Federal Communications Commission
2004 Biennial Regulatory Review
ET Docket No. 04-178

Office of Engineering and Technology
Staff Report
January 5, 2005

OVERVIEW

1. The Office of Engineering and Technology (OET) provides technical and engineering support to all of the bureaus and offices, as well as the Commission. OET has primary responsibility for the management and allocation of non-government spectrum, the authorization of telecommunications equipment and RF regulated devices, and the administration of the Experimental Radio Service. OET has specific responsibility for Parts 2, 5, 15 and 18 of the Commission's Rules.[1] All of the rules governing these responsibilities were reviewed by staff to determine whether those rules that govern providers of telecommunications services are no longer necessary in the public interest as the result of meaningful economic competition, as provided in Section 11 of the Communications Act of 1934, as amended.[2] As part of this review, OET sought recommendations from the public regarding which rules and procedures should be modified or eliminated as part of its Section 11 review.[3]

SCOPE OF REVIEW

2. The Office of Engineering and Technology staff reviewed all of the rules that the Office administers. Specifically, the staff reviewed:

Part 2, Subpart A: Terminology - This subpart provides definitive terms and definitions for words and phrases used throughout the Commission's rules.

Part 2, Subpart B: Allocation, Assignment, and Use of Radio Frequencies – This subpart contains the Table of Frequency Allocations, which designates the uses of each frequency band and provides the basic framework for each radio service's rules.

Part 2, Subpart C: Emissions – This subpart designates emission, modulation and transmission characteristics of radio signals and the symbology to be used to identify them, and defines and provides formulas for "occupied bandwidth" and "necessary bandwidth."

Part 2, Subpart D: Call Signs and Other Forms of Identifying Radio Transmissions – This subpart provides a system of distinctive call signs for each domestic and international station using radio frequencies, and provides for alternative forms of identification for certain classes of stations.

Part 2, Subpart E: Distress, Disaster, and Emergency Communications – This subpart provides for the priority and control of distress messages and emergency communications.

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1 47 C.F.R. Parts 2, 5, 15 and 18.

2 47 U.S.C. § 161.

3 *Public Notice, The Commission Seeks Public Comment in the 2004 Biennial Review of Telecommunications Regulations – ET Docket No. 04-178*, FCC 04-105, May 11, 2004.

Part 2, Subpart H: Prohibition Against Eavesdropping – This subpart prohibits the use of a radio device for eavesdropping on private conversations, unless authorized by all of the parties in the conversation; the prohibition expressly does not apply to law enforcement officers operating under lawful authority.

Part 2, Subpart I: Marketing of Radiofrequency Devices – This subpart provides that radiofrequency devices must comply with the appropriate equipment authorization requirements prior to importation or marketing in the U.S.

Part 2, Subpart J: Equipment Authorization Procedures – This subpart describes the general equipment authorization procedures for regulated equipment that generates radiofrequency energy.

Part 2, Subpart K: Importation of Devices Capable of Causing Harmful Interference – This subpart provides for the temporary or limited importation of certain devices that would normally need an equipment authorization, such as devices intended for display at trade shows or for testing and developmental purposes, as well as subassemblies and certain unintentional radiators.

Part 2, Subpart M: Advance Approval of Subscription TV Transmission Systems – This subpart provides for the approval of any transmission system that will be used for providing subscription television service.

Part 2, Subpart N: FCC Procedure for Testing Class A, B and S Emergency Position Indicating Radiobeacons (EPIRBs) – This subpart sets out the approved procedures for testing EPIRBs.

Part 5 – Experimental Radio Services (Other Than Broadcast) - This Part provides for the licensing of radio facilities in order to conduct experimental operations.

Part 15 – Radio Frequency Devices – This Part provides technical requirements for low power radio transmitters and other radio frequency devices to prevent interference to authorized radio services.

Part 18 – Industrial Scientific, and Medical Equipment – This Part provides for noncommunications uses of radiofrequency energy for industrial, scientific and medical purposes.

RECENT AND ONGOING ACTIVITIES

3. OET has responsibility for authorizing radio frequency equipment and devices and for maintaining the Table of Allocations, and has continually modified its rules to accommodate new technologies and associated services, in light of the operations of incumbent service providers. Through various spectrum management efforts, the Commission has endeavored to facilitate new, innovative and competitive services, and

to eliminate rules that are no longer in the public interest in light of increased competition.

4. OET has continued to lead the efforts of the Spectrum Policy Task Force (SPTF) by beginning the process of implementing the recommendations contained in the SPTF's November 2002 Report with regard to improving the way that the electromagnetic radio spectrum is "managed" in the United States.[4] The *SPTF Report* found that advances in technology opened the potential for more intensive and efficient utilization of the spectrum, and it recommended a number of reforms that should be undertaken to streamline the Commission's rules and processes and provide for greater flexibility and efficiency for manufacturers, licensees, and other service providers in providing service to the public.[5] For example, in the *SPTF Report*, the Task Force observed that interference management has become more difficult because of the greater density, mobility, and variability of RF transmitters and because users have been granted increased flexibility in using the spectrum.[6] The Task Force presented several recommendations for improving interference management in this changed environment, one of which was for the Commission, as a long term strategy, to shift its paradigm for assessing interference towards an approach that uses real-time adaptation based on actual RF environments, and in particular to adopt a new "interference temperature" metric to quantify and manage interference. Accordingly, the Commission issued a *Notice of Inquiry* to seek comment on its proposed "interference temperature" model for quantifying and managing interference.[7]

5. Another of the Task Force's principal recommendation for improving interference management was for the Commission to incorporate receiver interference immunity performance into its spectrum policies.[8] Pursuant to that recommendation, the Commission recently adopted a *Notice of Inquiry* to begin consideration of incorporation of receiver interference performance specifications into its spectrum policy on a broader basis.[9] In that *Inquiry*, the Commission observed that if the receivers used with a radio service are designed to provide a certain degree of immunity to, or tolerance of, undesired

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[4] *Report of the Spectrum Policy Task Force ("SPTF Report")*, ET Docket No. 02-135, released November 15, 2002. The Commission requested public comment on the Task Force's Report. *See Public Notice, Commission Seeks Public Comment on Spectrum Policy Task Force Report*, FCC 02-322 (released Nov. 25, 2002); *Order,* ET Docket No. 02-135 (released Dec. 11, 2002) (extending comment filing periods).

[5] *SPTF Report* at 1-6.

[6] *Id*. at 25-27.

[7] *See Establishment of an Interference Temperature Metric to Quantify and Manage Interference and to Expand Available Unlicensed Operation in Certain Fixed, Mobile and Satellite Frequency Bands,* ET Docket No. 03-237, *Notice of Inquiry and Notice of Proposed Rulemaking*, 18 FCC Rcd 23509 (2003).

[8] *SPTF Report* at 31.

[9] *See Interference Immunity Performance Specifications for Radio Receivers and Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, ET Docket No. 03-65, *Notice of Inquiry*, 18 FCC Rcd 6039 (2003).

RF energy and signals, more efficient and predictable use of the spectrum can be achieved, as well as greater opportunities for access to the spectrum. It asked for comment, information and research on a wide range of issues concerning the interference immunity performance capabilities of existing receivers, possibilities for improving the level of receiver interference immunity in the various radio services, possible approaches by which desired levels of performance could be achieved, and the potential positive and negative impacts of receiver standards on innovation and the marketplace.

6. The Task Force also concluded, among other things, that smart radio technologies can enable better and more intensive access to spectrum and recommended that the Commission strive to remove regulatory barriers to their use.[10] The Commission recently initiated a proceeding to explore all the uses of smart or cognitive radio technology to facilitate the improved spectrum use made possible by the emergence of the powerful real-time processing capabilities of cognitive radio technologies.[11] Cognitive radio technologies can make possible more intensive and efficient spectrum use by licensees within their own networks, and by spectrum users sharing spectrum access on a negotiated or an opportunistic basis. These technologies include, among other things, the ability of devices to determine their location, sense spectrum use by neighboring devices, change frequency, adjust output power, and even alter transmission parameters and characteristics. Cognitive radio technologies open spectrum for use in space, time, and frequency dimensions that until now have been unavailable. Such technologies are employed today in applications such as wireless LANs and mobile wireless service networks, and promise greater future benefits. In the *Notice of Proposed Rulemaking*[12], the Commission sought comment on how its rules and enforcement policies should address possible regulatory concerns posed by authorizing spectrum access based on a radio frequency (RF) device's ability to reliably gather and process real-time information about its RF environment or on the ability of device and/or users to cooperatively negotiate for spectrum access and whether changes should be made to the

[10] *SPTF Report* at 13-14.

[11] *See* Commission Docket Created in Connection with OET Workshop on Cognitive Radio Technologies, ET Docket No. 03-108, *Public Notice*, DA 03-1480, (released May 2, 2003) (opening ET Docket No. 03-108). With the initiation of the cognitive radio proceeding, the Commission closed the software defined radio (SDR) proceeding of ET Docket No. 00-47.

[12] *See Facilitating Opportunities for Flexible, Efficient, and Reliable Spectrum Use Employing Cognitive Radio Technologies*, ET Docket No. 03-108, *Notice of Proposed Rulemaking and Order*, 18 FCC Rcd 26859 (2003).

equipment authorization rules to reflect the growing importance of cognitive radio technologies.[13]

7. Additionally, the Commission has undertaken more specific efforts to advance the goals of efficient and more effective spectrum management in light of increased competition in the provision of telecommunications services. It has completed various proceedings to accommodate the introduction of advanced technologies not previously contemplated by the Commissions' rules, which provide a wide range of consumer and industrial uses. The agency provided rule interpretations and modifications to permit the marketing and development of ultra wideband (UWB) technology, in which a device operates across a wide range of spectrum with very little power in any individual spectrum segment.[14] Such devices, consequently, cannot be confined to a conventionally limited bandwidth, and our rules needed to be adjusted accordingly to accommodate them. The Commission also adopted new requirements and measurement guidelines for a new type of carrier current system that provides access to broadband services using electric utility companies' power lines.[15] Because power lines reach virtually every home and community in the country, these new systems, known as Access broadband over power line or Access BPL, could play an important role in providing additional competition in the offering of broadband services to the American home and consumers, and in bringing Internet and high-speed broadband access to rural and underserved areas.[16] The Commission's proposals take an important step towards promoting the deployment of new broadband networks that are expected to enhance the economic, educational and social well-being of all Americans.

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[13] This proceeding is complementary to other Commission proceedings considering specific uses of cognitive radio technologies including: (1) additional spectrum for unlicensed devices in the 5470-5725 MHz frequency range, *In the matter of Revision of Parts 2 and 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, ET Docket No. 03-122, *Report And Order*, 18 FCC Rcd 24484 (2003); (2) additional spectrum for unlicensed devices below 900 MHz and in the 3 GHz band (the TV broadcast and 3650-3700 MHz bands), *In the Matter of Additional Spectrum for Unlicensed Below 900 MHz and in the 3 GHz Band,* ET Docket No. 02-380, *Notice of Inquiry*, 17 FCC Rcd 25632 (2002); and (3) interference temperature, *In the matter of Establishment of an Interference Temperature Metric to Quantify and Manage Interference and to Expand Available Unlicensed Operation in the Fixed, Mobile and Satellite Frequency Bands*, ET Docket No. 03-237, *Notice of Inquiry and Notice of Proposed Rulemaking*, 18 FCC Rcd 25309 (2003).

[14] *See Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems,* ET Docket No. 98-153, *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 3857 (2003) and *Second Report and Order and Second Memorandum Opinion and Order*, released December 16, 2004, FCC 04-285.

[15] *See Carrier Current Systems, including Broadband over Power Line Systems* and *Amendment of Part 15 regarding new requirements and measurement guidelines for Access Broadband over Power Line Systems*, ET Docket Nos. 03-104 and 04-37, *Notice of Proposed Rulemaking*, 19 FCC Rcd 3335 (2004); *Report and Order in ET Docket No. 04-37*, FCC 04-245 (adopted Oct. 14, 2004).

[16] Access BPL typically uses the medium voltage power lines (carrying between 1,000 to 40,000 volts) as a transmission medium to bring high-speed communications services, *e.g.*, the Internet and other broadband services, to neighborhoods. Medium voltage lines may be overhead or underground, depending on the power grid network topology.

8. The Commission has taken additional actions to facilitate the development of unlicensed technologies by allocating an additional 255 megahertz of spectrum available in the 5.470–5.725 GHz band for unlicensed National Information Infrastructure (U-NII) devices, including Radio Local Area Networks (RLANs).[17] This action will align the frequency bands used by U-NII devices in the United States with bands in other parts of the world, thus decreasing development and manufacturing costs for U.S. manufacturers by allowing for the same products to be used in most parts of the world. The increased demand that will result from expanding the markets for U-NII devices, coupled with the operational flexibility provided by the U-NII rules, will lead manufacturers to develop a wide range of new and innovative unlicensed devices and thereby increase wireless broadband access and investment.[18]

9. The Commission also adopted changes to several technical rules for unlicensed radiofrequency devices contained in Parts 2 and 15 of its rules.[19] These rule changes will allow device manufacturers to develop expanded applications for unlicensed devices and will allow unlicensed device operators, including wireless Internet service providers (WISPs), greater flexibility to modify or substitute parts as long as the overall system operation is unchanged. WISPs use unlicensed devices to provide broadband service for rural and underserved areas, and also to provide an alternative broadband service in metropolitan areas. The increased flexibility in our technical rules for unlicensed devices will encourage and facilitate an environment that stimulates investment and innovation in broadband technology and services. The Commission also proposed to allow unlicensed radio transmitters to operate in the broadcast television spectrum at locations where that spectrum is not being used.[20] These proposals would provide for more efficient and effective use of the TV spectrum and would have significant benefits for the public by allowing the development of new and innovative types of unlicensed broadband devices and services for businesses and consumers. Further, new unlicensed broadband operations may provide synergy with traditional broadcast operations and offer broadcasters the opportunity to provide new services. In

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[17] *See Revision of Parts 2 and 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, ET Docket No. 03-122, *Report And Order*, 18 FCC Rcd 24484 (2003) ("*U-NII R&O"*). *See also* 47 C.F.R. Part 15 Subpart E – Unlicensed National Information Infrastructure Devices. U-NII devices are "[i]ntentional radiators operating in the frequency bands 5.15-5.35 GHz and 5.725-5.825 GHz that use wideband digital modulation techniques and provide a wide array of high data rate mobile and fixed communications for individuals, businesses, and institutions." 47 C.F.R. § 15.403(i).

[18] The *SPTF Report* recommended that the Commission act to promote more flexible, innovative, and market driven uses of the radio spectrum and specifically recommended that the Commission allocate additional spectrum for unlicensed use. We note that because unlicensed devices may operate in any unrestricted spectrum band, the FCC does not allocate spectrum for them. However, the policies articulated by the *SPTF Report* are advanced by the rules changed by the *U-NII R&O*.

[19] *See Modification of Parts 2 and 15 of the Commission's Rules for unlicensed devices and equipment approval*, ET Docket No. 03-201, *Report and Order*, 19 FCC Rcd 13539 (2004).

[20] *See Unlicensed Operation in the TV Broadcast Bands* and *Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, ET Docket Nos. 04-186 and 02-380, *Notice of Proposed Rulemaking,* 19 FCC Rcd 10018 (2004).

addition, because transmissions in the TV band are subject to less propagation attenuation than transmissions in the spectrum where existing broadband unlicensed operations are permitted, allowing unlicensed operation in the TV bands could benefit wireless internet service providers (WISPs) by improving their service range, thereby allowing WISPs to reach new customers. In addition, the Commission proposed to amend Parts 1 and 2 of our rules relating to the compliance of FCC-regulated transmitters and facilities with our guidelines for human exposure to radiofrequency (RF) energy. The Commission's proposals are intended to ensure that the public is appropriately protected from any potential adverse effects from RF exposure as provided by the exposure limits in its rules, while avoiding any unnecessary burden in demonstrating compliance with its RF exposure rules.[21]

10. The Commission has also taken action on several initiatives related to homeland security. In an effort to increase homeland security and improve the efficiency of commercial shipping operations, the Commission adopted a *Third Report and Order*[22] that allows for the operation of improved radio frequency identification (RFID) systems for use in conjunction with commercial shipping containers.[23] This action is expected to result in lower shipping costs and improved security at ports, rail yards and warehouses in commercial and industrial settings by enabling the contents of containers to be rapidly inventoried. These improvements will also help system users determine whether tampering with their contents has occurred during shipping. The Commission also adopted new rules requiring wireless, wireline, cable, and satellite telecommunications providers to report information electronically to the Commission about significant disruptions or outages to their communications systems.[24] The FCC's actions are in response to the increasing reliance consumers place on various forms of two-way communications, and the Commission's need for prompt information about significant disruptions to those communications during this time of increasing concern about homeland security and national defense. These actions will facilitate more reliable telecommunications throughout the United States and promote Homeland Security,

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[21] *See Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, ET Docket No. 03-137, *Notice of Proposed Rulemaking*, 18 FCC Rcd 13187 (2003).

[22] *See Review of Part 15 and other Parts of the Commission's Rules*, ET Docket No. 01-278, *Third Report and Order*, 19 FCC Rcd 7484 (2004). A number of actions in ET Docket No. 01-278 were based on proposals contained within the *Biennial Regulatory Review 2000 Updated Staff Report*. *See 2000 Biennial Regulatory Review Report* and *Federal Communications Commission Biennial Regulatory Review 2000 Updated Staff Report* (*"Updated Staff Report"*), 16 FCC Rcd 1207 (2001).

[23] RFID systems use radio signals to identify items. Uses of RFID include electronic toll collection such as the E-Z Pass system and anti-theft tags. An RFID system consists of a tag mounted on the item to be identified and a device that receives information transmitted from the tag. The Commission's rules permit RFID systems to be operated on a number of frequency bands, subject to limitations on their maximum signal level and transmission duration. These limitations constrain the range and information transfer rates of RFIDs.

[24] *See New Part 4 of the Commission's Rules Concerning Disruptions to Communications*, ET Docket No. 04-35, *Report and Order and Further Notice of Proposed Rulemaking*, 19 FCC Rcd 16830 (2004).

building on the telecommunications industry's efforts to date to improve outage reporting. Further, the Commission adopted a *Notice of Proposed Rulemaking and Declaratory Ruling* that begins a thorough examination of the appropriate legal and policy framework for implementing the Communications Assistance for Law Enforcement Act ("CALEA"), particularly regarding broadband access and services.[25] The Commission's primary policy goal in this proceeding is to ensure that law enforcement agencies have all of the resources that CALEA authorizes to combat crime and support Homeland Security.

11. The Commission has also undertaken numerous spectrum allocation proceedings that, among other things, have been designed to provide additional spectrum to support the development of new services including advanced wireless services such as those associated with 3G applications,[26] account for changes in Federal Government and non-Federal Government uses of shared spectrum,[27] and reflect revisions based on international agreements from the World Radiocommunication Conferences held in 2000 and 2003.[28] Each of these items proposes or adopts changes to the table of frequency allocations in Part 2 of the Commission's rules.[29]

12. The Commission anticipates that new spectrum allocations, rules and principles will enable a broad range of new competitive radio communications services,

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[25] *See Communications Assistance for Law Enforcement Act and Broadband Access and Services*, ET Docket No. 04-295, *Notice of Proposed Rulemaking and Declaratory Ruling*, 19 FCC Rcd 15676 (2004).

[26] *See e.g., Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems,* ET Docket No. 00-258, *Third Report and Order, Third Notice of Proposed Rulemaking, and Second Memorandum Opinion and Order*, 18 FCC Rcd 2223 (2003); *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for use by the Mobile Satellite Service*, ET Docket No. 95-18, *Third Report and Order and Third Memorandum Opinion and Order*, 18 FCC Rcd 23638 (2003); and *Sixth Report and Order, Third Memorandum Opinion and Order, and Fifth Memorandum Opinion and Order in ET Docket Nos. 00-258 and 95-18*, FCC 04-219 (released Sep. 22, 2004).

[27] *See e.g., Amendment of Parts 2 and 90 of the Commission's Rules to Provide for Narrowband Private Land Mobile Radio Channels in the 150.05-150.8 MHz, 162-174 MHz, and 406.1-420 MHz Bands that are Allocated for Federal Government Use,* ET Docket No. 04-243, *Notice of Proposed Rulemaking,* 19 FCC Rcd 12690 (2004); *Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems,* ET Docket No. 00-258, *Seventh Report and Order*, FCC 04-246 (adopted Oct. 14, 2004).

[28] *See e.g., Amendment of Part 2 of the Commission's Rules to Realign the 76-81 GHz band and the Frequency Range Above 95 GHz Consistent with International Allocation Changes,* ET Docket No. 03-102, *Report and Order,* 19 FCC Rcd 3212 (2004) (implementing decision from the World Radiocommunication Conference (Istanbul, 2000) (WRC-2000); *Amendment of Parts 2, 25, and 73 of the Commission's Rules to Implement Decisions from the World Radiocommunication Conference (Geneva, 2003) (WRC-03) Concerning Frequency Bands Between 5900 kHz and 27.5 GHz and to Otherwise Update the Rules in this Frequency Range,* ET Docket No. 04-139, *Notice of Proposed Rulemaking*, 19 FCC Rcd 6592 (2004).

[29] 47 C.F.R. § 2.106.

such as expanded wireless services, advanced mobile services, and new spectrum-efficient private land mobile systems. The development of a broad range of new devices and communications options will stimulate economic development and the growth of new industries and promote the ability of manufacturers, including small businesses and entrepreneurs to compete both domestically and globally.

SECTION 11 ANALYSIS OF CURRENT RULES

13. As further discussed in the appendix, the various rules directly within the purview of OET generally do not directly apply to the operations or activities of any telecommunications service provider, and thus are outside the scope of this Section 11 review. Moreover, the public interest need for the rules implemented by OET are generally unaffected by the degree of economic competition that may or may not exist among those covered by these rules. Finally, there were no comments received. Accordingly, OET finds that the rules within its purview are not subject to revision pursuant to the Section 11 review.

CONCLUSION

14. This Staff Report describes OET's extensive efforts in the last two years to update its rules to facilitate new technologies and services for the public and to provide for increased competition in the provision of services. It also describes OET's comprehensive review of the Commission's regulations pertaining to the allocations of non-government spectrum, the authorization of telecommunications equipment and RF-regulated devices and industrial, scientific and medical equipment, and the administration of the Experimental Radio Service. The staff determines that the rules within its purview generally do not directly apply to the operations or activities of any telecommunications service providers, and thus are not subject to revision pursuant to the Section 11 review.

APPENDIX: RULE PART ANALYSIS (OET)

PART 2, SUBPART A - TERMINOLOGY

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices.

Purpose

This subpart provides definitive terms and definitions for words and phrases used throughout the Commission's rules.

Analysis

Status of Competition

There are no competitive considerations related to the terms and definitions in this subpart.

Advantages

This rule part provides for a common understanding and interpretation of technical and administrative terms and terms of art used in the Commission's rules.

Disadvantages

None.

Comments

There were no comments received regarding this subpart.

Recommendation

These rules serve a public interest purpose because they provide for a common understanding and interpretation of technical and administrative terms and terms of art used in the Commission's rules. Since these terms and definitions are competitively neutral, the question of whether they are necessary in the public interest is unaffected by the degree of meaningful economic competition between providers of telecommunications service. Thus, we cannot conclude that such regulations are no longer necessary in the public interest as the result of meaningful economic competition.

PART 2, SUBPART B – ALLOCATION, ASSIGNMENT, AND USE OF RADIO FREQUENCIES

Description

Section 303(c) of the Communications Act of 1934, as amended, authorizes the Commission to "assign bands of frequencies to the various classes of stations." Part 2, subpart B implements this authority and contains the Table of Allocations which identifies the services allowed in each frequency band.

Purpose

The Table of Allocations provides a basic framework for each radio service's rules.

Analysis

Status of Competition

The status of competition cannot be summarily characterized because of the variety of services and markets affected by this part. The Commission is continually amending the Table of Allocations to provide spectrum for the expansion of existing services and for new services, and for the diminution of spectrum for services which do not efficiently utilize the spectrum allocated.

Advantages

The Table of Allocations sets out what radio services are permitted in each frequency band and the primary or secondary status of each. Users are informed of what other classes of stations may enter the band or adjacent bands and what priority exists with respect to other uses.

Disadvantages

For some new radio technologies, a two-step process is needed to implement their use: first the allocation table is amended, and then the service rules are adopted. On occasion, the Commission combines these two steps.

Comments

There were no comments received regarding the Table of Allocations and related rules.

Recommendation

The Table of Allocations and related rules continue to serve the public interest purpose of ensuring the orderly and efficient use of the spectrum by a myriad of different service providers and other users of the spectrum. While changes in the competitive landscape often requires changes in the Table, that process is ongoing. It does not, however, dictate

a finding that these rules are no longer necessary in the public interest as the result of meaningful economic competition. This Office recommends retaining the Table in its current form and continuing the present procedure of incremental change as the need arises.

PART 2, SUBPART C - EMISSIONS

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices.

Purpose

Part 2, subpart C, designates emission, modulation and transmission characteristics of radio signals and the symbology to be used to identify them, and defines and provides formulas for "occupied bandwidth" and "necessary bandwidth".

Analysis

Status of Competition

There are no competitive considerations with regard to the rules in Part 2, subpart C.

Advantages

This rule part provides necessary definitions for common understanding of emissions and bandwidth concepts to be applied in interpreting the Commission's rules.

Disadvantages

None

Comments

There were no comments received regarding emissions or bandwidth provisions.

Recommendation

These rules serve a public interest purpose because they provide necessary definitions for common understanding of emissions and bandwidth concepts to be applied in interpreting the Commission's rules. Since these definitions are competitively neutral, the question of whether they are necessary in the public interest is unaffected by the degree of meaningful economic competition between providers of telecommunications service. Thus, we cannot conclude that such regulations are no longer necessary in the public interest as the result of meaningful economic competition.

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PART 2, SUBPART D – CALL SIGNS AND OTHER FORMS OF IDENTIFYING RADIO TRANSMISSIONS

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices and to "assign bands of frequencies to the various classes of stations."

Purpose

Part 2, subpart D provides a system of distinctive call signs for each domestic and international station using radio frequencies, and provides for alternative forms of identification for certain classes of stations.

Analysis

Status of Competition

There are no competitive considerations with regard to the rules in Part 2, subpart D.

Advantages

This rule part ensures that the transmission of any station using radio frequencies can be identified, in order to eliminate harmful interference and to generally enforce the applicable radio treaties, conventions, regulations, arrangements, and agreements in force.

Disadvantages

None

Comments

There were no comments received regarding call signs and alternative forms of identification.

Recommendation

These rules serve a public interest purpose because they ensure that the transmission of any station using radio frequencies can be identified, in order to eliminate harmful interference and to generally enforce the applicable radio treaties, conventions, regulations, arrangements, and agreements in force. Since these rules are competitively neutral, the question of whether they are necessary in the public interest is unaffected by the degree of meaningful economic competition between providers of telecommunications service. Thus, we cannot conclude that such regulations are no longer necessary in the public interest as the result of meaningful economic competition.

PART 2, SUBPART E – DISTRESS, DISASTER, AND EMERGENCY COMMUNICATIONS

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices, and to assign bands of frequencies to the various classes of stations.

Purpose

Part 2, subpart E provides for the priority and control of distress messages and emergency communications.

Analysis

Status of Competition

There are no competitive considerations with regard to the rules in Part 2, subpart E.

Advantages

This rule part ensures that distress messages from ships or aircraft receive priority, and provides for flexibility in frequency usage during emergencies, including implementation of requests by the armed services.

Disadvantages

Prioritizing distress signals may disrupt other communications; providing for emergency operation on unassigned frequencies may disrupt other communications.

Comments

There were no comments received regarding distress and emergency communications.

Recommendation

These rules serve a public interest purpose because they ensure that distress messages from ships or aircraft receive priority, and they provide for flexibility in frequency usage during emergencies, including implementation of requests by the armed services. These public interest benefits outweigh the disadvantages set forth above. Since the regulations in this Rule Part are competitively neutral, the question of whether they are necessary in the public interest is unaffected by the degree of meaningful economic competition between providers of telecommunications service. Thus, we cannot conclude that such regulations are no longer necessary in the public interest as the result of meaningful economic competition.

PART 2, SUBPART H – PROHIBITION AGAINST EAVESDROPPING

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices.

Purpose

Part 2, subpart H, prohibits the use of a radio device for eavesdropping on private conversations, unless authorized by all of the parties in the conversation; the prohibition expressly does not apply to law enforcement officers operating under lawful authority.

Analysis

Status of Competition

There are no competitive considerations with regard to the rules in Part 2, subpart H.

Advantages

This rule part prevents eavesdropping by means of radio devices.

Disadvantages

None

Comments

There were no comments received regarding the eavesdropping prohibition.

Recommendation

This regulation serves a public interest purpose because it prohibits unauthorized eavesdropping. Since this regulation is competitively neutral, the question of whether it is necessary in the public interest is unaffected by the degree of meaningful economic competition between providers of telecommunications service. Thus, we cannot conclude that such regulations are no longer necessary in the public interest as the result of meaningful economic competition.

PART 2, SUBPART I – MARKETING OF RADIOFREQUENCY DEVICES

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices.

Purpose

Part 2, subpart I, provides that radiofrequency devices must comply with the appropriate equipment authorization requirements prior to importation or marketing in the U.S.

Analysis

Status of Competition

There are no competitive considerations with regard to the rules in Part 2, subpart I.

Advantages

This rule part prevents a proliferation of interference by unlicensed radio devices and unintentional radiators.

Disadvantages

These rules introduce some cost and delay into the introduction of new radiofrequency devices.

Comments

There were no comments received regarding this subpart.

Recommendation

These rules do not directly apply to the activities and operations of providers of telecommunications services. Thus, they are not within the scope of the instant Section 11 review.

PART 2, SUBPART J – EQUIPMENT AUTHORIZATION PROCEDURES

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices.

Purpose

Subpart J describes the general equipment authorization procedures for regulated equipment that generates radiofrequency energy.

Analysis

Status of Competition

The status of competition cannot be summarily characterized because of the variety of services and markets affected by this rule.

Advantages

This subpart delineates procedures and requirements for compliance with technical standards for radio frequency equipment, thereby promoting efficient use of radio spectrum.

Disadvantages

The requirements impose some regulatory costs on equipment manufacturers and the required approvals may slow market entry slightly.

Comments

There were no comments regarding this subpart.

Recommendation

These rules do not directly apply to the activities and operations of providers of telecommunications services, and thus are not within the scope of our Section 11 review.

PART 2, SUBPART K – IMPORTATION OF DEVICES CAPABLE OF CAUSING HARMFUL INTERFERENCE

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices.

Purpose

Part 2, subpart K provides for the temporary or limited importation of certain devices that would normally need an equipment authorization, such as devices intended for display at trade shows or for testing and developmental purposes, as well as subassemblies and certain unintentional radiators.

Analysis

Status of Competition

There are no competitive considerations with regard to the rules in Part 2, subpart K.

Advantages

This subpart provides relief for the importation of certain devices that do not pose the threat of interference for which the equipment authorization rules were promulgated.

Disadvantages

There may be some potential for interference from devices imported under this section that are not used in strict conformance with the provisions of the rules.

Comments

There were no comments received regarding this subpart.

Recommendation

These rules do not directly apply to the activities and operations of providers of telecommunications services. Thus, they are not within the scope of the instant Section 11 review.

PART 2, SUBPART M – ADVANCE APPROVAL OF SUBSCRIPTION TV TRANSMISSION SYSTEMS

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices.

Purpose

Part 2, subpart M, provides for the approval of any transmission system that will be used for providing subscription television service.

Analysis

Status of Competition

There are no competitive considerations with regard to the rules in Part 2, subpart M.

Advantages

This subpart ensures that subscription television systems will not interfere with other authorized services and devices.

Disadvantages

None.

Comments

There were no comments received regarding this subpart.

Recommendation

These regulations serve a public interest purpose because they help ensure that subscription television operations do not interfere with other licensed services and devices. Since this regulation is competitively neutral, the question of whether it is necessary in the public interest is unaffected by the degree of meaningful economic competition between providers of telecommunications service. Thus, we cannot conclude that such regulations are no longer necessary in the public interest as the result of meaningful economic competition.

PART 2, SUBPART N – FCC PROCEDURE FOR TESTING CLASS A, B AND S EMERGENCY POSITION INDICATING RADIOBEACONS (EPIRBS)

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices.

Purpose

Part 2, subpart N sets out the approved procedures for testing EPIRBs.

Analysis

Status of Competition

There are no competitive considerations with regard to the rules in Part 2, subpart N.

Advantages

This subpart provides testing procedures to ensure the proper operation of EPIRBs while avoiding unintentional reception of emergency signals.

Disadvantages

None.

Comments

There were no comments received regarding this subpart.

Recommendation

These regulations serve a public interest purpose because they help ensure the proper operation of EPIRBs while avoiding unintentional reception of emergency signals. Since this regulation is competitively neutral, the question of whether it is necessary in the public interest is unaffected by the degree of meaningful economic competition between providers of telecommunications service. Thus, we cannot conclude that such regulations are no longer necessary in the public interest as the result of meaningful economic competition.

PART 5 - EXPERIMENTAL RADIO SERVICE (OTHER THAN BROADCAST)

Description

Sections 302 and 303(e) of the Communications Act of 1934, as amended, authorize the Commission to regulate radio devices.

Purpose

Part 5 provides for experimentation in the provision of radio services without causing harmful interference to existing operations. These rules generally do not directly apply to the regulated activities and operations of providers of telecommunications services, and thus are not within the purview of this biennial review, as provided by Section 11 of the Communications Act of 1934, as amended.

Analysis

Status of Competition

There are no competitive considerations in the experimental radio service.

Advantages

This rule part provides the capability for the development of new radio technologies from temporarily protected facilities which will not cause harmful interference to incumbent service providers, thereby promoting efficient use of radio spectrum.

Disadvantages

The requirements impose some restrictions and regulatory costs on parties seeking to experiment with radio technology and the required approvals may slow development slightly in some cases.

Comments

There were no comments received regarding Part 5 of the Commission's rules.

Recommendation

These rules do not directly apply to the activities and operations of providers of telecommunications services, and thus are not within the scope of our Section 11 review.

PART 15 - RADIO FREQUENCY DEVICES

Description

Section 302 of the Communications Act of 1934, as amended, authorizes the Commission to regulate devices which may interfere with radio reception and requires the Commission to adopt regulations forbidding the sale of equipment capable of intercepting domestic cellular radio telecommunications service.

Purpose

The purpose of Part 15 is to provide technical guidance regarding radio devices, including prevention of interference, prohibitions on cellular transmission and reception interception.

Analysis

Status of Competition

The markets affected by Part 15 are competitive.

Advantages

The requirements of Part 15 are competitively neutral

Disadvantages

The requirements impose some regulatory costs on equipment manufacturers and the required approvals may slow market entry slightly.

Recent Efforts

The Part 15 rules are continually revised to address evolving technology.

Comments

There were no comments regarding Part 15 of the Commission's rules.

Recommendations

These rules do not directly apply to the activities and operations of providers of telecommunications services, and therefore are outside the scope of our Section 11 review.

PART 18 – INDUSTRIAL, SCIENTIFIC, AND MEDICAL EUQIPMENT

Description

Section 302 of the Communications Act of 1934, as amended, authorizes the Commission to regulate devices which may interfere with radio reception.

Purpose

The purpose of Part 18 is to provide for the use of industrial, scientific, and medical equipment and appliances that utilize radiofrequency energy for nontelecommunications purposes.

Analysis

Status of Competition

The markets affected by Part 18 are competitive.

Advantages

The requirements of Part 18 prevent interference to radio services from certain nontelecommunications devices that use RF energy to perform their functions. The requirements of Part 18 are competitively neutral.

Disadvantages

The requirements impose some regulatory costs on equipment manufacturers and the required approvals may slow market entry slightly.

Recent Efforts

The Part 18 rules are periodically revised to address evolving technology.

Comments

There were no comments regarding Part 18 of the Commission's rules.

Recommendations

The Part 18 rules do not apply to the activities and operations of providers of telecommunications services, and are outside the scope of this Section 11 review.