

the federal regulations, three of the non-authorized state regulations mentioned above.

### C. Decision

The EPA concludes, subject to receipt and evaluation of public comment, that New York's application for program revision meets all of the statutory and regulatory requirements established by RCRA. Accordingly, New York is granted final authorization to operate its hazardous waste program as revised.

The version of the regulations being authorized by EPA at this time are the regulations which were in effect as of January, 1995. The regulations so authorized are available at the repositories noted above and appear in the revised version of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York that the New York Secretary of State has already published.

### Compliance With Executive Order 12866

The Office of Management and Budget has exempted this rule from the requirements of Section 6 of Executive Order 12866.

### Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), P.L. 104-4, establishes requirements for Federal agencies to assess the effects of certain regulatory actions on State, local, and tribal governments and the private sector. Under sections 202 and 205 of the UMRA, EPA generally must prepare a written statement of economic and regulatory alternatives analyses for proposed and final rules with Federal mandates, as defined by the UMRA, that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any one year. The section 202 and 205 requirements do not apply to today's action because it is not a "Federal Mandate" and because it does not impose annual costs of \$100 million or more.

Today's rule contains no Federal mandates for State, local or tribal governments or the private sector for two reasons. First, today's action does not impose new or additional enforceable duties on any State, local or tribal governments or the private sector because the requirements of the New York program are already imposed by the State and subject to State law. Second, the Act also generally excludes from the definition of a "Federal Mandate" duties that arise from participation in a voluntary Federal program. New York participation in an

authorized hazardous waste program is voluntary.

Even if today's rule did contain a Federal mandate, this rule will not result in annual expenditures of \$100 million or more for State, local, and/or tribal governments in the aggregate, or the private sector. Costs to State, local and/or tribal governments already exist under the New York program, and today's action does not impose any additional obligations on regulated entities. In fact, EPA's approval of State programs generally may reduce, not increase, compliance costs for the private sector.

The requirements of section 203 of UMRA also do not apply to today's action. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, section 203 of the UMRA requires EPA to develop a small government agency plan. This rule contains no regulatory requirements that might significantly or uniquely affect small governments. Although small governments may be hazardous waste generators, transporters, or own and/or operate TSDFs, they are already subject to the regulatory requirements under existing State law which are being authorized by EPA, and, thus, are not subject to any additional significant or unique requirements by virtue of this program approval.

### Certification Under the Regulatory Flexibility Act

EPA has determined that this authorization will not have a significant economic impact on a substantial number of small entities. Such small entities which are hazardous waste generators, transporters, or which own and/or operate TSDF's are already subject to the regulatory requirements under existing State law which are being authorized by EPA. EPA's authorization does not impose any additional burdens on these small entities. This is because EPA's authorization would simply result in an administrative change, rather than a change in the substantive requirements imposed on these small entities.

Therefore, EPA provides the following certification under the Regulatory Flexibility Act, as amended by the Small Business Regulatory Enforcement Fairness Act. Pursuant to the provision at 5 U.S.C. 605(b), I hereby certify that this authorization will not have a significant economic impact on a substantial number of small entities. This authorization approves regulatory requirements under existing State law to which small entities are already subject.

It does not impose any new burdens on small entities. This rule, therefore, does not require a regulatory flexibility analysis.

### Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

**Authority:** This Notice is issued under the authority of Sections 2002(a), 3006 and 7004(b) of the Solid Waste Disposal Act, as amended, 42 U.S.C. 6912(a), 6926, 6974(b).

Dated: July 16, 1997.

**Jeanne M. Fox,**

*Regional Administrator.*

[FR Doc. 97-20970 Filed 8-11-97; 8:45 am]

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## FEDERAL COMMUNICATIONS COMMISSION

### 47 CFR Parts 2, 15, and 97

[ET Docket No. 97-124; FCC 97-153]

### Use of Radio Frequencies Above 40 GHz for New Radio Applications

**AGENCY:** Federal Communications Commission.

**ACTION:** Final rule.

**SUMMARY:** The Commission adopts a *Second Report and Order* designating the frequency spectrum band between 47.2 and 48.2 GHz for commercial use on a licensed basis. The Commission decides to permit fixed, fixed-satellite, and mobile uses consistent with the Table of Frequency Allocations governing the band. The Commission also decides to define service rules in a future rulemaking, based on the dominant use of the spectrum, and finds that the most likely dominant use will be fixed, point-to-multipoint services delivered through the deployment of fixed platforms located in the stratosphere. The Commission adopts the proposal to license operations on an area-wide basis and determines to divide the spectrum into five pairs of license blocks of 200 megahertz each pair, with each pair separated by 500 megahertz of spectrum. These actions are taken to promote the commercial availability of millimeter wave

technology in providing the potentially valuable uses of licensed spectrum above 40 GHz.

**EFFECTIVE DATE:** October 14, 1997.

**ADDRESSES:** Room 7002, 2025 M Street, NW., Federal Communications Commission, Washington, DC 20554.

**FOR FURTHER INFORMATION CONTACT:** Barbara Reideler, Policy Division, Wireless Telecommunications Bureau, (202) 418-1310.

**SUPPLEMENTARY INFORMATION:** This is a synopsis of the *Second Report and Order* in ET Docket No. 94-124, FCC 97-153, adopted May 2, 1997, and released July 21, 1997. The complete text of this decision is available for inspection and copying during normal business hours in the FCC Reference Center (Room 239), 1919 M Street, NW., Washington, DC, and also may be purchased from the Commission's copy contractor, International Transcription Service, (202) 857-3800, 1231 20th Street, NW., Washington, DC 20036.

### Synopsis of Second Report and Order

1. This action is part of an ongoing proceeding to open for commercial development portions of the spectrum known as the millimeter wave bands above 40 GHz.<sup>1</sup> The Commission initiated this proceeding by *Notice of Proposed Rulemaking (First NPRM)* in 1994 (59 FR 61304, March 1, 1995).

2. In this *Second Report and Order (Second R&O)*, the Commission adopts the proposal contained in the *First NPRM* to designate for commercial use on a licensed basis the 47.4-48.2 GHz band, together with the 47.2-47.4 GHz band made available in the *First Report and Order* (61 FR 14041, March 29, 1996) for a total of one gigahertz of spectrum (47 GHz band). Further, the Commission adopts proposals to establish a licensing framework that permit the full range of services allowed under the Table of Frequency Allocations (Allocation Table) in our rules<sup>2</sup> and to define service rules based on our best judgment of what the dominant use of the spectrum is likely to be. The Commission finds that the most likely dominant use will be fixed, point-to-multipoint services delivered through the deployment of fixed platforms located in the stratosphere, without foreclosing the other uses under the Allocation Table. The Commission adopts the proposal to license operations on an area-wide basis and we determine to divide the spectrum into

five pairs of license blocks of 100 megahertz each, with each pair separated by 500 megahertz of spectrum.

3. The Commission concludes that opening this spectrum for commercial licensed use under our licensing framework will stimulate the development of millimeter wave technology to provide new wireless communications services that are in demand by consumers. The broad degree of flexibility regarding the permissible range of services will ensure the ability of carriers to respond to the market, will promote competition, and will provide for the most efficient and effective services. The Commission will initiate a proceeding in the near future to propose service rules in order to implement our determinations in this *Second R&O* for the licensing of the 47 GHz band. The proposed rules will include proposals relating to auctions. The Commission also defers to future proceedings our consideration of the additional frequency bands above 40 GHz that we proposed for licensed use in the *First NPRM*, as well as the additional bands proposed for unlicensed use that were not considered in the *First Report and Order*.

4. In this *Second Report and Order*, the Commission limits consideration of the bands we proposed to designate for commercial, licensed use in the *First NPRM* to the 47 GHz band. This band consists of the 47.4-48.2 GHz segment originally set forth in the *First NPRM* and the adjoining 47.2-47.4 GHz segment made available for such use in the *First Report and Order*. The Commission did not propose any changes to this band in the *36-51 GHz Band Plan NPRM* in IB Docket No. 97-95 (62 FR 16129, April 4, 1997) where we designated the band for predominantly wireless terrestrial services. The Commission found that comments had already been received on this band segment in response to the *First NPRM* on which we could proceed to take action without delay. Thus, the Commission's proposals in the *First NPRM* as they apply to the 47 GHz band are ripe for disposition at this time.

5. The comments filed in this docket consist of two sets, the comments filed in direct response to the Commission's proposals in the *First NPRM* (to the extent those comments are pertinent to the issues we resolve in this *Second Report Order*), and the comments filed in response to the respective public notices accepting the Request To Establish New GSTS Service, Additional Comments, and Petition for Rulemaking (hereinafter cited as Request and Petition) and the Application, filed by

Sky Station International, Inc. (Sky Station) on March 20, 1996, in this docket. Both the filings by Sky Station and the responsive pleadings concern the Commission's proposals to license the 47 GHz band, but were filed after the comment period to the *First NPRM* closed and raise issues not addressed in our proposals. Because the Sky Station filings and responsive pleadings are pertinent to the issues before us, the Commission has decided to take these filings and pleadings into account in connection with the decisions we make in this *Second Report and Order*.

6. In the Request and Petition, Sky Station requests that the Commission authorize use of the spectrum at 47.2-47.5 GHz and 47.9-48.2 GHz for a new commercial, licensed service described as the Global Stratospheric Telecommunications Service (GSTS), and that the Commission adopt service rules either in this proceeding or a separate rulemaking to implement the service. Sky Station filed concurrently an application (hereinafter cited as Application) for authorization to construct and operate its proposed service to provide a global network of wireless communications services, subject to amendment pending the outcome of its Request and Petition. A public notice was issued accepting the Application for filing and accepting petitions, oppositions, and other pleadings filed in response to that public notice. (FCC Public Notice, Sky Station International, Inc., File No. 96-SAT-P/LA-96, released April 22, 1996.) Comments to the request and petition, and to the Application, are listed in Appendix A in the full text of this decision.

7. Sky Station, in its Request and Petition, states that it has developed a new technology for delivery of a new paradigm of wireless telecommunications services that it identifies as GSTS, to compete with existing satellite and terrestrial wireless services. Sky Station explains that GSTS is based on the concept of using a network of platforms in the stratosphere that are kept aloft in fixed positions by hydrogen or helium elements at an altitude of 30 kilometers, or 18 miles, above 99 percent of the atmosphere. Unlike satellite services, these platforms are not launched into orbit in space, but rather are lifted by balloons similar to dirigibles to an area in the stratosphere above flight patterns and below satellite orbits.

8. In the request and petition, Sky Station argues that opening up a portion of the 47 GHz band for the proposed system will promote the policy goals we established in the *First NPRM* and meet

<sup>1</sup> The term "millimeter wave" refers to the fact that the wavelength of radio signals for frequencies between 30 GHz and 300 GHz ranges from 10 millimeters down to 1 millimeter.

<sup>2</sup> 47 CFR 2.106.

numerous environmental, economic, and social public interest objectives. It requests that the Commission adopt proposed technical, financial, implementation, and licensing standards that encourage commercial development of the unused 47 GHz band and promote competition consistent with the flexible framework proposed in the *First NPRM*. The service rules advocated by Sky Station in its Request and Petition would enable all qualified applicants to construct and operate their own systems as part of the entire GSTS, and the GSTS would be designed to cover 80 percent of the world's population by a certain date.

9. Sky Station requests that the Commission dedicate exclusively for GSTS that portion at 47.2–47.5 GHz for earth-to-stratosphere communications and 47.9–48.2 GHz for stratosphere-to-earth communications. Sky Station argues that its service is covered by the Allocation Table, which provides for fixed and mobile service. However, it requests that the Commission modify the Table to permit only fixed and mobile GSTS stations to operate in the two portions of the 47 GHz band, inasmuch as it contends that the service cannot share co-channel frequencies with conventional fixed, mobile, or fixed satellite services. It also requests that International footnote 901 be modified, as well as U.S. footnote 297, in order to eliminate sharing with broadcasting-satellite service feeder links, which also could interfere with GSTS and could operate elsewhere.

10. Sky Station requests authorization in the Application to implement its proposed service. It argues that the Application demonstrates that Sky Station is in compliance with the technical, financial, licensing, and other regulations it has requested we adopt in the Request and Petition. Sky Station reserves the right to amend this application to comply with any future rules the Commission may adopt for its proposed service. The Application includes a request for a pioneer preference in the event that mutually-exclusive applications are filed.

11. On December 24, 1996, Sky Station submitted further comments to clarify its request and petition. Sky Station argues that the Commission should grant its alternative request in the request and petition to treat the filing as additional comments in response to the *First NPRM*, and that a new rulemaking proceeding to adopt separate service rules for its proposed stratospheric service is neither necessary nor appropriate. It requests that the Commission hold the Application in abeyance. Sky Station

argues that the Commission's proposal for the commercial, licensed use of the 47 GHz band has been open for comment since the *First NPRM* and that its comments on the pending issues together with the other comments in this docket provide an adequate record on which to resolve the issues to be determined in this Order.

12. In its further comments, Sky Station argues that its proposed service is a fixed terrestrial service and that we need not allocate the requested spectrum to a new global stratospheric service, apart from other fixed service millimeter wave uses. It argues that a generic terrestrial allocation for a flexible fixed (non-satellite) service would suffice, so that it would compete with other aspiring fixed service providers in auctions for this spectrum. Sky Station argues that its proposed operations generally fit well within the service rules the Commission proposed in the *First NPRM* to adopt for licensed services above 40 GHz, including the 47 GHz band, which rules are now contained in Part 101. (See Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules To Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, WT Docket No. 94–148, Amendment of Part 21 of the Commission's Rules for the Domestic Public Fixed Radio Services, CC Docket No. 93–2, and McCaw Cellular Communications, Inc., Petition for Rulemaking, RM–7681, Report and Order, 61 FR 26670, May 28, 1996.) Sky Station submits modifications to the proposed rules that it argues are minor but necessary to accommodate its proposed service in the 47 GHz band, including segmentation of the band to prevent sharing with other services, license blocks of 100 megahertz paired blocks separated by 500 megahertz, and larger area-wide licensing, among other operating and technical rules.

13. The Commission grants Sky Station's alternative request to accept its request and petition as late-filed comments in this proceeding. In addition, the Commission will also accept the Application as part of the comments, inasmuch as Sky Station acknowledges that the Application is filed preliminarily and is intended to illustrate the service it could provide under its proposals in the request and petition. As discussed more fully in the text of this *Second R&O*, petitioners filing in response to request and petition do not raise issues that prevent the Commission from including the Sky Station filings for consideration together with other comments filed in response to the *First NPRM* to open the 47 GHz band for commercial, licensed use.

14. Fixed Point-to-Point Communications Section, Network Equipment Division of the Telecommunications Industry Association (TIA), Motorola Satellite Communications, Inc. (Motorola), and Harris Corporation-Farion Division (Harris) argue that the nature of Sky Station's service proposal as terrestrial or satellite service is not clear, and that it does not fit existing definitions. They request that the Commission establish a separate allocation category for any airborne terrestrial wireless communications service.

15. TIA argues that the nature of Sky Station's proposed service must be identified to determine how to classify the service and find the appropriate regulatory niche before we may adopt its proposals. TIA contends that the filings are contradictory regarding whether the service is terrestrial or satellite, fixed or mobile. It contends that the service does not fit the international service definition that defines Radio-Relay Systems to be fixed services operating via terrestrial stations. TIA argues that the proposed service would be similar to a satellite based system as an interference source, that the platform qualifies as a Space Station under the definitions, and that it should be considered to be a Mobile-Satellite System.

16. TIA proposes that the Commission and the 1997 World Radio Conference (WRC–97) establish a new service category for any airborne service operating in the stratosphere or below, apart from aviation services, that would be defined as a Global Airborne Telecommunications Service. The category would stimulate innovative airborne services and would be consistent with allocation requirements. Harris agrees that the nature of the service should be clarified and that the Global Airborne category might be the solution to accommodating various airborne services that will have characteristics similar to the Sky Station proposal.

17. Motorola also argues that the proposed service requires a new allocation. It contends that terrestrial fixed and mobile service allocations do not contemplate stratosphere-to-earth and earth-to-stratosphere communications provided by means of stratospheric balloon-supported platforms. It asserts that the platforms should be disqualified as fixed or mobile terrestrial services because of their placement above the earth's atmosphere, and should instead be defined as spacecraft. Motorola further argues that the platforms would lie within sovereign airspace, and that

countries may view the proposed service as an infringement of their rights. It contends that we should refrain from pursuing an international allocation for the proposed service.

18. In the *36–51 GHz Band Plan NPRM*, the Commission determined that Sky Station's proposed use of spectrum in the 47 GHz band for its stratospheric radio relay repeater system is considered to be a terrestrial service. In its Further Comments, Sky Station has clarified its previous filings, which TIA points out are contradictory, in order to demonstrate that the proposed service is a terrestrial, fixed operation. Users permanently mount their terminals or antennas, which communicate with the repeaters located on the platforms. The Commission disagrees with TIA and Motorola that the platform qualifies as a space station and that the proposed service should be considered to be a satellite service. The platforms proposed for use by Sky Station clearly are not satellites and, unlike satellites, will not be in earth orbit. Although the platforms will be located 30 kilometers above the earth's surface, they still will be within the earth's atmosphere and will rely on atmospheric lift to keep them at that fixed altitude, which is far below the location of the lowest satellite orbit.

19. Motorola and TIA point out that there are international definitions and other international concerns that require that Sky Station's proposed service be considered in the appropriate international forums. In that context, the Commission further points out that world spectrum management experts recently participated in the work of ITU-R WP4–9S and WP 9B and concluded that a radio-relay service like Sky Station's proposed service that uses stratospheric-based repeaters is in the fixed service. The groups developed two Proposed Draft New Recommendations relating to platform-based stratospheric radio relay repeaters in the fixed service.<sup>3</sup> Moreover, in the *36–51 GHz Band Plan NPRM* the Commission noted that the Ad Hoc Millimeter Wave group of the Commission's WRC–97 Advisory Committee had discussed, among other things, the possibility of satellite and fixed terrestrial services, as well as other terrestrial services operating from alternative delivery platforms, sharing spectrum in the band. Thus, the use of such stratospheric-based platforms for a global service is being addressed in the appropriate forums, where issues of sovereignty and other concerns will be examined. The Commission denies the requests of Motorola, Harris, and TIA to

establish a separate allocation category for any airborne terrestrial wireless communications service as unnecessary and inefficient, inasmuch as the spectrum Sky Station seeks to use is the subject of this proceeding in which rules can be proposed to accommodate its service, as well as other terrestrial services in 47 GHz. The Commission finds these requests unnecessary and inefficient, inasmuch as the spectrum Sky Station seeks to use is the subject of this proceeding in which rules can be proposed to accommodate its service, as well as other terrestrial services in 47 GHz.

20. HCI and Motorola argue that the Application and the Request and Petition leave open many technical, financial, and safety concerns that must be addressed before the Commission can act on Sky Station's request and allocate the spectrum it requests. The Commission intends to solicit comment on the necessary technical and financial requirements for platform-based stratospheric services at the time we consider service rules, in a separate Notice of Proposed Rulemaking. At the same time the Commission will seek comment on the safety concerns that the platforms raise. These matters are important features of the service rules that the Commission must adopt before any service in the 47 GHz band can be implemented. They need not be considered in this *Second R&O*, however, which is limited to deciding whether to open the band to commercial, licensed use under a flexible licensing framework. The matters that HCI and Motorola ask the Commission to address now are not factors in that decision.

21. HCI, Lockheed Martin Corporation, and Motorola express concern that, as members of the satellite community, they will not be able to share the 47 GHz band with Sky Station's proposed service. Since the filings of these pleadings, the Commission has initiated a spectrum plan in the *36–51 GHz Band Plan NPRM* in order to address the competing demands between satellite and terrestrial interests for spectrum allocations for provision of commercial services. Although the Commission maintained the 47 GHz band for predominantly wireless services, we identified additional bands for predominantly satellite services that include the adjacent 48.2–50.2 GHz bands, among others. Thus, the spectrum management issues raised by petitioners here are matters addressed in that proceeding and are not a basis for delaying this proceeding. As for the additional matters the parties seek to

raise here concerning licensed uses of the band, the Commission will include those comments in our consideration of licensing issues in the full text of this *Second R&O*.

22. The *Second R&O* adopts the proposal to open the 47 GHz band for commercial applications and technologies. As stated in the *First NPRM*, the millimeter wave bands such as 47 GHz are a major resource that essentially is undeveloped and unavailable today for commercial use. The Commission finds that there is broad consensus that our proposal to open frequency bands above 40 GHz to commercial development will provide the public with access to new products and communications services and provide new opportunities for business and economic growth.

23. The *Second R&O* also adopts the proposal to license the 47 GHz band for commercial service and finds that our proposal to allow any use under the Allocation Table reflects the best approach to licensing this band. As a "frontier" band located in the frequencies above 40 GHz that are yet to be opened for commercial development, the exact nature of the services to emerge from the development of the 47 GHz band cannot be predicted in the comments. The Commission concludes that all identified uses of the 47 GHz band may be valuable and should be permitted. The record also confirms that both the technology and potential applications of millimeter wave spectrum will continue to evolve rapidly. Since the Commission initiated this proceeding we have seen important new technologies proposed for the millimeter wave spectrum, and it is likely that other technologies also will be developed. Under the circumstances, the Commission decides not to limit the types of services that can be offered in the band.

24. Accordingly, the Commission will license the 47 GHz band based on the services currently allowed under the Allocation Table. The spectrum from 47.2 to 50.2 GHz is allocated domestically for Government and non-Government Fixed, Fixed-Satellite, and Mobile uses, and internationally for the same uses. The Commission finds that the range of services covers all of the services identified as potential uses of the 47 GHz band. The Commission confirms the view expressed in the *First NPRM* that a broadly defined service allocation coupled with the licensing, technical, and operating rules to be proposed in a subsequent rulemaking will provide the best means of assuring that this spectrum will be used to the greatest benefit of the public.

<sup>3</sup> Doc. 4–9S/TEMP/30(Rev.1) and Doc. 9B/TEMP/38(Rev.1).

25. The Commission denies the requests of AT&T Corp, Hewlett-Packard, Millimeter Wave Advisory Group, Alcatel Network Systems, Harris, and TIA to expand the band to include spectrum up to 51 GHz in order to provide for point-to-point services. That additional spectrum in the adjacent bands will be addressed in response to the *36-51 GHz Band Plan NPRM*, in which the Commission proposes to designate the portion 48.2-50.2 GHz for predominantly satellite use. The Commission points out that point-to-point services may be provided in the 47 GHz band under the allocations for that band.

26. The Commission disagrees with TIA's assertion that licensing on such an "open-market" basis, which provides licensees with broad flexibility to engage in any uses under the Allocation Table, evades our statutory responsibilities under section 303(c) and, in light of the Commission's proposal to auction the spectrum, is inconsistent with Section 309(j) of the Communications Act. The Commission has broad authority under the Communications Act to designate spectrum usage, as well as the authority to perform any and all acts necessary in the execution of our functions.<sup>4</sup> In light of the range of possible uses, the likelihood that new uses can be developed in the future, and the lack of a record for specific service designations that would better serve the public interest and the goals of the Communications Act, our broad service designation comports with the public interest and with our statutory authority. The Commission's decision to designate this spectrum in this manner is unrelated to the proposal in the *First NPRM* to award licenses through competitive bidding.

The designation is not entirely open-ended and will be subject to technical rules we will adopt. Therefore, the Commission has not delegated to private parties our responsibility to allocate spectrum and adopt appropriate technical standards.

27. The Commission finds that, when we propose licensing and other service rules for the 47 GHz band, we will follow the approach proposed in the *First NPRM* to tailor the rules to reflect what we expect will likely be the dominant use of this spectrum, while retaining the flexibility allowed under the Allocation Table. Especially for "frontier" bands such as those above 40 GHz, this approach should set allocation and licensing rules that promote rapid,

efficient use of this spectrum to meet all the communications needs advanced by commenters, while allowing the market to adjust to changing needs and technologies and providing scope for innovative uses. It will also minimize regulatory barriers and requirements that might otherwise hamper entrepreneurial efforts to develop effective commercial uses of this spectrum.

28. However, the Commission does not find that the dominant use of spectrum in the 47 GHz band is likely to be similar to LMDS in the 28 GHz band, as we proposed. As Avant-Garde Telecommunications, Inc. requests, the Commission has reexamined our proposal, and we have taken into account the anticipated uses and changed circumstances reflected in the record for purposes of determining whether another licensing methodology would better meet the needs posed by those anticipated uses. The Commission finds that the dominant use of the 47 GHz band is likely to be a fixed, point-to-multipoint service that employs stratospheric platforms at fixed locations.

29. The Commission emphasizes, however, that we anticipate that ongoing technological developments can be expected to generate other types of delivery systems for fixed, point-to-multipoint services in the band. Thus, while the Commission will seek to tailor our licensing rules to accommodate the likely dominant use we have identified based on the current record, we will not foreclose other uses permitted by the Allocation Table, including new and innovative uses and technologies.

30. The Commission denies Sky Station's request that we dedicate to its exclusive use two portions of the 47 GHz band for its service and modify the Allocation Table to that effect. Sky Station is concerned about interference to its stratospheric signal when it is in the main path of a conventional fixed co-channel signal of greater power. The problems of interference do not necessarily require a change in the service allocation, but rather are the subject of operational and technical mitigation techniques that can be included in the Commission's service rules to be used to reduce or eliminate these types of interference problems. Accordingly, Sky Station should ensure that its concerns are addressed when the Commission seeks to adopt appropriate service rules in a subsequent proceeding to implement services under the Allocation Table.

31. Similarly, the Commission defers the request of United States Satellite Broadcasting Company (USSB) that we

accept a service rule requirement submitted by Sky Station to protect DBS-TV from interference from Sky Station's service. USSB requested that the Commission consider the impact of Sky Station's proposed platform-based service on the operations of other telecommunications services and, in particular, on the reception of DBS signals on the surface of the earth. The Commission will consider the requested restriction when we consider the need for other use restrictions to ensure the performance of the authorized services under appropriate service rules.

32. The Commission also denies the request of TIA for a guardband of 500 MHz to ensure adequate signal selectivity between the licensed services in the 47 GHz band and the fixed point-to-point services that TIA requests we designate for use in the adjacent band at 48.5-51.4 GHz. The adjacent band is under consideration in the *36-51 GHz Band Plan NPRM* and TIA's request can be addressed there. The Commission will consider the need for protections of licensed users from interference in developing service rules that govern the uses of 47 GHz.

33. The *Second R&O* adopts the Commission's proposal to issue area-wide licenses for services in the 47 GHz band as a necessary component of the flexible licensing framework we are adopting. The Commission has found that the predominant use of the band is a fixed point-to-multipoint service, which is a service provided on a point-radius basis within an area and not on a fixed point-to-point basis. However, fixed point-to-point service is not precluded and may be provided within the area. Moreover, authorization of a geographic area is consistent with the Allocation Table for the 47 GHz band, which also provides for mobile services in addition to fixed services. The Commission does not decide the size of the geographic area in this *Second R&O*, inasmuch as that is a matter for the service rules.

34. The *Second R&O* also adopts the Commission's plan to divide the spectrum into license blocks for exclusive assignment in each area. However, we modify our proposal to divide the entire band into only one contiguous pair and instead divide it into five separated pairs. Based on the comments filed in response to the Commission's inquiry into whether the licensed blocks should be contiguous or further subdivided into paired blocks to facilitate two-way transmission, the Commission finds that our original proposed division into one paired block would not be appropriate and would inhibit the most efficient and effective

<sup>4</sup> See Section 4(i) of the Communications Act, 47 U.S.C. 154(i).

use of the 47 GHz band. The Commission believes that Sky Station's proposal to divide the entire block into five pairs of 200 MHz channels each pair, separated by 500 megahertz, effectively accommodates the predominant use as well as the other likely uses of the band. The Commission further believes that paired 100-MHz channels would provide adequate bandwidth for the dominant use, while fostering competition and diversity of uses among licensees.

35. Finally, in the *First NPRM*, the Commission proposed to impose a spectrum cap and limit each licensee to a single spectrum block in each band in the same area, so that the licensee would not be permitted to own both licenses in the same band in any area. The Commission will address any spectrum limitation in the proceeding to establish the service rules to implement the framework we adopt here, which proceeding we will initiate shortly.

36. It is the Commission intent to complete the licensing of the 47 GHz band as quickly as possible to achieve our goal as stated in the *First NPRM*—to promote the commercial availability of millimeter wave technologies in providing the potentially valuable uses of licensed spectrum above 40 GHz.

## Procedural Matters and Ordering Clauses

### Final Regulatory Flexibility Analysis

37. As required by the Regulatory Flexibility Act, 5 U.S.C. 603 (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *First NPRM* in this proceeding. The Commission sought written public comments on the proposals in the *First NPRM*, including on the IRFA. The Commission's Final Regulatory Flexibility Analysis (FRFA) in this *Second R&O* conforms to the RFA, as amended by the Contract with America Advancement Act of 1996 (CWAAA), Pub. L. 104-121, 110 Stat. 846 (1996).

### I. Need for and Objectives of Action

38. We proposed in the *First NPRM* to open spectrum in the 47.4–48.2 GHz band for commercial, licensed use on an area-wide basis in a paired license block in order to promote the use of the millimeter wave region of the spectrum above 40 GHz. We adopt our proposals, with modification to the licensing blocks, for the entire 47.2–48.2 GHz band (47 GHz band) in order to achieve our goal to expedite the commercial development of this spectrum.

39. Advances in millimeter wave technology will enable new commercial uses to be achieved and will help meet

consumer demand for a wide range of potential commercial services, which would stimulate research and the growth of technology. We adopt a licensing framework that allows the full range of services in the Table of Frequency Allocations to provide licensees the flexibility to provide the most efficient and effective services. We identify the potential dominant use of the 47 GHz band to ensure that the service rules we will propose in a future proceeding are adequate and appropriate. Licensing on the basis of a geographic area will ensure that licensees have the flexibility to provide new services in the most rapid and efficient manner. Dividing the spectrum into five separated pairs of spectrum blocks for licensing ensures that licensees in the 47 GHz bands are able to offer the predominant service, as well as other potential services, in the most efficient manner.

### II. Summary of Significant Issues Raised by the Public Comments in Response to Initial Regulatory Flexibility Statement

40. Avant-Garde and M/A-Com, Inc. (MACOM) are small entities that generally support opening the bands above 40 GHz for commercial use to take advantage of the developments in millimeter wave technology. They argue that the technology is available for commercial uses and that we should designate any of the bands for commercial use in order to stimulate market demand for their products. Sky Station argues that its proposal to provide a fixed, terrestrial, global service in the 47 GHz band using stratospheric-based platforms will meet many commercial uses and promote the growth of a new stratospheric-based technology, rather than traditional tower-based technology, for delivery of service.

41. Metricom, Inc. (Metricom) requests that we adopt a flexible regulatory approach for licensed operations that includes very broad and general rules to encourage the development of equipment and services. Avant-Garde argues that the spectrum to be made available for licensing should not be artificially constrained in the manner in which it is licensed or used. It requests that we reexamine our proposal to use the LMDS service rules to govern the predominant uses of the bands above 40 GHz in light of the anticipated uses and changed circumstances reflected in the filings. It questions whether the licensing scheme we proposed remains appropriate or whether some other methodology would better meet the needs of commercial service providers.

42. Sky Station argues that its stratospheric-based platforms would deliver point-to-multipoint services that can be licensed under the terrestrial, flexible rules we proposed to adopt for 47 GHz. It argues that its technology is uniquely suited to take advantage of the characteristics of the 47 GHz band and will promote the maximum use of that spectrum. Sky Station argues that the service cannot share co-channel frequencies with other services and requests we dedicate the segments of the band at 47.2–47.5 GHz and 47.9–48.2 GHz to its exclusive use and modify the Table of Frequency Allocations accordingly.

43. Sky Station supports the use of area-wide licensing and requests that we adopt large service areas that are super-regional in size. Sky Station opposes our proposal to adopt a single pair of contiguous license blocks, and argues that the spectrum should be divided into five pairs of 100 MHz each that are separated by 500 MHz to ensure flexibility. P-Com, Inc. argues that we should be careful to divide the spectrum to reflect the proposed use, and that paired blocks with maximum frequency separation are required for fixed service, two-way links such as point-to-multipoint operations.

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

44. The determinations we adopt to open 47 GHz for commercial use under a flexible licensing framework authorizing any service under the Table of Frequency Allocations on an area-wide basis would apply to all entities that apply for a license, including small entities.

45. The definition that SBA has developed that approximates most closely the services that may be provided by the licensees would be the definition applicable to radiotelephone companies. The definition of radiotelephone companies provides that a small entity is a radiotelephone company employing 1,500 or fewer persons.<sup>5</sup> The size data provided by SBA do not enable us to make an accurate estimate of the number of telecommunications providers which are small entities because it combines all radiotelephone companies with 500 or more employees.<sup>6</sup> We therefore use the 1992 Census of Transportation,

<sup>5</sup> 13 CFR 121.201, Standard Industrial Classification (SIC) 4812.

<sup>6</sup> U.S. Small Business Administration 1992 Economic Census Employment Report, Bureau of the Census, U.S. Department of Commerce, Table 3, SIC 4812 (radiotelephone communications industry data adopted by the SBA Office of Advocacy).

Communications, and Utilities, conducted by the Bureau of the Census, which is the most recent information available. This document shows that only 12 radiotelephone firms out of a total of 1,178 such firms which operated during 1992 had 1,000 or more employees.<sup>7</sup> Therefore, the majority of entities to provide telecommunications services in the 47 GHz band may be small businesses under SBA's definition.

46. The Commission has not developed a definition of small entities applicable to licensees in the 47 GHz band, because the band is being opened for the first time for commercial, licensed use in this *Second R&O* and has not been subject to licensing. The RFA amendments were not in effect when the *First NPRM* was released, and no data has been received establishing the number of small businesses to be associated with services in the band. Although we proposed to auction the spectrum for assignment, we did not request information regarding the potential number of small businesses interested in obtaining licenses. We do not adopt in the *Second R&O* our proposal to auction the spectrum, and instead will seek additional comment in a future Notice of Proposed Rulemaking in which we will also propose the service rules to implement services in the 47 GHz band. Thus, we are unable to estimate the potential number of entities that may apply for a license that may be small businesses.

#### *IV. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements*

47. We do not adopt any rules that entail reporting, recordkeeping, and third party consultation. Until we adopt service rules to govern the licensing, operating, and technical aspects of our decision, there are no requirements to impose on any entities.

#### *V. Significant Alternatives to Proposed Rules Which Minimize Significant Economic Impact on Small Entities and Accomplish Stated Objectives*

48. We agree with many small entities that opening up the 47 GHz band for commercial uses is timely and feasible, and would be in the public interest. Small entities, such as Avant-Garde and MACOM, see many future market opportunities and have developed equipment, or expect to readily modify

equipment, to meet consumer demand for the kinds of services to be provided. Sky Station has developed an innovative technology that uses platforms fixed in the stratosphere to deliver services in an efficient and effective manner. They and other small or new entities will benefit from the demand for commercial applications of their technologies.

49. We agree with commenters, such as Avant-Garde and Metricom, to adopt the flexible licensing framework we proposed that authorizes any service allowed under the Table of Frequency Allocations. We find that a broadly defined service allocation assures that the 47 GHz band will be used to the greatest benefit of the public by giving licensees, including small entities, the flexibility to meet demands. We also adopt our proposal to prescribe service rules for the licensing of the band based on what the dominant use is likely to be, as demonstrated by the comments. We agree with Avant-Garde to reexamine the likely uses and find that, while the predominant uses are the fixed point-to-multipoint uses we predicted, they would not be based on LMDS-type technology but rather on millimeter wave technology based on stratospheric platforms for delivery of service as proposed for the 47 GHz band by Sky Station. We deny Sky Station's request to modify the Table of Frequency Allocations to protect its service, and find that its need for protection from interference is properly addressed in the future proceeding in which we will establish the technical and operational service rules to govern the authorized services in the band.

50. We decide to adopt our proposal to license on the basis of geographic areas in order to enable the broadest range of uses for the band and ensure efficient and effective operations. Area-based licensing provides greater operational flexibility and ease of administration that is particularly beneficial to small entities. We defer questions about the appropriate size of the area as raised by Sky Station to our consideration of service rules in a future proceeding.

51. Because of the change in the potential predominant use for the band, we do not adopt our proposed channelization plan and instead revise the subdivision of the spectrum to reflect the proposed uses, as P-Com requests. We agree with Sky Station to divide the bands into five pairs of 100 megahertz channels, with each pair separated by 500 megahertz. This provides adequate bandwidth to accommodate the predominant uses.

#### *VI. Report to Congress*

52. We will submit a copy of this Final Regulatory Flexibility Analysis, along with the Order, in a report to Congress pursuant to 5 U.S.C. 801(a)(1)(A).

53. It is ordered that the actions of the Commission herein are taken pursuant to sections 4(i), 257, 303(r), and 309(j) of the Communications Act of 1934, 47 U.S.C. 154(i), 257, 303(r), 309(j).

54. It is further ordered that these actions shall take effect October 14, 1997.

55. It is further ordered that the Request and Petition and Application filed by Sky Station, the Further Comments filed by Sky Station, and the comments and reply comments filed in response thereto, are accepted in this record as late-filed comments.

56. It is further ordered that the spectrum 47.2–48.2 GHz (47 GHz band) is designated for licensed, commercial use on the basis of area-wide licenses in accordance with the terms of this *Second R&O*.

57. It is further ordered that a division of the spectrum for license blocks is adopted for the 47 GHz band that divides the band into five spectrum blocks of 200 megahertz each for licensing, with each block consisting of a pair of 100 megahertz channels separated by 500 megahertz.

#### **List of Subjects**

##### *47 CFR Part 2*

Communications equipment.

##### *47 CFR Part 15*

Communications equipment, Radio.

##### *47 CFR Part 97*

Communications equipment, Radio.

Federal Communications Commission.

**William F. Caton,**

*Acting Secretary.*

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## **FEDERAL COMMUNICATIONS COMMISSION**

### **47 CFR Parts 32 and 53**

[CC Docket No. 96–150; FCC 96–490]

### **Accounting Safeguards Under the Telecommunications Act of 1996**

**AGENCY:** Federal Communications Commission.

**ACTION:** Final rule; establishment of effective date.

**SUMMARY:** The requirements and regulations established by the

<sup>7</sup> U.S. Bureau of the Census, U.S. Department of Commerce, 1992 Census of Transportation, Communications, and Utilities, UC92–S–1, Subject Series, Establishment and Firm Size, Table 5, Employment Size of Firms: 1992, SIC 4812 (issued May 1995).