

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of
Lockheed Martin Request for Part 90 Special
Temporary Authority to Operate Two
Radiolocation Service Sites in the 3.45 GHz Band
)
)
) ULS File No. 0009581172
)
)

ORDER

Adopted: June 16, 2021

Released: June 16, 2021

By the Wireless Telecommunications Bureau and Office of Engineering and Technology

I. INTRODUCTION

1. With this Order, the Wireless Telecommunications Bureau (WTB) and the Office of Engineering and Technology (OET) hereby grant the request of Lockheed Martin Corporation (Lockheed) for special temporary authority (STA) to operate Research, Development, Test & Evaluation (RDT&E) radar facilities in Cazenovia, NY and Liverpool, NY for 180 days pursuant to part 90 of the Commission's rules in the 3.45-3.525 GHz segment of the 3.45-3.55 GHz band (3.45 GHz band), subject to the conditions and parameters specified herein. We also grant several requests for waiver of the Commission's rules sought by Lockheed to effectuate its requested STA and deny other requests, as set forth below.

II. BACKGROUND

A. 3.45 GHz Second Report and Order and Auction 110

2. On March 17, 2021, in the 3.45 GHz Second Report and Order, the Commission made available 100 megahertz of spectrum in the 3.45-3.55 GHz band for licensed use within the contiguous United States.1 In that Order, the Commission allocated the 3.45-3.55 GHz band for new non-federal fixed and mobile (except aeronautical mobile) operations in the contiguous United States.2 Among other things, the Commission authorized both fixed and mobile operations in the 3.45-3.55 GHz band using geographic area licensing, established licensing and operating rules for the new 3.45 GHz Service, and decided to use its competitive bidding rules to assign 3.45 GHz Service licenses.3 All 3.45 GHz Service licenses will be issued for 15-year, renewable license terms.4

1 See generally Facilitating Shared Use in the 3100-3550 MHz Band, WT Docket No. 19-348, Second Report and Order, Order on Reconsideration, and Order Proposing Modification, 2021 WL 1086295 (2021) (3.45 GHz Second Report & Order); Auction of Flexible-Use Service Licenses in the 3.45-3.55 GHz Band for Next-Generation Wireless Services; Comment Sought on Competitive Bidding Procedures for Auction 110, AU Docket No. 21-62, Public Notice, 2021 WL 1086298 (2021).

2 3.45 GHz Second Report & Order at *6-7, paras. 17-19.

3 See generally id. The 100 megahertz of spectrum in this band will be licensed on an unpaired basis and divided into ten 10-megahertz blocks in partial economic area (PEA)-based geographic areas. Id. at *1, 19, 32, paras. 1, 58, 108-09.

4 See id. at *33, para. 113.

3. Certain licenses in the 3.45 GHz band are subject to cooperative sharing requirements, as described in the *3.45 GHz Second Report and Order*,⁵ and the Public Notice issued jointly by the Commission, through its Wireless Telecommunications Bureau, and the National Telecommunications and Information Administration (NTIA).⁶ Under this cooperative sharing framework, existing federal users are prohibited from causing harmful interference to non-federal operations, except in limited circumstances and in locations—Cooperative Planning Areas and Periodic Use Areas—where non-federal systems will not be entitled to protection against harmful interference from federal operations.⁷ Under this framework, incumbent federal station operators⁸ and new flexible-use station operators must coordinate with each other to facilitate shared use of the band in these specified areas and during specified time periods as described in the *3.45 GHz Second Report and Order*.⁹

4. Although the Commission did not impose formal coordination obligations on commercial licensees to accommodate existing or future non-federal radiolocation operations authorized under part 5 of the rules, it stated its expectation that all future commercial licensees in the 3.45 GHz band would cooperate with part 5 licensees when presented with requests for experimentation and testing in the band to enable continued development and upgrades of essential DoD systems.¹⁰

5. In addition, as part of its efforts to repurpose the 3.45-3.55 GHz band for flexible-use operations, the Commission relocated non-federal, secondary incumbents—namely, weather radar systems and amateur operators—from the band to alternate spectrum.¹¹ In order to ensure the efficient

⁵ See *id.* at *4, 8, 9-10, paras. 8-9, 21, 23-25.

⁶ *The Federal Communications Commission and the National Telecommunications and Information Administration: Coordination Procedures in the 3.45-3.55 GHz Band*, Public Notice, DA 21-645, 2021 WL 2288019 (WTB June 2, 2021).

⁷ See *3.45 GHz Second Report & Order* at *4, 8, paras. 8-9, 21. Cooperative Planning Areas are areas in which the DoD anticipates that federal operations will continue after the assignment of flexible use licenses in the band; Periodic Use Areas overlap with certain Cooperative Planning Areas and are areas in which the DoD will need episodic access to all or a portion of the band in specific, limited geographic areas. See *id.* at *10, para. 25. Within Cooperative Planning and Periodic Use Areas, federal and non-federal operators may reach mutually acceptable operator-to-operator agreements to permit more extensive non-federal use by identifying and mutually agreeing upon a technical approach that mitigates the interference risk to federal operations. See *id.* at *9, para. 23 (quoting note US431B to the Table of Allocations).

⁸ Incumbent federal operations include all current and planned federal use in the 3.45–3.55 GHz band.

⁹ See *3.45 GHz Second Report and Order* at *9-19, paras. 23-57.

¹⁰ *Id.* at *13, para. 34. The Commission also encouraged all stakeholders to work with the National Defense Industrial Association Spectrum Working Group (NDIA SWG) to develop mutually agreeable practices regarding experimental use of the band for defense radar testing and development. *Id.* On May 7, 2021, the Aerospace Industries Association (AIA) filed a Petition for Reconsideration of the *3.45 GHz Second Report and Order* asking the Commission to reconsider its broader decision not to adopt a coordination framework for existing contractor test facilities currently operating under part 5 experimental licenses in the 3.45 GHz band. Petition for Reconsideration of AIA, WT Docket No. 19-348 (filed May 7, 2021) (AIA Petition for Reconsideration). In its petition, AIA noted that the NDIA SWG had yet to produce a mutually acceptable coordination framework despite its stated objective to deliver such a framework by April 1, 2021. AIA Petition for Reconsideration at 6.

In addition, NTIA requested that the Commission continue to work with NTIA, the DoD, and other concerned stakeholders to develop a coordination framework to ensure that these non-federal experimental licensees in the 3.45 GHz band are able to continue to access spectrum to support their critical functions in support of the Department of Defense (DoD), in a way that minimizes potential impacts to the 3.45 GHz Service. Letter from Charles Cooper, Associate Administrator, NTIA, to Ronald T. Repasi, Acting Chief, OET, FCC and Joel Taubenblatt, Acting Chief, WTB, FCC, WT Docket No. 19-348, at 6 (filed Feb. 19, 2021).

¹¹ *3.45 GHz Second Report and Order* at *44-45, 48-49, paras. 150-53, 167-69.

use of this spectrum while new 3.45 GHz Service licenses are issued, the Commission allowed incumbent amateur licensees to continue operation until 90-days following the announcement of the close of Auction 110.¹² Incumbent weather radar systems will remain in operation in the band for slightly longer (up to 180 days following the grant of the first 3.45 GHz Service licenses) in order to allow enough time to transition their operations from the band.¹³

6. In a related action, also on March 17, 2021, the Commission announced that it would hold an auction of 3.45 GHz band licenses with bidding to start in early October 2021, to implement a deadline established in section 905 of the Consolidated Appropriations Act, 2021.¹⁴ On June 9, 2021, the Office of Economics and Analytics and the WTB released a public notice establishing the procedures to be used for Auction 110, the auction of new flexible-use licenses in the 3.45–3.55 GHz band.¹⁵ The public notice detailed application requirements, minimum opening bids, upfront payments, and other procedures for Auction 110. In addition, the public notice announced that bidding in Auction 110 is scheduled to begin on October 5, 2021.¹⁶

B. Lockheed's Operations

7. Lockheed operates RDT&E radar facilities in Cazenovia, NY and Liverpool, NY.¹⁷ According to Lockheed, using part 5 experimental licenses,¹⁸ these facilities “develop and produce S-band radars that enable critical air, surface, and missile defense missions; space domain awareness; and counter-fire target acquisition missions for use by both the Department of Defense and U.S. allies abroad.”¹⁹ Lockheed states that it has been testing radars in the area since the 1950s and that it has invested tens of millions of dollars in its RDT&E infrastructure.²⁰

C. Lockheed's Request for Waiver of Part 5 Rules

8. On April 29, 2021, Lockheed filed a request seeking a limited expedited waiver of sections 5.5 and 5.84 of the Commission's experimental licensing rules in order to be afforded the right to receive protection from harmful interference from other operators in the 3.45-3.55 GHz band at its RDT&E radar facilities in Cazenovia and Liverpool, NY.²¹ Lockheed asserted that the Commission's decision in the *3.45 GHz Band Second Report and Order* not to adopt a coordination framework for non-federal radar manufacturing and integration facilities was insufficient to ensure that Lockheed would have

¹² *3.45 GHz Second Report and Order* at *48-49, paras. 167-69.

¹³ *Id.* at *44-45, paras. 150-53.

¹⁴ Congress has mandated that a system of competitive bidding to grant flexible-use licenses in the 3.45–3.55 GHz band begin no later than December 31, 2021. Consolidated Appropriations Act, 2021, H.R. 133, 116th Cong., Div. FF, Title IX § 905(d)(1) (2020).

¹⁵ *Auction of Flexible-Use Service Licenses in the 3.5-3.55 GHz Band for Next-Generation Wireless Services, Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 110; Bidding in Auction 110 Scheduled to Begin October 5, 2021*, Public Notice, DA 21-655, 2021 WL 23595305 (OEA/WTB June 9, 2021) (*Auction 110 Procedures Public Notice*).

¹⁶ *Id.* at *4, para. 13. That public notice also established a deadline of July 21, 2021, for any potential bidder to a file short-form application for Auction 110. *Id.* at *4, 36, paras. 13, 134.

¹⁷ Lockheed Martin Corporation, Request for Waiver, filed April 29, 2021 (Waiver Request). Both sites are within the Syracuse, NY PEA.

¹⁸ Lockheed holds four part 5 authorizations, WE2XIQ, WJ2XQP, WR9XTK, and WK2XQU, which operate between 2922.5-3500 MHz.

¹⁹ Lockheed Request for Special Temporary Authority, ULS File No. 0009581172 (filed June 9, 2021) (STA Request) at 3; Waiver Request at 2.

²⁰ See STA Request at 4; Waiver Request at 18.

²¹ See Waiver Request.

continued access to spectrum for its RDT&E operations in the 3.45 GHz band.²² Lockheed argued that a waiver would serve the public interest by enabling it to continue its RDT&E operations in support of the United States' and its allies' critical S-band radar and national security needs.²³ Moreover, Lockheed requested consideration of its Waiver Request before the opening of the short-form application filing window for Auction 110 in order to preserve flexibility and give potential bidders notice of potential changes that might affect 3.45 GHz authorizations.²⁴

9. In support of its Waiver Request, Lockheed argued that a reasonable accommodation for its Cazenovia and Liverpool sites would ensure that the supply chain of S-band radars needed by the U.S. military and its allies would not be disrupted.²⁵ In addition, Lockheed proposed to condition its waiver on certain targeted limitations designed to balance and accommodate its needs with the needs of flexible-use licensees.²⁶ Lockheed also stated that it was considering filing an application for a permanent part 90 Radiolocation Service license to establish a long-term solution for Lockheed's operational needs at its Cazenovia and Liverpool sites.²⁷

10. WTB and OET placed the Waiver Request on public notice on May 7, 2021, with comments due on May 17, 2021 and replies due on May 24, 2021. Three parties, AT&T, CTIA, and T-Mobile filed in opposition to the Waiver Request. AT&T argued that grant of the part 5 waiver would elevate Lockheed, an experimental licensee, to primary status in the band, leaving 3.45 GHz Service licensees unprotected from harmful interference from Lockheed's high-power radars.²⁸ The Aerospace Industries Association filed in the support of the Waiver Request, and NCTA—the Internet & Television Association, took no position on the outcome of the Waiver Request but asked that any grant be subject to reasonable conditions.²⁹

D. Lockheed's Request for Special Temporary Authority Under Part 90 and Waiver Request Withdrawal

11. On June 9, 2021, Lockheed filed a separate Request for Special Temporary Authority for its Cazenovia and Liverpool facilities, as an alternative form of relief to its Waiver Request.³⁰ In its STA Request, Lockheed seeks authority to operate under part 90 of the Commission's rules in the 3.45-3.525 GHz band segment on a co-primary basis for a period of one year from the start of Auction 110, with an option to extend that authority if needed.³¹ Lockheed maintains that continued access to the band is necessary to allow it to conduct its RDT&E operations to produce a wide range of national security and

²² See *id.* at 7-8

²³ *Id.* at 9-11.

²⁴ *Id.* at 8.

²⁵ *Id.* at 10.

²⁶ See *id.* at 15 (proposing to limit in-band operations above 3.45 GHz to: (1) off-peak hours (between 12 A.M. and 8 A.M.); (2) a defined operating contour encompassing parts of PEAs 41, 44, and 227; and (3) the lower 75 megahertz of the 3.45 GHz band).

²⁷ *Id.* at 18.

²⁸ AT&T Reply to Waiver Request at 2; see also CTIA Opposition to Waiver Request at 6-7 (arguing that the Waiver Request failed to demonstrate how 3.45 GHz licensees would be protected from harmful interference).

²⁹ NCTA Reply at 1.

³⁰ STA Request.

³¹ See *id.* at 2-3. Lockheed states that, for purposes of its request, it understands co-primary to mean “during high power operations (e.g., the third shift between midnight and 8 AM), Lockheed Martin requests the right to cause interference to co-primary Part 27 operations; during low power operations (e.g., between 8 AM and midnight), Lockheed Martin could not cause interference to co-primary Part 27 operations but requests the right to be protected from interference caused by co-primary Part 27 operations.” *Id.* at 11.

homeland defense applications.³² Lockheed proposes that its operations be subject to targeted limitations that will maximize use of the 3.45-3.525 GHz segment for both 3.45 GHz Service licensees and its radiolocation services. Specifically, Lockheed proposes to limit its operations under the requested STA under the following conditions: (1) high-power outdoor operations would be limited to off-peak hours between midnight and 8 AM; (2) high-power outdoor operations would be limited to a defined geographic contour to cover the Cazenovia and Liverpool facilities; (3) all Lockheed RDT&E operations would be limited to the 3.45-3.525 GHz segment; (4) all operations during the time period from 8 AM to midnight would not exceed 317 W ERP.³³

12. Lockheed maintains that grant of the STA Request is warranted under section 1.931(b)(2)(v) of the Commission's rules because "the public interest would be seriously prejudiced by the extraordinary risk of disrupting a critical national security supply chain and U.S. technological leadership in the national security sector."³⁴

13. As part of its STA, Lockheed also requests waivers of certain Commission rules. Specifically, it seeks: (1) waivers to provide co-primary status to operate in the 3.45-3.525 GHz range;³⁵ (2) waivers to permit the filing of the instant application;³⁶ (3) waivers to permit use of unauthorized equipment for RDT&E operations in the 3.45-3.525 GHz segment;³⁷ and (4) a waiver of the 180-day limit for STAs.³⁸ Lockheed also requests waivers of any other rules necessary to permit grant of the STA Request.³⁹

14. Lockheed states that it will withdraw the Waiver Request of certain part 5 rules upon grant of its STA Request and associated waivers.⁴⁰

III. DISCUSSION

A. Grant of an STA Supports the Public Interest

15. For private wireless services, the Commission may grant STAs in the following circumstances: "(i) In emergency situations; (ii) To permit restoration or relocation of existing facilities to continue communication service; (iii) To conduct tests to determine necessary data for the preparation of an application for regular authorization; (iv) For a temporary, non-recurring service where a regular authorization is not appropriate; (v) In other situations involving circumstances which are of such extraordinary nature that delay in the institution of temporary operation would seriously prejudice the public interest."⁴¹

16. Lockheed argues that an STA is warranted under the fifth prong because "the public interest would be seriously prejudiced by the extraordinary risk of disrupting a critical national security supply chain and U.S. technological leadership in the national security sector."⁴² To this end, Lockheed

³² See *id.* at 2.

³³ *Id.* at 6-9.

³⁴ *Id.* at 1-2.

³⁵ *Id.* at 11-15.

³⁶ *Id.* at 15.

³⁷ *Id.* at 15-17.

³⁸ *Id.* at 17-18.

³⁹ *Id.* at 11 n.24.

⁴⁰ *Id.* at 10.

⁴¹ 47 CFR § 1.931(b)(2).

⁴² STA Request at 1-2.

states that it requires access to the 3.45-3.525 GHz segment “to conduct high power outdoor testing for state-of-the-art and next-generation radar systems designed for U.S. Government customers, including multiple branches of the U.S. military, as well as U.S. allies such as Japan and Canada.”⁴³ Lockheed states that its “facilities at Cazenovia and Liverpool develop and produce S-band radars that enable critical air, surface, and missile defense missions; space domain awareness; and counter-fire target acquisition missions for use by both the [DoD] and U.S. allies abroad.”⁴⁴

17. In order to meet its contractual obligations with U.S. government customers for delivery of fully tested radars, Lockheed explains that its RDT&E operations must be conducted in the 3.45-3.525 GHz range, because “radars cannot be reliably tested in one band and then operated in another.”⁴⁵ Lockheed states that “without full-band access, system calibration across the required operating band would not be possible before deployment—which is both inefficient and challenging.”⁴⁶ Lockheed also maintains that its RDT&E operations must be conducted outdoors and over-the-air to incorporate “the presence of moving targets at significant distances to validate the effects of an operationally relevant environment (e.g., inclement weather and surface reflections on radar performance (detection, measurement qualities, and interference rejection).”⁴⁷ Moreover, Lockheed states that outdoor, full-power testing of its radar systems is necessary to “verify that a system meets the required detection, false alarm, track, and interference rejection (e.g., clutter and electromagnetic interference) requirements.”⁴⁸ Thus, Lockheed argues, testing in indoor anechoic chambers is inadequate to meet its RDT&E operational needs.⁴⁹

18. Moreover, as the Commission recognized in the *3.45 GHz Second Report and Order*, limited incumbent DoD operations will remain in the 3.45 GHz band indefinitely, in Cooperative Planning and Periodic Use Areas as well as during times of national emergency.⁵⁰ These operations include high- and low-powered radar systems on a variety of platforms in the 3 GHz band, including fixed, mobile, shipborne, and airborne operations.⁵¹ In furtherance of these continuing DoD operations, NTIA has indicated that radar manufacturing and integration facilities require access to the 3.45 GHz band to perform experimentation and testing for radionavigation and other systems contracted for by federal agencies.⁵² Further, NTIA has noted that these facilities must retain access to the spectrum for testing and experimentation to ensure that agencies’ contracting requirements can be fulfilled.⁵³

19. In light of the extraordinary circumstances identified by Lockheed in its request, we find that an STA is warranted to ensure that a critical supply chain of S-band radars is not disrupted. We also acknowledge that the technical and operational requirements of Lockheed’s RDT&E operations necessitate operation outdoors, over-the-air, and across a portion of the S-band, including the 3.45 -3.525

⁴³ *Id.* at 1.

⁴⁴ *Id.* at 3.

⁴⁵ *See id.* at 4-5, 7.

⁴⁶ *Id.* at 5.

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *See 3.45 GHz Second Report and Order* at *3, 8, 45, paras. 6, 21, 153.

⁵¹ *Id.* at *7, para. 20.

⁵² *Id.* at *13, para. 33 (citing Letter from Charles Cooper, Associate Administrator, NTIA, to Ronald T. Repasi, Acting Chief, OET, FCC and Joel Taubenblatt, Acting Chief, WTB, FCC, WT Docket No. 19-348, at 1 (filed Feb. 19, 2021)).

⁵³ *Id.*

GHz segment. Given that no other spectrum can be used to test S-band-specific radars for military uses in the 3.45 GHz-3.55 GHz band, we find that an STA is further warranted here. Critical to our finding is that Lockheed has submitted a targeted request for relief, with conditions on the daily hours, geographic area, and power levels of its proposed operations, for a limited period of time, pending its development of a coordination procedure with new incoming licensees in the same geographic areas as Lockheed's operations, sufficiently in advance of the short-form application window closing that bidders may formulate their auction participation and business plans accordingly. Moreover, we note that the *Auction 110 Procedures Public Notice* referenced Lockheed's Part 5 waiver request, which presented a number of the same conditions set forth in Lockheed's STA request, and it advised potential bidders to be aware that any relief granted to Lockheed could affect coordination requirements and spectrum use in blocks A through H in PEAs 41, 44, and 227.⁵⁴ Related references to Lockheed's waiver request in the *Auction 110 Procedures Public Notice* were identified as potential encumbrances across these blocks. Together, these circumstances qualify as "extraordinary" and support grant of an STA to Lockheed subject to the parameters and conditions discussed further below.

20. While we find that that a conditional STA will serve the public interest here, we stress that this authorization is not a continuing solution, but rather an interim measure designed to facilitate negotiations between Lockheed and future 3.45 GHz Service licensees. Thus, as discussed below, we will continue our long-standing practice of limiting initial grants of STAs to 180 days.⁵⁵ Lockheed's STA will be effective on June 21, 2021.

21. We recognize that the Commission has taken steps to clear existing non-federal incumbents from the 3.45 GHz band.⁵⁶ As noted in the *3.45 GHz Report and Order*, the secondary, non-federal radiolocation and amateur operations relocated out of the 3.3-3.55 GHz band will be able to provide the same services in their new spectrum.⁵⁷ Due to the unique nature of its work in supporting ongoing S-band radar operations by the U.S. and allied nations, however, relocation to alternate spectrum is not possible for Lockheed's operations, and a different solution is required. We find that a time-limited STA, in a delineated geographic area, with the operating limitations discussed below, does not contravene the Commission's ultimate goal to make the 3.45 GHz band available for flexible-use services. Given the temporal, geographic, and spectral limitations that will apply to this STA, we do not anticipate that Lockheed's intended use will undermine the intensive and efficient use of mid-band spectrum. Its operations, as discussed below, will be limited during peak hours and only a segment of the 3.45 GHz band. Thus, we conclude that our actions today are consistent with the Commission's decisions in the 3.45 GHz proceeding.

B. STA Parameters and Conditions

22. *Co-Primary Rights.* Based on the extraordinary circumstances presented here, we conclude that it is in the public interest to grant Lockheed an STA for a period of 180 days to operate on a co-primary, non-harmful interference basis in the 3.45-3.525 GHz segment, subject to the conditions enumerated herein. Lockheed must make any and all adjustments necessary to prevent harmful

⁵⁴ *Auction 110 Procedures Public Notice* at *31, para. 116.

⁵⁵ See 47 CFR §1.931(b)(4).

⁵⁶ See *3.45 GHz Second Report and Order* at *45, para. 152 (sunsetting the secondary radiolocation authorization in the 3.45 GHz band 180 days after the new flexible-use licenses are granted); *Facilitating Shared Use in the 3100-3550 MHz Band*, WT Docket No. 19-348, Report and Order and Further Notice of Proposed Rulemaking, 35 FCC Rcd 11078, 11090, para. 33 (terminating the allocation for secondary amateur operations in the 3.3-3.5 GHz band in order to clear the way for flexible-use operations) (*3.45 GHz Report and Order*).

⁵⁷ *3.45 GHz Report and Order*, 35 FCC Rcd at 11088-91, paras. 27-37.

interference to other co-primary operations in the segment, i.e., 3.45 GHz Service licensees.⁵⁸ This requirement addresses the concerns of commenters who opposed the Waiver Request under part 5, arguing that grant of the waiver would leave 3.45 GHz Service licensees unprotected from harmful interference from Lockheed's high-power radars.⁵⁹ Likewise, 3.45 GHz Service licensees must not cause harmful interference to Lockheed during the period covered by Lockheed's STA. Specifically, while the STA is in effect, we expect that any part 27 licenses issued in the 3.45 GHz Service in PEAs 41, 44, and 227 in blocks A through H will be conditioned such that those licensees must not cause harmful interference to Lockheed for the duration of this STA, consistent with this Order.⁶⁰ We find that the grant of such co-primary rights strikes the appropriate balance between the national security needs served by Lockheed's RDT&E operations and future flexible-use deployments.

23. We find that issuing Lockheed an STA to operate on a co-primary, non-harmful interference basis will provide an opportunity for Lockheed to negotiate with the eventual 3.45 GHz Service licensees for mutually acceptable operations. We conclude that this operating authority sufficiently addresses the "main purposes of this STA application . . . to facilitate coordination negotiations with the actual 3.45 GHz Service licensees."⁶¹ We therefore decline to adopt Lockheed's formulation of co-primary rights.⁶² Once these prospective licensees are determined, we expect co-primary operators to negotiate to reach mutually acceptable agreements to permit both low- and high-power operations consistent with the conditions discussed below during the period of Lockheed's STA. Our conclusion is consistent with the Commission's expectation of negotiated coordination between non-federal contractor test facility operators and 3.45 GHz Service licensees in the context of part 5 experimental licensing.⁶³ Moreover, we expect Lockheed to initiate such negotiations at the first possible opportunity once winning bidders are identified in Auction 110 for PEAs 41, 44, and 227 in blocks A through H.⁶⁴

⁵⁸ The Commission's rules define harmful interference as, "interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with [the ITU] Radio Regulations." 47 CFR § 2.1.

⁵⁹ See AT&T Reply to Waiver Request at 2; CTIA Opposition to Waiver Request at 6-7. We thus anticipate that 3.45 GHz Service licensees will be protected from any harmful interference from any Lockheed operations, high- or low-power. In addition, we note that the authorization granted to Lockheed here is a conditional STA under our part 90 rules, rather than an amendment to Lockheed's existing part 5 experimental licenses.

⁶⁰ *Auction 110 Procedures Public Notice* at *31, para. 116.

⁶¹ See STA Request at 18. Lockheed also argues that the Commission has, in response to other unique situations in the past, granted some forms of primary status to operations that would otherwise be secondary. See STA Request at 12-13 (citing *City of Lewisburg Request for Waivers of Part 90 Rules to Permit Implementation of Wireless Water Management System*, Order, 26 FCC Rcd 10706 (2011); *Marathon County Sheriff's Department Request for Waiver of Section 101.81 of the Federal Communications Commission Rules*, Order, 19 FCC Rcd 3911 (2004) and *Milwaukee Metropolitan Sewerage District Request for Waiver to Allow Fixed Operations on a Primary Basis in the 450-470 MHz Band*, Order, 19 FCC Rcd 2623 (2004)). But here, at discussed above, we are not waiving rules to elevate Lockheed's experimental rights. To the contrary, we find that conditioned and time-limited rights—separate from its part 5 authorizations—are warranted, given the extraordinary circumstances that support this STA request.

⁶² See *supra* note 31.

⁶³ *3.45 GHz Second Report and Order* at *13, para. 34 ("We expect all future commercial licensees to cooperate with part 5 licensees when presented with requests for experimentation and testing in the 3.45 GHz band to enable continued development and upgrades of essential DoD systems.")

⁶⁴ Our grant of Lockheed's STA is well in advance of the July 21, 2021 filing window deadline for short-form applications for Auction 110 and should provide potential bidders with sufficient time to evaluate licensing considerations in the auction consistent with the Commission's obligation under section 309(j)(3)(E) of the Communications Act to provide interested parties with "sufficient time to develop business plans, assess market conditions, and evaluate the availability of equipment" for the 3.45 GHz Service. See 47 U.S.C. § 309(j)(3)(E).

(continued....)

24. *Conditions.* Given the unique nature of the relief granted here, we find that the public interest will be served by limiting Lockheed's operations under the STA. Accordingly, our grant of the STA is subject to the following conditions.

25. First, as proposed by Lockheed, all of its RDT&E operations at its Cazenovia and Liverpool, NY facilities are limited to the 3.45-3.525 GHz segment⁶⁵ and to the two transmitter sites listed in its application. These spectral and siting limitations apply to both Lockheed's high- and low-power RDT&E operations. Lockheed's operations will be limited to those with the technical parameters described in its experimental license and in the STA Request.

26. Second, Lockheed may operate on a co-primary, non-harmful interference basis as described above. That is, Lockheed must address any instances of reported interference that are experienced by 3.45 GHz Service licensees regardless of where and when they occur.

27. Third, as Lockheed proposes, its high-power outdoor RDT&E operations are limited to the off-peak hours between midnight and 8 AM.⁶⁶ We agree with Lockheed that this time period is when 3.45 GHz Service licensees would be least likely to be using the 3.45-3.525 GHz segment of the 3.45 GHz band.⁶⁷ As requested by Lockheed, during this "third shift," Lockheed's RDT&E operations may operate at transmit powers of up to 275.6 MW ERP.⁶⁸

28. Fourth, all Lockheed operations during the remaining 16 hours of the day (i.e., from 8 AM to midnight) must not exceed 317 Watts ERP, consistent with Lockheed's proposal.⁶⁹

29. Fifth, notwithstanding these conditions, Lockheed may adjust its operating hours and interference resolution obligations based on mutual agreement with all affected co-primary licensees.⁷⁰

30. Sixth, to the extent necessary, and for avoidance of doubt, we note that this grant will be subject to any decision the Commission may reach in connection with any pending requests for reconsideration of the *3.45 GHz Second Report and Order*.

31. Seventh, two months after release of the public notice announcing winner bidders in Auction 110 and every two months thereafter until the expiration of its STA, Lockheed must submit a report to WTB and OET reporting on its progress in reaching a long-term coordination solution. Lockheed must submit the status reports as Pleadings associated with the STA (see <https://wireless2.fcc.gov/UlsEntry/pleadings/pleadingsType.jsp>).

C. Lockheed's Requests for Waiver of Certain Commission Rules

32. Section 1.925(b)(3) of the Commission's rules states that the Commission may grant a waiver of its rules when either (i) "[t]he underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the

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Lockheed and any winning bidders in Auction 110 must be mindful that the prohibition on certain communications between auction applicants will remain in effect until the post-auction down payment deadline. 47 CFR § 1.2105(c); see also *id.* at 16-22, paras. 43-64. The down payment deadline for Auction 110 will be the later of January 7, 2022, or ten business days after release of the auction closing public notice. *Id.* at 71, para. 253.

⁶⁵ See STA Request at 9.

⁶⁶ *Id.* at 7.

⁶⁷ *Id.* at 7-8 (citing Ryan Heuser, *The Data Says: Mobile Traffic by Day and Time*, seoClarity (Apr. 16, 2015), <https://www.seoClarity.net/blog/mobile-seo-by-day-and-time-11890/>).

⁶⁸ *Id.* at 7.

⁶⁹ *Id.* Lockheed states that it "does not anticipate that its low power outdoor test operations would pose a significant risk of interference to a 5G transmitter located adjacent to its facilities." *Id.*

⁷⁰ See *id.* at 9.

public interest,” or (ii) “[i]n view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.”⁷¹ Section 1.3 allows the Commission, on its own motion, to waive rules for good cause shown.⁷²

33. Here, we find that several of Lockheed’s waiver requests to effectuate its STA meet the first prong of the Commission’s waiver standard. Accordingly, we grant a limited waiver of certain Commission rules to enable the conditional STA we also grant to Lockheed to allow radiolocation operations in the 3.45-3.525 GHz segment at the specified locations. However, we deny Lockheed’s request for waiver of the 180-day limit for STAs for the reasons discussed below.

1. Waivers to Permit Lockheed’s Operations Under its Part 90 STA

34. Lockheed requests waiver of certain rules to allow it to continue to operate its RDT&E radar facilities in Cazenovia and Liverpool, NY under an STA.⁷³ As discussed above, these operations support the United States’ and its allies’ S-band radar and national security needs. Lockheed argues that waiver of several rules will further the public interest by effectuating Lockheed’s STA, thus ensuring that it retains sufficient access to the 3.45-3.525 GHz segment to continue serving critical national security needs.⁷⁴ For the reasons discussed above, we agree and find that the public interest is served by granting limited waiver relief because it will enable the operations pursuant to the STA and because the impact on the new 3.45 GHz Service from the waivers granted herein will be minimal. Furthermore, this targeted relief to Lockheed, cabined by the conditions we describe above, is being granted well in advance of the short-form application window such that this arrangement can inform prospective bidders’ plans.

35. *Waivers to permit this application.* We grant Lockheed’s request for waivers of those rule sections necessary to permit the filing of this application: section 2.106, which contains the Table of Frequency Allocations,⁷⁵ and section 90.103(b), which details the frequencies available for stations in the radiolocation services.⁷⁶ Since there is no longer a radiolocation allocation for non-federal users in the 3300-3550 MHz band, and since this band is no longer included in the frequencies available under part 90, we waive these rules for the limited purpose of allowing Lockheed to operate radiolocation services in the 3300-3550 MHz band pursuant to and during the duration of its STA. We also grant Lockheed’s request for waiver of the freeze on applications for new or expanded part 90 Radiolocation Service operations in the 3100-3550 MHz band.⁷⁷

36. The Commission’s purpose in removing the 3300-3550 MHz band from those available for radiolocation services, and freezing applications for such services, was that clearing these non-federal operations from the band was necessary to support flexible-use licensing in this spectrum.⁷⁸ Permitting Lockheed’s limited use under the conditions included in the STA is necessary to allow it to continue its work, unlike those operators being relocated, and will not undermine that purpose due to the extensive limitations imposed on the STA, as discussed above. Further, allowing Lockheed to engage in radiolocation service operations for a limited period of time during this band’s transition is consistent

⁷¹ 47 CFR § 1.925(b)(3).

⁷² *Id.* § 1.3.

⁷³ STA Request at 9-18.

⁷⁴ *See id.* at 10.

⁷⁵ 47 CFR § 2.106.

⁷⁶ *Id.* § 90.103(b).

⁷⁷ *Temporary Freeze on Non-Federal Applications in the 3100-3550 MHz Band*, Public Notice, 34 FCC Rcd 19 (WTB 2019).

⁷⁸ *3.45 GHz Report and Order*, 35 FCC Rcd at 11085-86, paras. 24-25.

with the Commission's decision to allow secondary, non-federal operations in the 3.3-3.55 GHz band—namely, weather radar systems and amateur operators—to continue to operate in the band for a set amount of time, notwithstanding the removal of the radiolocation services allocation.⁷⁹

37. Similarly, the Bureau's purpose in freezing applications for part 90 radiolocation licenses was to “preserve the current landscape of authorized operations in the 3100-3550 MHz band” while the Secretary of Commerce, working through NTIA and the Commission, consider alternate uses of the band.⁸⁰ While the STA Request is technically for a “new” Part 90 *authorization*, it is not a new *operation*, since the operations in question have been ongoing for years at the two respective New York sites, albeit under different rules (part 5). As a result, the underlying purpose of the freeze—avoiding new entrants that could complicate the Commission's goal of reallocating the band for flexible-use operations—is still served despite a waiver in this instance.

38. *Waiver to permit use of uncertified equipment.* We also grant Lockheed's request for waiver of section 90.203(a), which requires that each transmitter operating under part 90 be certified for use under part 90, and of section 90.129(b), which requires that applications include a description of the equipment proposed to be used, if not certified. The conditions we adopt today limit Lockheed's operations under the STA to technical parameters consistent with those already approved by OET for operations under its experimental license in the band,⁸¹ and those authorization were coordinated within the Commission and with federal incumbent operators. Additionally, the nature of Lockheed's operations requires it to utilize a wide range of equipment, which are often designed for specific uses and purpose-built for specific users; its testing operations, in particular, are not suited to certification or Commission notice. Notably, Lockheed's customers are federal government agencies and foreign governments, none of which are required under the Commission's rules to operate with certified equipment. Given the fact that the STA at issue is for the same type of equipment that has been in operation pursuant to Lockheed's experimental license for many years and Lockheed's role as an experienced equipment manufacturer, along with the geographical and temporal limitations on Lockheed's operations, we believe the underlying purpose of these rules—ensuring safe operation and limiting interference potential—will be satisfied by the conditions contained in the STA and waive their application here.

39. *Waiver to permit operation on a co-primary basis.* Finally, we grant-in-part and deny-in-part Lockheed's request for waiver of section 1.931(b) of the Commission's rules, which states that operations pursuant to an STA must be on a secondary, non-interference basis.⁸² Under the STA conditions described above, we grant Lockheed an STA to engage in radiolocation operations on a co-primary, non-harmful interference basis in order to provide those operations with a limited set of protections as flexible-use wireless services are introduced pursuant to new 3.45 GHz Service licenses. We do not, however, grant Lockheed the right to cause harmful interference to new 3.45 GHz Service operations. As discussed above, we believe this structure will facilitate fair negotiations to ensure full access for both important uses of this valuable spectrum.

2. Waiver of the 180-day Limit on STAs

40. Without prejudice to any future extension upon an appropriate showing, we deny Lockheed's request for waiver of section 1.931(b)(1) of the Commission's rules, which limits STAs to a period of 180 days.⁸³ While the Commission's rules contemplate waivers of this limitation on the length

⁷⁹ 3.45 GHz Second Report and Order at *44-45, 48-49, paras. 150-53, 167-69.

⁸⁰ *Id.*

⁸¹ Under section 90.207(n) of our rules, emissions for Part 90 radiolocation operations may be approved on a case-by-case basis; the use of equipment which would have otherwise been permitted under Lockheed's experimental license functionally satisfies this requirement in this particular situation. 47 CFR § 90.207(n).

⁸² 47 CFR § 1.931(b)(1).

⁸³ *Id.*

of STAs in some instances, WTB in practice rarely if ever waives this limit, and instead considers extension based on the circumstances presented at the end of the STA period.⁸⁴ We do not believe deviation from our practice is necessary or appropriate here. We expect that the STA we grant to Lockheed will enable it to reach agreements with incoming 3.45 GHz Service licensees to permit continued spectrum access for design and testing of important radar systems while minimizing impacts on flexible-use wireless networks. We are cognizant, however, that the relevant winners of the 3.45 GHz Service auction will not be identified until sometime after the conclusion of Auction 110, which is not scheduled to begin until October 5, 2021. Further, auction winners will be required to demonstrate their qualifications in long form license applications, and as such they will likely not be in a position to deploy service for some time thereafter. Accordingly, in order to afford Lockheed the opportunity to engage with prospective licensees, we anticipate that an extension of the STA may be warranted.

41. We also deny Lockheed's request for waiver of section 1.931(b)(4) of the Commission's rules, which limits extensions of STAs to a period of 180 days.⁸⁵ Lockheed has not requested an extension of an existing STA, and therefore there is no need to address the duration of such an extension.

IV. ORDERING CLAUSES

42. Accordingly, IT IS ORDERED that, pursuant to sections 4(i), 4(j), 301, 307(a), 308(a), and 309(a) of the Communications Act, as amended, 47 U.S.C. §§ 154(i), (j), 301, 307(a), 308(a), and 309(a), and section 1.931 of the Commission's rules, 47 CFR § 1.931, the Wireless Telecommunications Bureau and the Office of Engineering and Technology GRANT the Request for Special Temporary Authority and associated waiver requests to the extent described herein. WTB and OET DENY the waiver requests to the extent described herein. WTB and OET note that this special temporary authority is not an authorization of a continuing nature.

43. IT IS FURTHER ORDERED, pursuant to sections 4(i), 4(j), 301, 307(a), 308(a), and 309(a) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), 154(j), 301, 307(a), 308(a), and 309(a), that grant of the Special Temporary Authority SHALL BE CONDITIONED on compliance with the conditions enumerated herein.

44. This action is taken under delegated authority pursuant to sections 0.31, 0.131, 0.241 and 0.331 of the Commission's Rules, 47 C.F.R. §§ 0.31, 0.131, 0.241, 0.331.

FEDERAL COMMUNICATIONS COMMISSION

Joel Taubenblatt
Acting Chief
Wireless Telecommunications Bureau

Ronald T. Repasi
Acting Chief
Office of Engineering and Technology

⁸⁴ See *id.* § 1.931(b)(4) ("The Commission may grant extensions of STA for a period of 180 days, but the applicant must show that extraordinary circumstances warrant such an extension.")

⁸⁵ *Id.*