Commission released a *Report and Order*, authorizing service in the upper 700 MHz band. This auction, previously scheduled for January 13, 2003, has been postponed.

20. Paging. We adopted a size standard for "small businesses" for purposes of determining their eligibility for special provisions such as bidding credits and installment payments. 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. The SBA has approved this definition. 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. Fifty-seven companies claiming small business status won 440 licenses. 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. 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. Currently, there are approximately 24,000 Private Paging site-specific licenses and 74,000 Common Carrier Paging licenses. According to one 2002 study, 608 private and common carriers reported that they were engaged in the provision of either paging or "other mobile" services. Of these, we estimate that 589 are small, under the SBA-approved small business size standard. We estimate that the majority of private and common carrier paging providers would qualify as small entities under the SBA definition.

21. 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. 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. These small business size standards, in the context of broadband PCS auctions, have been approved by the SBA. 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. On March 23, 1999, the Commission reaucted 155 C, D, E, and F Block licenses; there were 113 small business winning bidders.

22. 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. Through these auctions, the Commission awarded a total of forty-one licenses, 11 of which were

obtained by four small businesses. To ensure meaningful participation by small business entities in future auctions, the Commission adopted a two-tiered small business size standard. 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. 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. The SBA has approved these small business size standards. A third auction commenced on October 3, 2001 and closed on October 16, 2001. Here, five bidders won 317 (MTA and nationwide) licenses. Three of these claimed status as a small or very small entity and won 311 licenses.

23. *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. 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. The SBA has approved these small business size standards for the 900 MHz Service. 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. 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.

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

25. *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. 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 PLMR 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.

26. *Fixed Microwave Services*. Fixed microwave services include common carrier, private-operational fixed, and

broadcast auxiliary radio services. 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. 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.

27. *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. The SBA has approved these definitions. 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.

28. *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. "Very small 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. The SBA has approved these definitions. 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.

29. *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. 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 than \$15 million for the preceding three calendar years. These regulations defining "small entity" in the context of LMDS auctions have been approved by the SBA. 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.

30. *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). 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. 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. 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. The SBA has approved of these definitions. 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.

31. *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. 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. These definitions have been approved by the SBA. 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.

32. *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. There are approximately 1,000 licensees in the Rural Radiotelephone Service, and the Commission estimates 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.

33. *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. 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.

34. *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. 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.

35. *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. "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. The SBA has approved of these definitions. 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. Seven winning bidders claimed status as small or very small businesses and won 611 licenses.

36. 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. 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.

37. *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. We believe that there are only two licensees in the 24 GHz band that were relocated from the 18 GHz band, Teligent 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.

38. *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. "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. The SBA has approved these definitions. The Commission will not know how many licensees will be small or very small businesses until the auction, if required, is held.

39. *700 MHz Guard Band Licenses.* We adopted size standards for "small businesses" and "very small businesses" for purposes of determining their eligibility for special provisions such as bidding credits and installment payments. A small business in this service is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 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 \$15 million for the preceding three years. SBA approval of these definitions is not required. An auction of 52 Major Economic Area (MEA) licenses commenced on September 6, 2000, can 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.

40. *Broadband Radio Service* (formerly Multipoint Distribution Service) and *Educational Broadband Service* (formerly 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). In an order issued in July 2004 in WT Docket No. 03-66, the Commission comprehensively reviewed our policies and rules relating to the ITFS and MDS services, and replacing the Multipoint Distribution Service (MDS) with the *Broadband Radio Service* and *Instructional Television Fixed Service* (ITFS) with the *Educational Broadband Service*. 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. The SBA has approved of this standard. The MDS auction resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas (BTAs). 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.

41. In addition, the SBA has developed a small business size standard for *Cable and Other Program Distribution*, which includes all such companies generating \$12.5 million or less in annual receipts. 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. Of this total, 1,180 firms had annual receipts of under \$10 million, and an additional 52 firms had receipts of \$10 million or more but less than \$25 million. Consequently, we estimate that the majority of providers in this service category are small businesses that may

be affected by the rules and policies in the Second Report and Order.

42. 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. 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.

43. *Multichannel Video Distribution and Data Service.* MVDDS is a terrestrial fixed microwave service operating in the 12.2-12.7 GHz band. Licenses in this service were auctioned in January 2004, with 10 winning bidders for 192 licenses. Eight of these 10 winning bidders claimed small businesses status for 144 of these licenses.

44. *Aviation and Marine Services.* Small businesses in the aviation and marine radio services use a very high frequency (VHF) marine or aircraft radio and, as appropriate, an emergency position-indicating radio beacon (and/or radar) or an emergency locator transmitter. The Commission has not developed a small business size standard specifically applicable to these small businesses. For purposes of this analysis, the Commission uses the SBA small business size standard for the category "Cellular and Other Telecommunications," which is 1,500 or fewer employees. 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. For purposes of our evaluations in this analysis, we estimate that there are up to approximately 712,000 licensees that are small businesses (or individuals) under the SBA standard. In addition, between December 3, 1998 and December 14, 1998, the Commission held an auction of 42 VHF Public Coast licenses in the 157.1875-157.4500 MHz (ship transmit) and 161.775-162.0125 MHz (coast transmit) bands. For purposes of the auction, the Commission defined a "small" business as an entity that, together with controlling interests and affiliates, has average gross revenues for the preceding three years not to exceed \$15 million dollars. In addition, a "very small" business is one that, together with controlling interests and affiliates, has average gross revenues for the preceding three years not to exceed \$3 million dollars. There are approximately 10,672 licensees in the Marine Coast Service, and the Commission estimates that almost all of them qualify as "small"

businesses under the above special small business size standards.

45. *Public Safety Radio Services.* Public Safety radio services include police, fire, local government, forestry conservation, highway maintenance, and emergency medical services. There are a total of approximately 127,540 licensees in these services.

Governmental entities as well as private businesses comprise the licensees for these services. All governmental entities with populations of less than 50,000 fall within the definition of a small entity.

4. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

46. The policies and proposals set forth in the *Second Report and Order* impact a number of Commission licensees and spectrum lessees in various wireless services. The *Second Further Notice* explores ways in which licensees and spectrum lessees may enter into arrangements in which advanced technologies are opportunistically employed. The *Second Further Notice* and seeks to provide parties with greater certainty as to the types of opportunistic use arrangements that would be permitted while fitting into the framework of the Commission's current rules.

47. Our proposals in the *Second Report and Order* to implement certain advanced technologies necessarily implicates potential reporting, recordkeeping and compliance requirements for licensees and spectrum lessees, including: (1) Retention of lease agreements; (2) reporting of spectrum leasing terms to the Commission; (3) licensee and lessee compliance with the Commission's technical and service rules; (4) licensee filings with the Commission on behalf of the lessee; (5) licensee verification of lessee compliance with Commission rules; (6) license supervision of a lessee's adherence to the Commission's rules and policies; and (7) the leasing of spectrum by entities designated as "small business" or "very small business" under the Commission's rules. Licensees and spectrum lessees may retain or hire outside professionals (e.g., legal and engineering staff) to draft lease arrangements, provide consulting services, maintain records and comply with applicable Commission rules. They also may employ existing or new employees to be responsible for reporting, recordkeeping, and other compliance requirements.

48. The *Second Further Notice* also explores what steps the Commission should take to further enhance secondary markets and increase the

efficient use of spectrum and the availability to the public of innovative wireless services. The *Second Further Notice* does not propose any specific reporting, recordkeeping or compliance requirements in these matters. We are open to comment on what, if any, requirements we should impose if we adopt these proposals.

5. Steps Taken To Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

49. The RFA requires an agency to describe any significant, specifically small business alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): "(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance 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." See 5 U.S.C. 603(c)(1)-(c)(4).

50. Regarding our inquiry on ways to facilitate further development of advanced technologies, we do not anticipate any adverse impact on small entities. In fact, small (and large) entities should benefit from the reduction in transaction costs associated with leasing and the availability of other types of arrangements involving opportunistic use of licensed spectrum. We encourage comments on ways in which others may employ advanced technologies to opportunistically use licensed spectrum. Specifically, commenters should propose additional means to increase spectrum access and how that would fit into the rules and policies already established by the Commission. We do not believe that a revision of our rules would adversely impact small entities.

51. With regard to spectrum access through spectrum leasing arrangements, we seek comment on additional ways in which licensees and spectrum lessees may utilize advanced technologies, such as opportunistic devices, within the context of the Commission's spectrum leasing policies and rules. We do not anticipate that any rules we adopt in this area would adversely impact small entities. We believe that small and large entities will benefit from increased access to spectrum and the utilization of advanced technologies.

52. With regard to spectrum access through private commons, we seek

comment on the potential for this approach to improve access as well as the regulatory distinctions that are necessary to make this an effective regulatory model. We do not anticipate any adverse impact on small entities. We believe that both small and large entities that make use of "smart" or "opportunistic" technologies within their bands will benefit from the private commons option because this approach is designed to minimize some of the transaction costs associated with leasing or other market factors.

53. In addition, we seek comment on the technical parameters necessary to distinguish private commons from spectrum leasing arrangements or other arrangements. We do not anticipate any adverse impact on small entities as a result of setting these parameters. We believe that setting these parameters will benefit both small and large entities by reducing regulatory uncertainty and encouraging spectrum use.

54. We also seek comment on the examples of private commons set forth in the *Second Report and Order*, as well as other types of private commons arrangements. As stated in the *Second Report and Order*, licensee or spectrum lessees establishing a private commons retains direct responsibility for compliance with the Commission's rules. We encourage comment on whether there are any additional policies or requirements that could help ensure compliance. We do not anticipate any adverse impact on small entities as a result of establishing further compliance guidelines. We believe that establishing further compliance guidelines all entities, including small entities, will benefit from the additional control over their spectrum.

55. Finally, we seek comment on the appropriate notification process for licensees or spectrum lessees that choose to offer a private commons. In the *Second Report and Order*, we stated that a licensee or spectrum lessee managing the private commons must notify the Commission prior to permitting users to begin operating within the private commons. In the *Second Further Notice*, we propose to give the licensee or spectrum lessee the option of notifying the Commission directly or, in the alternative, providing a URL that posts the terms and conditions. We believe that this procedure will benefit all entities, including small entities, by taking an additional step toward increasing the efficient use of spectrum.

6. Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rules

56. None.

57. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of this *Second Further Notice*, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

B. Initial Paperwork Reduction Act of 1995 Analysis Regarding the Second Further Notice

58. In the *Second Further Notice*, this document seeks comment on a proposed information collection. As part of the Commission's 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 document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. Public and agency comments are due at the same time as other comments on this document and must have a separate heading designating them as responses to the Initial Paperwork Reduction Analysis (IPRA). OMB comments are due February 25, 2005. Comments should address: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

C. Comment Dates Regarding the Second Further Notice

59. Pursuant to applicable procedures set forth in §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415 and 1.419, interested parties may file comments on the *Second Further Notice* on or before January 18, 2005, and reply comments on or before February 17, 2005. Comments and reply comments should be filed in WT Docket No. 00-230. All relevant and timely comments will be considered by the Commission before final action is taken in this proceeding.

60. Comments may be filed either by filing electronically, such as by using the Commission's Electronic Comment Filing System (ECFS), or by filing paper

copies. Parties are strongly urged to file their comments using ECFS (given recent changes in the Commission's mail delivery system). Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Only one copy of an electronic submission must be filed. In completing the transmittal screen, the electronic filer should include its full name, Postal Service mailing address, and the applicable docket or rulemaking number, WT Docket No. 00-230. Parties also may submit comments electronically by Internet e-mail. To receive filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form <your e-mail address>." A sample form and directions will be sent in reply.

61. Parties who choose to file by paper may submit such filings by hand or messenger delivery, by U.S. Postal Service mail (First Class, Priority, or Express Mail), or by commercial overnight courier. Parties must file an original and four copies of each filing in WT Docket No. 00-230. Parties that want each Commissioner to receive a personal copy of their comments must file an original plus nine copies. If paper filings are hand-delivered or messenger-delivered for the Commission's Secretary, they must be delivered to the Commission's contractor at 236 Massachusetts Avenue, NE., Suite 110, Washington, DC 20002-4913. To receive an official "Office of the Secretary" date stamp, documents must be addressed to Marlene H. Dortch, Secretary, Federal Communications Commission. (The filing hours at this facility are 8 a.m. to 7 p.m.) If paper filings are submitted by mail through the U.S. Postal Service (First Class mail, Priority Mail, and Express Mail), they must be sent to the Commission's Secretary, Marlene H. Dortch, Federal Communications Commission, Office of the Secretary, 445 12th Street, SW., Washington, DC 20554. If paper filings are submitted by commercial overnight courier (*i.e.*, by overnight delivery other than through the U.S. Postal Service), such as by Federal Express or United Parcel Service, they must be sent to the Commission's Secretary, Marlene H. Dortch, Federal Communications Commission, Office of the Secretary, 9300 East Hampton Drive, Capitol Heights, MD 20743. (The filing hours at this facility are 8 a.m. to 5:30 p.m.)

62. Parties may also file with the Commission some form of electronic media submission (*e.g.*, diskettes, CDs, tapes, etc.) as part of their filings. In

order to avoid possible adverse affects on such media submissions (potentially caused by irradiation techniques used to ensure that mail is not contaminated), the Commission advises that they should not be sent through the U.S. Postal Service. Hand-delivered or messenger-delivered electronic media submissions should be delivered to the Commission's contractor, Natek, Inc., at 236 Massachusetts Avenue, NE., Suite 110, Washington, DC 20002-4913. Electronic media sent by commercial overnight courier should be sent to the Commission's Secretary, Marlene H. Dortch, Federal Communications Commission, Office of the Secretary, 9300 East Hampton Drive, Capitol Heights, MD 20743.

63. Regardless of whether parties choose to file electronically or by paper, they should also send one copy of any documents filed, either by paper or by e-mail, to each of the following: (1) Best Copy & Printing, Inc., Portals II, 445 12th Street, SW., Room CY-B402, Washington, DC 20554, facsimile (202) 488-5563, or e-mail at fcc@bcpiweb.com; and (2) Paul Murray, Commercial Wireless Division, Wireless Telecommunications Bureau, 445 12th Street, SW., Washington, DC 20554, or e-mail at Paul.Murray@fcc.gov.

64. Comments, reply comments, and *ex parte* submissions will be available for public inspection during regular business hours in the FCC Reference Information Center, Federal Communications Commission, 445 12th Street, SW., Room CY-A257, Washington, D.C. 20554. These documents also will be available electronically at the Commission's Disabilities Issues Task Force Web site, <http://www.fcc.gov/dtf>, and from the Commission's Electronic Comment Filing System. Documents are available electronically in ASCII text, Word 97, and Adobe Acrobat. Copies of filings in this proceeding may be obtained from Best Copy & Printing, Inc., Portals II, 445 12th Street, SW., Room CY-B402, Washington, DC 20554, telephone (800) 378-3160, facsimile (202) 488-5563, or via e-mail at fcc@bcpiweb.com. This document is also available in alternative formats (computer diskette, large print, audio cassette, and Braille). Persons who need documents in such formats may contact Brian Millin at (202) 418-7426, TTY (202) 418-7365, Brian.Millin@fcc.gov, or send an e-mail to access@fcc.gov.

D. Ex Parte Rules Regarding the Second Further Notice—Permit-But-Disclose Proceeding

65. With regard to the *Second Further Notice*, this is a permit-but-disclose

notice and comment rule making proceeding. *Ex parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in Commission rules. *See generally* 47 CFR 1.1202, 1.1203, and 1.1206.

IV. Ordering Clauses

66. Pursuant to the authority contained in sections 1, 4(i), and 303(r)

of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i), and 303(r), the *Second Further Notice* is adopted.

67. The Commission's Consumer Information Bureau, Reference Information Center, *shall send* a copy of the Second Report and Order, Order on Reconsideration, and Second Further NPRM of Proposed Rulemaking,

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

Federal Communications Commission.

Marlene H. Dortch,

Secretary.

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