PART 41—VISAS: DOCUMENTATION OF NONIMMIGRANTS UNDER THE IMMIGRATION AND NATIONALITY ACT, AS AMENDED

■ 1. The authority citation for part 41 continues to read as follows:

Authority: 8 U.S.C. 1101; 1102; 1104; 1182; 1184; 1185 note (section 7209 of Pub. L. 108–458, as amended by section 546 of Pub. L. 109–295); 1323; 1361; 2651a.

■ 2. Revise § 41.31(b)(1) to read as follows:

§ 41.31 Temporary visitors for business or pleasure.

* * * * *

(b) * * *

(1) The term ''business,'' as used in INA 101(a)(15)(B), refers to conventions, conferences, consultations and other legitimate activities of a commercial or professional nature. It does not include local employment or labor for hire. For the purposes of this section building or construction work, whether on-site or in plant, shall be deemed to constitute purely local employment or labor for hire; provided that the supervision or training of others engaged in building or construction work (but not the actual performance of any such building or construction work) shall not be deemed to constitute purely local employment or labor for hire if the alien is otherwise qualified as a B–1 nonimmigrant.

* * * * *

Carl C. Risch,

Assistant Secretary, Consular Affairs, Department of State.

[FR Doc. 2020–21975 Filed 10–20–20; 8:45 am]

BILLING CODE 4710–06–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 1, 2, 27

[WT Docket No. 19–348; FCC 20–138; FRS 17121]

Facilitating Shared Use in the 3100–3550 MHz Band

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: In this document, the Commission proposes rules to govern commercial wireless operations in the 3.45–3.55 GHz band. It proposes to add a new primary allocation for fixed and mobile (except aeronautical mobile) services and to adopt technical, licensing, and competitive bidding rules governing licenses in this band. The Commission proposes and seeks comment on coexistence and coordination between new commercial wireless licensees and incumbent federal radiolocation and radionavigation operations, which will continue to operate on a limited basis, but which will remain co-primary with commercial operations. The Commission also proposes and seeks comment on relocation and sunset procedures for incumbent non-federal, secondary operations, which are being cleared from the band.

DATES: Interested parties may file comments on or before November 20, 2020; and reply comments on or before December 7, 2020.

ADDRESSES: You may submit comments, identified by WT Docket No. 19–348, by any of the following methods:

- *Electronic Filers:* Comments may be filed electronically using the internet by accessing the ECFS: *http://apps.fcc.gov/ecfs/* in docket number WT Docket No. 19–348. *See Electronic Filing of Documents in Rulemaking Proceedings,* 63 FR 24121 (1998).
- *Paper Filers:* Parties who choose to file by paper must file an original and one copy of each filing.
- Filings can be sent by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701. U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street SW, Washington, DC 20554
- Effective March 19, 2020, and until further notice, the Commission no longer accepts any hand or messenger delivered filings. This is a temporary measure taken to help protect the health and safety of individuals, and to mitigate the transmission of COVID–19. *See FCC Announces Closure of FCC Headquarters Open Window and Change in Hand-Delivery Policy,* Public Notice, DA 20–304 (March 19, 2020). *https://www.fcc.gov/document/fcc-closes-headquarters-open-window-and-changes-hand-delivery-policy.*

During the time the Commission's building is closed to the general public and until further notice, if more than one docket or rulemaking number appears in the caption of a proceeding, paper filers need not submit two additional copies for each additional docket or rulemaking number; an original and one copy are sufficient.

FOR FURTHER INFORMATION CONTACT: Joyce Jones, Wireless Telecommunications Bureau, Mobility Division, (202) 418–1327 or *joyce.jones@fcc.gov,* or Ira Keltz, Office of Engineering and Technology, (202) 418–0616 or *ira.keltz@fcc.gov.* For information regarding the PRA information collection requirements, contact Cathy Williams, Office of Managing Director, at 202–418–2918 or *Cathy.Williams@fcc.gov.*

SUPPLEMENTARY INFORMATION: This is a summary of the *Further Notice of Proposed Rulemaking* (FNPRM) in WT Docket No. 19–348, FCC 20–138, adopted September 30, 2020, and released October 2, 2020. The full text of the FNPRM is available for public inspection at the following internet address: *https://docs.fcc.gov/public/attachments/FCC-20-138A1.pdf.* Alternative formats are available for people with disabilities (Braille, large print, electronic files, audio format), by sending an email to *FCC504@fcc.gov* or calling the Consumer and Governmental Affairs Bureau at 202–418–0530 (voice) or 202–418–0432 (TTY).

Pursuant to §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments on or before the dates indicated on the first page of this document.

Ex Parte Rules

This proceeding shall continue to be treated as a ''permit-but-disclose'' proceeding in accordance with the Commission's *ex parte* rules (47 CFR 1.1200). Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments

can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.,* .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

Initial Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act of 1980 (RFA), the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules proposed in the FNPRM. It requests written public comment on the IRFA, contained at Appendix E to the FNPRM. Comments must be filed in accordance with the same deadlines as comments filed in response to the FNPRM as set forth on the first page of this document and have a separate and distinct heading designating them as responses to the IRFA. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of the FNPRM, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

Initial Paperwork Reduction Analysis

This document contains proposed information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104–13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107–198, see 44 U.S.C. 3506(c)(4), the Commission seeks specific comment on how it might further reduce the information collection burden for small business concerns with fewer than 25 employees.

Synopsis

I. Introduction

The FNPRM is part of the Commission's comprehensive strategy to Facilitate America's Superiority in 5G Technology (the 5G FAST Plan). Collectively, the 3.45–3.55 GHz band and neighboring 3.5 GHz and 3.7 GHz bands could offer 530 megahertz of mid-band spectrum for flexible use.

II. Background

The lower 3 GHz band—and the 3,450 MHz to 3,550 MHz portion of the band (3.45–3.55 GHz band) in particular—has been targeted as spectrum to support 5G both here and abroad, and assessed within the federal government, across the legislative and executive branches, as well as within the Commission.

Congress addressed the pressing need for spectrum to support broadband, including mid-band spectrum, in the Fiscal Year 2018 omnibus spending bill, which included the Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless Act (MOBILE NOW Act) under Title VI of RAY BAUM'S Act. *See* Consolidated Appropriations Act, 2018, Public Law 115–141, Division P, the Repack Airwaves Yielding Better Access for Users of Modern Services (RAY BAUM'S) Act, Title VI (the Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless Act or MOBILE NOW Act). The MOBILE NOW Act mandated that the Secretary of Commerce, working through NTIA: (1) Submit, in consultation with the Commission, a report by March 23, 2020, on the feasibility of ''allowing commercial wireless service, licensed or unlicensed, to share use of the frequencies between 3,100 megahertz and 3,550 megahertz, and (2) identify with the Commission ''at least 255 megahertz of Federal and non-Federal spectrum for mobile and fixed wireless broadband use'' by December 31, 2022. MOBILE NOW Act § 605(a). Shortly before Congress signed the 2018 omnibus spending bill, NTIA announced that it had identified the 3.45–3.55 GHz band for study for potential repurposing to spur commercial wireless innovation. In 2020, the White House and the DoD formed America's Mid-Band Initiative Team (AMBIT) with the goal of making 100 megahertz of contiguous mid-band spectrum available in the 3.45–3.55 GHz band for full commercial use.

III. Further Notice of Proposed Rulemaking

A. Reallocating the 3.45–3.55 GHz Band for Commercial Wireless Use

The Commission proposes to reallocate the 3.45–3.55 GHz band on a co-primary basis for non-federal fixed and mobile (except aeronautical mobile) services and seeks comment on its proposal. Under Section 303(y) of the Communications Act of 1934, as amended, the Commission is permitted to allocate spectrum for flexible uses if the allocation is consistent with international agreements and if the Commission finds that: (1) The allocation is in the public interest; (2) the allocation does not deter investment in communications services, systems, or the development of technologies; and (3) such use would not result in harmful interference among users. The Commission anticipates that its proposal to add co-primary allocations for non-federal fixed and mobile (except aeronautical mobile) services to the U.S. Table of Frequency Allocations for the 3.45–3.55 GHz band would meet these criteria.

The Commission tentatively concludes that its proposal would serve the public interest by advancing U.S. leadership in next-generation 5G networks. A key element of such leadership is making additional critical mid-band spectrum available for 5G services as proposed in the FNPRM. In addition, the Commission expects that its proposal will promote, rather than deter, investments in the band by flexible use licensees. Mid-band spectrum is particularly well-suited for 5G buildout due to its desirable coverage, capacity, and propagation characteristics and the Commission anticipates that this spectrum should attract investment from 5G network operators. Further, the actions the Commission takes in the accompanying Report and Order and proposes in the FNPRM should not result in harmful interference among users of the 3.45–3.55 GHz band. To the contrary, the Commission's decision in the *Report and Order* to remove all secondary allocations and relocate certain secondary operations from the band will minimize the potential for interference to new flexible use licensees; and the Commission's proposals in the FNPRM should enable coordination with incumbent federal operations. In addition, the Commission's proposed allocation would harmonize the Commission's allocation for the 3.45–3.55 GHz band with international allocations.

The Commission seeks comment on its proposal to add this allocation and on its initial assessment that doing so is consistent with the requirements of Section 303(y). The Commission also asks commenters to provide quantitative estimates of its proposal's costs and benefits to current and potential non-federal users of the band.

A. Future of Federal Incumbent Use in the 3.45–3.55 GHz Band

The 3.45–3.55 GHz band currently is used by the DoD for high-powered radar systems on fixed, mobile, shipborne, and airborne platforms. In July 2020, consistent with the requirements of the MOBILE NOW Act to provide an evaluation of the feasibility of sharing portions of the 3.1–3.55 GHz band, NTIA released a report identifying the 3.45–3.55 GHz band for such sharing. As directed by Section 605(d) of the MOBILE NOW Act, the Commission seeks comment on that report, specifically its findings as to the sharing of the 3.45–3.55 GHz band, with commercial wireless services. While NTIA has identified the uppermost 100 megahertz of the 3.1–3.55 GHz band for commercial wireless operations, consistent with the MOBILE NOW Act, the Commission seeks comment on whether such operations are feasible below 3.45 GHz. In particular, the Commission asks commenters to provide input on the feasibility of reallocating the 100 megahertz of spectrum between 3.35 GHz and 3.45 GHz for commercial wireless service at the same power levels that it proposes for the 3.45–3.55 GHz band throughout the contiguous United States and on what additional steps would be necessary to make such use feasible. The Commission seeks specific comment on whether clearing this spectrum of federal operations for exclusive commercial use is feasible, what steps need to be taken, what the timeline for such clearing would be, and whether limited sharing through geographic coordination zones could speed making this spectrum available to the commercial market.

Also consistent with Congress's directive in the MOBILE NOW Act, and following the Commission's proposal in 2019 to take the first steps to make the 3.1–3.55 GHz band available for flexible use commercial operations, the DoD recently indicated that it intends to promote cooperative sharing of the band with new fixed and mobile, except aeronautical mobile, systems to the extent possible. The DoD intends to allow for commercial deployments in the band by adjusting its concept of operations for many of these systems to the extent possible without fully vacating the band. To this end, the AMBIT selected the specific frequency band 3450–3550 MHz for commercial access. Consistent with the AMBIT study, the Commission proposes that federal systems operating in the band may not cause harmful interference to non-federal operations in the band, except in limited circumstances and locations. Non-federal systems are not entitled to protection against harmful interference from federal operations (and limited restrictions may be placed on non-federal operations), under the following circumstances: (1) In Cooperative Planning Areas; (2) in Periodic Use Areas; and (3) during times of National Emergency. The Commission seek comment on its proposal.

Upon completion of the AMBIT study, a number of circumstances were identified where the DoD will require continued access to the band. Specifically, the DoD has identified a list of ''Cooperative Planning Areas,'' in which it anticipates that federal operations will continue subsequent to the assignment of flexible use licenses in the band. These areas are limited in size and scope and include military training facilities, test sites, Navy home ports, and shipyards. The Commission will work with the DoD to minimize the size of Cooperative Planning Areas where possible. For each Cooperative Planning Area, the DoD intends to receive input from and provide information to the wireless industry, including commercial operators, in the near future (*i.e.,* before the spectrum is auctioned) regarding commercial network planning and deployments in order to minimize impacts from incumbent federal operation on future commercial operations and to enable effective federal operations. For example, the DoD anticipates holding workshops with wireless carriers to begin discussing such issues, similar to information sharing and transition planning that occurred with industry as part of the AWS–3 auction. The DoD anticipates that, once licenses are issued, it would reach mutual agreements with individual licensees for commercial network planning. In addition, the DoD has identified a number of ''Periodic Use Areas'' that overlap with certain Cooperative Planning Areas, in which the DoD will need episodic access to all or a portion of the band in identified, limited geographic areas. The DoD anticipates that it will need to coordinate federal usage of the spectrum with affected licensees for specific times, bandwidths, and locations. In both cases, the coordination procedures would need to ensure that the DoD has authority to radiate and that protection from interference would be adequate to preserve military readiness, capabilities, and national security. The Commission seeks comment on these concepts and how to incorporate them into future coordination procedures. Should the Commission also adopt a process for sharing of sensitive and classified information between federal and commercial operators? If so, should the Commission base this process on the procedures used in the AWS–3 proceeding?

In light of the AMBIT agreement recently reached between the DoD and the White House, the Commission seeks comment on an appropriate coordination regime that would promote productive ongoing negotiations between federal incumbents and new, commercial flexible use licensees. What aspects of network planning should be considered during coordination efforts and what are the ramifications of such negotiations? For example, should federal incumbents and new, commercial licensees be required to coordinate network architecture, power levels, shielding, antenna backlobe/sidelobe and/or filter requirements to minimize potential co- and adjacent channel interference to and from commercial systems? How should disagreements be resolved? Should timelines be applied to such negotiations? What other safeguards would be appropriate to ensure efficient and productive coordination negotiations? For Periodic Use Areas, how would commercial licensees be notified of each periodic use and with how much advance notice? Would cooperative agreements between federal and non-federal operators in Periodic Use Areas further increase the commercial utility of the spectrum in the vicinity of such areas? What costs would be involved in the proposed coordination regime, and how large would these costs be? What would be the benefits of such coordination regimes? In addition, the Commission notes that under certain environmental conditions tropospheric ducting could occur and harmful interference could be received at large distances from its source. In such instances, what notification and coordination mechanisms can be used by federal and non-federal users to identify and mitigate such interference? What steps, if any, can network operators and federal users take at system planning stages to account for the effects of

tropospheric ducting? Are there efforts federal users can undertake to optimize and encourage sharing? How should harmful interference in such instances be resolved? And should there be different procedures or requirements for Cooperative Planning and Periodic Use Areas and the rest of the contiguous U.S. that are not in such areas? Given that federal use of the radio spectrum is generally governed by NTIA while non-federal use is governed by the Commission, the Commission anticipates that any guidance or details concerning federal/non-federal coordination would be issued jointly by NTIA and the Commission. The Commission also seeks comment on directing the Wireless Telecommunications Bureau and the Office of Engineering and Technology to administer details of the coordination regime for the 3.45 GHz band, and on whether to codify such direction into the Commission's rules.

The Commission seeks comment on technical parameters that would inform federal and non-federal coordination in the band. The Commission invites commenters to discuss the likely costs and benefits of such parameters to ensure that new, co-primary commercial licensees are protected from harmful interference from incumbent federal operations. For example, what is the appropriate maximum co-channel received power from pulsed radar signals that could be tolerated as an input to commercial mobile cellular equipment (both base station and user equipment) without creating a significant impact on the user experience? Beyond the user experience, the Commission seeks comment on input power at which new commercial receivers, both base stations and mobile stations, would experience desensitization. What sensing mechanisms inherent in modern mobile cellular communication systems and networks could be used for identifying external interference caused by federal operators? Once identified, how should information about such interference and degradation to commercial operations be quantified and reported to the federal operators? What other mechanisms could be used to enable effective coordination in this band?

While the Institute for Telecommunications Science has published preliminary testing results about the likely impact of federal radars on commercial 4G LTE systems, additional data may be needed to further validate the conclusions and values for 5G systems. The Commission therefore seeks technical analyses and comparisons between LTE and 5G new radio (NR) receiver performance in the presence of interference from radar-type pulses. The Commission also seeks comment on the impact the differences between LTE and 5G systems could have on the technical parameters and rules that the Commission may consider and adopt for this band. In addition, the Commission invites commenters to submit technical studies and analyses that account for the new 5G physical layer designs, including symbol time and structure, subcarrier spacing, channel coding, and interleaving as it relates to the ability of 5G NR to operate in the presence of pulsed radar. The Commission also invites commenters to submit technical studies on other variabilities in radar waveforms, including frequency domain bandwidth and chirping, pulse duration, and duty cycle.

The Commission seeks comment additionally on how to assess and limit potential harmful interference to new 3.45–3.55 GHz flexible use licensees from federal operations in adjacent bands. Commenters who are concerned about adjacent band operations should identify the types of systems that they operate and provide information on measures that can be taken to lessen any effects. Are there filters that commercial and/or federal users could use to minimize the potential for harmful interference? What are the minimum filtering requirements necessary to ensure that commercial operations will not suffer harmful interference in the presence of ongoing federal operations? How would such filters affect the size of the areas where commercial operations may be impacted by ongoing federal operations? Should the rules require commercial systems to install filters with minimum performance specifications to enable use of the 3.45–3.55 GHz band by federal and non-federal users? What form of sensing or notification-based mechanisms would facilitate successful and automated coordination between federal and non-federal operations in the 3.45–3.55 GHz band? What are the costs and benefits of a sensing regime as compared to a notification-based regime?

What other techniques could federal incumbents and new commercial operators use to minimize interference to commercial operators? Are there additional steps that the DoD and commercial operators could take to adjust their operations to help block emissions to the non-federal fixed or mobile users and to federal users in areas where federal and non-federal operations will be in close proximity to one another? Could the DoD incorporate its efforts into Cooperative Planning Area negotiations? Could the sensing and notification-based mechanisms used in the 3.5 GHz band also be used in this band to enable successful coordination between federal and non-federal operations in the 3.45–3.55 GHz band? What would be the costs and benefits of these alternative approaches? The Commission also seeks comment on the potential impact that relocating DoD operations out of the 3.45–3.55 GHz band might have on commercial access to other spectrum bands.

If the Commission makes this band available for non-federal fixed and mobile (except aeronautical mobile) operations, it seeks comment on how to coordinate incumbent federal radar operations in the future. Specifically, the DoD will require access to the band during times of National Emergency to fulfill military operational needs. Accordingly, the Commission proposes that during times of National Emergency federal users are authorized to operate within the band as required to meet operational mission requirements. Further, the Commission proposes that upon notification, commercial licensees shall terminate or otherwise adjust their operations to prevent harmful interference to the federal operations. The Commission seeks comment on its proposal. How would commercial operators be informed of a National Emergency and how would continued coordination be facilitated? What should constitute a ''National Emergency'' in this context? How quickly would a commercial operator be required to terminate or adjust its operations following notification? How would the termination of a National Emergency be communicated to a commercial operator? What other coordination procedures would be beneficial under these circumstances? NTIA states that it is considering ''the development [of] an automated, real-time, incumbent-informing spectrum sharing system ('incumbent-informing system') that NTIA would operate in conjunction with DoD to notify commercial entities when the latter would need to cease operations.'' The Commission seeks comment on the appropriate means to coordinate operations of federal users and commercial licensees. The Commission seeks comment on the costs and benefits of such coordination regimes.

B. 3.45–3.55 GHz Band Plan

Block Sizes.—The Commission seeks comment on the appropriate block size to promote efficient and robust use of the band for next generation wireless technologies, including 5G. The Commission proposes to adopt 20

megahertz blocks for this band to align with the 3.7 GHz band, which it recently reallocated for fixed and mobile use, and for which it likewise adopted 20 megahertz spectrum blocks. The Commission seeks comment on this proposal. Alternatively, should the Commission license this band by 10 megahertz blocks akin to Priority Access Licenses (PALs) in the Citizens Broadband Radio Service operating in the 3.5 GHz band? If so, why? The Commission asks commenters to detail the advantages and disadvantages of their favored approach, including any costs and benefits. The Commission also seeks comment on potential alternatives.

Spectrum Block Configuration.—The Commission proposes to allocate the 3.45–3.55 GHz band as an unpaired band to promote a consistent spectral environment with the nearby mid-band allocations in the 3.5 GHz and 3.7 GHz bands, which are also unpaired in the United States. This approach is consistent with industry standards. The Commission seeks comment on its approach as well as alternative approaches, including the costs and benefits of a commenter's favored approach. What administrative measures would be necessary to keep track of how spectrum blocks are being used with time division duplexing (TDD) within the band or frequency division duplexing (FDD) paired with other bands? If the Commission anticipate that licensees will be using TDD, should it require licensees to synchronize or coordinate their transmissions with each other or with Citizens Broadband Radio Service users to the extent that the licensees both use TDD and one party requests synchronization? The Commission notes, however, that the Commission did not take this approach in the *3.7 GHz Service Order. See Expanding Flexible Use of the 3.7 to 4.2 GHz Band,* GN Docket No. 18–122, Report and Order and Order of Proposed Modification, 35 FCC Rcd 2343 (2020) (*3.7 GHz Service Order*). What are the consequences of adopting this flexible approach as compared to a more prescriptive approach? What other factors, including costs or benefits of this approach, should the Commission consider?

Use of Geographic Licensing.—Consistent with the Commission's approach in several other bands used to provide fixed and mobile services, the Commission proposes to license the 3.45–3.55 GHz band on an exclusive, geographic area basis. The Commission seeks comment on this approach, including the costs and benefits of adopting a geographic area licensing scheme. If a party opposes using geographic licensing, it should explain its position, describe the licensing scheme it supports, and identify the costs and benefits associated with its alternative licensing proposal.

Guard Bands.—The proposed 3.45–3.55 GHz band will be situated between two active bands. At the upper edge of the band, the Citizens Broadband Radio Service operates in the 3.55–3.7 GHz band, and federal incumbents use the 3.55–3.65 GHz band. At the lower edge of the band, the primary allocation for federal radiolocation operations will continue below 3.45 GHz. While the creation of guard bands is one option for protecting adjacent systems, such a use of valuable spectrum is inefficient and could be avoided using other technical solutions.

The proposed technical rules mirror many of those adopted in the *3.7 GHz Service Order,* in which the Commission likewise did not create a guard band for the lower edge of the 3.7 GHz band, which also abuts the 3.5 GHz band. The Commission expects that its proposed technical rules also would sufficiently protect adjacent operations at the lower edge of the band. Accordingly, the Commission does not propose creating guard bands at either end of the 3.45–3.55 GHz band. The Commission seeks comment on this proposed approach and its underlying assumptions. If a commenter supports the creation of one or more guard bands, then it should include a technical analysis justifying the need for such guard band(s), including the costs and benefits.

C. Relocation of Secondary Non-Federal Radiolocation Operations

In the accompanying Report and Order, the Commission removes the non-federal secondary allocations in the 3.3–3.55 GHz band for radiolocation operations and relocates them to the 2.9–3.0 GHz band. In the FNPRM, the Commission seeks comment on how it should relocate non-federal radiolocation operators to the 2.9–3.0 GHz band and the timing for doing so.

In the *Report and Order,* the Commission determined that secondary non-federal radiolocation licensees operating in this band as of the effective date of the Report and Order may continue to operate while the Commission finalizes plans to reallocate spectrum in the 3.45–3.55 GHz band. Authorization for these operations will sunset on a date consistent with the first possible grant of flexible use authorizations to new users in that portion of the band. For example, if the Commission adopts a licensing scheme that will result in an auction to assign licenses, non-federal radiolocation use would sunset within 90 days of the close of the auction. The Commission does not propose, however, to bifurcate the sunset of the secondary radiolocation allocation as it proposes for the amateur allocation, first sunsetting the allocation above 3.45 GHz, and later at 3.3–3.4 GHz. There are far fewer radiolocation operators in the lower 3 GHz band than amateur users, and their operations are higher power. The Commission seeks comment on this approach. Further, within this framework, the Commission seeks comment on the appropriate timing of transitioning such licenses to the 2.9 to 3.0 GHz band. What interim benchmarks or deadlines might be appropriate to best relocate such licensees without interruptions to their operations?

In order to clear the entire 3.3–3.55 GHz band for future flexible use licenses, the Commission proposes to use its section 316 authority to modify existing secondary, non-federal radiolocation licenses such that they are no longer authorized to operate in the 3.3–3.55 GHz band following adoption of final rules based on the proposals in this FNPRM. The Commission finds that such modifications are consistent with its statutory authority and would serve the public interest. Given the Commission's decision to sunset the allocation for these secondary, non-federal radiolocation operations, it proposes to modify their licenses accordingly to authorize use in the 2.9–3.0 GHz band, which would allow them to continue providing the same services as they do today. The Commission proposes that, once it finalizes procedures for the relocation of non-federal radiolocation licensees and determines the appropriate timing for the transition of such licensees to their new frequencies, it would issue an Order of Proposed Modification under section 316 to modify their licenses to operate on these new frequencies. The Commission seeks comment on this proposal.

The Commission also seeks comment on whether it should require new flexible use licensees to reimburse incumbent non-federal, commercial radiolocation operators for relocation costs they might incur. The Commission notes that non-federal radiolocation operations in the 3.3–3.55 GHz band are pursuant to a secondary allocation and that the Commission has previously found that such secondary users were not entitled to reimbursement. However, the Commission seeks comment on whether it should expand the *Emerging*

Technologies framework in this specific instance to include some reimbursement for secondary users relocating out of the 3.3–3.55 GHz band. The Commission recognizes that reimbursement would increase the costs of participating in its new flexible use licensing regime, and that it could therefore reduce investment in the band and proceeds generated by an auction of licenses in the band. The Commission seeks comment on this possibility and note that section 309(j) of the Communications Act only requires the Commission to recover a ''portion of the value of the public spectrum resource made available for commercial use.'' The Commission also seeks comment on the level of investment in these commercial operations, and the remaining useful life of the equipment used for such operations, as well as on the importance of the services they provide. The Commission therefore seeks comment on the costs and benefits of such reimbursement. If the Commission elects some form of reimbursement for these secondary users, should it require all incoming licensees to share in reimbursing such relocation costs? How should this shared reimbursement structure work? The Commission invites reference to prior shared reimbursement regimes.

Commenters should specify the extent to which the Commission should or should not expand the *Emerging Technologies* framework to include relocated secondary licensees. If the Commission should provide for reimbursement of relocation costs, to what extent is that decision specific to the secondary, non-federal radiolocation operations in the 3.3–3.55 GHz band or generally applicable to secondary users across other bands and services? The Commission notes that operators in this band perform important safety functions, in particular for weather forecasting and physical security, and, despite their secondary status, have operated without significant interference risks from primary federal operations. To what extent should these factors, or others, play a role in guiding the Commission's decision on reimbursement in this proceeding and otherwise?

Additionally, the Commission seeks comment on costs associated with relocating secondary, non-federal radiolocation operations. The Commission seeks comment on the nature of relocation costs and how best to quantify them. For example, what equipment or software would need to be modified or replaced? The Commission seeks comment on the frequency agility of existing radars; could such equipment be retuned to the relocated band or are other modifications required? If changes are needed, commenters should address the nature of such changes, *e.g.,* new filters, new antennas, etc. Are labor costs likely to be incurred in implementing the relocations? The Commission seeks comment on how long relocations would be expected to take and on any changes in operations that need to be made to operate in new bands. Commenters should discuss in detail any such specific costs. Commenters should also discuss how costs should be calculated and what, if any, costs should be excluded, as well as the most appropriate Commission implementation of any reimbursement regime.

Which of the relocation mechanisms that the Commission has used in the past would be appropriate here? Are there unique logistical concerns with relocation planning for these operations that the Commission should address by rule, as opposed to by public notices to be issued by the relevant bureaus? The Commission proposes to handle any mutually exclusive applications for new frequencies based on its existing part 90 shared spectrum use rules, but it seeks comment on alternatives.

D. Continued Operation of Amateur Stations in Part of the 3.3–3.45 GHz Band

In the accompanying *Report and Order,* the Commission sunsets the allocation for amateur operations in the 3–3.3.5 GHz band to allow for full commercial use of the spectrum to be made available through flexible use licenses. The Commission authorizes continued operations for amateur license holders only until the date consistent with the first possible grant of flexible use authorizations to new users in the band, consistent with the timeline for relocation of secondary radiolocation services.

Many amateur licensees argue that requiring them to cease operations earlier than necessary would be ''a waste of valuable spectrum resources.'' Many also argue that, since the focus of future flexible use licensing is above 3.45 GHz, the Commission at a minimum should allow amateur operators to continue below 3.45 GHz for the foreseeable future. In light of these concerns, and of the large number of amateur licensees currently operating in the band, the Commission seeks comment on sunsetting amateur use in the band in two separate phases.

The Commission proposes to sunset amateur operations in the 3.4–3.5 GHz band, pursuant to the accompanying Report and Order, but to allow amateur operations in the remainder of the band (*i.e.,* 3.3–3.4 GHz) to continue pending further decisions about the future of this portion of the spectrum. Specifically, the Commission proposes that amateur use in the upper portion of the 3.3–3.55 GHz band would sunset according to the procedures set out in the accompanying Report and Order (on a date consistent with the first possible grant of flexible use authorizations to new users in that portion of the band), while amateur use of the lower portion of the band would continue until a future date to be set later in this proceeding. If the Commission adopts this approach, it stresses that amateur operations in that lower portion of the band would remain on a secondary basis, and the allocation would continue to be subject to sunset at any time.

Would this approach of bifurcating the amateur allocation and sunsetting the two portions on different dates allow amateur operations to continue during the pendency of decisions about use of the band below 3.4 GHz, while still providing future flexible use licensees sufficient protection from harmful interference? What are the costs and benefits of this approach and of any alternatives? If the Commission were to adopt this approach, at what frequency should it split the band? Given the possibility that cross-service adjacent channel interference could result if the Commission allows amateur operations to continue immediately adjacent to 3.45 GHz, the Commission proposes to set the upper boundary of this lower portion of the allocation at 3.4 GHz in order to create a 50 megahertz guard band, and seeks comment on that proposal. Are there alternatives to this approach that would allow increased amateur use while also providing full protection to flexible use licensees?

Finally, the Commission seeks comment on whether any modifications pursuant to its Section 316 authority are necessary to accomplish its proposed changes to the amateur allocation. The Commission notes the unique nature of amateur licensing relative to other Commission licensees, and that it is not selecting new frequencies for amateur operations because there are many alternate bands available for amateurs to choose from.

E. Technical Issues

The Commission seeks comment on appropriate technical rules to maximize the potential uses of the 3.45–3.55 GHz band, particularly for the next generation of wireless services, while minimizing the impact on adjacent band incumbents, consistent with the public

interest. In order to promote maximum flexibility for 5G deployments, the Commission proposes to align the technical rules for this band with those adopted in the 3.7 GHz band. The Commission seeks comment on this overarching proposal and its potential impact on operations in adjacent bands. The Commission also seeks comment on alternative approaches. For example, fixed wireless providers may deploy fixed client devices in this band. What technical standards should apply to such devices, particularly when mounted outdoors? In order to prevent interference to fixed and mobile operations in the Citizens Broadband Radio Service, should the technical rules for this band more closely resemble those for the Citizens Broadband Radio Service in the 3.5 GHz band? Are there advantages to adopting technical rules that are harmonized with the rules applicable to Priority Access Licenses in the adjacent 3.5 GHz Citizens Broadband Radio Service band? The Commission seeks comment on the technical approach that will maximize the spectral efficiency of 3 GHz spectrum. In addition, the Commission seeks comment on appropriate power limits, out-of-band emissions limits, antenna height limits, service area boundary limits, international coordination requirements, and any other technical rules that would maximize flexible use of the band while protecting new, non-federal licensees and federal incumbents in adjacent bands.

Power Limits for Base Stations.—The Commission seeks comment on transmit power limits for base stations in the 3.45–3.55 GHz band. The Commission proposes to adopt the same base station power limits that the Commission adopted in the 3.7 GHz band, 1640 watts and 3280 watts of equivalent isotropically radiated power (EIRP) per megahertz in non-rural and rural areas, respectively. These power levels were used in the AMBIT study, and any change can change the result of the study and produce a corresponding increase or decrease in Cooperative Planning Areas and Periodic Use Areas. The Commission believes these limits would support robust deployment of next-generation mobile broadband services. The Commission seeks comment on this proposal. Commenters should provide a technical evaluation of the impact of these proposed power levels on effective coexistence with all operations within the 3.45–3.55 GHz band and across adjacent bands, as well as its costs and benefits. The Commission also seeks comment on the potential effect on users in the adjacent 3.5 GHz band. Could asymmetrical EIRP limits between the 3.45–3.55 GHz and Citizens Broadband Radio Service operations result in interference to Priority Access Licensees or General Authorized Access users in the lower 50 megahertz of the Citizens Broadband Radio Service band? The Commission also seeks comment on whether the proposed EIRP would impact Environmental Sensing Capability sensors in the Citizens Broadband Radio Service band and, if so, what effect this could have for access to the lower 100 megahertz of the Citizens Broadband Radio Service band. Absent any coordination requirement, what power limits would be needed to avoid interference to existing or future Citizens Broadband Radio Service operations?

The Commission also seeks comment on alterative base station power limits. Should the power be composed of transmit conducted power and antenna gain with some flexibility to ''mix and match'' both, or should the rule only define the final power in EIRP? While higher power limits may provide additional flexibility for some deployments, what is the impact of high-power base stations on adjacent bands? Commenters that propose alternative base station transmit power limits should include a thorough technical justification for their proposal, including the effect on receiver blocking or other aggregate interference issues impacting receivers operating above and below the band. Commenters should also provide the costs and benefits of such proposals.

Power Limits for Mobile *Stations.*—The Commission seeks comment on appropriate power limits for mobile stations in the 3.45–3.55 GHz band. The Commission notes that most commercial services, including LTE, CDMA, and UMTS, commonly deploy mobile stations which operate at a maximum output power of 23 dBm (200 milliwatts), regardless of higher FCC power limits. 3GPP, however, has defined a higher power class for LTE and 5G at 26 dBm (400 milliwatts). This development may warrant continued flexibility in the Commission's rules to allow for a wider range of device types.

The Commission proposes to adopt 1 Watt EIRP as the maximum power limit consistent with the 3.7 GHz Service rules. The Commission anticipates that this mobile power limit would provide adequate power for robust mobile service deployment. Additionally, this limit would permit operation of mobile user equipment (UE) at two power levels—23 dBm and 26 dBm—as specified in the 3GPP standards for 5G systems, which are both lower than the proposed 1 Watt EIRP limit. The Commission seeks comment on its proposed limit and queries whether alternative mobile station power limits should be considered based on expected use cases. Commenters supporting specific mobile station transmit power limits should include a technical justification for such power limits and an evaluation of any coexistence issues. For each proposed power limit, The Commission also seeks comment on whether the proposed limit would affect operation of mobile stations in the adjacent Citizens Broadband Radio Service or affect federal users in the 3.5 GHz band. Commenters should provide an analysis of the costs and benefits of their proposals.

Out-of-Band Emission Limits.—The Commission seeks to adopt OOBE limits that would both protect incumbent services in adjacent bands while still allowing full commercial use in the new band. At the upper edge, this band is adjacent to the 3.5 GHz band's Citizens Broadband Radio Service and the DoD's shipborne radar operations in the 3.55–3.65 GHz portion of the band. At the lower edge, the DoD will continue radar operations in the 3.1–3.45 GHz range for the foreseeable future, and it may increase its use below 3.45 GHz as the DoD migrates some radar operation out of the 3.45–3.55 GHz band. In addition, the DoD's use below 3.45 GHz is expected to include ground-based and airborne operations, which may necessitate additional protection considerations.

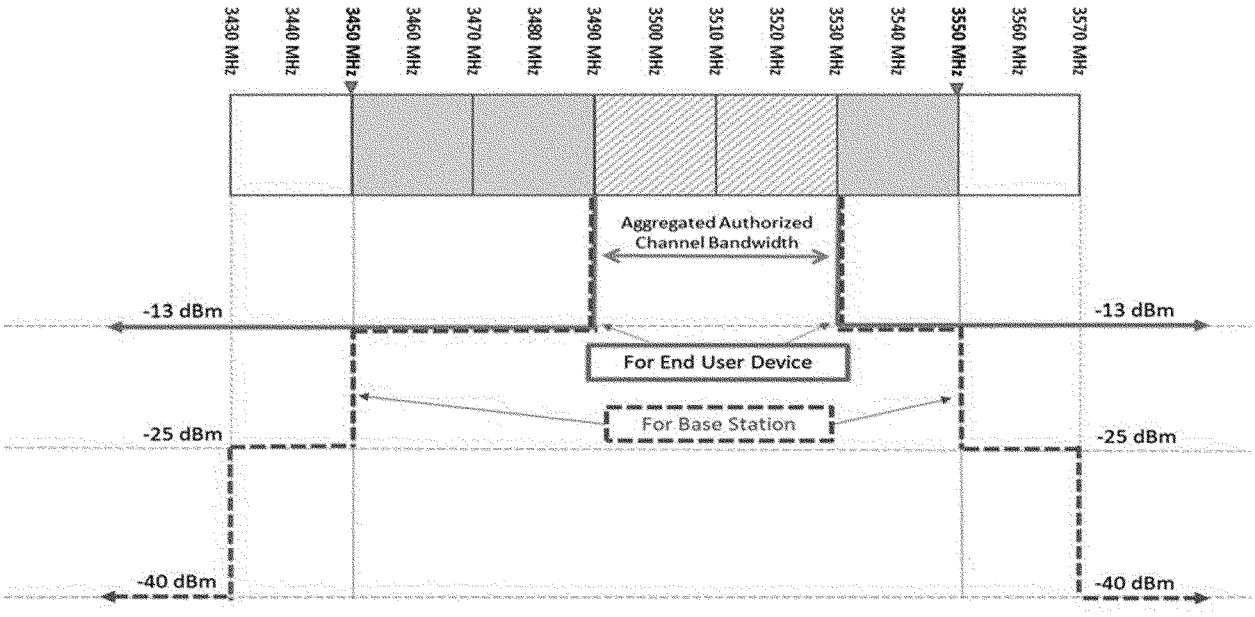
The Commission proposes to adopt an OOBE limit of −13 dBm/MHz at the authorized channel edge (as measured at the antenna terminals), consistent with the OOBE limit adopted for the 3.7 GHz band. Further, as a baseline for the 3.45 GHz band, the Commission proposes additional requirements beyond the upper and lower band edges such that base stations meet the same two-step limits consistent with the OOBE limits specified for the Citizens Broadband Radio Service as implemented for band n48. The Commission believes that these OOBE limits will be needed to facilitate widespread deployment of next generation wireless services in the 3.45–3.55 GHz band, while ensuring effective coexistence with the mission critical federal and other non-federal services operating in the adjacent bands. Specifically, the Commission proposes the following emissions limits for the 3.45–3.55 GHz band:

- −13 dBm/MHz at the authorized channel edge;

• Equal to or less than −25 dBm/MHz beyond the band edge down to 3430 megahertz and up to 3570 megahertz;

• Equal to or less than −40 dBm/MHz below 3430 megahertz and above 3570 megahertz.

The Commission summarizes its proposed approach in Figure 1 below.



The Commission seeks comment on its proposal. The Commission's proposal for a –13 dBm/MHz OOBE limit at the band edge is consistent with other commercial mobile bands and the additional requirements are consistent with OOBE limits for the nearby Citizens Broadband Radio Service, for which the Commission adopted a graduated emissions mask to, among other things, prevent adjacent channel interference from Citizens Broadband Radio Service users to federal radar operations in 3.45–3.55 GHz band. Although it does not propose a specific OOBE limit, NTIA recommends that the Commission consider ''tighter'' OOBE limits for commercial operations to better facilitate federal and non-federal operations on adjacent frequencies. Without additional emission limits to protect adjacent band operations, would new mobile broadband deployments in the 3.45–3.55 GHz band near federal radar usage areas and deployed Environmental Sensing Capability sensors experience operational impacts which could lower the spectrum's value and use in some high population areas? The Commission also seeks comment on what OOBE limits might be appropriate to protect users in the adjacent 3.5 GHz band. Would OOBE from 3.45–3.55 GHz emitters contribute to the aggregate interference for shipborne and inland DoD radars in the Citizens Broadband Radio Service band? If so, are SAS operators able to accurately model or manage this interference contribution? Would a TDD synchronization or coordination requirement enable less stringent OOBE limits? The Commission declined to adopt such a requirement in the 3.7 GHz proceeding.

Alternatively, should the Commission adopt an OOBE limit which only specifies the limit at the edge of the authorized channel (*i.e.,* −13 dBm/MHz) consistent with other commercial mobile bands? How would the graduated emission mask the Commission proposes here affect the ability of equipment to operate across other mid-band spectrum bands, such as the 3.7 GHz or 2.5 GHz bands?

The Commission's proposals recognize that 3GPP 5G standards, based on regional regulatory requirements, define similar basic and band-specific base station emission limits for certain mid-band spectrum bands. For example, the 3GPP standard for bands n77 and n78, which overlap with the 3.45–3.55 GHz band, requires emissions to be reduced below −52 dBm/MHz as measured from the edge of the spectrum band, while emissions for other bands must be reduced below −49 dBm/MHz. For band n48, which applies to 5G base stations in the Citizens Broadband Radio Service band in the U.S., the 3GPP standard is in line with the Commission's part 96 rules. The Commission's proposed approach, while more relaxed than what is required by 3GPP for similar bands in other regions, should provide more flexibility and consistency with its recent rules and 3GPP limits for adjacent band n48. The Commission believes that the limits proposed above are sufficient for expected coexistence scenarios without imposing unreasonable implementation costs. The Commission seeks comment on this notion.

The Commission seeks comment on this proposal and requests technical evaluation of this or any alternative approach including alternative limit values or use of slopes rather than steps. For example, should the emission limit only specify a flat −13 dBm/MHz requirement similar to other commercial mobile bands or start with −13 dBm or −25 dBm at the edge of the band and gradually lower to −40 dBm at a 20 megahertz offset from edge of the band? Are there other alternatives that achieve the same goal of protecting adjacent services without unduly impacting equipment in the 3.45–3.55 GHz band? The Commission also seeks comment on whether different limits should be applied based on the location of deployments. Commenters should provide an analysis of the costs and benefits of different options and provide detailed technical analysis in support of their proposals.

To fully define an OOBE limit, the Commission's rules generally specify how to measure the power of the emissions, such as the resolution

bandwidth. For most AWS bands, the resolution bandwidth used to determine compliance with the base station limit is one megahertz or greater, except that within one megahertz of the channel edge, a resolution bandwidth of at least 1% of the emission bandwidth of the fundamental emission of the transmitter can be employed. The Commission proposes to adopt the same approach here and seeks comment on its proposal. In addition, The Commission seeks comment on alternative approaches to defining resolution bandwidth. For example, the Upper Microwave Flexible Use Service (UMFUS) rules under part 30 instead specify use of a one megahertz resolution bandwidth but allow an OOBE limit of −5 dBm per megahertz from the channel edge out to 10% of the channel. Should the rules the Commission adopts in this band instead follow the UMFUS approach to defining the resolution bandwidth? Is another approach more appropriate? In addition, like other part 27 services, the Commission proposes to apply section 27.53(i), which states that the FCC, in its discretion, may require greater attenuation than specified in the rules if an emission outside of the authorized bandwidth causes harmful interference. The Commission seeks comment on this approach.

Mobile Out-of-Band Emissions.—As with base station OOBE limits, the Commission proposes to adopt mobile emission limits similar to its standard emission limits that apply to other mobile broadband services. Specifically, the Commission proposes that mobile units be required to suppress the conducted emissions to no more than −13 dBm/MHz outside their authorized frequency band. The Commission seeks comment on this proposal and on other alternative limits to ensure robust coexistence with federal and non-federal operations in adjacent bands, including any costs and benefits. Should the same OOBE limits apply to both base stations and mobile stations or are different OOBE requirements needed for each? The Commission notes that mobile stations and other end user equipment usually operate with power control and at lower maximum power levels than base stations, and that the implementation of more stringent emission limits could be complex and cost-prohibitive for the form factor. The Commission seeks comment on all aspects of the OOBE limits for base stations and mobile stations. The Commission also seeks comment on whether the same or different OOBE limits should be applied to emissions within the band as compared to those at either edge of the band. Commenters should address the costs and benefits of their proposals.

Coexistence with Federal and Non-federal Adjacent Band Operators.—The Commission seeks comment on whether additional coordination or technical protection criteria, beyond OOBE limits, are necessary to ensure effective coexistence with federal and non-federal adjacent band operators. Regarding federal adjacent band operators, what rules might be necessary to assess and avoid potential excessive receiver blocking that could occur from the aggregated power received from dense deployment of base stations and mobile stations to the federal radars operating below and above the 3.45–3.55 GHz band? Similarly, what rules would be necessary to assess and avoid potential receiver blocking to new flexible use fixed/mobile operations in the band from adjacent high-power radar systems below and above the band?

Field Strength Limit and Market Boundaries.—If the Commission decides to license the 3.45–3.55 GHz band based on geographic service areas, it would need to ensure that such licensees do not cause interference to co-channel systems operating along common geographic borders. The Commission proposes to adopt the same parameters that it adopted in the 3.7 GHz band. Specifically, the Commission proposes to adopt a −76 dBm/m2/MHz power flux density (PFD) limit at a height of 1.5 meters above ground at the border of the licensees' service area boundaries. In addition, the Commission proposes to allow licensees operating in adjacent geographic areas to agree voluntarily to higher field strength limits at their common boundaries. The Commission seeks comment on these proposals as well as alternative approaches to limit field strength or power level in the 3.45–3.55 GHz band. For example, the current rules for AWS–1, AWS–3, and AWS–4 address the possibility of harmful co-channel interference between geographically adjacent licenses by setting a field strength limit from base stations of 47 dBμV/m at the edge of the license area. In the 3.5 GHz band, the Commission limited aggregate power at PAL boundaries to be less than or equal to −80 dBm/10 MHz (with the measurement antenna placed at a height of 1.5 meters above ground level) or at a level mutually agreed upon by operators. Would one of these other approaches be preferable here? Should technical rules allow adjacent affected area licensees to agree voluntarily to higher signal levels like the Citizens Broadband Radio Service, PCS, and AWS services? Should such a power level or field strength limit be based on single node transmission or aggregate powers received? The Commission seeks comment on appropriate metrics to be used and the best approaches to determine the limits, including the costs and benefits of such approaches.

Antenna Height Limits.—The Commission seeks comment on the appropriate antenna height limits for the 3.45–3.55 GHz band. The Commission notes that while specific antenna height restrictions for AWS–1 and AWS–3 base stations are not set forth in part 27 of its rules, all such services are subject to section 27.56, which bans antenna heights that would be a hazard to air navigation. In the Citizens Broadband Radio Service, there is no height limit for base stations if they operate indoors or are professionally installed. Furthermore, the co-channel coexistence between adjacent networks and the adjacent channel coexistence between overlapping networks limit field strength at the geographical boundary of the license, which may also effectively limit deployable antenna heights. The Commission proposes to adopt the flexible antenna height rules that apply to AWS–1 and AWS–3 and seeks comment on its proposal and any alternatives. Should the antenna height limit for base stations operating in this band be tied to the base station maximum power limit? Should the Commission consider banning antenna heights that would be a hazard to air navigation or air-borne radars in adjacent bands? Commenters should address the costs and benefits of their proposals as well as include technical support.

Canadian and Mexican Coordination.—Section 27.57(c) of the Commission's rules provides that several AWS services, including WCS, AWS–1, AWS–3, AWS–4, and the H Block, are subject to international agreements with Mexico and Canada. The Commission proposes to apply the same limitation to the 3.45–3.55 GHz band. Until such time as adjusted agreements between the United States and Mexico, or the United States and Canada, can be successfully negotiated, operations would be prohibited from causing harmful interference across the border, consistent with the terms of the agreements currently in force. The Commission notes that further modification (of the proposed or final rules) might be necessary in order to comply with any future agreements with Canada and Mexico regarding the use of these bands. The Commission seeks comment on this issue, including the

costs and benefits of alternative approaches to this issue.

General Part 27 Rules.—There are several additional technical rules applicable to all part 27 services, including sections 27.51 (equipment authorization), 27.52 (RF safety), 27.54 (frequency stability), 27.56 (antennas structures; air navigation safety), and 27.63 (disturbance of AM broadcast station antenna patterns). The Commission proposes to apply these general part 27 rules to all 3.45–3.55 GHz band licenses. Further, the Commission proposes to apply these rules to licensees that acquire their licenses through partitioning or disaggregation (to the extent the service rules permit such aggregation). The Commission seeks comment on its proposals, including specific costs and benefits.

F. Licensing and Operating Rules; Regulatory Issues

The Commission proposes and seeks comment on service-specific rules for the 3.45–3.55 GHz band, including eligibility, mobile spectrum holdings policies, license term, performance requirements, renewal term construction obligations, and other licensing and operating rules. In addressing these issues, commenters should discuss the costs and benefits associated with these proposals and any alternatives that commenters propose. The Commission seeks comment generally on the appropriate approach or combination of approaches to encourage investment, promote efficient spectrum use, and facilitate robust deployment in the band. In general, the Commission proposes to align the licensing and operating rules for the 3.45–3.55 GHz band with the rules adopted in the 3.7–4.2 GHz band, but also seeks comment on alternative or different approaches, including aspects of the Part 96 rules, such as smaller license areas and shorter license terms.

Eligibility.— The Commission proposes to adopt an open eligibility standard for licenses in the 3.45–3.55 GHz band, consistent with established Commission practice. An open eligibility standard for the licensing of the 3.45–3.55 GHz band should encourage the development of new technologies, products, and services, while helping to ensure efficient use of this spectrum. The Commission seeks comment on this assumption. The Commission notes that an open eligibility approach would not affect citizenship, character, or other generally applicable qualifications that may apply under its rules. Commenters should discuss the costs and benefits of the open eligibility proposal on competition, innovation, and investment. The Commission proposes to apply the ineligibility provision which provides that a person who, for reasons of national security, has been barred by any agency of the Federal Government from bidding on a contract, participating in an auction, or receiving a grant is ineligible to hold a license that the Spectrum Act requires to be assigned by a system of competitive bidding under Section 309(j) of the Communications Act.

Mobile Spectrum Holding Policies.— Spectrum is an essential input for the provision of mobile wireless services, and the Commission has developed policies to ensure that spectrum is assigned in a manner that promotes competition, innovation, and efficient use. The Commission seeks comment generally on whether and how to address any mobile spectrum holdings issues involving 3.45–3.55 GHz band spectrum to meet its statutory requirements and to ensure competitive access to the band. Similar to the Commission's approach in the *2017 Spectrum Frontiers Order and FNPRM* and the *1675–1680 MHz NPRM,* the Commission proposes not to adopt a pre-auction, bright line limit on the ability of any entity to acquire spectrum in the 3.45–3.55 GHz band through competitive bidding. The Commission is not inclined to adopt such limits absent a clear showing that they are necessary to address a specific competitive concern; such pre-auction limits may restrict unnecessarily the ability of entities to participate in and acquire spectrum in an auction. The Commission seeks comment on any specific concerns of this type.

The Commission also seeks comment on whether this band should be included in the Commission's spectrum screen, which helps to identify markets that may warrant further competitive analysis, for evaluating proposed secondary market transactions. The Commission seeks comment on reviewing holdings on a case-by-case basis when long-form applications for initial licenses are filed to ensure that the public interest benefits of having a spectrum screen applicable to secondary market transactions are not rendered ineffective. And, the Commission seeks comment on whether and how the similarity of this spectrum to spectrum currently included in the screen should be factored into its analysis, including its suitability for use in the provision of mobile telephony or broadband services. Commenters should discuss and quantify any costs and benefits associated with any proposals on the applicability of mobile spectrum holdings policies to 3.45–3.55 GHz band spectrum.

Geographic License Area.— Considering the opportunity presented here to align the 3.45–3.55 GHz band with other mid-band spectrum, the Commission seeks comment on the appropriate geographic license area for the band to best facilitate robust band use. The Commission proposes to issue flexible use licenses on a Partial Economic Area (PEA) basis, as it recently adopted for the 3.7 GHz Service. The Commission asks commenters to discuss and quantify the economic, technical, and other public interest considerations of licensing on a PEA basis, or if offering alternatives (such as counties), to discuss and quantify the same considerations for that alternative. The Commission invites commenters to discuss which set of considerations is most applicable for the circumstances of the 3.45–3.55 GHz band. Or do the considerations in this band indicate a different geographic license area is more appropriate? As the Commission has for the adjacent Citizens Broadband Radio Service, should it allow ''license-by-rule'' use for some spectrum in the band? For areas where not all spectrum licenses are sold at auction, should the Commission permit opportunistic use of that spectrum? How would the Commission ensure adequate protection of incumbent and licensee operations under alternative licensing frameworks? Would the need for a database or other coordination techniques create unnecessary burdens on licensees or hinder the ability to protect incumbents? The Commission asks commenters to address the costs and benefits of their recommended licensing approach.

The Commission also recognizes that the AMBIT study focused on licensing for the contiguous United States and it therefore proposes that the states of Hawaii and Alaska and U.S. territories should be excluded from 3.45–3.55 GHz band licensing at this time. The Commission seeks comment on its proposal, including the costs and benefits. Going forward, NTIA and DoD plan to conduct additional analysis of federal operations in Alaska, Hawaii and the U.S. Territories and Possessions, in close cooperation with industry stakeholders to identify additional Cooperative Planning Areas and Periodic Use Areas outside of the contiguous United States. Pending the results of such future analysis, should the Commission consider extending any 3.45–3.55 GHz band regime adopted in this proceeding to additional areas at a

later date? Should the Commission delegate authority to the Wireless Telecommunications Bureau and Office of Engineering and Technology to make any future adjustments to Cooperative Planning Areas or Periodic Use Areas as they deem appropriate in consultation with NTIA and consistent with NTIA and DoD analysis? In addition, the Commission seeks comment on whether there are ways to mitigate the impact of possible future licensees in the Gulf of Mexico to federal operations. Could the Commission's past experiences in licensing under similar circumstances, such as in the AWS–3 band, prove useful here?

License Term.—Given the similarity in the flexible use goal of the Commission in opening the 3.7 GHz Service and opening this spectrum to commercial use, the Commission believes a 15-year term, as was adopted for licenses in the 3.7 GHz Service, would afford licensees sufficient time to make long-term investments in deployment. For that service, the Commission determined that additional time was necessary for relocation of services vacating the band. Here, a similar transition period may be necessary, given the anticipated need to coordinate federal usage of the spectrum with affected licensees under circumstances that may be particular to each licensee's individual situation. The Commission seeks comment on the appropriate license term for flexible use licenses in the 3.45–3.55 GHz band and on the costs and benefits of this proposal. Additionally, the Commission seeks comment on whether there are alternative license terms that might be better suited for this band. If an alternative license term is chosen, what impact would it have on investment or deployment, particularly for smaller or rural entities? The Commission seeks comment on the costs and benefits of the license term being discussed.

Renewal.—The Commission proposes to apply its general part 27 renewal requirements for wireless licenses, as in the *3.7 GHz Service Order* and the 3.5 GHz band. The Commission seeks comment on this proposal. Commenters should address the costs and benefits of the renewal term being advocated.

Performance Requirements.—The Commission seeks comment on the types of performance requirements that would be appropriate to encourage rapid deployment by flexible use licensees in the 3.45–3.55 GHz band. For example, in the *3.7 GHz Service Order,* the Commission adopted specific quantifiable benchmarks for different types of operations. The Commission proposes to adopt the same requirements here. Licensees offering mobile or point-to-multipoint services are required to provide reliable signal coverage and offer service to at least 45% of the population in each of their license areas within eight years of the license issue date (first performance benchmark), and to at least 80% of the population in each of their license areas within 12 years from the license issue date (second performance benchmark). Licensees providing fixed service must demonstrate within eight years of the license issue date (first performance benchmark) that they have four links operating and providing service, if the population within the license area is equal to or less than 268,000. If the population within the license area is greater than 268,000, a licensee relying on point-to-point service must demonstrate that it has at least one link in operation and providing service, either to customers or for internal use, per every 67,000 persons within a license area. The Commission requires licensees relying on point-to-point service to demonstrate within 12 years of the license issue date (final performance benchmark) that they have eight links operating and providing service, either to customers or for internal use, if the population within the license area is equal to or less than 268,000. If the population within the license area is greater than 268,000, the Commission requires a licensee relying on point-to-point service to demonstrate it is providing service and has at least two links in operation per every 67,000 persons within a license area. Would these metrics be appropriate in the 3450–3550 MHz band? If not, why? And how should they be adjusted?

For the 3.7 GHz Service, the Commission also adopted alternate Internet of Things (IoT) performance requirements in order to allow for flexibility to provide services potentially less suited to a population coverage metric. Specifically, licensees providing IoT-type services thus have flexibility to demonstrate that they offer geographic area coverage of 35% of the license area at the first (eight-year) performance benchmark, and geographic area coverage of 65% of the license area at the second (12-year) performance benchmark. Is it appropriate to adopt this—or a different—IoT metric here?

The Commission seeks comment on these types of requirements and any other requirements to achieve its goal of ensuring spectrum use. Commenters should discuss the appropriate metric to accommodate such service offerings or other innovative services in the 3.45–3.55 GHz band, as well as the costs and benefits of an alternative approach.

Failure to Meet Performance Requirements.—Along with performance benchmarks, the Commission proposes to adopt meaningful and enforceable penalties for failing to meet the benchmarks. The Commission proposes that, in the event a licensee fails to meet the first performance benchmark, the licensee's second benchmark and license term would be reduced by two years, thereby requiring it to meet the second performance benchmark two years sooner (at 10 years into the license term) and reducing its license term to 13 years. If a licensee fails to meet the second performance benchmark for a particular license area, its authorization for each license area in which it fails to meet the performance requirement shall terminate automatically without Commission action. The Commission seeks comment on this proposal and on which penalties will most effectively ensure timely build-out.

The Commission proposes that, in the event a 3.45–3.55 GHz band licensee's authority to operate terminates, its spectrum rights should become available for reassignment pursuant to the competitive bidding provisions of section 309(j). The Commission also seeks comment on whether, consistent with the Commission's rules for other part 27 licenses, it should require that any 3.45–3.55 GHz band flexible use licensee that forfeits its license for failure to meet its performance requirements be precluded from regaining that license. Finally, the Commission seeks comment on other performance requirements and enforcement mechanisms that would effectively ensure timely buildout.

Compliance Procedures.—The Commission proposes a rule requiring licensees to submit electronic coverage maps that accurately depict both the boundaries of each licensed area and the coverage boundaries of the actual areas to which the licensee provides service or, in the case of a fixed deployment, the locations of the fixed transmitters associated with each link. The Commission's proposal is consistent with the compliance procedures adopted in the *3.7 GHz Service Order,* in addition to compliance procedures applicable to all part 27 licensees, including the filing of electronic coverage maps and supporting documentation. If a licensee does not provide reliable signal coverage to an entire license area, the Commission proposes that it must provide a map that accurately depicts the boundaries of the area or areas within each license area

that are not being served. The Commission further proposes that each licensee must file supporting documentation certifying the type of service it is providing for each licensed area within its service territory and the type of technology used to provide such service. Supporting documentation must include the assumptions used to create the coverage maps, including the propagation model and the signal strength necessary to provide reliable service with the licensee's technology. The Commission seeks comment on this approach. Would such procedures confirm that the spectrum is being used consistently with the performance requirements? The Commission seeks comment on this assumption. The Commission also seeks comment on whether small entities face any special or unique issues with respect to the transition such that they would require additional time to comply.

Applicability of Other Part 27 Rules.—In establishing service rules for similar bands, the Commission has sought to afford licensees the flexibility to align licenses with other spectrum bands governed by part 27 of the Commission's rules. The Commission therefore proposes that licensees in the 3.45–3.55 GHz band should be governed by licensing and operating rules that are applicable to all part 27 services, including regulatory status, foreign ownership reporting, compliance with construction requirements, permanent discontinuance of operations, partitioning and disaggregation, and spectrum leasing. The Commission asks commenters to identify any aspects of its general part 27 service rules that should be modified to accommodate the particular characteristics of the 3.45–3.55 GHz band. Are there reasons that flexible use licensees in this band should *not* be subject to these general part 27 requirements? The Commission asks proponents of the various mechanisms described above whether there are issues specific to this section and their preferred approach. The Commission also asks commenters that support modifying certain part 27 rules as applied to licensees in the 3.45–3.55 GHz band to articulate the reasons why different treatment here is justified.

G. Competitive Bidding Procedures

The Commission proposes to assign the licenses through a system of competitive bidding. Consistent with the competitive bidding procedures the Commission has used in previous auctions, the Commission proposes to conduct any auction for licenses for spectrum in the band in conformity with the part 1, subpart Q general competitive bidding rules, subject to any modification of the part 1 rules that the Commission may adopt in the future. The Commission seeks comment on whether any of these rules would be inappropriate or should be modified for an auction of licenses in this band. The Commission seeks comment on the costs and benefits of these proposals.

Under the Commercial Spectrum Enhancement Act (CSEA), federal entities operating on certain frequencies that have been reallocated from federal to co-primary federal and non-federal use and assigned by the Commission through auction are eligible for reimbursement for the cost of relocating or sharing their operations. In order to provide for such reimbursement, the Communications Act requires that the ''total cash proceeds'' from the auction of these frequencies must equal at least 110% of the estimated relocation or sharing costs of incumbent federal operations. Based on the current use of the 3.45–3.55 GHz band by the DoD and DoD's planned sharing arrangements and relocation of some operations out of the band to make way for commercial use as part of the AMBIT agreement, this spectrum qualifies as eligible frequencies under the CSEA. Accordingly, the Commission proposes to set the reserve price for any auction of 3.45–3.55 GHz band licenses at 110% of expected federal relocation costs, based on the estimate of relocation costs provided to the Commission by NTIA under the CSEA.

The Commission also proposes to make bidding credits for designated entities available for this band and seeks comment on this proposal. If the Commission decides to offer small business bidding credits, it seeks comment on how to define a small business. In recent years, for other flexible use licenses, the Commission has adopted bidding credits for the two larger designated entity business sizes provided in the Commission's part 1 standardized schedule of bidding credits. The Commission proposes to use the same definitions here. Accordingly, the Commission proposes to define a small business as an entity with average gross revenues for the preceding five years not exceeding $55 million, and a very small business as an entity with average gross revenues for the preceding five years not exceeding $20 million. A qualifying ''small business'' would be eligible for a bidding credit of 15% and a qualifying ''very small business'' would be eligible for a bidding credit of 25%. The Commission also seeks comment on whether the characteristics of these frequencies and its proposed licensing model suggest that it should adopt different small business size standards and associated bidding credits than it has in the past. Finally, the Commission seeks comment on whether it should offer rural service providers a designated entity bidding credit for licenses in this band. The Commission proposes to offer rural service providers a bidding credit of 15% under its rules, consistent with its approach in other similar flexible use bands. Commenters addressing these proposals or advocating for any alternatives should consider what details of licenses in the band may affect whether designated entities will apply for them.

VI. Ordering Clauses

It is ordered, pursuant to sections 1, 4(i), 157, 301, 303, 307, 308, 309, 310, and 316, of the Communications Act of 1934, as amended, as well as the MOBILE NOW Act, Public Law 115–141, 132 Stat. 1098, Div. P, Title VI, § 603 (Mar. 23, 2018), 47 U.S.C. 151, 154(i), 157, 301, 303, 307, 308, 309, 310, 316, and 1502, that this Further Notice of Proposed Rulemaking *is adopted.*

It is further ordered that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, *shall send* a copy of this Further Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analyses, to the Chief Counsel for Advocacy of the Small Business Administration.

Lists of Subjects in 47 CFR Parts 1, 2, and 27

Administrative practice and procedure, Common carriers, Communications common carriers, Radio, Table of Frequency Allocations, Wireless communication services, Telecommunications.

Federal Communications Commission.

Marlene Dortch,

Secretary.

Proposed Rules

The Federal Communications Commission proposes to amend 47 CFR parts 1, 2, and 27 as follows:

PART 1—PRACTICE AND PROCEDURE

■ 1. The authority citation for part 1 continues to read as follows:

Authority: 47 U.S.C. chs. 2, 5, 9, 13; 28 U.S.C. 2461, unless otherwise noted.

■ 2. Amend § 1.907 by revising the definition of ''Covered geographic licenses'' to read as follows:

§ 1.907 Definitions.

* * * * *

Covered geographic licenses. Covered geographic licenses consist of the following services: 1.4 GHz Service (part 27, subpart I of this chapter); 1.6 GHz Service (part 27, subpart J); 24 GHz Service and Digital Electronic Message Services (part 101, subpart G of this chapter); 218–219 MHz Service (part 95, subpart F, of this chapter); 220–222 MHz Service, excluding public safety licenses (part 90, subpart T, of this chapter); 600 MHz Service (part 27, subpart N); 700 MHz Commercial Services (part 27, subparts F and H); 700 MHz Guard Band Service (part 27, subpart G); 800 MHz Specialized Mobile Radio Service (part 90, subpart S); 900 MHz Specialized Mobile Radio Service (part 90, subpart S); 900 MHz Broadband Service (part 27, subpart P); 3.45 GHz Service (part 27, subpart Q); 3.7 GHz Service (part 27, subpart O); Advanced Wireless Services (part 27, subparts K and L); Air-Ground Radiotelephone Service (Commercial Aviation) (part 22, subpart G, of this chapter); Broadband Personal Communications Service (part 24, subpart E, of this chapter); Broadband Radio Service (part 27, subpart M); Cellular Radiotelephone Service (part 22, subpart H); Citizens Broadband Radio Service (part 96, subpart C, of this chapter); Dedicated Short Range Communications Service, excluding public safety licenses (part 90, subpart M); Educational Broadband Service (part 27, subpart M); H Block Service (part 27, subpart K); Local Multipoint Distribution Service (part 101, subpart L); Multichannel Video Distribution and Data Service (part 101, subpart P); Multilateration Location and Monitoring Service (part 90, subpart M); Multiple Address Systems (EAs) (part 101, subpart O); Narrowband Personal Communications Service (part 24, subpart D); Paging and Radiotelephone Service (part 22, subpart E; part 90, subpart P); VHF Public Coast Stations, including Automated Maritime Telecommunications Systems (part 80, subpart J, of this chapter); Upper Microwave Flexible Use Service (part 30 of this chapter); and Wireless Communications Service (part 27, subpart D of this chapter).

* * * * *

■ 3. Amend § 1.9005 by:

■ a. Removing the word ''and'' at the end of paragraph (ll);

■ b. Removing the period at the end of paragraph (mm) and adding a semi-colon;

■ c. Removing the period at the end of paragraph (nn) and adding ''; and'' in its place; and

■ d. Adding paragraph (oo).

The addition reads as follows:

§ 1.9005 Included services.

* * * * *

(oo) The 3.45 GHz Service in the 3.45–3.55 GHz band (part 27 of this chapter).

PART 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

■ 4 The authority citation for part 2 continues to read as follows:

Authority: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

■ 5. Amend § 2.106, the Table of Frequency Allocations, as follows:

■ a. Revise pages 40 and 41.

■ b. In the list of United States (U.S.) Footnotes, add footnotes US103 and US431B.

The additions and revisions read as follows:

§ 2.106 Table of Frequency Allocations.

* * * * *

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2670-2690 FIXED 5.410 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	2670-2690 FIXED 5.410 FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.208B 5.415 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149	2670-2690 FIXED 5.410 FIXED-SATELLITE (Earth-to-space) 5.415 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (Earth-to-space) 5.351A 5.419 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149	US205	US385	
2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422			2690-2700 EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY US74 SPACE RESEARCH (passive) US246		
2700-2900 AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424			2700-2900 METEOROLOGICAL AIDS AERONAUTICAL RADIONAVIGATION 5.337 US18 Radiolocation G2 5.423 G15	2700-2900 5.423 US18	Aviation (87)
2900-3100 RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427			2900-3100 RADIOLOCATION 5.424A G56 MARITIME RADIONAVIGATION 5.427 US44 US316	2900-3100 MARITIME RADIONAVIGATION Radiolocation US44 5.427 US316	Maritime (80) Private Land Mobile (90)
3100-3300 RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149 5.428			3100-3300 RADIOLOCATION G59 Earth exploration-satellite (active) Space research (active) US342	3100-3300 Earth exploration-satellite (active) Space research (active) Radiolocation US342	Private Land Mobile (90)
3300-3400 RADIOLOCATION 5.149 5.429 5.429A 5.429B 5.430	3300-3400 RADIOLOCATION Amateur Fixed Mobile 5.149 5.429C 5.429D	3300-3400 RADIOLOCATION Amateur 5.149 5.429 5.429E 5.429F	3300-3500 RADIOLOCATION G2	3300-3450 US103 US108 US342	
3400-3600 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.430A Radiolocation 5.341	3400-3500 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.431A 5.431B Amateur Radiolocation 5.433 5.282	3400-3500 FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile 5.432 5.432B Radiolocation 5.433 5.282 5.432A	US103 US108 US342 US431B	3450-3600 FIXED MOBILE except aeronautical mobile US103 US105 US108 US433 US431B	Wireless Communications (27) Citizens Broadband (96)

Table of Frequency Allocations	3500-5460 MHz (SHF)				Page 41
International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
3400-3600 MHz: see previous page	3500-3600 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.431B Radiolocation 5.433	3500-3600 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.433A Radiolocation 5.433	3500-3550 RADIOLOCATION G59 AERONAUTICAL RADIONAVIGATION (ground-based) G110 US103 US108 US431B	3450-3600 MHz: see previous page	
			3550-3650 RADIOLOCATION G59 AERONAUTICAL RADIONAVIGATION (ground-based) G110 US105 US107 US245 US433	3600-3650 FIXED FIXED-SATELLITE (space-to-Earth) US107 US245 MOBILE except aeronautical mobile US105 US433	Satellite Communications (25) Citizens Broadband (96)
3600-4200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile	3600-3700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.434 Radiolocation 5.433	3600-3700 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation 5.435	3650-3700 US109 US349	3650-3700 FIXED FIXED-SATELLITE (space-to-Earth) NG169 NG185 MOBILE except aeronautical mobile US109 US349	
	3700-4200 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile		3700-4200	3700-4000 FIXED MOBILE except aeronautical mobile NG182 NG457A	Wireless Communications (27)
				4000-4200 FIXED FIXED-SATELLITE (space-to-Earth) NG457A NG182	Satellite Communications (25)
4200-4400 AERONAUTICAL MOBILE (R) 5.436 AERONAUTICAL RADIONAVIGATION 5.438 5.437 5.439 5.440			4200-4400 AERONAUTICAL RADIONAVIGATION 5.440 US261		Aviation (87)
4400-4500 FIXED MOBILE 5.440A			4400-4940 FIXED MOBILE	4400-4500	
4500-4800 FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A				4500-4800 FIXED-SATELLITE (space-to-Earth) 5.441 US245	
4800-4990 FIXED MOBILE 5.440A 5.441A 5.441B 5.442 Radio astronomy 5.149 5.339 5.443			US113 US245 US342	4800-4940 US113 US342	
			4940-4990 5.339 US342 US385 G122	4940-4990 FIXED MOBILE except aeronautical mobile 5.339 US342 US385	Public Safety Land Mobile (90Y)
4990-5000 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149			4990-5000 RADIO ASTRONOMY US74 Space research (passive) US246		

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United States (U.S.) Footnotes

* * * * *

US103 In the band 3300–3550 MHz, the following provisions shall apply: Non-Federal stations in the radiolocation service that were licensed (or licensed pursuant to applications accepted for filing) before February 22, 2019, may continue to operate on a secondary basis until new flexible use licenses are issued for operation in the band 3450–3550 MHz. The date by which non-Federal stations in the radiolocation service will be required to cease operations in the band 3300–3550 MHz will be set when the Commission establishes procedures for assigning flexible use licenses. After [EFFECTIVE DATE OF FINAL RULE], no new assignments may be made to non-Federal stations in the radiolocation service.—In the band 3300–3500 MHz, stations in the amateur service may continue to operate on a secondary basis until new flexible use licenses are issued for operation in the band 3450–3550 MHz. The date by which stations in the amateur service will be required to cease operations in the band 3400–3500 MHz will be set when the Commission establishes procedures for assigning flexible use licenses. Stations in the amateur service may continue to operate in the band 3300–3400 MHz on a secondary basis while the band's future uses are finalized, and stations in the amateur service may be required to cease operations in the band 3300–3450 MHz at any time if the amateur service causes harmful interference to flexible use operations..

* * * * *

US431B In the 3450–3550 MHz band, the following provisions shall apply. In general, within the contiguous United States, the band is a shared co-primary allocation between the Federal Radiolocation service and non-Federal Fixed and Mobile, except aeronautical mobile, services. Federal operations in the 3450–3550 MHz band must protect non-Federal operations from harmful interference, except under the following circumstances.—*Military Operational Need in National Emergency.* In time of war or a threat of war, or a state of public peril or disaster or other national emergency (collectively ''national emergency''), Federal users are authorized to operate within the band as required to meet operational mission requirements. Upon notification, non-Federal licensees shall terminate or otherwise adjust their operations to prevent harmful interference to the Federal operations consistent with procedures established by the FCC in coordination with NTIA. During such operations and until the end of the national emergency, non-Federal licensees must adjust their operations to enable Federal use of the band and non-Federal users may not claim protection from harmful interference.—*Cooperative Planning Areas.* Cooperative Planning Areas are geographic locations in which non-Federal operations shall coordinate with Federal systems in the band to deploy non-Federal operations, in a manner that shall not cause harmful interference to Federal systems operating in the band and to protect non-Federal operations from potential harm caused by high powered Federal operations. In such areas, operators of non-Federal stations may be required to modify their operations (*e.g.,* reduce power, adjust antenna pointing angles, shielding, *etc.*) to protect themselves and to protect Federal operations from interference. In these areas, non-Federal operations may not claim interference protection from Federal systems outside of coordination procedures. To the extent possible, Federal use in Cooperative Planning Areas will be chosen to minimize operational impact on non-Federal users. Appendix A to part 2 identifies the locations of Cooperative Planning Areas. Cooperative Planning Areas may also be Periodic Use Areas as described below. Coordination between Federal users and non-Federal licensees in Cooperative Planning Areas shall be consistent with procedures established by the FCC in coordination with NTIA.—*Periodic Use Areas.* Periodic Use Areas are geographic locations where non-Federal operations in the band may not cause harmful interference to Federal systems operating in the band for episodic periods. During these times and in these areas, Federal users will require interference protection from non-Federal operations. Non-Federal operations may be required to temporarily modify their operations (*e.g.,* reduce power, adjust antenna pointing angles, *etc.*) to protect Federal operations from interference, which may include restrictions on non-Federal stations' ability to radiate at certain locations during specific periods of time. During such episodic time periods, non-Federal users in Periodic Use Areas must alter their operations to enable Federal systems' temporary use of the band, and during such times, non-Federal users may not claim interference protection from Federal systems outside of coordination procedures. To the extent possible, Federal use in Periodic Use Areas will be chosen to minimize operational impact to non-Federal users. Coordination between Federal users and non-Federal licensees in Periodic Use Areas shall be consistent with procedures established by the FCC in coordination with NTIA. While all Periodic Use Areas are co-located with Cooperative Planning Areas, the exact geographic area used during periodic use may differ from the co-located Cooperative Planning Area. The geographic locations of Periodic Use Areas are identified in Appendix A to part 2. Restrictions and authorizations for the Cooperative Planning Areas remain in effect during periodic use unless specifically relieved in the coordination process.

* * * * *

■ 6. Add Appendix A to part 2 to read as follows:

APPENDIX A TO PART 2—TABLE OF TABLE: DEPARTMENT OF DEFENSE COOPERATIVE PLANNING AREAS AND PERIODIC USE AREAS

Location name	State	CPA	PUA
Little Rock	AR	Yes.	
Yuma Complex (includes Yuma Proving Grounds and MCAS Yuma)	AZ	Yes	Yes.
Camp Pendleton	CA	Yes.	
Edwards Air Force Base	CA	Yes	Yes.
National Training Center	CA	Yes	Yes.
Naval Air Weapons Station, China Lake	CA	Yes	Yes.
Point Mugu	CA	Yes	Yes.
San Diego*	CA	Yes.	
Includes Point Loma SESEF range*			
Twentynine Palms	CA	Yes.	

APPENDIX A TO PART 2—TABLE OF TABLE: DEPARTMENT OF DEFENSE COOPERATIVE PLANNING AREAS AND PERIODIC USE AREAS—Continued

Location name	State	CPA	PUA
Eglin Air Force Base	FL	Yes	Yes.
Includes Santa Rosa Island and Cape San Blas site			
Mayport *	FL	Yes.	
Includes Mayport SESEF range *			
Pensacola	FL	Yes	Yes.
Joint Readiness Training Center	LA	Yes	Yes.
Chesapeake Beach	MD	Yes	Yes.
Naval Air Station, Patuxent River	MD	Yes	Yes.
St. Inigoes	MD	Yes	Yes.
Bath	ME	Yes	Yes.
Pascagoula	MS	Yes	Yes.
Camp Lejeune	NC	Yes.	
Cherry Point	NC	Yes.	
Fort Bragg	NC	Yes	Yes.
Portsmouth	NH	Yes	Yes.
Moorestown	NJ	Yes	Yes.
White Sands Missile Range	NM	Yes	Yes.
Nevada Test and Training Range	NV	Yes	Yes.
Fort Sill	OK	Yes	Yes.
Tobyhanna Army Depot	PA	Yes.	
Dahlgren	VA	Yes	Yes.
Newport News	VA	Yes	Yes.
Norfolk *	VA	Yes.	
Includes Fort Story SESEF range *			
Wallops Island	VA	Yes	Yes.
Bremerton	WA	Yes	Yes.
Everett *	WA	Yes.	
Includes Ediz Hook SESEF range *			

* Includes Shipboard Electronic Systems Evaluation Facility (SESEF) attached to each homeport.

PART 27—MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

■ 7. The authority citation for part 27 continues to read as follows:

Authority: 47 U.S.C. 154, 301, 302a, 303, 307, 309, 332, 336, 337, 1403, 1404, 1451, and 1452, unless otherwise noted.

■ 8. Amend § 27.1 by adding paragraph (b)(17) to read as follows:

§ 27.1 Basis and purpose.

* * * * *

(b) * * *

(17) 3450–3550 MHz.

* * * * *

■ 9. Amend § 27.4 by adding, in alphabetical order, the definition for ''3.45 GHz Service'' to read as follows:

§ 27.4 Terms and definitions.

3.45 GHz Service. A radiocommunication service licensed under this part for the frequency bands specified in § 27.5(n) (3450–3550 MHz band).

* * * * *

■ 10. Amend § 27.5 by adding paragraph (o) to read as follows:

§ 27.5 Frequencies.

* * * * *

(o) *3450–3550 MHz band.* The 3.45 GHz Service is licensed as five individual 20 megahertz blocks available for assignment in the contiguous United States on a Partial Economic Area basis, *see* § 27.6(n).

■ 11. Amend § 27.6 by adding paragraph (n) to read as follows:

§ 27.6 Service areas.

* * * * *

(n) *3450–3550 MHz Band.* Service areas in the 3.45 GHz Service are based on Partial Economic Areas (PEAs) as defined by appendix A to this subpart (*see* Wireless Telecommunications Bureau Provides Details About Partial Economic Areas, DA 14–759, Public Notice, released June 2, 2014, for more information).

■ 12. Amend § 27.11 by adding paragraph (m) to read as follows:

§ 27.11 Initial authorization.

* * * * *

(m) *3450–3550 MHz band.* Authorizations for licenses in the 3.45 GHz Service will be based on Partial Economic Areas (PEAs), as specified in § 27.6(n), and the frequency blocks specified in § 27.5(n).

■ 13. Amend § 27.13 by adding paragraph (o) to read as follows:

§ 27.13 License period.

* * * * *

(o) *3450–3550 MHz Band.* Authorization for the band will have a term not to exceed fifteen years from the date of issuance.

■ 14. Amend § 27.14 by revising the first sentence of paragraphs (a) and (k), and adding paragraph (w) to read as follows:

§ 27.14 Construction requirements.

(a) AWS and WCS licensees, with the exception of WCS licensees holding authorizations for the 600 MHz band, Block A in the 698–704 MHz and 728–734 MHz bands, Block B in the 704–710 MHz and 734–740 MHz bands, Block E in the 722–728 MHz band, Block C, C1 or C2 in the 746–757 MHz and 776–787 MHz bands, Block A in the 2305–2310 MHz and 2350–2355 MHz bands, Block B in the 2310–2315 MHz and 2355–2360 MHz bands, Block C in the 2315–2320 MHz band, Block D in the 2345–2350 MHz band, in the 3450–3550 MHz band, and in the 3700–3980 MHz band, and with the exception of licensees holding AWS authorizations in the 1915–1920 MHz and 1995–2000 MHz bands, the 2000–2020 MHz and 2180–2200 MHz bands, or 1695–1710 MHz, 1755–1780 MHz and 2155–2180 MHz bands, must, as a performance requirement, make a showing of ''substantial service'' in their license area within the prescribed license term set forth in § 27.13. * * *

* * * * *

(k) Licensees holding WCS or AWS authorizations in the spectrum blocks

enumerated in paragraphs (g), (h), (i), (q), (r), (s), (t), (v) and (w) of this section, including any licensee that obtained its license pursuant to the procedures set forth in paragraph (j) of this section, shall demonstrate compliance with performance requirements by filing a construction notification with the Commission, within 15 days of the expiration of the applicable benchmark, in accordance with the provisions set forth in § 1.946(d) of this chapter. * * * * * * * * *

(w) The following provisions apply to any licensee holding an authorization in the 3450–3550 MHz band:

(1) Licensees relying on mobile or point-to-multipoint service shall provide reliable signal coverage and offer service within eight (8) years from the date of the initial license to at least forty-five (45) percent of the population in each of its license areas (''First Buildout Requirement''). Licensee shall provide reliable signal coverage and offer service within twelve (12) years from the date of the initial license to at least eighty (80) percent of the population in each of its license areas (''Second Buildout Requirement''). Licensees relying on point-to-point service shall demonstrate within eight years of the license issue date that they have four links operating and providing service to customers or for internal use if the population within the license area is equal to or less than 268,000 and, if the population is greater than 268,000, that they have at least one link in operation and providing service to customers, or for internal use, per every 67,000 persons within a license area (''First Buildout Requirement''). Licensees relying on point-to-point service shall demonstrate within 12 years of the license issue date that they have eight links operating and providing service to customers or for internal use if the population within license area is equal to or less than 268,000 and, if the population within the license area is greater than 268,000, shall demonstrate they are providing service and have at least two links in operation per every 67,000 persons within a license area (''Second Buildout Requirement'').

(2) In the alternative, a licensee offering Internet of Things-type services shall provide geographic area coverage within eight (8) years from the date of the initial license to thirty-five (35) percent of the license (''First Buildout Requirement''). A licensee offering Internet of Things-type services shall provide geographic area coverage within twelve (12) years from the date of the initial license to sixty-five (65) percent of the license (''Second Buildout Requirement'').

(3) If a licensee fails to establish that it meets the First Buildout Requirement for a particular license area, the licensee's Second Buildout Requirement deadline and license term will be reduced by two years. If a licensee fails to establish that it meets the Second Buildout Requirement for a particular license area, its authorization for each license area in which it fails to meet the Second Buildout Requirement shall terminate automatically without Commission action, and the licensee will be ineligible to regain it if the Commission makes the license available at a later date.

(4) To demonstrate compliance with these performance requirements, licensees shall use the most recently available decennial U.S. Census Data at the time of measurement and shall base their measurements of population or geographic area served on areas no larger than the Census Tract level. The population or area within a specific Census Tract (or other acceptable identifier) will be deemed served by the licensee only if it provides reliable signal coverage to and offers service within the specific Census Tract (or other acceptable identifier). To the extent the Census Tract (or other acceptable identifier) extends beyond the boundaries of a license area, a licensee with authorizations for such areas may include only the population or geographic area within the Census Tract (or other acceptable identifier) towards meeting the performance requirement of a single, individual license. If a licensee does not provide reliable signal coverage to an entire license area, the license must provide a map that accurately depicts the boundaries of the area or areas within each license area not being served. Each licensee also must file supporting documentation certifying the type of service it is providing for each licensed area within its service territory and the type of technology used to provide such service. Supporting documentation must include the assumptions used to create the coverage maps, including the propagation model and the signal strength necessary to provide reliable service with the licensee's technology.

■ 15. Amend § 27.50 by adding paragraph (k) to read as follows:

§ 27.50 Power limits and duty cycle.

* * * * *

(k) The following power requirements apply to stations transmitting in the 3450–3550 MHz band:

(1) The power of each fixed or base station transmitting in the 3450–3550 MHz band and located in any county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, is limited to an equivalent isotropically radiated power (EIRP) of 3280 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.

(2) The power of each fixed or base station transmitting in the 3450–3550 MHz band and situated in any geographic location other than that described in paragraph (j)(1) of this section is limited to an EIRP of 1640 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.

(3) Mobile and portable stations are limited to 1 Watt EIRP. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

(4) Equipment employed must be authorized in accordance with the provisions of § 27.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (j)(5) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

(5) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, and any other relevant factors, so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

■ 16. Amend § 27.53 by adding paragraph (o) to read as follows:

§ 27.53 Emission limits.

* * * * *

(o) *3.45 GHz Service.* The following emission limits apply to stations transmitting in the 3450–3550 MHz band:

(1) For base station operations in the 3450–3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (o)(1) is based on the use of measurement instrumentation

employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. Notwithstanding the channel edge requirement of −13 dBm per megahertz, for base station operations in the 3450–3550 MHz band beyond the two edges of the band, the conducted power of any emission shall not exceed −25 dBm/MHz within a 20 megahertz offset from the top and bottom edges of the band, and shall not exceed −40 dBm/MHz beyond that 20 megahertz offset.

(2) For mobile operations in the 3450–3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (o)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

■ 17. Amend § 27.55 by adding paragraph (e) to read as follows:

§ 27.55 Power strength limits.

* * * * *

(e) *Power flux density for* stations *operating in the 3450–3550 MHz band.* For base and fixed stations operation in the 3450–3550 MHz band in accordance with the provisions of § 27.50(j), the power flux density (PFD) at any location on the geographical border of a licensee's service area shall not exceed −76 dBm/m^2/MHz. This power flux density will be measured at 1.5 meters above ground. Licensees in adjacent geographic areas may voluntarily agree to operate under a higher PFD at their common boundary.

■ 18. Amend § 27.57 by revising paragraph (c) to read as follows:

§ 27.57 International coordination.

* * * * *

(c) Operation in the 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 1915–1920 MHz, 1995–2000 MHz, 2000–2020 MHz, 2110–2155 MHz, 2155–2180 MHz, 2180–2200 MHz, 3450–3550 MHz, and 3700–3980 MHz bands is subject to international agreements with Mexico and Canada.

■ 19. Add new Subpart Q to read as follows:

Subpart Q—3450–3550 MHz Band

Sec.

§ 27.1600 3450–3550 MHz band subject to competitive bidding.

Mutually exclusive initial applications for 3450–3550 MHz band licenses are subject to competitive bidding. The general competitive bidding procedures set forth in 47 CFR part 1, subpart Q of this chapter will apply unless otherwise provided in this subpart.

§ 27.1601 Designated entities in the 3450–3550 MHz band.

(a) *Definitions.* (1) *Small business.* A small business is an entity that, together with its affiliates, its controlling interests, and the affiliates of its controlling interests, has average gross revenues not exceeding $55 million for the preceding five (5) years.

(2) *Very small business.* A very small business is an entity that, together with its affiliates, its controlling interests, and the affiliates of its controlling interests, has average gross revenues not exceeding $20 million for the preceding five (5) years.

(b) *Bidding credits.* A winning bidder that qualifies as a small business, as defined in this section, or a consortium of small businesses may use the bidding credit of 15 percent, as specified in § 1.2110(f)(2)(i)(C) of this chapter, subject to the cap specified in § 1.2110(f)(2)(ii) of this chapter. A winning bidder that qualifies as a very small business, as defined in this section, or a consortium of very small businesses may use the bidding credit of 25 percent, as specified in § 1.2110(f)(2)(i)(B) of this chapter, subject to the cap specified in § 1.2110(f)(2)(ii) of this chapter.

(c) *Eligibility for rural service provider bidding credit.* A rural service provider, as defined in § 1.2110(f)(4)(i) of this chapter, that has not claimed a small business bidding credit may use the bidding credit of 15 percent specified in § 1.2110(f)(4) of this chapter.

§ 27.1602 Permanent discontinuance of 3450–3550 MHz licenses.

A 3450–3550 MHz band licensee that permanently discontinues service as defined in § 1.953 must notify the Commission of the discontinuance within 10 days by filing FCC Form 601 requesting license cancellation. An authorization will automatically terminate, without specific Commission action, if service is permanently discontinued as defined in § 1.953, even if a licensee fails to file the required form requesting license cancellation.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R4–ES–2019–0070; FXES11130900000C2–189–FF09E42000]

RIN 1018–BD01

Endangered and Threatened Wildlife and Plants; Reclassification of Eugenia woodburyana as Threatened and Section 4(d) Rule

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service or USFWS), propose to reclassify the plant *Eugenia woodburyana* (no common name) from an endangered species to a threatened species under the Endangered Species Act of 1973, as amended (Act), due to improvements in the species' status since the original listing in 1994. This proposed action is based on a thorough review of the best available scientific and commercial information, which indicates that *E. woodburyana* is not currently in danger of extinction throughout all or a significant portion of its range, but it is likely to become so within the foreseeable future. If this proposal is finalized, *E. woodburyana* would remain protected as a threatened species under the Act. We seek information, data, and comments from the public on this proposal. We also propose to establish a rule under section 4(d) of the Act that will provide