



PUBLIC NOTICE

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WIRELESS TELECOMMUNICATIONS BUREAU AND OFFICE OF ENGINEERING AND TECHNOLOGY APPROVE RED TECHNOLOGIES TO BEGIN INITIAL COMMERCIAL DEPLOYMENT IN THE 3.5 GHZ BAND

GN Docket No. 15-319

I. INTRODUCTION

1. With this *Public Notice*, the Wireless Telecommunications Bureau (WTB) and the Office of Engineering and Technology (OET) (collectively, WTB/OET) of the Federal Communications Commission (Commission or FCC) certify that the Spectrum Access System (SAS) operated by RED Technologies SAS (RED) has satisfied the Commission's SAS laboratory testing requirements¹ and is approved to begin its initial commercial deployment (Initial Commercial Deployment or ICD) as described in its ICD proposal and consistent with the obligations and conditions detailed in this Public Notice and contained in the ICD Proposals Public Notice.² WTB/OET, in consultation with the Department of Defense (DoD) and the National Telecommunications and Information Administration (NTIA), have reviewed both RED's SAS laboratory testing report and its ICD proposal.

II. BACKGROUND

2. In the *2015 Report and Order*, the Commission directed WTB/OET—in consultation with the DoD and NTIA—to oversee the review, certification, and approval of SASs in the 3.5 GHz band.³ As required in the *2015 Report and Order*, and as further described in the *SAS/ESC Proposal Public Notice*, all prospective SAS administrators must complete a two-stage review process prior to final

¹ Conditionally approved SAS Administrators are permitted to file their laboratory testing reports in GN Docket No. 15-319. *Wireless Telecommunications Bureau and Office of Engineering and Technology Establish Procedure and Deadline for Filing Spectrum Access System Initial Commercial Deployment Proposals*, Public Notice, 33 FCC Rcd 7390, 7392, para. 5 (WTB/OET 2018) (*ICD Proposals Public Notice*). RED chose to file its laboratory testing report with the Commission and requested confidential treatment. See Performance Certification Results for a 3.5 GHz Spectrum Access System Provided for Testing by RED Technologies SAS; Final SAS Certification Test Report Submission, GN Docket No. 15-319 (filed September 25, 2022) (RED SAS Test Report).

² RED's ICD proposal was filed in GN Docket No. 15-319 consistent with the Commission's instructions and RED requested confidential treatment for its ICD filings. See *ICD Proposals Public Notice*, 33 FCC Rcd at 7394-95, para. 11; RED Technologies SAS Proposal for Spectrum Access System Initial Commercial Deployment, GN Docket No. 15-319, (filed November 6, 2022) (RED ICD Proposal).

³ See generally *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959, 4067, paras. 369-373 (2015) (*2015 Report and Order* and *2015 FNPRM*, respectively); see also 47 CFR §§ 0.241(j), 0.331(f).

certification.⁴ In the first stage, a prospective SAS Administrator must submit a proposal describing how its system will comply with all Commission rules governing the construction, operation, and approval of SASs and perform all core functions described in the *2015 Report and Order*.⁵ The second stage involves SAS testing both in a controlled lab environment and in a real-world setting.⁶ On May 7, 2021, WTB/OET conditionally approved RED's SAS.⁷

3. As part of the second stage testing process, RED elected to collaborate with the Institute for Telecommunication Sciences (ITS), NTIA's research and development arm, in order to complete the laboratory testing requirement.⁸ ITS completed its laboratory testing and subsequently provided RED with a SAS laboratory test report, which RED submitted for the Commission's review on September 25, 2022.⁹

4. In order to comply with the field testing requirement, in July 2018, WTB/OET sought proposals for short-term, limited geographic commercial deployment.¹⁰ Consistent with the requirements set forth in the *ICD Proposals Public Notice*, RED submitted its ICD proposal on November 6, 2022.¹¹

III. DISCUSSION

5. WTB/OET, in coordination with NTIA and DoD, are responsible for assessing and testing each conditionally approved SAS prior to final certification in both laboratory and real-world environments.¹² ICD will satisfy the real-world element of the testing process and will allow WTB/OET to assess whether a SAS can operate under actual deployment conditions.¹³

6. WTB/OET, in coordination with NTIA and DoD, reviewed RED's laboratory test report and ICD proposal in detail. Based on the information contained in those documents, WTB/OET find that RED's laboratory test report satisfies the Commission's requirement to assess and test each SAS in a

⁴ See *Wireless Telecommunications Bureau and Office of Engineering and Technology Establish Procedure and Deadline for Filing Spectrum Access System (SAS) Administrators(s) and Environmental Sensing Capability (ESC) Operator(s) Applications*, GN Docket No. 15-319, Public Notice, 30 FCC Rcd 14170, 14174-77 (WTB/OET 2015) (*SAS/ESC Proposal Public Notice*).

⁵ See *2015 Report and Order*, 30 FCC Rcd at 4054-55, para. 320 (listing SAS core functions); see also *SAS/ESC Proposal Public Notice*, 30 FCC Rcd 14170; *Wireless Telecommunications Bureau and Office of Engineering and Technology Conditionally Approve Three Spectrum Access System Administrators for the 3.5 GHz Band*, Public Notice, 36 FCC Rcd 8255 (WTB/OET 2021) (*Second Wave SAS Conditional Approval Public Notice*).

⁶ See *2015 Report and Order*, 30 FCC Rcd at 4067, para. 372 (noting that the final compliance testing phase can include a public testing period, testing of protections for incumbent systems, and field trials). On July 27, 2018, WTB/OET released a Public Notice that described the procedure and deadline for filing ICD proposals. See *ICD Proposals Public Notice*, 33 FCC Rcd 7390. ICD is meant to fulfill the Commission's requirement that applicants conduct a public testing period and field trials prior to final certification. *2015 Report and Order*, 30 FCC Rcd at 4067, para. 372.

⁷ See *Second Wave SAS Conditional Approval Public Notice*.

⁸ While lab testing of individual SASs is required before final certification, participation in either the process of verifying and validating the test harness or the subsequent lab testing of an individual SAS with ITS is optional and is not a prerequisite to submitting an ICD proposal or to obtaining final certification. *ICD Proposals Public Notice*, 33 FCC Rcd at 7392, para. 4.

⁹ See RED SAS Test Report.

¹⁰ *ICD Proposals Public Notice*, 33 FCC Rcd at 7390, para. 1.

¹¹ See RED ICD Proposal.

¹² See *2015 Report and Order*, 30 FCC Rcd at 4067, para. 372.

¹³ *ICD Proposals Public Notice*, 33 FCC Rcd at 7392, para. 6.

controlled lab environment and that the ICD proposal meets the requirements set forth in the *ICD Proposals Public Notice*. WTB/OET therefore approve RED's SAS for Initial Commercial Deployment subject to the following ongoing compliance obligations:

- RED must file a notification in GN Docket No. 15-319 stating: (1) the beginning date of its ICD period; (2) the specific geographic areas covered by ICD deployments; (3) whether its SAS is DPA-enabled;¹⁴ (4) whether its SAS will be operating with an approved Environmental Sensing Capability (ESC) operator during ICD and, if so, which ESC they will be using;¹⁵ and (5) the expected end date of the ICD reporting period. The notification must also include a primary point of contact for incumbent operators to use to report potential interference issues to its SAS¹⁶ and to obtain additional information about ICD operations, if needed. The ICD period may begin once this notification is filed.
- ICD must continue for a minimum of 30 consecutive days, consistent with RED's ICD proposal, and they must demonstrate compliance with the Commission's rules and other requirements set forth in the *ICD Proposals Public Notice*.¹⁷ ICDs must involve a variety of testing scenarios featuring multiple Citizen Broadband Radio Service Devices (CBSDs)¹⁸ that result in the generation of data upon which the Commission can reasonably predict that its SAS can reliably operate in compliance with the Commission's rules.¹⁹
- During ICD, RED must operate a SAS that is functionally consistent with its SAS tested in the laboratory environment. SAS operators may implement software upgrades and patches to address any issues identified during ICD.
- RED must comply with all current and future Commission rules, instructions, and procedures.

¹⁴ Dynamic Protection Areas (DPAs) are pre-defined protection areas that extend beyond the coastline or that enclose a protected terrestrial radar facility, which may be activated or deactivated as necessary to protect DoD radar systems. *Promoting Investment in the 3550-3700 MHz Band*, GN Docket No. 17-258, Order, 33 FCC Rcd 4987, 4990, para. 5 (WTB/OET 2018) (*DPA Waiver Order*). In the *DPA Waiver Order*, WTB and OET conditionally waived sections 96.7(a), 96.15(a)(2)-(3), 96.15(b)(2)-(3), 96.45(b), 96.53(g), and 96.57(d) of the Commission's rules to allow: (1) DPA-enabled SASs to authorize both Category A and Category B CBSDs in the 3.5 GHz band prior to ESC deployment and certification; and (2) DPA-enabled SASs to be certified without being tested for compliance with phase one Exclusion Zone requirements in areas where NTIA has published DPAs.

¹⁵ See *Wireless Telecommunications Bureau and Office of Engineering and Technology Announce the Approval and Registration of Environmental Sensing Capability Sensors of Three ESC Operators for the 3.5 GHz Band*, GN Docket No. 15-319, Public Notice, DA 19-718 (WTB/OET July 29, 2019); *Wireless Telecommunications Bureau and Office of Engineering and Technology Announce Approval of Key Bridge's Environmental Sensing Capability*, GN Docket No. 15-319, DA 22-175 (WTB/OET February 18, 2022); *DPA Waiver Order*, 33 FCC Rcd at 4993-94, para.16.

¹⁶ See 47 CFR § 96.17(f).

¹⁷ See *ICD Proposals Public Notice*, 33 FCC Rcd at 7392-94, paras. 7-8, 10.

¹⁸ CBSDs are fixed stations, or networks of such stations, that operate on a Priority Access or General Authorized Access basis in the Citizens Broadband Radio Service. 47 CFR § 96.3.

¹⁹ *ICD Proposals Public Notice*, 33 FCC Rcd at 7394, para. 10. These scenarios are included in RED's ICD Proposal. See *supra* note 2.

- RED must comply with all instructions issued by WTB and OET pursuant to sections 0.241(j) and 0.331(f) of the Commission's rules.²⁰
- RED must promptly respond to any Commission, WTB, Enforcement Bureau, or OET requests for additional information.
- During ICD, each conditionally approved SAS must promptly deactivate, or make changes in the operational parameters of any CBSD or group of CBSDs, if directed to do so by the Commission, WTB, OET, or Enforcement Bureau. If, during ICD, a SAS is continually shown to cause interference to incumbents, WTB/OET may require that SAS to cease all operations until the underlying issues are resolved.

7. In addition, consistent with the *ICD Proposals Public Notice* and RED's ICD proposal, RED must satisfy the following requirements during ICD:

- RED must demonstrate that users can register with its SAS, receive authentication, and obtain user IDs during ICD.²¹
- RED must demonstrate how its SAS will communicate with and manage multiple CBSD or Domain Proxy (DP) products, including the protocols for SAS-CBSD communications for registration, channel grant, and channel release.²² RED must identify all of its commercial partners that will operate during ICD.
- RED must demonstrate that a certified professional installer (CPI) can register CBSDs/DPs during ICD and must explain how that professional installation will ensure its SAS can accurately locate devices in compliance with part 96.²³
- RED must demonstrate that its SAS can access, read, and use data directly from FCC databases during ICD.²⁴
- RED must demonstrate its ability to correctly synchronize and exchange information with other SASs and to correctly apply information security procedures and incumbent protection methods during ICD.²⁵
- RED must demonstrate the processes that it will use to ensure the correct implementation of all relevant interference protection criteria, including how its SAS's over-the-air propagation testing addresses the protection of Fixed Satellite Service earth station sites, federal inland radar test sites, and area-based protections.²⁶ RED should include the results of these protection tests in its ICD Report consistent with its approved final ICD deployment plan.

²⁰ See 47 CFR §§ 0.241(j), 0.331(f).

²¹ See, e.g., 47 CFR §§ 96.25(c), 96.33, 96.39, 96.57.

²² See, e.g., 47 CFR §§ 96.39, 96.55-59. ICD will not need to cover all test cases performed in ITS lab testing.

²³ See *3.5 GHz First Report & Order*, 30 FCC Rcd at 4028, para. 220 (stressing the importance of accurate CBSD geo-location for coordinating interactions between and among users in the band and for protecting Incumbent Users from harmful interference in compliance with Part 96). WinnForum has developed standards and a program to approve CPIs that successfully complete their training in the relevant Part 96 rules and the associated technical best practices, per the Commission's strong encouragement to multi-stakeholder groups and industry associations in the *3.5 GHz First Report & Order*. See *id.* at 4028-29, paras. 221-222.

²⁴ See 47 CFR § 96.55(d), 96.63.

²⁵ See 47 CFR §§ 96.55(a)(2), 96.57, 96.59, 96.63(i).

²⁶ See 47 CFR §§ 96.15, 96.17, 96.21, 96.57, 96.59; <https://www.ntia.doc.gov/fcc-filing/2015/ntia-letter-fcc-commercial-operations-3550-3650-mhz-band>.

- If RED is DPA-enabled, RED must demonstrate the ability to implement notification-based DPA protection using a DPA portal.²⁷
- RED must provide a method by which WTB, Enforcement Bureau, OET, NTIA, and DoD will have access to its SAS and data generated by its SAS during ICD in order to verify that its SAS complies with the relevant rules. RED must also provide a primary point of contact to address questions about SAS operations or information from the Commission, NTIA, and the DoD.
- RED must demonstrate real-world application of interference reporting and timely interference mitigation processes, including providing FCC enforcement personnel with access to SAS data upon request.²⁸
- Once RED completes its ICD, it must submit an ICD Report to the Commission, according to its approved proposal format and including a demonstration of compliance with these conditions, as well as any outstanding issues identified in RED's lab test report.²⁹

8. These conditions will ensure that RED will comply with the Commission's rules. RED will not receive final certification unless the conditions described in this *Public Notice* are met, and such certification may be revoked at any time if RED fails to comply with the Commission's rules and guidance on an ongoing basis.

IV. NEXT STEPS

9. WTB/OET will carefully oversee RED's operations during the ICD period. WTB/OET, in coordination with NTIA and the DoD, will review RED's ICD Report and will publicly announce if RED successfully completes ICD and receives final certification to operate a SAS.

10. After RED submits its ICD Report to the Commission, it may continue Initial Commercial Deployment, subject to the conditions described in this *Public Notice*, during the review period and pending further Commission review. RED may expand operations seven business days after providing notice to the Commission, provided that such notice includes all information required by the *ICD Proposals Public Notice*. All ICD deployments must comply with all conditions listed in this *Public Notice* and contained in the *ICD Proposals Public Notice*.³⁰

11. If RED successfully completes ICD and receives final certification to operate, it will be allowed to make its SAS available for commercial use for the five-year term specified in our rules.³¹ WTB/OET will publicly announce the availability of each SAS, at which time the five-year term will commence.

V. PROCEDURAL REQUIREMENTS

12. RED must file: (1) ICD Reports and any supplements; and (2) ICD notifications with the Commission using the Commission's Electronic Comment Filing System.³² See *Electronic Filing of*

²⁷ *ICD Proposals Public Notice*, 33 FCC Rcd at 7393, para. 7.

²⁸ See, e.g., 47 CFR §§ 96.53, 96.55.

²⁹ *ICD Proposals Public Notice*, 33 FCC Rcd at 7394, para. 10.

³⁰ *ICD Proposals Public Notice*, 33 FCC Rcd at 7392-94, paras. 7-10.

³¹ See 47 CFR § 96.63(e).

³² While we will accept proposals electronically, we are not requesting public comment on the reports or notifications at this time.

Documents in Rulemaking Proceedings, 63 FR 24121 (1998). REDs may request confidential treatment of information contained in their filings consistent with Section 0.459 of the Commission's rules.³³

13. Questions regarding this *Public Notice* may be directed to Paul Powell, Associate Division Chief, Wireless Telecommunications Bureau, Mobility Division at (202) 418-1613 or paul.powell@fcc.gov, or Navid Golshahi, Electronics Engineer, Office of Engineering and Technology, Policy and Rules Division at (202) 418-2422 or navid.golshahi@fcc.gov.

14. By the Acting Chief, Wireless Telecommunications Bureau, and the Acting Chief, Office of Engineering and Technology.

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³³ See 47 CFR § 0.459.