

Memorandum of Agreement 800 MHz Expansion Band and Guard Band Spectrum

As amended, June 4, 2020

This Memorandum of Agreement, as amended, (“MOA”) is entered into by and among the undersigned representatives of Federal Communications Commission (“FCC”) certified frequency advisory committees (“FACs”) who, through their execution of this MOA, commit to conduct frequency coordination and application certification processes in accordance with the terms herein.¹ The MOA is intended to ensure compliance with FCC application filing procedures announced in anticipated *Public Notices* (“Public Notices”) authorizing the release of 815-816/860-861 MHz Expansion Band (“EB”) and 816-817/861-862 MHz Guard Band (“GB”) (collectively “EB/GB”) spectrum, potentially including 12.5 kHz “Interstitial” channels in the EB/GB, as authorized by the FCC in WP Docket No. 16-261, the 25 kHz and 12.5 kHz channels, collectively “EB/GB”² in areas not previously released. This MOA shall be provided to the FCC for informational purposes and posted for public inspection on the Land Mobile Communication Council (“LMCC”) web site. This MOA shall serve to ensure an efficient, equitable, expeditious, and transparent coordination of applications for 800 MHz EB/GB frequencies consistent with the FCC’s directive that no mutually exclusive applications are filed with the FCC and in accordance with the FCC’s definition and recommended disposition of mutually exclusive applications.

1. Coordination Procedures

(a) Notification Commencement

Electronic notification of applications shall be made available no earlier than _____, 2020, _____ a.m. Eastern Time (“Notification Commencement”).³ The Z1 record date/time stamp, formatted to the thousandths of a second, may not be earlier than _____ (HH:MM:SS:sss). Any application with an earlier Z1 record date/time stamp will not be accepted as a valid application.

¹ Only FACs that execute this MOA are permitted to participate in the processes and procedures described herein.

² Applications filed by Public Safety entities to expand coverage on already authorized EB frequencies and/or to add EB frequencies are governed by the Provisions of *Public Notice*, DA 15-451, released April 10, 2015.

³ The Notification Commencement for EB/GB Interstitial Channels will be determined at a later date based on the FCC Public Notice announcing their availability.

For the purpose of FAC system processing consistency, all system clocks will be synchronized at the Atomic Clock Stratum 2 level.

Only New and Modification applications are acceptable.

(b) Notification Procedures

Each FAC will submit via Electronic Batch File (“EBF”) notification to all other FACs their certified application information via current File Transfer Protocol (“FTP”) delivery methods; and, shall also send to all other FACs within 60 minutes of posting an EBF notification a report (“Notification Report”) via email or a spreadsheet in electronic form that provides details of the applications posted. The Notification Report shall contain, for each application the following information: the sending FAC name, application ID and applicant name. Subsequent to completion of the first day of notifications, the Notification Report shall be provided by FACs on a daily basis when notifications are posted.

Participating FACs with an application(s) time stamped during a certain day will transmit to all other FACs at least one EBF notification file daily and may transmit files as often as hourly. Notification files shall be transmitted after 8:00 a.m. and before 11:59 p.m. Eastern Time. FACs receiving notification files are encouraged to retrieve the files prior to 7:00 a.m. Eastern Time.

FACs shall submit EB/GB applications to Sitesafe with information necessary for time-stamping in accordance with the procedures provided in Attachment A. Applications shall be time stamped with the exact time of transmission to Sitesafe, down to the thousandth of a second. The time stamp established by Sitesafe shall be the official receipt stamp for purposes of determining the order of processing of all EG/GB applications.

(c) Z1 Record Creation

Each application shall contain a Z1 record with a unique date/time stamp, coded as “IA.” No two applications from the same FAC may contain duplicate date/time stamps. Z1 records shall be created one application at a time, for which the unique time stamp shall be no earlier than Notification Commencement.

Batch filing as defined by the FCC is not permitted. EBF notification files may contain multiple applications but each application shall have a unique Z1 record date/time stamp and the generation of the time stamp must be initiated by a single human action per application. File creation resources shall be limited to FAC employees. The EBF notification file shall not be created prior to Notification Commencement, nor may time stamps be altered by any human or computer process following notification file creation.

2. Application Requirements

Certified applications for EB/GB spectrum shall contain, at a minimum, the following information:

- FCC Form 601 that complies with Universal Licensing System (ULS) requirements and includes at a minimum:
 - FAC identification,
 - Applicant name and mailing address,
 - FRN number,
 - Applicant contact name and phone number,
 - Assigned channel (s),
 - Coordinates for each base/repeater (ASR is optional but coordinates must be provided),
 - Antenna height for each base/repeater,
 - Ground elevation,
 - ERP for base/repeater(s), controls and mobiles,
 - Emission designators for all base/repeater(s), controls and mobiles,
 - Applicant eligibility rule section, and
- If applicable, a certification from the FAC that the application complies with the contour requirements specified by the applicable FCC *Public Notice* with regard to the protection of an adjacent NPSPAC Region that has not completed 800 MHz Band reconfiguration.
- If applicable, any additional information requested by the FCC in the *Public Notice*.

It is understood that all licenses, pending applications on file with the FCC, and applications for which notifications were posted previously pursuant to this MOA, including applications with earlier time stamps in accordance with Section 1(b) above, will receive co-channel and adjacent channel protection consistent with FCC Rules. Further, any certified applications that do not have, at a minimum, the above-required information, shall be dismissed, but may be resubmitted by the FAC with a new Z1 record date/time stamp.

3. Channel Limitations

All applicants shall be limited initially to five (5) channels within any one hundred thirteen (113 km)/seventy (70) mile radius (“Service Area”) with the radius established based on the coordinates of the first certified transmitter site. Some or all of the five (5) channels may be coordinated at multiple sites within that Service Area. FACs may submit additional applications with new time stamps for already notified applicants pursuant to

Paragraph 1 seeking up to five (5) additional channels within the same Service Area. The maximum number of channels that any applicant may receive within that Service Area shall be consistent with applicable FCC Rules. Each site will be processed separately irrespective of the number of sites on any application.

4. Duplicative Applications

Duplicative applications are those submitted to multiple FACs that have the same applicant name and/or same FRN and seek channels at a single location or at sites within the same Service Area. All such applications will be dismissed by those FACs once the applications are reached in the application processing queue, and the certification shall be rescinded for any previously certified, duplicative application.

5. Mutual Exclusivity

Mutually exclusive applications are created when more than one application, received on the same day, seeks the same channels, or channels with overlapping bandwidth within a portion of the same Service Area. When a succeeding application seeks one or more of the same channels within the Service Area of a previously certified application, the succeeding application may identify alternative channels consistent with distance requirements and power limits specified in Section 90.621(b) Section 90.621(d)(1)-(3) if there are available channels remaining.⁴ If there are no channels remaining, the subsequent application will be dismissed. It is the responsibility of the submitting FAC to ensure that the applications it processes are not mutually exclusive with any earlier-notified applications.

(a) Engineering Solutions

FACs may not modify the primary site (geographic coordinates) submitted. Engineering solutions are limited to those defined within the FCC rules; reduction in antenna height and/or power permits closer transmitter separation to a minimum of eighty-eight (88) km/fifty-five (55) miles. An application that require concurrence or a waiver to secure assignable frequencies must be dismissed and a new application with the necessary supporting documentation submitted with a new Z1 record date/time stamp.

(b) Objections

An objection based on full or partial mutual exclusivity may be made only by the FAC that previously certified a complete application. All objections must be submitted as

⁴ In accordance with these FCC Rules, the succeeding application may place their site less than 113 km (70 miles), but no closer than 88 km (55 miles) from a previously certified site at reduced power levels consistent with the FCC's Short Spacing Table.

promptly as possible to the FAC that certified the application that created an instance of mutual exclusivity and resolved within one hour of submission.

6. Material Changes

Participating FACs agree that material changes to this MOA, including but not limited to changes requiring accommodating software development, will require mandatory delay to the Notification Commencement of a period of not less than one week.

7. Entire Agreement

This MOA constitutes the entire agreement among the participating FACs and supersedes all prior oral or written agreements and understandings with respect to the subject matter herein. This MOA shall not be amended except by unanimous agreement in writing of the participating FACs.

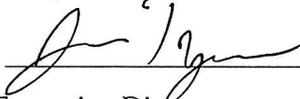
8. Enforcement

If there are repeated, material breaches by a FAC of the procedures defined herein, a two-thirds majority of the non-breaching FACs may request the FCC to terminate the offending FACs certification to conduct frequency coordination in EB/GB spectrum.

9. Execution

This MOA is entered into by and among the undersigned FACs, in each case by its duly authorized representative, as of the latest date set forth below.

American Association of State Highway and Transportation Officials (AASHTO)

Signed 
Title Executive Director
Date June 8, 2020

American Automobile Association (AAA)

Signed _____
Title _____
Date _____

Association of American Railroads (AAR)

Signed _____
Title _____
Date _____

Association of Public Safety Communications Officials Int'l (APCO)

Signed _____
Title _____
Date _____

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American Association of State Highway and Transportation Officials (AASHTO)

Signed _____

Title _____

Date _____

American Automobile Association (AAA)

Signed Jorge Gonzalez

Title Manager Automotive Technology

Date June 9, 2020

Association of American Railroads (AAR)

Signed _____

Title _____

Date _____

Association of Public Safety Communications Officials Int'l (APCO)

Signed _____

Title _____

Date _____

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Date _____

American Automobile Association (AAA)

Signed _____

Title _____

Date _____

Association of American Railroads (AAR)

Signed James G. Rineer

Title FREQUENCY COORDINATOR

Date JUNE 10, 2020

Association of Public Safety Communications Officials Int'l (APCO)

Signed _____

Title _____

Date _____

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Date _____

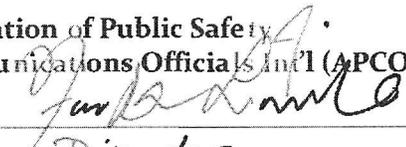
American Automobile Association (AAA)

Signed _____
Title _____
Date _____

Association of American Railroads (AAR)

Signed _____
Title _____
Date _____

**Association of Public Safety
Communications Officials Int'l (APCO)**

Signed  _____
Title Director
Date 06/04/2020

Enterprise Wireless Alliance (EWA)

Signed *Jack B. Cronk*
Title PRESIDENT
Date 6/5/20

**Forest Industries
Telecommunications (FIT)**

Signed *[Signature]*
Title EVP
Date 6-4-20

**Forestry-Conservation
Communications Association (FCCA)**

Signed _____
Title _____
Date _____

**International Municipal
Signal Association (IMSA)**

Signed _____
Title _____
Date _____

MRFAC, Inc. (MRFAC)

Signed _____
Title _____
Date _____

Utilities Technology Council (UTC)

Signed _____
Title _____
Date _____

Wireless Infrastructure Association (WIA)

Signed _____
Title _____
Date _____

... END ...

Enterprise Wireless Alliance (EWA)

Signed _____
Title _____
Date _____

**Forest Industries
Telecommunications (FIT)**

Signed _____
Title _____
Date _____

**Forestry-Conservation
Communications Association (FCCA)**

Signed *[Signature]*
Title Executive Director
Date June 4, 2020

**International Municipal
Signal Association (IMSA)**

Signed _____
Title _____
Date _____

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Signed _____

Title _____

Date _____

**Forest Industries
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Signed _____

Title _____

Date _____

**Forestry-Conservation
Communications Association (FCCA)**

Signed _____

Title _____

Date _____

**International Municipal
Signal Association (IMSA)**

Signed Michelle Jik

Title NAT'L FREQUENCY COORDINATOR

Date 6/4/20

MRFAC, Inc. (MRFAC)

Signed _____

Title _____

Date _____

Utilities Technology Council (UTC)

Signed _____

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Date _____

Forestry-Conservation
Communications Association (FCCA)

Signed _____

Title _____

Date _____

International Municipal
Signal Association (IMSA)

Signed _____

Title _____

Date _____

MRFAC, Inc. (MRFAC)

Signed Danny B. Hankins

Title President

Date 6/6/20

Utilities Technology Council (UTC)

Signed _____

Title _____

Date _____

Wireless Infrastructure Association (WIA)

Signed _____

Title _____

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Communications Association (FCCA)**

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Title _____

Date _____

**International Municipal
Signal Association (IMSA)**

Signed _____

Title _____

Date _____

MRFAC, Inc. (MRFAC)

Signed _____

Title _____

Date _____

Utilities Technology Council (UTC)

Signed Klaus Bender

Title VP, Engineering

Date June 4, 2020

Wireless Infrastructure Association (WIA)

Signed _____

Title _____

Date _____

... END ...

Enterprise Wireless Alliance (EWA)

Signed _____
Title _____
Date _____

**Forest Industries
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Title _____
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Communications Association (FCCA)**

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Date _____

**International Municipal
Signal Association (IMSA)**

Signed _____
Title _____
Date _____

MRFAC, Inc. (MRFAC)

Signed _____
Title _____
Date _____

Utilities Technology Council (UTC)

Signed _____
Title _____
Date _____

Wireless Infrastructure Association (WIA)

Signed Don Andrew
Title Vice President, Spectrum Management
Date June 8, 2020 _____

... END ...

Attachment A - Sitesafe Procedures

Setup a time server which would be located on a URL. For example: time.sitesafe.com

In the URL the following info would be required:

- FAC#
- EBFbatchID
- Latitude of location 1 (ONLY)
- Longitude of location 1 (ONLY)
- Coordinator of application

URL: <http://time.sitesafe.com?F=<FAC>&E=<EBFBATCHID>&LAT=<LATITUDE#1 in DMS>&LON=<LONGITUDE#1 in DMS>&C=<COORDINATORCODE>>

The system will return the following:

- Time in Eastern Time Zone (17:00:00.000 would be 5 PM ET)
- Success code (which binds all the application data sent) (CODE: 5737eebc-c938-483a-b53e-74dd9c198d02)

This code would be unique to the entire process and would be serve as a receipt for the application.

The IP address of where the time request comes from in case of multi computers/servers are used will be recorded, but we will not block.

We will auto block two requests that happen in fast succession using the following method.

Application sent and is successfully filed with time server. Time is recorded and code is given.

The hundredth of second integer value is converted to tens of second offset for new minimum send time for next successful code from that coordinator. Sending before that time will cause retry value to be set equal to 1 additional full second per retry.

Example:

Application sent at time 1:00:00.123 ET.

Min time of next application: 1:00:00.323 ET.

Application received after 1:00:00.323 ET is accepted with no problem. Application sent before this time from the same coordinator causes retry counter and minimum sent time

is increased to the following: 1:00:01.323. Each additional retry before this time will add 1 second additional (2 retries in this case) would yield the following minimum send time 1:00:03.323.

This is designed to stop mass scripts or spamming the URL. Fast systems should have no problem and using hundreds of second value on the time stamp will create a level of randomness.

Potential FAC Software Modifications

- FACs need to modify their data structures to add the time stamp verification code to the Z1 record.
- FACs need to modify code so that when NOTIFICATION status is selected, their system will bundle the suggested info and send it to the time stamp engine.
- Whether the FAC chooses to add a screen to their application layout remains the choice of the FAC.

Process Summary

1. FAC selects NOTIFICATION status
2. FACs system bundles info and sends it to the time server
3. Time server returns code and time of notification
4. FAC system bundles the application data in EBF
5. Time and unique code are inserted in the Z1 record and it is added to the collected application EBF data
6. EBF data plus Z1 are added into the Interagency file for FTP download