

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

In the Matter of)	
)	
Unlicensed Operation in the TV Broadcast Bands)	ET Docket No. 04-186
)	
Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band)	ET Docket No. 02-380
)	

ORDER

Adopted: July 28, 2011

Released: July 29, 2011

By the Chief, Office of Engineering and Technology:

I. INTRODUCTION

1. In this *Order*, we conditionally designate Microsoft Corporation as a TV bands database administrator pursuant to Section 15.715 of our rules, subject to conditions described herein.¹ The TV bands databases will be used by fixed and personal portable unlicensed devices to identify unused channels in the spectrum used principally by the broadcast television service that are available at their geographic locations. Microsoft is the tenth entity designated to develop a database that will enable the introduction of this new class of unlicensed broadband wireless devices in the TV spectrum.

II. BACKGROUND

2. On September 23, 2010, the Commission adopted a *Second Memorandum Opinion and Order (Second MO&O)* in ET Docket No. 04-186 that updated the rules for unlicensed wireless devices that can operate in broadcast television spectrum at locations where that spectrum is unused by licensed services.² This unused TV spectrum is commonly referred to as television “white spaces.” The rules allow for the use of unlicensed TV bands devices in the unused spectrum to provide broadband data and other services for consumers and businesses.³

3. To prevent interference to authorized users of the TV bands, TV bands devices must include a geo-location capability and the capability to access a database that identifies incumbent users entitled to interference protection, including, for example, full power and low power TV stations, broadcast auxiliary point-to-point facilities, PLMRS/CMRS operations on channels 14-20, and the Offshore Radiotelephone Service.⁴ The database will calculate and communicate to a TV bands device which TV channels are vacant and can be used at the device’s location.⁵ The database will also register the

¹ See 47 C.F.R. § 15.715.

² See *Second Memorandum Opinion and Order* in ET Docket No. 04-186, 25 FCC Rcd 18661 (2010).

³ The TV bands comprise five frequency bands at: 54-72 MHz, 76-88 MHz, 174-216 MHz, and 470-698 MHz. See 47 C.F.R. § 2.106.

⁴ See 47 C.F.R. § 15.711. The rules also contain provisions for devices that rely on spectrum sensing to determine available channels. See 47 C.F.R. § 15.717.

⁵ See 47 C.F.R. § 15.713(a)-(b).

locations of fixed TV bands devices and protected locations and channels of certain incumbent services that are not recorded in Commission databases.⁶ The rules state that the Commission will designate one or more entities to administer a TV bands database.⁷

4. The Office of Engineering and Technology (OET) released a public notice on November 25, 2009, inviting entities interested in being designated as a TV bands database administrator to file proposals with the Commission and inviting comments on the proposals.⁸ The notice requested that entities address how the basic components of a TV bands database as required by the Commission's rules would be satisfied—*i.e.*, a data repository, a data registration process, and a query process—and whether the entity sought to provide all or only some of these functions. Entities were also required to affirm that the database service would comply with all of the applicable rules. Nine parties filed proposals in response to this public notice.⁹

5. On January 26, 2011, OET issued an *Order* designating all nine parties that filed proposals as TV bands database administrators, subject to certain conditions.¹⁰ Specifically, the administrators were required to: (1) supplement their initial filings to show how they will comply with the rule changes adopted in the *Second MO&O*; (2) attend workshops conducted by OET to address the operation of the databases to ensure consistency and compliance with the rules; (3) cooperate with any steps OET deems necessary to ensure compliance with the rules; and (4) agree that they will not use their capacity as a database manager to engage in any discriminatory or anti-competitive practices or any practices that may compromise the privacy of users. In addition, each administrator's database will be subject to a trial period of not less than 45 days before it is allowed to be made available for actual use by TV bands devices to allow interested parties an opportunity to check that the database is providing accurate results. OET conducted three workshops after the release of the January 26, 2011 order.¹¹

6. On April 18, 2011, Microsoft Corporation filed a proposal with OET seeking designation as a TV bands database administrator.¹² Microsoft's proposal addresses the questions in the November 25, 2009 public notice that invited proposals from parties seeking to be designated as database

⁶ *Id.* (e.g., the locations of cable headends and low power TV receive sites that are outside the protected contours of the TV stations whose signals they receive, and the locations where authorized wireless microphones and other low power auxiliary devices are used on a regular or scheduled basis).

⁷ See 47 C.F.R. § 15.715.

⁸ See "Office of Engineering and Technology Invites Proposals from Entities Seeking to be Designated TV Band Device Database Managers," Public Notice, DA 09-2479, ET Docket No. 04-186, rel. Nov. 25, 2009. The information requested in the Public Notice was based on rules for TV bands databases and administrators adopted in the *Second Report and Order and Memorandum Opinion and Order (Second Report and Order)* in ET Docket No. 04-186, 23 FCC Rcd 16807 (2008).

⁹ These parties were Comsearch, Frequency Finder Inc., Google Inc., LS Telcom AG (formerly KB Enterprises LLC and LS Telcom), Key Bridge Global LLC, Neustar Inc., Spectrum Bridge Inc., Telcordia Technologies, and Airtivity, Inc. (formerly WSdb LLC).

¹⁰ See *Order* in ET Docket 04-186, 26 FCC Rcd 554 (2011).

¹¹ These workshops were held on March 10, 2011; April 20, 2011; and May 25, 2011, at the FCC Laboratory in Columbia, Maryland.

¹² Microsoft's proposal is available on the Commission's web site at <http://fjallfoss.fcc.gov/ecfs/document/view?id=7021239289>

administrators. In addition, Microsoft provided information to show that it will comply with the rule changes adopted in the *Second MO&O* and states that it will comply with the other three conditions in the January 26, 2011 order that conditionally designated the nine database administrators. Microsoft representatives attended all three of OET's database administrator workshops. On April 29, 2011, OET issued a public notice seeking comment on Microsoft's proposal.¹³ Two parties filed comments, and Microsoft filed reply comments.¹⁴

III. DISCUSSION

7. Based upon our review of its proposal and the record before us, we are designating Microsoft Corporation as a TV bands database administrator, subject to the conditions described below. We find that Microsoft has shown that it has the technical expertise to develop and operate a TV bands database. Moreover, as explained below, none of the concerns raised by any of the commenters in the record before us causes us to conclude that Microsoft is not capable of meeting all the requirements placed on database administrators by the Commission's rules in the *Second Report and Order* and as modified in the *Second MO&O* or that it should otherwise not be designated as a database administrator.

8. The Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) argues that Microsoft should not be designated as a TV bands database administrator for three reasons. First, it claims that Microsoft's request to become a TV bands database administrator is untimely because the request was filed 15 months after the Commission's deadline for filing database administrator proposals.¹⁵ Second, EIBASS claims that Microsoft's proposal fails to identify an entire category of licensed stations entitled to protection, specifically, TV STL/TV Relay/TV Translator Relay stations operating on UHF TV channels.¹⁶ Third, EIBASS expresses concern about Microsoft's performance regarding its Special Temporary Authority (STA) station WE9XUO, intended to test and demonstrate white spaces technology at a recent National Association of Broadcasters (NAB) convention in Las Vegas, Nevada.¹⁷ With respect to the STA, EIBASS states that Microsoft requested an overly large number of TV channels which included some with operating TV stations and that it did not clearly specify the location of operation, *i.e.*, the Las Vegas Convention Center. EIBASS further states that Microsoft apparently did not contact the Society of Broadcast Engineers (SBE) frequency coordinator as required by its STA, and that EIBASS and the Las Vegas area frequency coordinator became aware of the need for coordination only after the STA was entered on SBE's computer system.¹⁸ EIBASS argues that Microsoft's failure to exercise "due diligence" in these situations demonstrates that Microsoft lacks

¹³ See "Office of Engineering and Technology Seeks Comment on Microsoft Corporation Proposal to be Designated as a TV Bands Device Database Administrator," Public Notice, DA 11-803, ET Docket No. 04-186, rel. Apr. 29, 2011.

¹⁴ Comments were filed by Cohen, Dippell and Everist, P.C. and Engineers for the Integrity of Broadcast Auxiliary Service Spectrum (EIBASS). Microsoft Corporation filed reply comments.

¹⁵ See EIBASS comments at 1.

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ See EIBASS comments at 2. According to SBE's web site, the frequency coordinator for southern Nevada is Jack Smith of KVVU-TV.

“the necessary regulatory awareness” and should not be selected as a TV bands database administrator.¹⁹

9. In response to EIBASS, Microsoft argues that its proposal indicates that it will provide protection to all licensed services eligible for protection. It states that its database system will obtain data about licensed services from Commission databases, including the Universal Licensing System (ULS), and that information about TV STL/TV Relay/TV Translator Relay stations is available on the ULS. Microsoft also argues that it followed the proper procedures for coordination of its STA to operate in Las Vegas and began coordination with SBE within five days after grant of the STA. Microsoft further states that it arranged for Adaptrum, Inc. to perform a site survey ten days before the convention and that it supplied a list of channels that it intended to use to SBE and EIBASS almost a week before the convention. Microsoft claims that its operation under the STA did not result in any interference to licensed services or complaints from EIBASS.

10. We are not persuaded that the factors cited by EIBASS demonstrate that Microsoft is not qualified to administer a TV bands database. With regard to the issue of the timeliness of Microsoft’s proposal, the rules do not prohibit additional parties from requesting designation as a TV bands database administrator after other parties have already been designated. In fact, the rules were designed with the expectation that there could be changes in database administrators over time, *e.g.*, administrators are designated for a five-year term, subject to renewal at the Commission’s discretion, and an administrator that ceases operation must transfer its database to another designated entity that takes its place.²⁰ The original filing deadline was established by OET to allow orderly processing of the initial prospective database administrators as a group. However, this deadline was not intended to preclude other parties from requesting designation as a database administrator at a later date.

11. With regard to the issue of the protection of authorized services, the Commission’s November 25, 2009 public notice did not request that prospective database administrators submit a complete list of every licensed service that is eligible for protection from TV bands devices. The Commission’s rules and procedures for database testing and approval will ensure that all TV bands databases protect all eligible facilities. We note that Microsoft’s proposal and response states that it will obtain information about protected services from several different sources, including the Commission’s databases, which contain information on the services that EIBASS referenced in its comments.²¹

12. The Commission authorized the channel range for the Microsoft STA that EIBASS contends is overly large and contains operating TV stations.²² The Commission specified the large channel range requested by Microsoft to simplify processing of the STA. Rather than determining in advance which channels within that range were vacant at the STA’s location, the Commission made operation subject to the condition that Microsoft coordinate with SBE to ensure that operation would occur only on vacant TV channels. The Commission has taken this same approach with other experimental authorizations for operations in the TV bands.²³ While EIBASS is correct that the Microsoft STA does not name the

¹⁹ See EIBASS comments at 2-3.

²⁰ See 47 C.F.R. § 15.715.

²¹ See Microsoft proposal at 4.

²² See <https://apps.fcc.gov/els/GetAtt.html?id=114389&x>.

²³ For example, see the following experimental authorizations permitting operation in the TV bands: [WF2XUR](#), specifying TV channels 7-51 (excluding 37); [WE9XYN](#), specifying TV channels 14-51 (excluding 37); and [WE9XXY](#), specifying TV channels 7-51 (excluding 37). In each of these cases, the Commission made operation subject to the condition of prior coordination with SBE.

precise location of operation within Las Vegas, one can easily determine that the geographic coordinates specified in the STA correspond to the Las Vegas Convention Center. As for EIBASS's contention that Microsoft initially failed to contact SBE, the parties do not dispute the fact that coordination did occur before Microsoft began operations. Microsoft states that it did coordinate with SBE and EIBASS prior to operating,²⁴ and EIBASS states that the Las Vegas area frequency coordinator was made aware of the STA prior to operation.²⁵ Furthermore, the Commission received no complaints of interference resulting from Microsoft's operation under this STA. We find no basis here to reject Microsoft as a TV bands database administrator.

13. Cohen, Dippell and Everist, P.C. ("CDE") filed brief comments on the Microsoft proposal. CDE recommends that the database be updated at 12-hour intervals, seven days a week to provide the most accurate and timely information to white spaces users. However, making this change mandatory for database administrators would require modifications to our rules, which currently require synchronization of TV bands databases with the Commission databases once a week and synchronization between TV bands databases once every 24 hours.²⁶ Such rule changes are outside the scope of this Order.²⁷

14. We are designating Microsoft as a TV bands database administrator subject to the same conditions we required of the nine previously designated administrators. Microsoft has already satisfied several of these conditions. Specifically, it included in its request to be designated as a database administrator information to show that it complies with the rule changes adopted in the *Second MO&O* and stated that it would not use its capacity as a database manager to engage in any discriminatory or anti-competitive practices or practices that may compromise the privacy of users. Microsoft also participated in all three database administrator workshops held by OET thus far. We will require Microsoft to take part in any future workshops that may be held by OET that address database implementation details and provide guidance on the requirements to the database administrators. In addition, Microsoft must cooperate with any steps OET deems necessary to ensure that the TV bands databases provide accurate and consistent lists of protected services and available channels. Further, it must support capabilities that OET deems necessary to ensure that any changes in registration of protected facilities in one database are rapidly reflected in all others.

15. Consistent with our previous action designating database administrators, Microsoft's database will be subject to a trial period of not less than 45 days before it is allowed to be made available for actual use by TV bands devices to allow interested parties an opportunity to check that the database is providing accurate results. A longer trial period may be required if we determine that its database is not in compliance with the Commission's rules. OET will determine the details of the trial, balancing the need to ensure that the database is working properly with the need to avoid an unnecessarily cumbersome and burdensome process.

²⁴ See Microsoft reply comments at 3.

²⁵ See EIBASS comments at 2.

²⁶ See 47 C.F.R. §§ 15.715(b) and (l).

²⁷ The rules require database operators to cooperate and develop a standardized system for sharing information between databases. The nine previously designated database administrators indicated at the OET workshops that they have agreed to synchronize wireless microphone and other registration information between databases more frequently than the rules require.

16. If Microsoft successfully satisfies all of the conditions herein, it will be allowed to make its database available for actual use for the five year term specified in our rules.²⁸ In such case, OET will announce the public availability of the database, at which time the five year term for that database will commence.

17. In summary, we have considered Microsoft's proposal and all the comments and replies filed in response to the April 29, 2011 Public Notice. We conclude that Microsoft is capable of meeting the Commission's regulatory requirements for serving as a database administrator, as set forth in the Commission's rules, including the rule revisions adopted in the *Second MO&O*. Accordingly, we are designating Microsoft Corporation as a TV bands database administrator subject to the conditions described above.

IV. PROCEDURAL MATTERS

18. For additional information concerning this Order, please contact Mr. Hugh L. Van Tuyl at (202) 418-7506 or Mr. Alan Stillwell at (202) 418-2925, or via the Internet at Hugh.VanTuyl@fcc.gov or Alan.Stillwell@fcc.gov.

V. ORDERING CLAUSES

19. Accordingly, **IT IS ORDERED** that, pursuant to the authority contained in Sections 4(i), 302, 303(e), 303(f), and 307 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 302, 303(c), 303(f), and 307, and Sections 0.31 and 0.241 of the Commission's rules, 47 C.F.R. §§ 0.31, 0.241, Microsoft Corporation **IS CONDITIONALLY DESIGNATED** as a TV bands database administrator as set forth in Section 15.715 of the Commission's rules, 47 C.F.R. § 15.715, subject to the conditions specified above.

FEDERAL COMMUNICATIONS COMMISSION

Julius P. Knapp
Chief, Office of Engineering and Technology

²⁸ See 47 C.F.R. §15.715(h) as revised by the *Second MO&O*.