

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of)	
)	
Amendment to Parts 2, 15, and 97 of the)	
Commission's Rules To Permit Use of)	ET Docket No. 94-124
Radio Frequencies Above 40 GHz for)	RM-8308
New Radio Applications)	
)	
International Harmonization of Frequency)	
Bands Above 40 GHz)	
)	
Petition of Sky Station International, Inc.,)	
For Amendment of the Commission's)	
Rules To Establish Requirements for a)	RM-8784
Global Stratospheric Telecommunications)	
Service in the 47.2-47.5 GHz and)	
47.9-48.2 GHz Frequency Bands)	
)	
Amendment to Part 27 of the)	
Commission's Rules To Revise Rules)	
for Services in the 2.3 GHz Band and)	WT Docket No. 98-136 ✓
To Include Licensing of Services)	
In the 47 GHz Band)	

**MEMORANDUM OPINION AND ORDER
ON RECONSIDERATION
AND
NOTICE OF PROPOSED RULEMAKING**

Adopted: June 30, 1998

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Comment Date: September 21, 1998

Reply Comment Date: October 13, 1998

Comments and Reply Comments to be filed in WT Docket No. 98-136

By the Commission:

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I. INTRODUCTION

1. This decision furthers the Commission's goal of promoting competition by providing spectrum for commercial uses that can make available new and innovative communications services to the public. The action we take today includes a Memorandum Opinion and Order on Reconsideration (Order), and a Notice of Proposed Rulemaking (Notice). In the Order, we deny reconsideration of the *Second Report and Order*, in which the Commission opened for commercial use on a licensed basis the 47.2-48.2 GHz band (47 GHz band), adopted channelization for that band, and determined generally that the band would be licensed on a wide-area basis.¹ In the Notice, we propose service, licensing, and

¹ Amendment of Parts 2 and 15 of the Commission's Rules To Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications, ET Docket No. 94-124, RM-8308, Second Report and Order, 12 FCC Rcd 10571 (1997) (*Second Report and Order*). The Notice of Proposed Rulemaking initiating the proceeding is at 9 FCC Rcd 7078 (1994) (*Millimeter Wave Notice*).

competitive bidding rules for the 47 GHz band.² We also propose to amend the Part 27 Rules to include rules for the 47 GHz band, and to codify and conform certain rules for the 2.3 GHz band to provide for consistent regulation of Part 27 services.

2. As explained in the Notice, we seek to encourage new and innovative services and technologies in the 47 GHz band. Our decisions and proposals recognize the anticipated use of this band for fixed, point-to-multipoint services delivered by platforms located in the stratosphere,³ but also permit other uses. These decisions and proposals accord with actions taken by the World Radiocommunication Conference (WRC-97), which limited acceptance of notices to the Radiocommunication Bureau for the 47.2-47.5 GHz and 47.9-48.2 GHz bands to stratospheric platform uses and Broadcast-Satellite Service (BSS) feeder links.⁴

A. Memorandum Opinion and Order on Reconsideration

3. Four potential providers of satellite systems or services jointly filed a Petition for Reconsideration of the *Second Report and Order*.⁵ They contend that the Commission's finding that stratospheric services are likely to be the dominant use of this band is unsupported and irrational, and that the Commission's initial licensing framework decisions are consequently untenable. Petitioners also assert that the Commission failed to provide adequate notice that the proceeding might make such determinations respecting area-based licensing and channelization, and that such determinations should be made in the separate

² In order to promote administrative efficiency regarding the management of the various dockets involved in this proceeding, we are creating a new docket for the 47 GHz proceeding. Comments and reply comments concerning the Notice should be filed only in this new docket.

³ The contemplated stratospheric platform operations constitute fixed services, and are referred to as such herein, although the initial proponent, Sky Station International, Inc., has indicated that it expects to provide mobile services as well. See *Second Report and Order*, 12 FCC Rcd at 10591-92 (para. 55).

The platforms deployed by Sky Station as part of its proposed Global Stratospheric Telecommunications Service (GSTS) would be supported by balloons at an altitude of 18 miles above 250 major metropolitan areas, providing nearly universal global coverage. Using these platforms in conjunction with control facilities on the ground and small personal communications devices, the GSTS system would provide broadband Personal Communications Service (PCS) with video and Internet access capability, interconnected with the public switched telephone network. *Id.*, 12 FCC Rcd at 10580-81 (paras. 23-25).

⁴ See para. 10, *infra*.

⁵ See para. 17, *infra*.

rulemaking proceeding considering allocations in the V-band from 36 to 51 GHz.⁶ The Order denies this petition and affirms the decisions made in the *Second Report and Order*.

4. One of the principal contentions made by the petitioners is that service and licensing rules for the 47 GHz band should be deferred until the broader V-band allocation proceeding is resolved. We have decided, however, not to take such an approach, based upon our conclusion that such a deferral would delay use of these frequencies for service to the public. In the *V-Band Notice*, which was adopted prior to the *Second Report and Order* and which proposes a broad approach to allocations in the 36-51 GHz bands, the Commission explicitly contemplated that specific rulemakings, such as the 47 GHz proceeding, would move toward resolution without awaiting Commission action regarding the broader allocation proposals.⁷ To the extent that petitioners seek to defer implementation of service and licensing rules in the 47 GHz band pending resolution of the V-band proceeding, which may designate other frequency bands for satellite use, the Commission has already announced a determination of its approach to the priorities of spectrum development, and we are not persuaded by any new evidence that we should take a different approach.

5. The petitioners also assert that the *Second Report and Order* fails to justify the Commission's determination that stratospheric platforms are the likely dominant use of the 47 GHz band, and that the wide-area licensing and channelization decisions effectively preclude satellite use of the 47 GHz band without sufficient notice. As described below, however, we conclude that there is record support for the Commission's dominant use determination,⁸ and the Commission's determination respecting dominant use does not preclude satellite use, or any other use in the Table of Allocations, of the 47 GHz band. Petitioners have offered no arguments that persuade us to revisit either the Commission's initial decision respecting the ordering and scope of our rulemaking proceedings, or the specific licensing and channelization decisions in the *Second Report and Order*.

B. Notice of Proposed Rulemaking

6. The second element of the action we take today, the Notice, seeks comment on service, licensing, and competitive bidding rules for the services to be provided in the 47 GHz band. We seek comment in the Notice on specific service rules for the 47 GHz band opened

⁶ Allocation and Designation of Spectrum for Fixed Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.5-50.2 GHz Frequency Bands; Allocation of Spectrum To Upgrade Fixed and Mobile Allocations in the 40.5-42.5 GHz Frequency Band, Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0-38.0 GHz and 40.0-40.5 GHz Frequency Bands for Government Operations, IB Docket No. 97-95, Notice of Proposed Rulemaking, 12 FCC Rcd 10130 (1997) (*V-Band Notice*).

⁷ *Id.* at 10138.

⁸ See para. 25, *infra*.

to commercial use in the *Second Report and Order*.⁹ In later proceedings, we will consider service rules for the other segments of the 36-51 GHz band. Consistent with the initial licensing area and channelization determinations contained in the *Second Report and Order*, we seek to develop service rules for the 47 GHz band that will accommodate a range of new and innovative services and technologies to the maximum extent consistent with our findings in the *Second Report and Order* regarding the anticipated use of stratospheric platforms.

7. As explained below, the initial "dominant use" determination in the *Second Report and Order* was not intended, nor does it have the effect, of precluding other technologies or services. This determination represents not an initially prescriptive approach to limiting or tailoring use of the band, but a recognition that when technical constraints make a completely flexible approach technically or economically inefficient or otherwise unworkable, the Commission should have a clearly declared, consistent premise from which to approach and resolve such issues. Determining the extent to which a full range of service and technology alternatives may be accommodated in the 47 GHz band, identifying aspects of our service rules for which unstructured flexibility is not practicable, and developing the least restrictive approaches to such conflicts, are primary purposes of the next phase of this proceeding.

8. We propose to include the service and licensing rules for services to be provided in the 47 GHz band in Part 27 of our Rules. This recognizes the flexibility in existing Part 27 requirements, which we seek to adopt in the specific rules for the 47 GHz band, and also reflects the breadth of services covered by Part 27, which embraces the full range of services allocated to the 47 GHz band by international and domestic allocation tables. We also propose some more general changes to the Part 27 Rules that would also apply to the existing service in the 2.3 GHz band.¹⁰ These rule amendments are intended to codify decisions previously adopted for the 2.3 GHz band, and to ensure consistent treatment of all bands regulated under Part 27 of the Commission's Rules.

9. The technical aspects of the varied technologies that may be employed in the 47 GHz band, their economic characteristics, and the auction process together will determine the initial mix of services and technologies offered in this band. We seek to avoid any regulatory constraints that might limit the flexibility of these arrangements, or delay adoption of subsequent innovations in the 47 GHz band. At the same time, we recognize that development of the 47 GHz band faces several potential tensions. For example, the entire 47

⁹ In the *First Report and Order* in this proceeding, the Commission decided, *inter alia*, to make available the 46.7-46.9 GHz band for vehicular radar systems, rather than the 47.2-47.4 GHz band as proposed in the *Millimeter Wave Notice*. See Amendment of Parts 2 and 15 of the Commission's Rules To Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications, ET Docket No. 94-124, RM-8308, First Report and Order, 11 FCC Rcd 4481 (1995) (*First Report and Order*). Thus, the 47.2-47.4 GHz band was available for licensed, commercial use.

¹⁰ See paras. 68, 70, 90, 98, 111, 113, and 129, *infra*.

GHz band also continues to be allocated for Government use; this presents complications for commercial licensees with respect to technical capability, system planning, and competitive bidding for licenses. The Notice thus seeks comment on several different approaches to reconciling commercial development of this spectrum with Government uses.

10. We also note that, following the Commission's adoption of the *Second Report and Order*, WRC-97 adopted resolutions that limit acceptance of notices to the Radiocommunication Bureau¹¹ for the 47.2-47.5 GHz and 47.9-48.2 GHz portions of the 47 GHz band¹² to stratospheric platform uses and BSS feeder links, pending review at WRC-99. While these actions do not preclude authorization of different uses of these portions of the 47 GHz band, such uses would not be accorded protection from interference nor could they cause any interference to allocated services.¹³ Thus, to the extent that satellite entities continue to advocate the use of the 47 GHz band for satellite services other than those specified in the WRC-97 actions, the Notice asks satellite providers to describe the circumstances that support such uses, and to address the implications of such departures.¹⁴

11. Finally, we recognize that the prospect of different service and technology approaches for use of 47 GHz spectrum requires that our service area, channelization, and competitive bidding rules should not unnecessarily inhibit the range of choices considered by service providers. The Notice thus seeks comment on approaches to sharing spectrum by different technologies, recognizing that international studies of sharing are pending.¹⁵ It also seeks comment on national or regional approaches to bidding for 47 GHz spectrum.

¹¹ The Radiocommunication Bureau, as an entity of the International Telecommunication Union (ITU), has the responsibility to "process information received from administrations in application of the relevant provisions of the Radio Regulations . . ." and to "effect an orderly recording and registration of frequency assignments . . ." See ITU Convention (Geneva, 1992).

¹² WRC-97 provided for operation of stratospheric platform stations within the 47.2-47.5 GHz and 47.9-48.2 GHz bands. Footnote S5.552A to the International Table of Frequency Allocations; Resolution 52 (WRC-97); Resolution 122 (WRC-97).

¹³ The International Radio Regulations provide in No. 342:

Administrations of the members shall not assign to a station any frequency in derogation of either the Table of Frequency Allocations given in this Chapter or the other provisions of these Regulations, except on the express condition that harmful interference shall not be caused to services carried on by stations operating in accordance with the provisions of the Convention and of these Regulations.

Radio Regulations, Dec. 6, 1979, Annex, Art. 6, § 4, S. Treaty Doc. No. 21, 97th Cong., 1st Sess. (1981), ratified, 97th Cong., 2d Sess., 128 CONG. REC. 33,138 (1982).

¹⁴ See para. 57, *infra*.

¹⁵ See Resolution 122, Final Acts, WRC-97, "Use of the Bands 47.2-47.5 GHz and 47.9-48.2 GHz by High Altitude Platform Stations in the Fixed Service and by Other Services."

II. BACKGROUND

12. The *Millimeter Wave Notice* that initiated this proceeding originally proposed to make available a total of 18 gigahertz of spectrum in the frequency range between 40.5 GHz and 153 GHz, on a shared basis with Government users, for the commercial development of "short-range wireless radio systems."¹⁶ The *Millimeter Wave Notice* recognized that current allocations for the affected bands above 40 GHz permit a wide diversity of terrestrial and satellite services, and, in the absence of information as to which potential services might represent the highest valued use of spectrum, proposed to retain the full range of services allowed under the Table of Frequency Allocations.¹⁷ The *Millimeter Wave Notice*, however, also noted that the specific frequency bands proposed to be made available for commercial use might be altered in the final Rules.¹⁸ While not proposing revisions to the permitted uses listed in the Table of Frequency Allocations, the Commission did propose to determine licensing rules for the several millimeter wave bands on the basis of its best judgment of likely dominant use for the spectrum, rather than by designing such rules on the basis of a prescribed use.¹⁹ The Commission also invited suggestions for rules "that would enhance the use of specific bands for particular services."²⁰

13. Because the Commission believed many uses of the millimeter wave spectrum would be technically and operationally similar to the proposed use of the 28 GHz band for Local Multipoint Distribution Service (LMDS), the Commission proposed generally to model its licensing rules after those proposed in the LMDS proceeding.²¹ For example, the 47.4-48.2 GHz band could be divided into two 400 megahertz contiguous blocks.²² The Commission also proposed to use larger service areas, both to accommodate a broader range of uses and

¹⁶ *Millimeter Wave Notice*, 9 FCC Rcd at 7078 (para. 2). The term millimeter wave spectrum is taken from the fact that the wavelength of radio signals on frequencies between 30 GHz and 300 GHz ranges between 1 and 10 millimeters. *Id.* at 7078 (para. 1 n.1).

¹⁷ *Id.* at 7087 (para. 21).

¹⁸ *Id.* at 7084 (para. 12 n.19).

¹⁹ *Id.* at 7087 (para. 22).

²⁰ *Id.* at 7083-84 (para. 12).

²¹ See Rulemaking To Amend Parts 1, 2, 21, and 25 of the Commission's Rules To Redesignate the 27.5-29.5 GHz Frequency Band, To Reallocate the 29.5-30.0 GHz Frequency Band, To Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, Petitions for Reconsideration of the Denial of Applications for Waiver of the Commission's Common Carrier Point-to-Point Microwave Radio Service Rules, CC Docket No. 92-297, Suite 12 Group Petition for Pioneer Preference, PP-22, Notice of Proposed Rulemaking, Order, Tentative Decision, and Order on Reconsideration, 8 FCC Rcd 557 (1993) (*LMDS Rulemaking*).

²² *Millimeter Wave Notice*, 9 FCC Rcd at 7087-88 (paras. 22-23).

technologies than contemplated for LMDS, and to produce economies of scale and reduce coordination requirements to assist the initiation of a variety of new services.²³

14. By its subsequent *V-Band Notice*, the Commission proposed to designate certain frequency bands for fixed-satellite services, and also sought comment on an integrated allocation plan for the use of spectrum in a selected range of "millimeter wave" frequencies, specifically the 36-51.4 GHz band.²⁴ The Commission stated in the *V-Band Notice* that consideration of the proposed allocation plan would not delay resolution of issues in other proceedings considering allocations in specific frequency bands.²⁵ In this proceeding we are therefore moving forward, consistent with the *V-Band Notice*, to develop service rules for the 47 GHz band.²⁶

III. MEMORANDUM OPINION AND ORDER ON RECONSIDERATION

A. Background

15. The *Second Report and Order* adopted the Commission's proposal to license the 47 GHz band for commercial service and to allow licensees to provide any domestically allocated service. When the *Second Report and Order* was adopted by the Commission, the 47 GHz band was allocated both domestically and internationally to the Fixed, Mobile, and Fixed-Satellite Services (FSS), with an international footnote to the FSS allocation urging that the band be used for BSS feeder links.²⁷ The Commission stated that this approach to the 47 GHz band reflected both the priority attached to making spectrum available for commercial development, and the limited information available as to which potential services likely represent the highest valued use of the spectrum.²⁸

16. In the *Second Report and Order*, the Commission made the 47 GHz band available for licensed commercial use on the basis of wide-area licenses, and divided the band

²³ *Id.* at 7088 (para. 24).

²⁴ See *V-Band Notice*. The proposed band plan recognizes that technological developments have sparked new uses for these bands that were not contemplated by the *Millimeter Wave Notice*. *V-Band Notice*, 12 FCC Rcd at 10133 (para. 6).

²⁵ *Id.* at 10138 (para. 16).

²⁶ See paras. 34-36, *infra*.

²⁷ See Section 2.106 of the Commission's Rules, 47 C.F.R. § 2.106. As noted, while these allocations have not been changed, the Radiocommunication Bureau as of November 22, 1997, was directed to accept only notifications for the 47 GHz band that involved stratospheric platform services or BSS feeder links. See para. 10, *supra*.

²⁸ *Second Report and Order*, 12 FCC Rcd at 10576 (para. 10).

into five pairs of 100 megahertz spectrum blocks, with each pair separated by 500 megahertz of spectrum.²⁹ The Commission referred to the 47 GHz band as a "frontier" band and concluded that it was not possible to determine the exact nature of the services that might be offered in the 47 GHz band.³⁰ The Commission emphasized, however, that it wanted to encourage the full range of services allowed under the Allocation Table to develop in the 47 GHz band.³¹ As a result, the Commission recognized that it had to depart from its traditional practice of developing licensing and service rules within the context of certain prescribed uses. Instead, the Commission utilized a dominant use test under which it used its best judgment to determine the likely dominant use of the band.³² The Commission found this use to be "fixed, point to multi-point services delivered through the deployment of fixed platforms located in the stratosphere."³³ While the Commission stated that it would use this dominant use finding to develop licensing and service rules for the 47 GHz band, it deferred deciding more specific service, licensing, and competitive bidding rules to a later stage of this proceeding.

17. A Petition for Reconsideration of the *Second Report and Order* was filed by four entities involved in the provision of satellite systems or services: Hughes Communications, Inc. (Hughes), Motorola Satellite Systems, Inc. (Motorola), TRW, Inc. (TRW), and GE American Communications, Inc. (GE Americom). These parties had filed satellite applications in the 40 GHz band before their reconsideration petition was submitted, or submitted applications shortly thereafter. Petitioners request the Commission to reconsider its finding that the likely dominant use of the 47 GHz band would be fixed, point-to-multipoint services delivered through the deployment of fixed platforms located in the stratosphere. Petitioners argue instead that the likely dominant use of the band will be satellite services.

B. Likely Dominant Use of 47 GHz Spectrum

18. Petitioners first contend that the Commission failed to explain the basis for its finding that stratospheric platforms are the likely dominant use of 47 GHz spectrum, or to address evidence in the record that weighs against that finding, so that the *Second Report and Order* is unsupported and irrational in this respect.³⁴ Petitioners state that satellite firms have

²⁹ The channel pairs thus are: (1) 47.2-47.3 and 47.7-47.8 GHz; (2) 47.3-47.4 and 47.8-47.9 GHz; (3) 47.4-47.5 and 47.9-48.0 GHz; (4) 47.5-47.6 and 48.0-48.1 GHz; and (5) 47.6-47.7 and 48.1-48.2 GHz.

³⁰ *Second Report and Order*, 12 FCC Rcd at 10593 (para. 61).

³¹ *Id.* at 10594 (para. 64).

³² *Id.* 10596 (para. 68).

³³ *Id.* at 10573 (para. 2).

³⁴ Petition for Reconsideration (Sept. 11, 1997) at 2-3, 5-6. The *Second Report and Order* was adopted May 2, 1997, three days prior to the due date for initial comments in the V-band proceeding, but was not released until July 21, 1997. Petitioners contend that, because the V-band pleading cycle closed June 3, 1997, the

emphasized the need to maintain access to the 47 GHz band for satellite systems, both in the 47 GHz proceeding and in their filings in response to the *V-Band Notice*, and have supported these contentions by filing several complete applications for satellite systems requesting the use of the 47 GHz band.³⁵

19. The petitioners specifically contend that the Commission has failed to consider, much less explain, why Motorola's M-Star application, filed in September 1996, is not a better indicator of likely dominant use of the 47 GHz band than the Sky Station proposal, filed in March 1996.³⁶ Petitioners argue that the Commission considered the Sky Station application on its merits well after the March 1, 1995 close of the 47 GHz pleading cycle, but the same consideration was not given to the Motorola M-Star application.³⁷ In sum, petitioners assert, the several satellite applications and comments by satellite entities in the V-band proceeding preclude a rational determination that a single, "illustrative" application by Sky Station, which provoked no competing application, establishes the technology to be employed by Sky Station as the likely dominant use of the 47 GHz band segment.³⁸

20. Sky Station responds that the majority of commenters, including public interest parties, supported designation of spectrum for stratospheric platforms to improve communications within and between developing countries.³⁹ The only public interest comments, Sky Station asserts, supported designation for the stratospheric platform service, and predicted large-scale use of the service. Applications of the type filed by the satellite carriers, Sky Station contends, are not a measure of real spectrum demand.⁴⁰ The several pending satellite applications, Sky Station asserts, are explained by the opening of a filing window and cutoff date; similar responses would follow opening of a filing window for stratospheric service.⁴¹ Sky Station states that its proposal would occupy approximately 7 percent of the V-band, compared to the satellite entities' established occupancy of approximately 80 percent of the commercially available bandwidth over the 36-51.4 GHz range, so there is little reason to fear adverse consequences for the satellite industry.⁴²

Commission had ample time to consider pleadings filed in response to the *V-Band Notice*.

³⁵ *Id.* at 6-7.

³⁶ *Id.* at 8.

³⁷ *Id.*

³⁸ *Id.* at 9-10.

³⁹ Sky Station Opposition (Oct. 17, 1997) at 3.

⁴⁰ *Id.* at 4, 13-14 n.22.

⁴¹ *Id.* at 9-10. Filing windows for terrestrial fixed (and mobile) services are generally not opened prior to final adoption of relevant service rules. See para. 26, *infra*.

⁴² *Id.* at 3-4.

21. Sky Station notes that courts accord great deference to agencies' exercise of discretion when predictions are involved,⁴³ and that the Commission's conclusion regarding expected use of the band reflected record evidence demonstrating concrete advantages of stratospheric platforms, including low-cost global services resulting from efficient spectrum use; high bandwidth for fixed services; and smaller initial investment and modular technology.⁴⁴ Sky Station quotes from several comments supporting stratospheric platform technology as preferable on the basis of cost and availability to satellite offerings, and as desirable for a variety of services, including news gathering, search and rescue missions, and weather prediction.⁴⁵ Sky Station also notes that the then pending joint proposal to WRC-97 on behalf of nine nations in the Americas sought designation of 47 GHz bands within the fixed service so that systems could use a common band around the globe, and states that support for global stratospheric service has been sent to the ITU from the Conference of European Postal and Telecommunications Administrations (CEPT), the Inter-American Telecommunications Conference (CITEL), and Asian Pacific Telecommunications (APT).⁴⁶

22. With regard to the specific dominant use decision at issue, the record supports the Commission's earlier determination that stratospheric platforms are the likely dominant use of the 47 GHz spectrum band. The *Second Report and Order* references numerous supporting statements submitted in response to the Sky Station Request and Petition. The assertedly lower capital requirements, compared to satellite systems, and the flexibility to sequentially activate stratospheric platforms as demand and revenue warrant, present clear, if not yet demonstrated, benefits for a variety of applications. These expected benefits have engendered substantial interest from potential users in the United States and abroad. The statements noted in the *Second Report and Order* were necessarily anticipatory, and do not purport to address or resolve the range of outstanding implementation concerns, but this is inherent in any evolving technology.⁴⁷

23. The broad expressions of domestic and international interest in developing the stratospheric platform technology have since been substantially confirmed by subsequent actions taken at WRC-97, which designated a portion of the 47 GHz band for stratospheric platform and BSS feeder link use, and limited frequency registration filings with the

⁴³ *Id.* at 9.

⁴⁴ *Id.* at 4-5, 7-8.

⁴⁵ *Id.* at 6-7, citing comments from African Development Bank, National Institute for Urban Search and Rescue, and Mercy Medical Airlift.

⁴⁶ *Id.*

⁴⁷ As explained at paras. 42-43, *infra*, these uncertainties support an approach to service rules that will allow as much flexibility as possible to accommodate alternative approaches, including satellite services.

Radiocommunication Bureau in that portion to those uses.⁴⁸ This international action, explicitly preferring stratospheric platform technology for specified segments of the 47 GHz frequency band by precluding notices to the Radiocommunication Bureau involving other technologies, reinforces the Commission's prior determination that stratospheric platforms are the likely dominant use of the 47 GHz frequency band.

24. Second, despite petitioners' contentions, evidence of support for satellite services was considered in the *Second Report and Order*.⁴⁹ The Commission concluded that "all identified uses of the 47 GHz band may be valuable and should be permitted."⁵⁰ Indeed, the *Second Report and Order* cited Motorola's M-Star application as a new potential delivery system for point-to-multipoint services.⁵¹ The Commission reasoned that it should not foreclose new and innovative services and technologies permitted by the Allocation Table. Thus, the Commission did take into account claims by satellite carriers regarding potential satellite services in the band, and the Commission also stressed the importance of promoting the use of new and innovative technologies in developing the band. Notwithstanding these considerations, however, the Commission found sufficient basis to conclude that stratospheric platforms were the likely dominant use for the band, based in part on the specific uses of the band delineated by Sky Station in the record.⁵²

25. This determination (and the related service area and channelization decisions) does not preclude the application of satellite technology. The dominant use determination did, however, establish a reasoned basis for subsequent resolution, in the proceeding to develop service rules, of any issues that present a conflict between accommodating multiple technologies or system configurations. In determining the likely dominant use, the Commission noted that several commenters had stated that they did not seek to use the spectrum now for satellite service, but rather seek to retain access to the band in case of future need.⁵³

26. We find Petitioners' reference to satellite applications as supporting a different conclusion respecting dominant use of the 47 GHz band to be unpersuasive. While petitioners refer to pending satellite applications for the use of frequencies above 40 GHz as

⁴⁸ Consistent with these international developments, we seek comment in the Notice on considerations that might warrant satellite uses of the 47 GHz band beyond those contemplated by the International Table of Frequency Allocations. See para. 57, *infra*.

⁴⁹ As explained at para. 33, *infra*, the comments filed in response to the *V-Band Notice* were not considered because they were filed after the adoption of the *Second Report and Order*.

⁵⁰ *Second Report and Order*, 12 FCC Rcd at 10573 (para. 3).

⁵¹ *Id.* at 10596 (para. 70 & n.103).

⁵² *Id.* at 10596 (para. 69).

⁵³ *Id.* at 10592-93 (para. 58), citing comments by Hughes and Motorola.

indicative of likely dominant use, such applications are not necessarily the best indicators of final system configuration or services to be delivered. Such applications are subject to later modification and are commonly refiled to demonstrate compliance with subsequently adopted service rules. This practice reflects the Commission's approach to satellite licensing, which has traditionally allowed satellite entities to submit preliminary applications *before* licensing rules are adopted.⁵⁴ In contrast, the Commission does not generally allow the filing of applications for other services, such as fixed terrestrial services, prior to the adoption of licensing and service rules. For non-satellite services, therefore, the filing of applications presupposes the specification of service rules which are intended to define the parameters essential to expedited implementation of the service, including the review of individual applications, and the determination of system parameters, service costs, and competitive prospects to such a point that applicants are able and can be required to present specific proposals for review.⁵⁵ In these circumstances, we agree with Sky Station that the satellite applications were triggered by the filing cut-off date, and we conclude that the number of satellite applications is not dispositive in determining likely dominant use.

27. In light of these circumstances, the authorities cited by petitioners to emphasize the Commission's obligation to consider relevant evidence, provide a reasoned basis for decision, and articulate a rational connection between the evidence and the decision are fully satisfied by the Commission's analysis.⁵⁶ The Commission in the *Second Report and Order* considered arguments advanced by satellite advocates, and explained why it determined stratospheric platforms to be the likely dominant use of the 47 GHz frequency band.⁵⁷ Moreover, the Commission has here explained repeatedly its intention to preserve the possibility of accommodating other services, while focussing on the encouragement of new and innovative technologies. The Commission's decision on the spectrum newly made

⁵⁴ See, e.g., Public Notice, Applications Accepted for Filing; Cut-Off Established for Additional Space Station Applications and Letters of Intent in the 36-51.4 GHz Frequency Band, Report No. SPB-89, DA 97-1551, July 22, 1997. That Public Notice states that "[a]pplicants filing by the cut-off date will be afforded an opportunity to amend their applications, if necessary, to conform with any requirements and policies that may be adopted subsequently for space stations in these bands."

⁵⁵ Although petitioners refer to the pending satellite applications to support their contentions respecting dominant use, rather than asserting any procedural or substantive rights, we note that it is well established that pendency of applications does not create a right to hearing nor otherwise constrain agency discretion. See *Hispanic Info. & Telecomms. Network v. FCC*, 865 F.2d 1289, 1294-95 (D.C. Cir. 1989); *Schraier v. Hickel*, 419 F.2d 663, 667 (D.C. Cir. 1969).

⁵⁶ Cf. *Motor Vehicle Manufacturers Ass'n v. State Farm Mutual Automobile Ins. Co.*, 463 U.S. 29 (1983) (Rescission by the National Highway Traffic Safety Administration (NHTSA) of a standard requiring automatic passenger restraints was arbitrary and capricious because NHTSA failed to consider alternative technologies, and did not articulate a basis for its failure to require technology alternatives within the ambit of the standard.); *Schurz Communications v. FCC*, 982 F.2d 1043 (7th Cir. 1992) (The Commission's articulation of its grounds for new financial interest and syndication rules governing the broadcast networks was not adequately reasoned.)

⁵⁷ See para. 24, *supra*.

available for commercial use has also been supported by subsequent international action.⁵⁸ The Commission in the *Second Report and Order* has weighed the arguments of satellite providers and, consistent with its clearly stated intentions in separate decisions respecting spectrum allocation more generally, has moved forward with the 47 GHz rulemaking rather than defer potentially innovative service alternatives pending resolution of other proceedings.⁵⁹

28. Further, the Commission has not departed from an established decisional standard, as argued by petitioners.⁶⁰ The Commission has not announced "binding precedent" in the *Second Report and Order* — e.g., a determination of how particular 47 GHz service rules will (or might) accommodate or constrain specific technical approaches — by either rulemaking or by a general statement of policy. The Commission's initial determination of likely dominant use does not preclude any other services consistent with the domestic spectrum allocations for this band. Rather, it establishes a point of departure for the next regulatory phase — the development of licensing and service rules for the range of technologies and services contemplated in this frequency band. The determination of likely dominant use is not a determination of exclusive or preclusive use, but recognizes that the subsequent process of specifying technical parameters may identify conflicts between uses such that setting operational standards effectively, and necessarily, results in according priority to a specific use. The extent to which such conflicts may result in practical constraints on particular uses of the band is yet to be determined. Neither the record in the *Second Report and Order*, nor the rationale for the Commission's decision, purports to identify and address the range of potential technical conflicts that may arise between alternative point-to-multipoint technologies. The *Second Report and Order* bases its determinations on conclusions rationally drawn from the record and, as described, coheres procedurally with the Commission's proposed approach to other frequency bands in the *V-Band Notice*.

29. If the subsequent determination of licensing and service rules identifies irreconcilable technical conflicts between specific technologies, the resolution of such conflicts will be based on the record in the next stage of this proceeding. Moreover, the proposed designations in the *V-Band Notice* are there made explicitly subject to pending rulemaking proceedings for specific frequency bands, including the 47 GHz band.

30. Given the evidence with respect to interest in stratospheric platforms, as well as the Commission's consideration of other uses and the Commission's decision to permit all uses

⁵⁸ *Id.*

⁵⁹ See para. 25, *supra*.

⁶⁰ Cf. *Bechtel v. FCC*, 957 F.2d 873 (D.C. Cir. 1992) (the Commission was required to directly confront a competing applicant's contention that intervening regulatory changes had rendered the Commission's continuing use of a standard adopted in 1965 arbitrary and capricious); *Action for Children's Television v. FCC*, 821 F.2d 741 (D.C. Cir. 1987) (the Commission's withdrawal of commercialization guidelines for children's television lacked a reasoned basis).

in the Allocations Table, we affirm the dominant use determination in the *Second Report and Order*, and deny the Petition for Reconsideration in that respect.

C. V-Band Rulemaking Proceeding

31. Petitioners contend that the dominant use determination for the 47 GHz band should not have been made separately from resolution of the Commission's pending proposals in the *V-Band Notice* for service designations in the 36-51 GHz frequency bands. From the outset, however, the Commission made clear that these broader proposals should not delay resolution of pending proceedings for specific bands. Petitioners' argument that individual bands cannot be considered apart from the *V-Band Notice* proposals runs counter to established agency discretion to order its own proceedings, and the need for finality in such decisions.

32. Petitioners assert that the *Second Report and Order* is inextricably intertwined with the proposed V-band designation plan, and they state that the tentative designation of the 47 GHz band for wireless services in the *V-Band Notice* generated significant contention. Petitioners assert that the record in the V-band proceeding wholly undercuts the basis for the Commission's determination of likely dominant use in the *Second Report and Order*.⁶¹ Nor, according to petitioners, did the Commission discuss the several comments of satellite companies submitted in response to the *V-Band Notice*, although the Commission relied on aspects of the *V-Band Notice* to support its conclusions in the *Second Report and Order*.⁶²

33. The *Second Report and Order* was adopted by the Commission before the record closed in the V-band rulemaking proceeding. Therefore, the Commission could not consider the V-band record in its *Second Report and Order*. To incorporate that proceeding's record would have required the Commission first to reconsider the *Second Report and Order* on its own motion, and then to expand the scope of its dominant use determination to include alternatives discussed in a different proceeding. This would not only set aside the Commission's explicitly declared approach to ordering these proceedings, but would presumably — in the view of satellite advocates — entail consideration of other frequency bands to be used for satellite service in conjunction with the 47 GHz band. We conclude that the petitioners are simply wrong to the extent they maintain that we were under some procedural obligation to proceed in the manner they advocate.

34. Aside from these procedural requirements, the argument advanced by petitioners encounters another problem: the *V-Band Notice* itself declared the Commission's intent to resolve the pending 47 GHz frequency band proceeding without waiting for final resolution of

⁶¹ Petition for Reconsideration at 3.

⁶² *Id.* at 8-9.

the overall V-band allocation plan. The *V-Band Notice*, released several weeks before adoption of the *Second Report and Order*, made clear that the Commission anticipated that service rule proceedings for specific frequency bands would be resolved independently. The Commission concluded that “[t]o defer action on other rulemakings, pending the outcome of this proceeding, would cause unnecessary delay in licensing commercial operations throughout the 36-51.4 GHz band.”⁶³ During the period after release of the *V-Band Plan Notice* and before release of the *Second Report and Order*, when preparing comments for the V-band proceeding, petitioners were on notice that action in the 47 GHz band proceeding was not dependent on proposals or comments in the *V-Band Notice*.

35. Petitioners also assert that the Commission's action in the *Second Report and Order* is no better than its action affecting payphone service providers, which was remanded as arbitrary and capricious in *Illinois Public*.⁶⁴ The court in *Illinois Public*, however, stated that the Commission had failed to respond to or even acknowledge data showing dissimilar costs for different types of payphone calls.⁶⁵ In the *Second Report and Order*, in contrast, the Commission considered the arguments of satellite providers and explained, consistent with its broader approach to designation of spectrum, why those arguments are unpersuasive in this instance. The subsequent international actions by WRC-97 reinforce our view that, while anticipating the dominant use of spectrum newly made available for commercial use requires judgment, the Commission's decision considered all viewpoints expressed in the record of this proceeding and cannot be viewed as arbitrary and capricious.

36. Petitioners' contentions that the *Second Report and Order* effectively precludes satellite use of the 47 GHz frequency band, and that the V-band proceeding should consider 47 GHz issues as part of its broader inquiry, thus amount to a call for a different approach than the Commission has explicitly adopted. The *V-Band Notice* disavowed any intent to defer this proceeding. The Commission decided it was not necessary to delay action on the 47 GHz band in order to consider its potential uses in conjunction with other bands under review in the broader proceeding. The relative weight to be accorded innovations in service, domestic competition between providers, and global (“seamless”) systems in this individual instance remains to be determined in the licensing rules, and these issues are considered in the Notice we adopt today. We therefore deny reconsideration of the *Second Report and Order* to the extent it is sought on the basis of that decision's relation to the V-band proceeding.

⁶³ *V-Band Notice*, 12 FCC Rcd at 10138 (para. 16).

⁶⁴ *Illinois Public Telecom. Ass'n v. FCC*, 117 F.3d 555 (D.C. Cir. 1997) (*Illinois Public*).

⁶⁵ *Id.* at 564.

D. Wide-Area Licensing and Channelization

37. Petitioners assert that the adoption of wide-area licensing and paired 100 megahertz license blocks by the Commission in the *Second Report and Order* is premised on the Commission's finding that stratospheric platforms are the likely dominant use of the 47 GHz band, and, as that initial premise is not supported by the record, the wide-area licensing and channelization determinations based on it are unsustainable.⁶⁶ Petitioners construe specific language in the *Second Report and Order* as suggesting, "despite other assurances that all allocated services will be permitted to utilize the 47 GHz band," that the effect of the *Second Report and Order* will be to accommodate stratospheric platforms and other terrestrial services, but not satellite systems.⁶⁷ Petitioners contend that the Commission effectively accommodated Sky Station and other terrestrial services, but at the same time conceded that deployment of Sky Station platforms will "likely have a preclusive effect on satellite use of the same frequency band," despite the Commission's conclusion that the band remains allocated for satellite use.⁶⁸ Thus, petitioners contend, the Commission must reconsider aspects of the licensing framework for the 47 GHz band adopted by the *Second Report and Order*.

38. Sky Station responds that the wide-area licensing plan originated in the *Millimeter Wave Notice* and enjoys general support. The Commission has developed substantial experience in defining licensing areas for other wireless services and is entitled to substantial deference, says Sky Station, and paired 100 megahertz spectrum blocks allow for intensive spectrum use and enable a larger number of licensees.⁶⁹

39. We do not find the petitioners' arguments persuasive. As an initial matter, the petition does not indicate how the wide-area licensing determined by the *Second Report and Order*, or the 100 megahertz channelization decision, foreclose satellite use. Indeed, the wide-area licensing approach comports with satellite systems' reliance on ubiquitous coverage of large areas. The decision to subdivide this spectrum into 100 megahertz channel pairs, in contrast to the two 400 megahertz contiguous blocks proposed in the *Millimeter Wave Notice*, does not inherently preclude satellite services. Access to 400, 800, or even the entire 1,000 megahertz of this band, and its use for satellite services, would turn in part on the technical difficulty of a specific approach to channelization as well as the outcome of the auction process.

⁶⁶ Petition for Reconsideration at 10.

⁶⁷ *Id.*, citing *Second Report and Order*, 12 FCC Rcd at 10585 (para. 37) ("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").

⁶⁸ *Id.* at 10.

⁶⁹ Sky Station Opposition at 14-15.

40. Satellite use of this band, however, is initially dependent on the Commission's making other spectrum available, outside the 47 GHz band, for pairing purposes.⁷⁰ All satellite proposals before the Commission that entail the use of the 47 GHz band are premised on the availability of a second band rather than on pairing within the 47 GHz band itself. The channelization adopted is thus not inconsistent with the needs of satellite technology, and with existing satellite services implemented in other frequency bands.⁷¹ The petitioners do not present any arguments or evidence that would cause us to reassess the Commission's prior decision.

41. Should the Commission decide in a separate proceeding to make another frequency band available for satellite service, that band could be paired with the 47 GHz band to the extent that licensing and service rules proposed for the 47 GHz band are adopted in a form that accommodates satellite services, and so enable satellite interests to pursue their various plans. If, on the other hand, the Commission decides not to make another frequency band available, then satellite proposals that would require both that band and the 47 GHz band for implementation may be precluded. In that instance, however, satellite use of the 47 GHz band would be precluded by the absence of a frequency band suitable for pairing with 47 GHz — not by particular licensing and service rules for the 47 GHz band that have not yet been adopted. Thus, we find no basis for the argument made by petitioners that the Commission's decisions regarding service areas and channelization by themselves will foreclose satellite operations in the 47 GHz band.

42. Rather than assert or describe actual preclusive effects from these determinations in the *Second Report and Order*, petitioners in effect challenge the licensing and channelization decisions as unsustainable because they are "premised entirely" on the dominant use determination made by the Commission. There is no basis for concluding, however, at this juncture of the 47 GHz rulemaking proceeding, that the Commission's dominant use determination will prevent satellite operations in the 47 GHz band. The significance of the Commission's dominant use finding is that it signals the Commission's intention to develop service rules crafted to accommodate point-to-multipoint stratospheric platform technology, *but* the service rules are also intended to be as flexible as possible, and

⁷⁰ Satellite systems generally employ "paired" up- and down-links, separated by significant bandwidth to minimize interference.

⁷¹ Existing satellite services in other bands comparable to the 47 GHz band generally require several hundred megahertz for each of the paired channels, though some services use non-contiguous channels of less than 100 megahertz. Some system configurations may be supportable in the 47 GHz band by multiple, though non-contiguous, 100 megahertz channels. Thus, satellite operators would need to bid for the 100 megahertz channels in the 47 GHz band to obtain either sufficient spectrum or contiguous channels suitable for aggregation, if a familiar service configuration is their desire. The Notice seeks comment on approaches to the bidding process that reflect this alternative.

to maintain prospects for as wide a range of alternative technologies and services as practicable.

43. In sum, consideration of the service rules we propose today and responsive comments will indicate the extent to which satellite providers can use the 47 GHz band for their services, including their ability or inability to share spectrum with platform or other fixed services in specific licensing areas. In the absence of any explanation how the determinations regarding wide-area licensing and channelization preclude satellite services, and with the remaining licensing and service rules subject to the proceeding initiated by the Notice, we fail to see how the designation of a likely dominant use forecloses or even affects satellite service at this juncture. We therefore deny reconsideration of these determinations.

E. Administrative Procedure Act Notice Requirements

44. Finally, petitioners state that the Commission did not follow the notice requirements of the Administrative Procedure Act (APA) when it supposedly changed the nature of the proposal in the 47 GHz rulemaking. Petitioners assert that the *Second Report and Order* relies on a position first articulated in a late-filed *ex parte* submission to which other parties neither consented nor were provided opportunity to respond, and which raises issues not addressed in the Commission's proposals in the *Millimeter Wave Notice*.⁷² According to petitioners, the late-filed comments submitted by Sky Station in December 1996 caused the Commission to alter the fundamental nature of previous proposals by advocating that the Commission prevent satellite operations in this part of the band. They further contend that the licensing framework consequently adopted in the *Second Report and Order* "will likely preclude satellite systems from sharing the same spectrum."⁷³

45. We find no basis for the claim made by petitioners that the Commission lacked sufficient notice for its actions in the *Second Report and Order*. Sky Station proposals that would limit satellite use of the 47 GHz band — whether the suggestions contained in the original, March 20, 1996, request that we establish a new service category for allocation purposes, or the suggestion in the later, December 24, 1996, filing that we dedicate an allocation of spectrum for stratospheric platform use — were not placed on notice as a supplemental notice of rulemaking, but neither were they adopted.

46. In its late-filed comments, Sky Station advocated band segmentation premised on a dedicated designation of spectrum to stratospheric platforms, rather than a more flexible approach that would permit any type of service allowed by the Table of Allocations. But the *Second Report and Order* declined to adopt that approach, and instead adopted the more

⁷² Petition for Reconsideration at 11.

⁷³ *Id.*

flexible licensing and channelization determinations.⁷⁴ The petitioners' reliance on *Donovan*⁷⁵ is thus misplaced; there, the court found notice insufficient when a regulation was in fact revised, but the first notice to affected parties that such a revision was even under consideration was the agency's *adoption* of the revision as a final rule.⁷⁶

47. We disagree with the claim made by petitioners that the *Millimeter Wave Notice* did not provide adequate notice for the service rule decisions made by the Commission in the *Second Report and Order* because, according to the petitioners, these decisions fundamentally changed the proposals made by the Commission in the *Millimeter Wave Notice*. The APA notice requirement for legislative-type rulemakings requires that issues under consideration be adequately identified. The *Millimeter Wave Notice* specifically invited suggestions for rules "that would enhance the use of specific bands for particular services," and stated that both the frequency bands proposed for commercial use and their technical standards might be altered in the final rules.⁷⁷ The *Millimeter Wave Notice* also stated that licensing rules would follow the likely dominant use.⁷⁸ Since the measures adopted in the *Second Report and Order* are within the scope of the proposals made in the *Millimeter Wave Notice*,⁷⁹ we reject the claim made by petitioners that these measures lacked sufficient notice.

48. Courts have repeatedly held that the APA notice requirement is satisfied where the final rule is a "logical outgrowth" of the rulemaking proposal.⁸⁰ The focus of this test is "whether ... [the party], *ex ante*, should have anticipated that such a requirement might be

⁷⁴ As described in paras. 39-43, *supra*, neither the determination of likely dominant use nor the related licensing and channelization decisions have the preclusive effect attributed to them by petitioners. In addition, the Commission has announced its proposal to determine actual licensees by auction. *Millimeter Wave Notice*, 9 FCC Rcd at 7089-90 (paras. 26-28). The proposed service rules provide sufficient flexibility to enable satellite operators to bid for and use this band.

⁷⁵ *American Federation of Labor and Congress of Industrial Organizations v. Donovan*, 757 F.2d 330 (D.C. Cir. 1985) (*Donovan*).

⁷⁶ The court stated that "the first indication we have found from the agency itself of any contemplated modification was in the final rule itself, as adopted on October 27, 1983." *Id.* at 339.

⁷⁷ *Millimeter Wave Notice*, 9 FCC Rcd at 7084 (para. 12 n.19).

⁷⁸ *Id.* at 7087 (para. 22). In the broad context of the *Millimeter Wave Notice*, that statement referred to the anticipated use of frequency bands — for the 47 GHz band, point-to-multipoint services using a variety of technologies.

⁷⁹ See paras. 48-50, *infra*.

⁸⁰ See, e.g., *Aeronautical Radio, Inc. v. FCC*, 928 F.2d 428, 445-46 (D.C. Cir. 1991); *United Steelworkers of America v. Marshall*, 647 F.2d 1189, 1221 (D.C. Cir. 1980), *cert. denied*, 453 U.S. 913 (1981).

imposed.”⁸¹ Moreover, notice is sufficient where the description of the “subjects and issues involved” affords interested parties a reasonable opportunity to participate in the rulemaking.⁸²

49. We also reject the claim made by the petitioners that the Commission somehow went beyond the bounds of the *Millimeter Wave Notice* because it took action in the *Second Report and Order* that precludes use of satellite technology in the 47 GHz band. The *Second Report and Order* does not have any such effect. The extent to which technical obstacles to spectrum sharing by such technologies may require service rules in the 47 GHz band that could impede the use of one or more technologies has not yet been decided. Further, while we do not regard the initial determinations of license structure as having a preclusive effect, the *Millimeter Wave Notice*, as noted, also advised parties that both the frequency bands and technical standards proposed might be altered in the final rules.⁸³ We conclude that decisions made by the Commission in the *Second Report and Order* regarding channelization and wide-area licensing are well within the scope of the notice provided in the *Millimeter Wave Notice*.

50. We emphasize that our primary purpose in making available spectrum in the 47 GHz band is to encourage new technologies and services, as announced in the *Millimeter Wave Notice*. Because these new technologies and services are, in the nature of this evolving process, unproven, we also seek to maintain the maximum flexibility for implementation of alternatives to the anticipated dominant use, whether in the fixed or satellite services. In light of the declared purposes of the *Millimeter Wave Notice*, and the consideration of additional spectrum allocations for satellite services in other proceedings, the service rules will, however, be focussed on the development of fixed terrestrial and fixed satellite services generally, and the platform technology more specifically. The feasibility of providing for satellite services in these rules will be considered in the proceeding we initiate today. If the preclusive effects that petitioners are concerned about are realized, they will result from full consideration in that process of different approaches to service rules. The Commission's determination in the *Second Report and Order* of the likely dominant use does not have that effect.

IV. NOTICE OF PROPOSED RULEMAKING

51. In this Notice, we propose licensing and operating rules for the 47 GHz band, and we propose that licenses for this band be acquired through competitive bidding under the Commission's Part 1 competitive bidding rules. We also propose to license the 47 GHz band under Part 27 of the Commission's Rules, as modified to reflect the particular characteristics and circumstances of services offered through the use of spectrum in the 47 GHz band. We

⁸¹ *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 549 (D.C. Cir. 1983).

⁸² *Transpacific Freight Conference of Japan/Korea v. Federal Maritime Commission*, 650 F.2d 1235, 1248 (D.C. Cir. 1980).

⁸³ *See, e.g.*, note 18, *supra*, and accompanying text.

seek comment on how Government and non-Government licensees can effectively share the 47 GHz band. In addition, in a few instances, we propose that modifications to the Part 27 Rules be made applicable to the 2.3 GHz band. We also propose to modify Part 27 to clarify that the rules contained in Part 27 will apply to both the 2.3 GHz band and the 47 GHz band.

A. Service Rules in General

52. The Commission decided in the *Second Report and Order* to make the 47 GHz band available for commercial use and to license the spectrum under a flexible framework that reflects the likely dominant use of that band, but that does not preclude other uses. The Commission also adopted a geographic service area licensing plan and a channeling plan that were consistent with the likely dominant use of the band. Specifically, the Commission divided the 47 GHz band into five pairs of 100 megahertz channels, separated by 500 megahertz.⁸⁴ The Commission found that this approach would accommodate the likely use of this band, and would foster competition and diversity of uses among licensees. The Commission also determined that the 500 megahertz separation between channel pairs would facilitate system design and reduce interference problems without affecting the use of multichannel operations that are accommodated in the pairs.⁸⁵

53. In the *Millimeter Wave Notice*, the Commission also proposed a 10-year license term with a license renewal expectancy, the use of Rand McNally Major Trading Areas (MTAs) as the geographic service area, auction rules, and technical rules that would allow broad flexibility in choosing technologies and services while providing protection from interference. With regard to all other service rules for the 47 GHz band, the Commission proposed to use the same service rules that had been proposed for LMDS⁸⁶ and to modify Part 21 of the Commission's Rules⁸⁷ to accommodate the new services at 47 GHz.

54. After adoption of the *Millimeter Wave Notice*, there have been several developments that lead us to seek additional comment on the Commission's previous proposals, and to seek comment on new proposals in order to accommodate the changed circumstances produced by these developments. While the Commission has adopted service rules for LMDS in Part 101 of the Commission's Rules,⁸⁸ the Commission has also adopted a

⁸⁴ *Second Report and Order*, 12 FCC Rcd at 10600 (para. 82); see also Appendix B, Proposed Section 27.5(c) of the Commission's Rules, 47 C.F.R. § 27.5(c).

⁸⁵ *Id.*

⁸⁶ *Millimeter Wave Notice*, 9 FCC Rcd at 7088 (para. 23).

⁸⁷ 47 C.F.R. Part 21.

⁸⁸ 47 C.F.R. Part 101. After the *Millimeter Wave Notice* was issued, the Commission created a new Part 101 of its Rules by combining certain sections of Part 21 of its Rules with all of what formally was Part 94. Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing

new set of service rules, in Part 27 of the Commission's Rules,⁸⁹ for wireless services in the 2.3 GHz band. These rules provide a licensing framework that may be more appropriate than the Part 101 rules in that they provide for much greater flexibility in the types of services that can be provided and in the technical and operational rules that govern those services.⁹⁰

55. Accordingly, we propose to modify Part 27 of the Commission's Rules to include the entire range of services that may be provided at 47 GHz. We also propose to modify Part 27 of the Commission's Rules to the extent necessary to reflect the particular characteristics and circumstances of services to be offered and to codify the specific provisions adopted by the Commission in the *Second Report and Order* in this proceeding.

56. We propose to permit in the 47 GHz band the operation of all services permitted in the United States Table of Allocations.⁹¹ Such services include Fixed, Mobile, and Fixed-Satellite services, including BSS feeder links. Consistent with this approach, we note that licensees may be required to comply with rules contained in other Parts of the Commission's Rules. For example, while we anticipate that the predominant use of spectrum in the 47 GHz band will be for fixed service applications, to the extent a licensee provides a Commercial Mobile Radio Service (CMRS), such service will also be subject to the provisions of Part 20 of the Commission's Rules.⁹² Part 20 applies to all CMRS providers, even though the stations may be licensed under other Parts of the Rules. With regard to the fixed-satellite service, for which the 47 GHz band only provides for the Earth-to-space path of a two-path (dual band) system, we propose that fixed-satellite services offered through the use of spectrum in the 47 GHz band shall be subject to applicable provisions of Part 25 of the Commission's Rules,⁹³ except to the extent these provisions conflict with the provisions of Part 27, in which case we propose that the latter rules shall govern. We seek comment as well on whether the dual band aspect of fixed-satellite service suggests other approaches to the application of service-specific Parts of the Commission's Rules. We also seek comment generally on any provisions in existing, service-specific rules that may require specific recognition or adjustment to

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, McCaw Cellular Communications, Inc. Petition for Rulemaking, RM-7861, Report and Order, 11 FCC Rcd 13449 (1996).

⁸⁹ 47 C.F.R. Part 27.

⁹⁰ See Amendment of the Commission's Rules To Establish Part 27, the Wireless Communications Service (WCS), GN Docket No. 96-228, Report and Order, 12 FCC Rcd 10785, 10883 (para. 203) (1997) (*Part 27 Report and Order*), adopting 47 C.F.R. Part 27.

⁹¹ See Section 2.105 of the Commission's Rules, 47 C.F.R. § 2.106, column 5 (United States table, Non-Government).

⁹² 47 C.F.R. Part 20; see also Appendix B, Proposed Section 27.3(f) of the Commission's Rules, 47 C.F.R. § 27.3(f).

⁹³ 47 C.F.R. Part 25.

comport with the supervening application of Part 27, as well as any provisions that may be necessary in Part 27 to fully describe the scope of covered services and technologies.

57. To the extent that entities interested in utilizing the 47 GHz band seek to implement services, or service configurations, that are not consistent with footnote S5.552A to the International Table of Frequency Allocations, as modified by WRC-97 (e.g., non-BSS feederlink Fixed-Satellite or traditional terrestrial Fixed services in the 47.2-47.5 and 47.9-48.2 GHz bands),⁹⁴ we ask those potential service providers to address the implications of any departure from the international allocations such services or service configurations may raise. Those implications include, but are not limited to, the technical implementation of the immediately affected service, and preserving the flexibility of the 47 GHz frequency band to accommodate a variety of new and innovative offerings. Service providers advocating such departures should describe the circumstances that in their view support such uses. We also note that such uses would not be assured protection from harmful interference by the International Radio Regulations.⁹⁵

58. Additionally, as noted earlier, footnote S5.552A of the international Radio Regulations designates the 47.2-47.5 GHz and 47.9-48.2 GHz bands for use by high altitude platform stations (HAPS). While neither this footnote, nor any other provisions of the international Radio Regulations, precludes access to the entire 47.2-48.2 GHz band by HAPS stations, as envisioned by the Commission in its *Second Report and Order* in this proceeding, we seek comment on whether any difficulties are foreseen if HAPS systems are implemented in other countries with channeling schemes that differ from that adopted in our *Second Report and Order*.

59. Similarly, the potential use of the 47 GHz frequency band by different services or configurations, even when consistent with international and domestic allocations, may present significant technical issues. We seek comment on issues raised by, e.g., licensee use of the 47 GHz band for both satellite and terrestrial uses (including stratospheric platforms), as well as specific proposals for technical rules to achieve the most effective utilization of this band by all of these technologies.

60. We note that Section 303(y) of the Communications Act grants the Commission "authority to allocate electromagnetic spectrum so as to provide flexibility of use," if the Commission makes certain findings.⁹⁶ While we are proposing flexible use for the 47 GHz

⁹⁴ See note 12, *supra*.

⁹⁵ See note 13, *supra*.

⁹⁶ 47 U.S.C. § 303(y), as added by Section 3005 of the Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251 (1997). This section states that the Commission must find that: (1) such an allocation would be in the public interest; (2) such use would not deter investment in communications services and systems, or