



PUBLIC NOTICE

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DA 16-1426

Released: December 21, 2016

WIRELESS TELECOMMUNICATIONS BUREAU AND OFFICE OF ENGINEERING AND TECHNOLOGY CONDITIONALLY APPROVE SEVEN SPECTRUM ACCESS SYSTEM ADMINISTRATORS FOR THE 3.5 GHZ BAND

GN Docket No. 15-319

I. INTRODUCTION

1. With this Public Notice, the Wireless Telecommunications Bureau (WTB) and Office of Engineering and Technology (OET) conditionally approve seven entities: Amdocs, Inc.; Comsearch; CTIA-The Wireless Association (CTIA); Federated Wireless; Google, Inc.; Key Bridge; and Sony Electronics, Inc. (Sony), as Spectrum Access System (SAS) Administrators in the 3550-3700 MHz band (3.5 GHz Band).¹ The SAS will coordinate three tiers of users in the 3.5 GHz Band, making the band available for commercial use on a shared basis with existing federal and non-federal incumbents. Today's action marks an important step toward making this spectrum available for wireless broadband and other innovative uses.

II. BACKGROUND

2. On April 17, 2015, the Commission adopted a *Report and Order and Second Further Notice of Proposed Rulemaking (3.5 GHz Order)* that established a new Citizens Broadband Radio Service in the 3.5 GHz Band.² The Citizens Broadband Radio Service will share use with federal and non-federal Incumbent Access tier users as part of a broader three-tiered sharing framework enabled by the SAS. The SAS will serve as an advanced, highly automated frequency management system to assign spectrum within the band and protect the three tiers of users.

3. The *3.5 GHz Order* established that WTB and OET,³ in coordination with the Department of Defense (DoD) and National Telecommunications and Information Administration (NTIA), would seek

¹ Conditional approval in this context means that an applicant can submit a SAS for actual system testing and final certification.

² See 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 (2015) (*3.5 GHz Order*).

³ The Commission delegated authority to WTB / OET to oversee the SAS approval process and facilitate the testing and development of multiple SAS Administrators. See *3.5 GHz Order*, 30 FCC Rcd at 4054, para. 370. See 47 CFR §§ 0.241(j) and 0.331(f).

non-exclusive applications and issue approvals for SAS Administrator and Environmental Sensing Capability (ESC) operators.⁴

4. On December 16, 2015, WTB / OET released a Public Notice describing the application submission process and provided detailed guidance as to how applicants can demonstrate their ability to perform the functions of a SAS Administrator.⁵ Specifically, the *SAS / ESC Proposal Public Notice* established a two-step review process whereby applicants are required to first submit a paper proposal describing their SAS and / or ESC, which must be conditionally approved before the second stage of actual system testing and final certification.

5. The Public Notice requested that the proposals include a description of the scope of the functions the SAS would perform; demonstration of the SAS Administrator's technical and financial capabilities, including whether other entities would perform any SAS functions; a demonstration that the prospective SAS Administrator or ESC operator possesses sufficient technical expertise to operate such a system, including the qualifications of key personnel responsible for operating and maintaining that system; a description of how data will be securely communicated, including software and firmware updates; technical diagrams showing the SAS architecture; proposed propagation models; detailed description of how the SAS will retain, secure, and verify device information, description of interference protection and coordination procedures; description of the SAS communication procedures; dynamic use case scenarios that demonstrate frequency assignment; a description of how the SAS will retain information; and an affirmation that the SAS will comply with all of the Commission's rules.⁶

6. The "first wave" of proposals were due May 16, 2016,⁷ and as of that date, seven parties submitted proposals to act as a SAS Administrator: Amdocs, Inc.; Comsearch; CTIA; Federated Wireless; Google, Inc.; Key Bridge; and Sony.⁸ WTB and OET, in coordination with NTIA and DoD, reviewed these proposals in detail and sought feedback from applicants through a public meeting and individual requests for information. No parties filed comments on the proposals.

III. DISCUSSION

7. Based on our review of the proposals, including subsequent amendments, WTB and OET will conditionally approve all seven applicants' proposals to act as a SAS Administrator, subject to the conditions and processes described below. Through their proposals, these seven entities each sufficiently demonstrate the technical and financial capability, as required by the *SAS / ESC Proposal Public Notice*, to move on to the next phase of the approval process prior to final approval. Specifically, we conditionally approve each of the seven applicants as SAS Administrators in the 3.5 GHz Band subject to the following:

⁴ See *3.5 GHz Order*, 30 FCC Rcd at 4051-54, paras. 359-366, 369-373.

⁵ 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 (WTB / OET Dec. 16, 2015) (*SAS / ESC Proposal Public Notice*). (The Public Notice also sets forth the procedure to submit Environmental Sensing Capability operator proposals.)

⁶ See *SAS / ESC Proposal Public Notice*, 30 FCC Rcd at 14174-14176.

⁷ WTB and OET will continue to consider proposals and amendments thereto submitted after this date, but stated they may not be considered concurrently with "first wave" proposals. See *SAS / ESC Proposal Public Notice*, 30 FCC Rcd at 14170.

⁸ Six parties submitted proposals to act as an ESC operator: Comsearch; CTIA; Federated Wireless; Google; iPosi; and Key Bridge. WTB / OET are continuing to review these ESC proposals, which remain pending.

- Each conditionally approved SAS Administrator must comply with all current and future Commission rules, instructions, and procedures.
- Each conditionally approved SAS Administrator 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.⁹
- All conditionally approved SAS Administrators must attend workshops and meetings convened by the Commission or WTB and OET. Workshop or meeting topics may include: (1) SAS development and operations; (2) SAS testing and certification procedures; and (3) other topics relevant to the ongoing development of the SAS.
- If a conditionally approved SAS Administrator relies on third party or proprietary specifications or standards for its proposed SAS, these specifications or standards must be consistent with the relevant Commission rules.¹⁰ All such specifications and standards will be reviewed by WTB and OET to ensure consistency with the Commission's rules.
- Each conditionally approved SAS Administrator must demonstrate that it is able to protect Incumbent Access tier users, *i.e.*, federal incumbent users and Fixed Satellite Services (FSS) licensees, and Grandfathered Wireless Broadband Licensees (GWBL), in compliance with the parameters established by Commission rules.¹¹
- Each conditionally approved SAS Administrator must comply with coordination procedures to protect federal naval and ground-based radars and must be able to receive and address reports of interference from federal Incumbent Access tier users. The Commission, in conjunction with NTIA and DoD, is developing coordination and interference reporting procedures that the conditionally approved SAS Administrators must follow in order to comply with the requirements set forth in the Commission's rules.
- Each conditionally approved SAS Administrator must be able to receive reports of interference from non-federal incumbents, *i.e.*, FSS licensees and GWBL, and develop a mechanism to address and remedy, as necessary, such reports of interference and report such interference and its resolution (if any) to the Commission upon request.
- Each conditionally approved SAS Administrator must employ a propagation model, or set of propagation modeling methods acceptable to the Commission, to determine interference protection for: 1) federal Incumbent Access tier users; 2) FSS licensees; 3) GWBL;¹² and 4) Priority Access Licenses.¹³ The SASs may use the same propagation model to protect all four categories of users or may use multiple models but must utilize the same model, or set of models, for all users within each discrete category. These models must be consistent for all SASs.

⁹ See 47 CFR §§ 0.241(j), 0.331(f).

¹⁰ Each conditionally approved SAS Administrator states that it relies on current or future WinnForum standards as part of its proposal. To the extent that the SAS Administrator incorporates any revisions to existing WinnForum standards into its system, such revisions must also be consistent with Commission rules.

¹¹ See 47 CFR §§ 96.15; 96.17(a)-(d), 96.21, 96.53(e)-(i) and (m).

¹² See 47 CFR §§ 96.17 (a) and (b), 96.25(c), 96.53 (g)-(i). See *Wireless Telecommunications Bureau and Office of Engineering and Technology Announce Methodology for Determining the Protected Contours for Grandfathered 3650-3700 MHz Band Licensees*, Public Notice, GN Docket No. 12-354, 31 FCC Rcd 9037, 9037, para. 1 (WTB / OET Aug. 19, 2016).

¹³ The Commission recognizes that SAS applicants and the WinnForum are still assessing potential propagation models and encourages industry to continue this work toward selecting default propagation models. WTB and OET will review such propagation models once this process is complete.

- Each conditionally approved SAS Administrator must demonstrate the capability to comply with the frequency assignment functions required in section 96.59 of the Commission’s rules.¹⁴ WTB and OET encourage industry to develop a common methodology to implement this requirement.
- Consistent with section 96.55 of the Commission’s rules, “SAS Administrators must make all information necessary to effectively coordinate operations between CBSDs available to other SAS Administrators.”¹⁵ A record of any information sharing agreement entered into between or among SAS Administrators must, in whole or in summary, be submitted to GN Docket No. 15-319.¹⁶
- SAS Administrators must “make CBSD registration information available to the general public, but they must obfuscate the identities of the licensees providing the information for any public disclosures.”¹⁷ Publicly disclosed information includes all information required under section 96.45 and must be sufficient to facilitate coordination consistent with section 96.35(e). To protect the identities of individual customers and licensees, conditionally approved SAS Administrators may obfuscate the location of any registered CBSD by up to +/- 50 meters (horizontal) and +/- 3 meters (vertical).¹⁸
- As specified by the Commission, all conditionally approved SAS Administrators must provide external testing interfaces to enable WTB, OET, NTIA, and DoD to utilize that interface and verify that the SAS complies with the relevant rules.

8. We impose the above conditions to ensure that each conditionally approved entity’s final approved SAS will demonstrate compliance with Commission rules throughout all steps of the approval process and in recognition that each of the proposals rely on third-party standards or solutions that applicants and multi-stakeholder organizations, such as the Winn Forum, are still in the process of developing. Also, we recognize that applicants will be relying on further guidance from the Commission, and NTIA and DoD, to meet certain requirements. The failure of applicants to meet any of the conditions on an ongoing basis or to comply with future further guidance from the Commission could result in revocation of its conditional approval, affecting the applicant’s ability to move on to the next step, including final approval.

IV. NEXT STEPS

9. We will continue to exercise strong oversight of the approval process and provide detailed guidance regarding the next steps of the approval process. We may ask the conditionally approved entities for additional information at any time and all conditionally approved SAS Administrators must attend related workshops, as detailed in the above conditions. Parties are permitted to amend their

¹⁴ See 47 CFR § 96.59.

¹⁵ See 47 CFR § 96.55(a)(2).

¹⁶ Applicants may seek confidential treatment of information filed in amendments to their proposals, pursuant to section 0.459 of the Commission’s rules and such information may be shared with other federal agencies, including NTIA and DoD. Any party that opposes the sharing of this information with other agencies has ten days from the date of the confidential filing to oppose such sharing. See 47 CFR § 0.459; *Wireless Telecommunications Bureau and Office of Engineering and Technology Announce Ex Parte Status and Inter-Agency Confidentiality Procedures for Submissions in GN Docket No. 15-319*, Public Notice, 31 FCC Rcd 5312, 5313 (WTB / OET May 19, 2016). However, if the party consents to the sharing of such information, we request that applicants explicitly state this in their filing. This will waive the ten day period and allow us to share the confidential filings with NTIA and DoD immediately, expediting the review process, a goal shared by the Commission and applicants.

¹⁷ See 47 CFR § 96.55(a)(3).

¹⁸ See 47 CFR § 96.39(a).

proposals in GN Docket 15-319. As noted above, all applications, or portions of applications, seeking approval to be ESC operators remain pending.

10. As required in the *3.5 GHz Order*, all conditionally approved SAS Administrators must submit their systems for compliance testing before final approval, which may include a public testing period, testing of protections for incumbent systems, and field trials.¹⁹ We will provide instructions and criteria for testing through one or more public notices. After the testing period is completed, each SAS will be subject to a trial period before receiving its final certification. The trial period is intended to ensure that the SAS is operating properly and in compliance with Commission rules. SAS Administrators that successfully satisfy all of the conditions herein and those systems that are deemed compliant through testing will be allowed to make their databases available for actual use for the five-year term specified in our rules.²⁰ We will publicly announce the availability of each SAS, at which time the five-year term will commence.

¹⁹ See *3.5 GHz Order*, 30 FCC Rcd at 4054.

²⁰ See *id.* at 4051; 47 CFR § 96.63(e).