BY ORDER OF THE
SECRETARY OF THE AIR FORCE

DEPARTMENT OF THE AIR FORCE
INSTRUCTION 17-220

JOINT BASE ANACOSTIA-BOLLING
Supplement

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Cyberspace

SPECTRUM MANAGEMENT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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(Lt Col Daniel Boyarski)
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This supplement implements DAFI 17-220, *Spectrum Operations* and applies to all activities operating on Joint Base Anacostia-Bolling, associated units as specified in the host-tenant support agreements, and public/private organizations that wish to operate Federal Communication Commission (FCC) radio frequency licenses/regulated stations within the Joint Base Anacostia-Bolling complex.

Refer recommended changes and questions about this publication to the OPR listed above using the AF Form 847, Recommendation for Change of Publication; route AF Forms 847 from the field through the appropriate chain of command. Requests for waivers must be submitted to the OPR listed above for consideration and approval. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

1. OVERVIEW

1.1.1. **(Added)** The electromagnetic spectrum is the range of frequencies of electromagnetic radiation extending from zero to infinity, measured in hertz (cycles per second). The radio frequency spectrum is the group of frequency sub-bands within the

allocated electromagnetic spectrum associated with radio wave propagation between 9 kilohertz and 275 gigahertz. This instruction provides for Joint Base Anacostia-Bolling's responsibilities in the conduct of peacetime electromagnetic spectrum management.

1.2.1. **(Added)** The Installation Spectrum Manager's spectrum monitoring equipment has the capability to intercept and direction-find communications over unencrypted radio channels. IAW DoDI 8560.01, COMSEC Monitoring, all emitters, telecommunications, and information systems are subject to periodic spectrum monitoring at any time by the 794th Communications Squadron (CS) Installation Spectrum Manager (ISM) office (SCOX), or as directed by the 11th Wing. Communications and radio transmissions on Joint Base Anacostia-Bolling are not private, are subject to routine monitoring, interception, and search, and may be disclosed or used for any U.S. Government-authorized purpose. This includes security measures (e.g., authentication and access controls) to protect U.S. Government interests—not for personal benefit or privacy.

1.3.1. **(Added)** Joint Base Anacostia-Bolling (JBAB) Commanders and all tenant organizations must efficiently manage assigned radio frequencies to meet operational mission requirements. Spectrum Operations planning and coordination with proper command authority through the 794 CS ISM is essential for all radio frequency and electromagnetic compatibility matters to provide an environment free from communications interference and protect users in and around the installation against any unintentional communications equipment jamming. The 794 CS ISM contact phone number is: DSN 484-3737, Commercial (202) 284-3737, or e-mail **794CS.SCOX.Spectrum@us.af.mil**.

2. ROLES AND RESPONSIBILITIES

2.4. **(Added)** JBAB Spectrum Defense Operations. The lead service at any Joint DoD installation designates a spectrum manager to provide spectrum support for the common functions. At JBAB, service requirements are processed through national command channels after approval from the 794 CS ISM. The 794 CS ISM, is responsible to the Host Installation Commander (11th Wing Commander) through their chain of command, for managing all spectrum use on the installation and areas under control of the installation commander. The 794 CS ISM will be the responsible office for fulfilling all of JBAB's tenant organization's spectrum requirements as appointed by the 11th Wing Commander. The 794 CS ISM will:

2.4.1. **(Added)** Process frequency proposals and applications for equipment spectrum certification using the End-to-End Supportability System and SPECTRUM XXI respectively, and ensure submissions are processed through appropriate command channels.

2.4.2. **(Added)** Update JBAB frequency records. 794 CS ISM is responsible for actions such as adding, modifying, deleting, or renewing frequency assignments in the Frequency Resource Record System (FRRS) accessed through SPECTRUM XXI.

2.4.3. **(Added)** Educate spectrum users and review unit organization proposals of purchasing spectrum-dependent devices prior to any contractual obligation of the purchase in order to evaluate spectrum supportability. If the system will be deployed outside of the United States, DAF policy requires pre-coordinated host nation coordination in accordance with DoDI 4650.01.

2.4.4. **(Added)** Ensure using organizations understand the technical parameters and any imposed operational restrictions of their assigned frequencies.

2.4.5. **(Added)** Assist deployable units with identifying spectrum requirements for exercises and contingencies.

2.4.6. **(Added)** Review and validate using organizations frequency assignment requirements, validate existing frequency assignment parameters, and submit modifications, renewal, or deletion actions through command channels in accordance with the NTIA Manual, Annex F. All temporarily assigned frequencies for JBAB Unit Organizations will be reviewed 90 days prior to their expiration date, updated to ensure accuracy of the assignment, and submitted for renewal no later than 30 days prior to the expiration date. Temporary assignments on loan from 794 CS ISM will be reviewed annually, or one week prior to expiration, whichever is more appropriate for the condition of the loan.

2.4.7. **(Added)** Maintain a current point of contact list for JBAB Unit Organizations. Contact list includes: name, unit, date of positive contact, e-mail address, and phone number. These contacts are also known as the Unit Spectrum Monitor.

2.4.8. **(Added)** Act on behalf of the Host Installation Commander to immediately resolve all electromagnetic radio frequency interference issues and prohibit any radio frequency emitters from operating (cease and desist) when anticipating or noting electromagnetic interference to approved mission essential electromagnetic equipment.794 CS ISM is delegated authority to represent the 11th Wing Commander in areas of Spectrum Operations. See **Chapter 4** of this document for more details on the Spectrum Interference Resolution Program.

2.4.9. **(Added)** Submit a follow-up action report of all spectrum interference findings to the Mid- Atlantic Area Frequency Coordinator (AFC) for interference resolution, to the affected user, and to the appropriate chain of command. See **Chapter 4** of this document for more details on the Spectrum Interference Resolution Program.

2.4.10. **(Added)** Provide JBAB organizations a link to JBAB Spectrum Operations resources and training references. The link to the 794 CS/SCOX Spectrum Operations Management program continuity is located on the 794 CS ISM SharePoint site here: **http://usaf.dps.mil/:f:/s/794cs/es_fmbdgztbkhnj7wzbmqf0b3gng6ibmeciyjlmuxj0ghw?e=0dp07s**

2.4.11. **(Added)** Issue Radio Frequency Authorizations and/or Temporary Frequency Authorizations (RFAs/TFAs) authorizing the use of assigned RF spectrum within the Joint Base Anacostia-Bolling area of responsibility. Copies of the approved RFAs/TFAs will be provided to the Project Officer and unit POC. Other copies will be provided as required. The RFAs/TFAs issued by 794 CS ISM will contain an expiration date on which the authorization expires.

2.4.12. **(Added)** Maintain a current log of all registered FCC non-licensed devices being operated on Joint Base Anacostia-Bolling. This will be accomplished by the 794 CS ISM through the SPECTRUM XXI registration process with a Standard Frequency Action Format (SFAF) proposal item 144 line item with U as the indication on the proposal IAW

the Joint Staff J6 Military Command, Control, Communications, and Computers Executive Board (MC4EB) Pub 7, FRRS.

2.4.13. **(Added)** Coordinate with the safety office and weapons safety officer to support the hazard of electromagnetic radiation to ordnance program and provide frequency assignment records for antenna locations IAW AFI 91-208, Hazards of Electromagnetic Radiation to Ordnance (HERO) Certification and Management.

2.4.14. **(Added)** Perform emitter surveys based on resource availability, as required, with assistance from the parent command to ensure spectrum-dependent systems are operated in accordance with frequency licenses.

2.4.15. **(Added)** Provide customer education, guidance, resources, and training for JBAB Spectrum Defense Operations upon request to JBAB Unit Organizations. This could include, but not limited to, spectrum allocation processes, electromagnetic spectrum (EMS) briefings, local and external spectrum coordination processes, spectrum interference resolutions, Electronic Warfare (EW), Electronic Attack (EA), Counter-small Unmanned Aerial Systems (C-sUAS), emitter surveys, etc. The 794 CS ISM will make training availabilities upon request to provide customer education or any relative spectrum information as deemed necessary by the 11th Wing Commander, the 794th Communications Squadron Commander, or as requested by any other JBAB Unit Organization.

2.5. **(Added)** Unit Organizations. Unit Organizations activities include, but are not limited to acquisition, program, operational, test, and tenant units of JBAB. Unit Organizations shall:

2.5.1. **(Added)** Provide a point of contact, also known as a Unit Spectrum Monitor, to the 794 CS ISM office for program continuity via e-mail or unit letterhead IAW **paragraph 2.4.7** of this document. Units are individually responsible for maintaining an updated contact list for the Unit Spectrum Monitor in the event of personnel changes, contact info updates, or unavailability of the unit POC.

2.5.2. **(Added)** Assist the 794 CS ISM in reviewing and verifying equipment parameters during mandatory and periodic reviews, IAW NTIA Manual, Annex F.

2.5.3. **(Added)** Obtain a frequency assignment through the installation spectrum manager prior to operation of any spectrum-dependent devices that radiate radio frequency energy. To meet this requirement, the requesting unit will submit a Frequency Request Form (**Attachment 6** on the back of this document). This form is also published on the 794 CS SharePoint site here: **https://usaf.dps.mil/:f:/s/794cs/ejnfqiwzmwlforzbj3fbecablzp1i78kg9a-ovneh-_u0w?e=udkiu8**

2.5.4. **(Added)** In the event a mandated, standardized frequency request application is published by a higher command (AFDW, AFSMO, HAF, NTIA, etc.) that would replace the Frequency Request form, paragraph 2.2.3 is null and void, and each JBAB Unit Organization and the 794 CS ISM will use the published application instead.

2.5.5. **(Added)** Submit a Purchase Approval Request through either the 844th COMM411 site or send the request to the 794 CS/SCX Flight (Commercial Phone 202-284-4900) prior to purchasing any spectrum-dependent equipment, including non-licensed devices. The

appropriate reviewing authority may or may not open a Cyberspace Infrastructure Planning System (CIPS) request for coordination and tracking purposes.

2.5.6. **(Added)** Verify that emitter information for equipment does or does not exist in the FCC ID database. When a Purchase Approval Request is submitted above IAW **para 2.5.5**, include as much information as possible about any spectrum-dependent device (e.g. FCC ID number, manufacturer, make, model number, frequency range, power level, etc.). Identify the owning/using organization, as well as the name and phone number of the submitting requestor's unit point of contact. The FCC ID database and resources web link can be found here: **https://www.fcc.gov/oct/ea/fccid**

2.5.7. **(Added)** Contact the 794 CS ISM at least annually to discuss spectrum supportability for existing RFAs or any other projected emitter planning requirements (e.g. OPLANs, exercisable UTCs, HUREVAC plans, etc.). This information will be reviewed annually and published on the 794th Communications Squadron SharePoint Site located here: **https://usafidps.mil/:f:/s/794cs/ejnfqiwzmw/forzbj3fbecablzp1i78kg9a-ovneh-_u0w?e=7dmm5q**

2.5.8. **(Added)** Contact the 794 CS ISM prior to physically changing any antenna locations or parameters. The 11 Civil Engineering Squadron (CES) and/or 794th Communications Squadron will require Unit Organizations to contact 794 CS ISM regarding removing, adding, or modifying any emitter, antenna, location of the antenna, or antenna structure for any spectrum-dependent system on Joint-Base Anacostia-Bolling.

2.5.9. **(Added)** Review any agreements between 11 CES, the 11th Contracting Squadron (CONS), and the 794 CS at least annually to ensure the spectrum acquisition and other processes in place are adequate to satisfy the following requirements:

2.5.9.1. **(Added)** Verify DAFI 17-220, Spectrum Operations, paragraph 2.1.8.4.1: Assessment of local purchase or government purchase card orders for spectrum-dependent systems to determine spectrum supportability prior to the obligation of funds; specifically, if the system is deployed outside the continental United States in accordance with ACP 190 US SUPP-1(D), Chapter 3**. (T-0)**

2.5.9.2. **(Added)** Verify DAFI 17-220, Spectrum Operations, paragraph 2.1.8.4.2: Review of memoranda of understandings or memoranda of agreements that pertain to the use of spectrum-dependent systems. **(T-3)**

2.5.10. **(Added)** Contact the 794 CS ISM prior to submitting the purchase request for electromagnetic spectrum-dependent equipment and/or devices. Contractual obligations to procure/develop or use spectrum-dependent equipment that utilizes electromagnetic energy shall not be assumed until a frequency certification has been obtained and the availability of appropriate frequency assignment support is assured.

2.6. **(Added)** Unit Organizations with a Valid RFA.

2.6.1. **(Added)** If the using unit has a valid frequency authorization for the device, and the organizations will use the communications equipment IAW the approved RFA parameters, no further action is required.

2.7. **(Added)** Unit Organizations that Require an RFA.

2.7.1. **(Added)** If the Unit Organization does not have an active frequency authorization for an emitter or radio equipment, or if the equipment will be used not in accordance with the active RFA, then the organization must submit a new frequency request proposal to the 794 CS ISM and are advised not to proceed with any purchase or contractual obligation. The Unit Organization will use a Frequency Request Form, when submitting the request to the 794 CS ISM. The form is located on **Attachment 6** of this document, as well as the 794 CS ISM SharePoint site here: **https://usaf.dps.mil/:f:/s/794cs/ejnfqiwzmwlforzbj3fbecablzp1i78kg9-ovneh-_u0w?e=pxnjfn**

2.7.2. **(Added)** If the Unit Organization's POC information changes, or any proposed modifications to existing emitters become a new planning requirement, that unit is required to contact the 794 CS ISM for continuity and future spectrum project planning efforts.

2.8. **(Added)** Victim Organization Experiencing Spectrum Interference. Attempt to resolve spectrum interference at the lowest level, with or without the 794 CS ISM's assistance. Unit Organizations will:

2.8.1. **(Added)** Prohibit any RF emitters from operating (cease and desist) when anticipating or noting electromagnetic interference to approved mission essential electromagnetic equipment.

2.8.2. **(Added)** Start documenting any known or unknown sources for spectrum interferences within two hours of experiencing the issue on the **Attachment 2** form provided by the 794 CS ISM. See **Chapter 4** of this document for more details of JBAB's Spectrum Interference Resolution program.

2.8.3. **(Added)** Assist in resolving interference by performing a visual verification of antenna, radios equipment, and all other emitters. Assistance from the Unit Organization may include, but is not limited to, performing emitter surveys and providing site access while escorting the 794 CS ISM office (SCOX) through secure areas. The 794 CS ISM may be required in order to identify and resolve spectrum interference, with the assistance from the Unit Organization experiencing spectrum interference. Please see **Chapter 4** of this document for more details.

2.8.4. **(Added)** Become familiar with how to properly document and report a spectrum interference on JBAB. JBAB Unit Organizations can find standard operating procedures on Chapter 4 of this document, as well as on the 794 CS ISM SharePoint site here: **https://usaf.dps.mil/:f:/s?794cs/ei2zc5v2e1narykmbtdphibdlblmlfpas8cfiyqmkkm8q?e=ancuza**

3. NON-LICENSED DEVICES

3.4. **(Added)** Federal and FCC non-licensed devices. All JBAB Unit Organizations should review section 7.8 of the NTIA Manual, Annex K regarding the use of Federal and FCC non-licensed devices. Examples of non-licensed devices are wireless routers, wireless or lapel microphones, Family Radio Service (FRS) radios (**paragraph 3.5** of this document), cell phone boosters (**paragraph 3.6** of this document), and cordless telephones. The following caveats and warnings may apply:

3.4.1. **(Added)** DoD activities should not use non-licensed equipment for critical tactical or strategic command and control applications essential for mission success, protection of human life, or protection of high-value assets, as they offer no protection of spectrum use in support of operational requirements. Non-licensed devices operate on a non-interference basis, which includes accepting any interference from any federal or non-federal authorized radio station, other non-licensed device, or industrial, scientific, and medical equipment. Essentially, non-licensed devices must not cause interference to licensed stations.

3.4.2. **(Added)** Upon notification by cognizant spectrum management personnel that the device is causing interference, the operator of the non-licensed device shall cease all radiation from the device until it can be proven that further use will no longer cause interference.

3.4.3. **(Added)** Users will not modify, modernize, enhance, or change the equipment's power, antenna, waveform, or information transfer characteristics in any manner that would cause it to violate the NTIA criteria for non-licensed devices or the device's FCC type certification.

3.5. **(Added)** Family Radio Service (FRS) Radios. FRS is a FCC unlicensed, low-powered service that provides coverage up to 2 miles using frequencies within the FRS frequency pool. FRS radios may be used on any of the 14 FRS channels (typically channels 8-14, check owner's manual for FRS channels), which are shared between all FRS users. This reduces confusion between multiple conversations on the same channel. Privacy codes allow the FRS users to limit the transmissions received to those users on the same channel and privacy code (check owner's manual). Note that any FRS user can listen to any ongoing conversation and can legally break into that conversation. Federal government entities are authorized to purchase and operate radios certified by the FCC in the FRS pursuant to the Code of Federal Regulation (CFR), Title 47, Telecommunication, Part 95 – PERSONAL RADIO SERVICES, Subpart B - Family Radio Service. Federal users will be accorded the same privileges as non-federal users. FRS users must share each channel and no user is assured protection from interference caused by another authorized user. FRS users may not purchase and operate FRS radios for planned communications operations that safeguard human life or property. FRS users must comply with the following conditions:

3.5.1. **(Added)** The provisions of CFR, Title 47, Part 95 and Section 7.5.8. of the NTIA Manual.

3.5.2. **(Added)** Federal users and contractors are responsible for all communications using FRS radio equipment. Use must comply with federal, state, and local laws.

3.5.3. **(Added)** The installation commander may prohibit FRS when interference to mission essential spectrum dependent systems/spectrum dependent equipment is anticipated, or to resolve a suspected interference problem.

3.5.4. **(Added)** Federal users and contractors using FRS radios must relinquish channel use for emergency communication messages concerning the immediate safety of life or the immediate protection of property.

3.5.5. **(Added)** Use only FCC certified FRS. Any modification to the equipment cancels the FCC certification and voids authority. Illegal FRS equipment is subject to confiscation.

3.5.6. **(Added)** Units may use FRS devices to communicate with non-government users during AF supported or sponsored community activities, e.g., scouts, Special Olympics, youth activities/sporting events, civil disasters, funeral details for deceased military veterans, etc. In addition, FRS radios may be used for administrative purposes when communicating in warehouses, commissaries, base exchanges, billeting areas, work crews, etc.

3.5.7. **(Added)** Under no circumstance will FRS radios be permitted for use in controlled areas without express written consent of the installation commander and full compliance with all security directives.

3.6. **(Added)** Consumer Signal Booster (Cell Repeater). Consumer signal boosters are permitted on JBAB. However, 794 CS ISM approval must be granted prior to any contractual agreements with service providers. In addition, a study performed by the Joint Spectrum Center (JSC) must be completed to ensure there will be no radio frequency (RF) interference to federal systems. If no harmful interference is predicted in the JSC study, use of a consumer signal booster is permitted at the discretion of the 794 CS ISM provided the power levels are maintained at/below FCC class B Part 15 requirements and are acquired from wireless providers. The booster may not be modified from the manufacturer's specifications. Use/location of boosters must be approved by the appropriate local cybersecurity personnel. Boosters do not require certification and are provided no protection from interference other than what may be experienced in the non-federal bands. These devices can only be used if the following conditions are met:

3.6.1. **(Added)** The subscriber obtains some form of licensee consent to operate the booster; the booster is registered with its provider; the booster meets the Network Protection Standard; the booster is FCC certified; and the booster is operated on a secondary, non-interference basis. The booster must be shut down if it causes harmful interference to a licensed station.

3.6.2. **(Added)** Cellular boosters need to be entered into an FCC database. The 794 CS ISM and/or the owning organization must obtain the account required to register the equipment as part of registering the equipment and should be identified in the 844th Comm411 request so they are aware of the registration requirement with reference to **paragraph 2.5.5** above.

4. (Added) JBAB SPECTRUM INTERFERENCE RESOLUTION PROGRAM

4.1. **(Added)** Unit Organizations Spectrum Interference Resolution Guidance.

4.1.1. **(Added)** The focus of the spectrum interference program is to resolve electromagnetic interference at the lowest level. JBAB Unit Organizations experiencing spectrum interference will:

4.1.2. **(Added)** Begin documenting and reporting information to the 794 CS ISM to initiate safeguards and seek solutions at the lowest level possible. Notification of any electromagnetic radio frequency interference must be reported to the 794 CS ISM within two (2) hours of the start of the event.

4.1.3. **(Added)** Start producing their interference reports based on the instructions listed in AFI 17-221, Spectrum Interference Resolution, Attachments **2** and **3** respectively.

4.1.4. **(Added)** The Unit Organizations must evaluate the security sensitivity of the interference on the affected system and classify the report accordingly. Guidelines for classifying interference incidents are contained in CJCSI 3320.02F, Joint Spectrum Interference Resolution. Both attachments are listed on **Attachment 7** of this document, as well as can be found on the 794 CS SharePoint site here: **https://usaf.dps.mil/:f:/s/794cs/esdp24cs5pdntag87ajtgggbw4mjjrs2_qd2_cu-fenwig?e=ehhf1x**

4.2. **(Added)** Exceptions to Unit Organizations for Reporting Interference.

4.2.1. **(Added)** Do not report an incident when the event is transient electromagnetic interference from natural sources (e.g. lightning, rain, etc.)

4.2.2. **(Added)** Do not report when the interference only affects training frequencies assigned on a non-interference basis (NIB) for training purposes.

4.3. **(Added)** 794 CS ISM Interference Reporting Instructions.

4.3.1. **(Added)** The 794 CS ISM will work in conjunction with the affected DOD Unit Organizations, non-DOD users, the Area Frequency Coordinator (AFC) office, and the AFDW Spectrum Management Office to attempt to resolve the interference at the lowest level possible. More instructions are in **Attachment 7** of this document.

4.3.2. **(Added)** In the event the interference persists and cannot be identified or resolved, the AFDW Spectrum Management Office can request assistance directly from the 85th Engineering Installation Squadron (EIS) at Keesler AFB MS for an initial assessment of the problem, obtain consultation, and recommendations regarding actions, coordination, and techniques that can be used to identify the source and resolve the interference. The 85th EIS provides Quick Fix Interference Reduction Capability (QFRIC) to all Air Force units affected by non-hostile electromagnetic interference.

5. (Added) DAFI 17-220 JBAB SUPPLEMENT DISSEMINATION

5.1. **(Added)** DAFI17-220 JBAB Supplement Point of Contact.

5.1.1. **(Added)** If you have any questions, please contact primary point of contact the 794 CS ISM at any of the following methods: DSN: 484-3737, COMM: (202) 284-3737, or the 794 CS ISM office (SCOX) organizational email at: **794CS.SCOX.Spectrum@us.af.mil**.

CATHERINE M. LOGAN, Colonel, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 17-221, *Spectrum Interference Resolution Program*, 11 May 2018

AFI 33-322, *Records Management and Information Governance Program*, 23 March 2021

AFI 48-109, *Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program*, 1 August 2014

AFI 91-208, *Hazards of Electromagnetic Radiation to Ordnance (HERO) Certification and Management*, 24 October 2019

(Added) CJCSI 3320.02F, *Joint Spectrum Interference Resolution*

(Added) Code of Federal Regulation (CFR), Title 47, Telecommunication, Part 95 – PERSONAL RADIO SERVICES, Subpart B - *Family Radio Service (FRS)*

DAFI 17-220, *Spectrum Operations*, 8 June 2021

DoDI 3222.03, *DoD Electromagnetic Environmental Effects (E3) Program*, 25 August 2014,

DoDI 4650.01, *Policy and Procedures for Management and Use of the Electromagnetic Spectrum*, 9 January 2009,

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

MC4EB Pub 7, *Frequency Resource Record System (FRRS) Standard Frequency Action Format (SFAF)*

Abbreviations and Acronyms

ACP—Allied Communications Publication

AFC (Added)—Area Frequency Coordinator

AFDPO (Added) —Air Force Departmental Publishing Office

AFDW (Added)—Air Force District of Washington

AFI—Air Force Instruction

CIPS (Added)—Cyberspace Infrastructure Planning System

CJCSI (Added)—Chairman of the Joint Chiefs of Staff Instructions

CJCSM—Chairman of the Joint Chiefs of Staff Manual

COMSEC (Added)—Communications Security

CS (Added)—Communications Squadron

DoDI—Department of Defense Instruction

E3—Electromagnetic Environmental Effects

FCC (Added)—Federal Communications Commission

FRS (Added)—Family Radio Service

FRRS (Added)—Frequency Resource Record System

HERO (Added)—Hazards of Electromagnetic Radiation to Ordnance

ISM (Added)—Installation Spectrum Manager

ITU RR—International Telecommunications Union Radio Regulation

JBAB (Added)—Joint Base Anacostia-Bolling

JP—Joint Publication

MC4EB—Military Command, Control, Communications, and Computers Executive Board

NTIA—National Telecommunications and Information Administration

RFA (Added)—Radio Frequency Authorization

RFAT (Added—Temporary Radio Frequency Authorization

SFAF (Added)—Standard Frequency Action Format

Terms

Allotment (of a radio frequency or radio frequency channel)—Entry of a designated frequency channel in an agreed plan, adopted by a component conference, for use by one or more administrations for a (terrestrial or space) radio communication service in one or more identified countries or geographical areas and under specified conditions. Source: ITU RR.

Assignment (of a radio frequency or radio frequency channel)—Authorization given by an administration for a radio station to use a radio frequency or radio frequency channel under specified conditions. Source: ITU RR.

Commercial—**Off-The-Shelf**—Spectrum-dependent systems that can be procured by the public wholesale or retail. Source: National Institute of Standards and Technology.

Electromagnetic Attack—Division of electromagnetic warfare involving the use of electromagnetic energy, directed energy, or anti-radiation weapons to attack personnel, facilities, or equipment with the intent of degrading, neutralizing, or destroying enemy combat capability and is considered a form of fires. Source: JP 3-85.

Electromagnetic Compatibility—(1) The condition that prevails when telecommunications equipment is performing its individually designed function in a common electromagnetic without causing or suffering unacceptable degradation due to unintentional electromagnetic interference to or from other equipment in the same environment. Source: NTIA. (2) The ability of systems, equipment, and devices that use the electromagnetic spectrum to operate in their intended environments without causing or suffering unacceptable or unintentional degradation because of electromagnetic radiation or response. Source: JP 3-85.

Electromagnetic Environmental Effects (E3)—The impact of the electromagnetic operational environment upon the operational capability of military forces, equipment, systems, and platforms. E3 encompasses the electromagnetic effects addressed by the disciplines of electromagnetic compatibility, electromagnetic interference, electromagnetic vulnerability, electromagnetic pulse, electromagnetic protection, electrostatic discharge, and electromagnetic radiation hazards to personnel, ordnance, and fuels and volatile materials. E3 includes the affects generated by all electromagnetic environment contributors including radio frequency systems, ultra-wideband devices, high-powered microwave systems, lightning, and precipitation static. Source: DoDI 3222.03.

Electromagnetic Spectrum Management—The operational, engineering, and administrative procedures to plan, and coordinate operations within the electromagnetic operational environment. Source: JP 3-85.

Electromagnetic Spectrum Operations—Coordinated military actions to exploit, attack, protect, and manage the electromagnetic environment. Source: JP 3-85.

Electromagnetic Warfare—Military action involving the use of the electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. Source: JP 3-85.

Frequency Assignment—see Assignment (of a radio frequency or radio frequency channel). Source: ITU RR.

Frequency Coordination—(1) The process of obtaining approval to use the radio frequency spectrum via arrangements and technical liaison for the purpose of minimizing harmful interference through cooperative use of the radio frequency spectrum. Source: NTIA. (2) Rules and mechanisms that control how to use the electromagnetic spectrum in specified dimensions (i.e., spatial, time, frequency, power, waveform. Source: JP 3-85. To be effective, the coordination must extend through the planning, proposal, and actual in use phases of radio frequency utilization.

Interference—(1) The effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radio communication system, manifested by any performance degradation, misinterpretation, or loss of information that could be extracted in the absence of such unwanted energy. Source: ITU RR. (2) Any electromagnetic disturbance, induced intentionally or unintentionally, that interrupts, obstructs, or otherwise degrades or limits the effective performance of electromagnetic spectrum-dependent systems and electrical equipment. Also referred to as electromagnetic interference. Source: JP 3-85.

Radio Frequency Spectrum—The radio frequency spectrum includes the frequencies from 3.0 kilohertz to 400 gigahertz. The presently allocated spectrum is from 9 kilohertz to 275 gigahertz. Also called electromagnetic spectrum. Source: NTIA.

Spectrum Supportability Risk Assessment—An assessment performed by Department of the Defense for all spectrum-dependent systems to identify risk as early as possible and affect design and procurement decisions. These risks are reviewed at acquisition milestones and managed throughout the system's life cycle. Source: DoDI 4650.01.

National Table of Allocations—Entry in the federal table of frequency allocations of a given frequency band for its use by one or more (terrestrial or space) radio communication services or the radio astronomy service under specified conditions. This term also applies to the frequency band concerned. Source: NTIA.

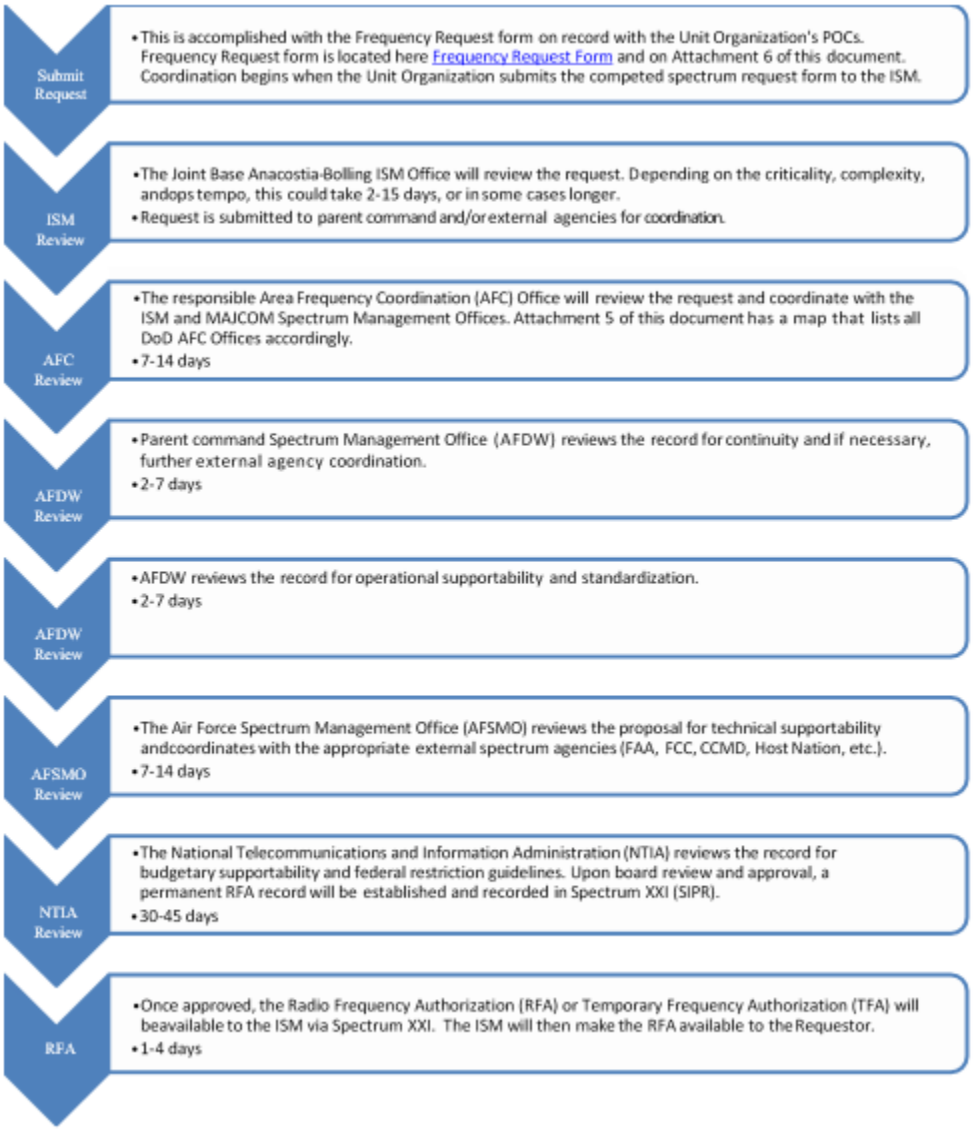
Telecommunication—Any transmission, emission, or reception of signs, signals, writings, images, and sounds or information of any nature by wire, radio, visual or other electromagnetic systems. Source: ITU RR.

United States and its Possessions—Includes the 50 States, District of Columbia, the Commonwealth of Puerto Rico, and the territories and possessions (but less the Canal Zone) Source: NTIA.

Attachment 2 (Added)

CONUS PERMANENT RADIO FREQUENCY AUTHORIZATION TIMELINE FOR JBAB UNIT ORGANIZATIONS: LEAD TIME ~ 90 DAYS

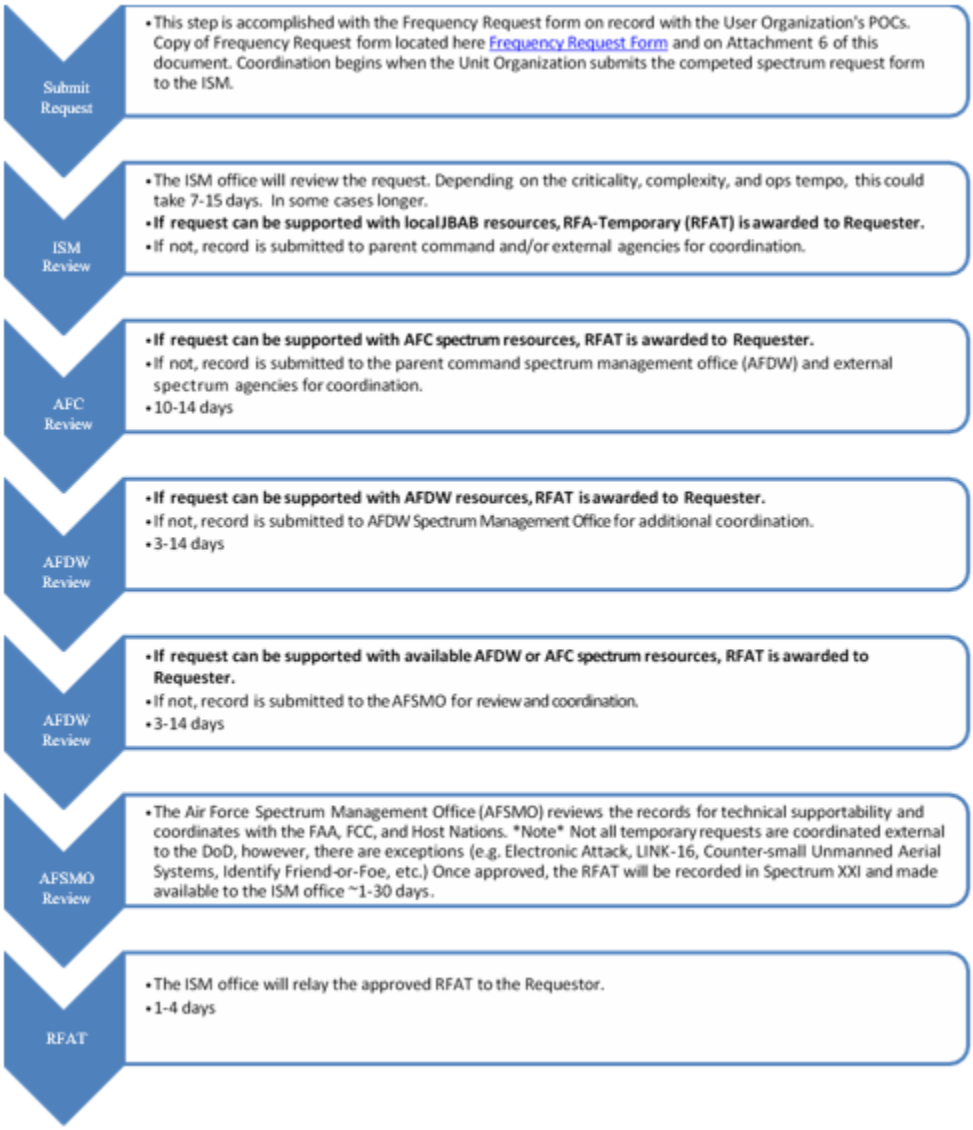
Figure A2.1. (Added) CONUS Permanent RFA Timeline.



Attachment 3 (Added)

CONUS TEMPORARY RADIO FREQUENCY AUTHORIZATION TIMELINE FOR JBAB ORGANIZATIONS: LEAD TIME ~ 30 TO 90 DAYS

Figure A3.1. (Added) CONUS Temporary RFA Timeline.



Attachment 4 (Added)

FREQUENCY BANDS

Figure A4.1. (Added) Frequency Bands.

ITU Band	Radar/ IEEE Band	Frequency Ranges	NATO / EW Band
ELF	---	Less than 3 kHz	---
VLF	---	3 - 30 kHz	---
LF	---	30 - 300 kHz	---
MF	---	300 - 3000 kHz	---
HF	HF	3 - 30 MHz	---
VHF	VHF	30 - 250 MHz	A
		250 - 300 MHz	B
UHF	UHF	300 - 500 MHz	
		500 - 1000 MHz	C
	L	1 - 2 GHz	D
	S	2 - 3 GHz	E
SHF		3 - 4 GHz	F
	C	4 - 6 GHz	G
		6 - 8 GHz	H
	X	8 - 10 GHz	I
		10 - 12 GHz	J
	Ku	12 - 18 GHz	
	K	18 - 20 GHz	
		20 - 27 GHz	K
	Ka	27 - 30 GHz	
EHF		30 - 40 GHz	
	V	40 - 60 GHz	L
		60 - 75 GHz	M
	W	75 - 100 GHz	
		100 - 110 GHz	N
	mm	110 - 200 GHz	
		200 - 300 GHz	O

ELF = Extremely Low Frequency
VLF = Very Low Frequency
LF = Low Frequency
MF = Medium Frequency
HF = High Frequency
VHF = Very High Frequency
UHF = Ultra HighFrequency
SHF = Super High Frequency
EHF = Extremely High Frequency

KHz = Kilo Hertz
MHz = Mega Hertz
GHz = Giga Hertz

Attachment 5 (Added)

AREA FREQUENCY COORDINATOR (AFC) MAP

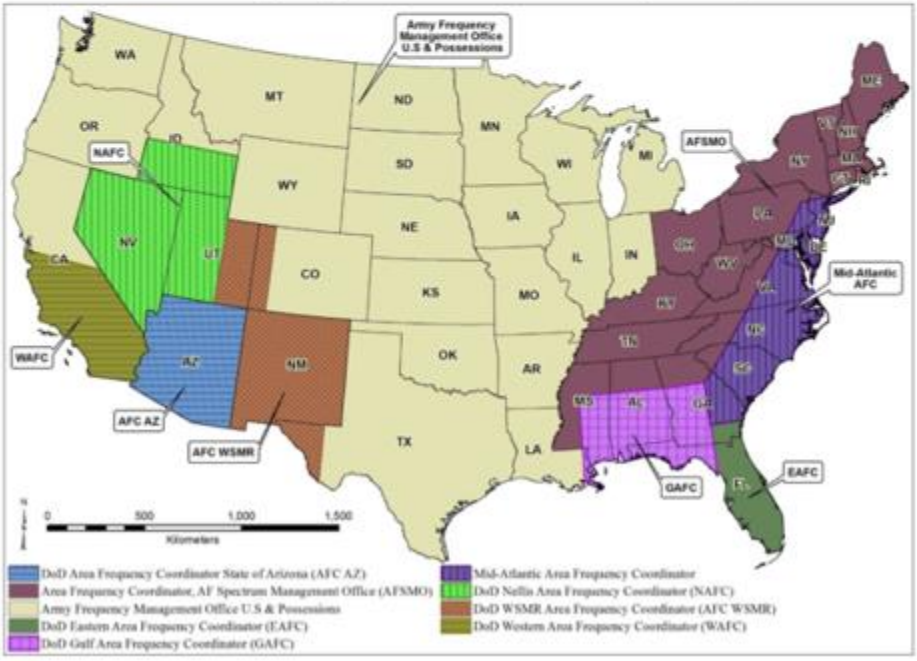
Figure A5.1. (Added) AFC Map.

AFCs can be reached by requesting POC info through any ISM or MAJCOM Spectrum Offices.
The AFC directly responsible for the National Capitol Region is the **Mid-Atlantic AFC**.

USN Mid-Atlantic Area Frequency Coordinator

Naval Air Warfare Center Aircraft Division, Atlantic Test Ranges
23013 Cedar Point Road, Code 5.2.2.2, Unit 4, Bldg. 2118
Patuxent River, MD 20670-1883
DSN Number 342-1194
Comm Number 301-342-1194
FAX 342-1200
NIPR Org Box midlantafc_paxriver@navy.mil

Area Frequency Coordinator's Area of Responsibility



Attachment 6 (Added)

FREQUENCY REQUEST FORM

A6.1. (Added) Frequency Request Form. This form will need to be completed by the Unit Organization requesting spectrum support and relayed to the JBAB ISM office for processing and obtaining new emitters or modifying existing spectrum authorizations. Please allow up to 90 days of lead time for spectrum coordination to be completed. More details of the spectrum coordination process and lead times can be found on Attachments **2** and **3** above in this document.

A6.1.1. **(Added)** For any OCONUS requests, please contact the 794 CS ISM for more details of the spectrum coordination process.

A6.1.2. **(Added)** Please navigate to the 794 CS ISM SharePoint site for the Frequency Request Form. Direct link to the 794 CS ISM SharePoint, frequency request form is located here:

(**https://usaf.dps.mil/:f:/s/794CS/EjnfQiWZMWlForZbj3FBeCABlzp1i78KG9a-OVNeh-_u0w?e=GWcvPK**)

Attachment 7 (Added)

JBAB SPECTRUM INTERFERENCE REPORTING AND RESOLUTION

A7.1. (Added) Unit Spectrum Interference Reporting Checklists.

A7.1.1. **(Added)** Spectrum interference resolution starts with data collection from the victim organization and must be solved at the lowest level possible. Do not report an incident when the event is transient electromagnetic interference from natural sources (e.g. lightning, rain, etc.). Do not report when the interference only affects training frequencies assigned on a non-interference basis (NIB) for training purposes.

A7.1.2. **(Added)** Once the JBAB Unit Organization has determined (or could not determine) the source of the interference, the victim organization experiencing the event must start documenting a detailed report, with or without the 794 CS ISM's assistance, within two (2 hours). Victim organizations will follow the steps below:

A7.1.3. **(Added) Step 1:** The victim organization experiencing spectrum interference is required to complete the **Attachment 2**_Victim Interference Characterization Checklist (in this document below) experiencing the communications anomaly. **Attachment 2** is MANDATORY and is required to be completed by the victim organization, with or without the ISM's assistance, in the event of electromagnetic interference.

A7.1.4. **(Added) Step 2:** Once **Attachment 2** has been completed by the victim organization(s), the form will then be classified accordingly, before relaying the document to the JBAB 794 CS ISM office (SCOX). The victim organization(s) must evaluate the security sensitivity of the interference on the affected system and classify the report accordingly. Guidelines for classifying interference incidents are contained in CJCSI 3320.02F, Joint Spectrum Interference Resolution. **Note: Attachment 3** is only used as prescribed by the appropriate spectrum management offices and can be completed by the ISM office or AFDW Spectrum Management Office when deemed necessary. Upon inputting the proper classification level on the document(s), the completed document(s) will then be relayed to the 794 CS ISM office (SCOX) for action.

A7.1.5. **(Added) Step 3:** (ISM responsibility): Prepare an official Joint Spectrum Inference Report (JSIR) on SIPR and submit to the AFDW Spectrum Management Office for continuity and tracking. This step may or may not be necessary. If so, then the JSIR will require inputs from each of the ISM, AFDW, AFC, and the victim organizations.

A7.2. (Added) JBAB Spectrum Interference Checklists.

A7.2.1. **(Added)** The JBAB Spectrum Interference Resolution Program information, attachments, and resources are found on the 794 CS ISM office (SCOX) SharePoint. Direct hyperlinks to the spectrum interference checklists are also found here:

Link to **Attachment 2**, Victim Interference Characterization Checklist:
(**https://usaf.dps.mil/:f:/s/794CS/EsdP24cs5PdNtAg87aJtGggBW4mjJrS2_qd2_cU-FCnwIg?e=nS5EGu**)
Link to **Attachment 3**, Offline Interference Report Format:
(**https://usaf.dps.mil/:f:/s/794CS/EsdP24cs5PdNtAg87aJtGggBW4mjJrS2_qd2_cU-FCnwIg?e=nS5EGu**)