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SPANGDAHLEM AB (USAFE)**

**SPANGDAHLEM AIR BASE  
INSTRUCTION**



**17-220**

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**Cyberspace Operations**

**SPECTRUM OPERATIONS**

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This publication implements Department of the Air Force Policy Directive (DAFPD) 17-2, *Cyber Warfare Operations* and is consistent with the guidance established with National Telecommunications and Information Administration (NTIA), *Manual of Regulations and Procedures for Federal Radio Frequency Management* (also known as “Redbook”) and the Joint Staff J6 Military Command, Control, Communications, and Computers Executive Board (MC4EB) Frequency Panel. It identifies various levels of responsibilities for Department of the Air Force Instruction (DAFI) spectrum management and use of the electromagnetic spectrum. This publication applies to all civilian employees and uniformed members of Regular Air Force, the Air Force Reserve, the Air National Guard, the United States Space Force, those who are contractually obligated to comply with Department of the Air Force publications, and the Civil Air Patrol when conducting missions as the official Air Force Auxiliary. Ensure all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction (AFI) 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule which is located in the Air Force Records Information Management System. Refer recommended changes and questions about this publication to the office of primary responsibility using the Air Force Form 847, *Recommendation for Change of Publication*; route Air Force Forms 847 from the field through the appropriate functional chain of command. This publication may be supplemented at any level, but all supplements must be routed to the office of primary responsibility of this publication for coordination prior to certification and approval. The authorities to waive wing unit-level requirements in this publication are identified with a tier (“T- 0, T-1, T-2, T-3”) number following the compliance statement. See DAFI 90-160,

*Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Submit requests for waivers through the chain of command to the appropriate tier waiver approval authority, or alternately, to the requestor's commander for non-tiered compliance items. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service does not imply endorsement by the Department of the Air Force.

## Chapter 1

### OVERVIEW

#### 1.1. OVERVIEW.

1.1.1. 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. The requirements for completing this publication can be found in DAFI 17-220 Spectrum management 8 June 2021, 2.1.8.4. This publication provides roles for the Spangdahlem Installation Commander, Spangdahlem Communications Commander, Spangdahlem Installations Spectrum Manager and each user organization, to include but not limited to acquisition, program, operational, test, and tenant units outlined in USAFEI10-505, *Geographically separated Unit and Tenant Support*. SABI17-220 is a compilation of DAFI17-220 and DAFI17-220USAFE\_SUP. The Spangdahlem additions can be found in the following: [2.1.1.2.2.](#), [2.1.1.2.4.](#), [2.1.1.2.4.1.](#), [2.1.1.2.4.2.](#), [2.1.1.3.5.](#), [2.1.1.3.5.1.](#), [2.1.1.3.14.1.](#), [2.1.1.3.14.2.](#), [2.1.2.3.](#)

1.1.2. International law, domestic law, and implementing regulations require effective management and use of the electromagnetic spectrum. Within the United States, the electromagnetic spectrum is allocated between federal and non-federal users with portions of the spectrum being shared as noted in the NTIA Manual national table of allocations. The Department of Commerce's NTIA Manual regulates federal operations, and the Federal Communications Commission regulates non-federal operations. Federal users must utilize frequency bands allocated for government or shared use in accordance with NTIA Manual. **(T-0)** A government frequency assignment is authorized in a non-government allocated frequency band, providing the Federal Communications Commission approves the request.

1.1.3. Sovereign nations exercise control over the use of the electromagnetic spectrum within their own territory. This basic consideration of international spectrum management becomes extremely important when United States military forces operate abroad. In nearly all circumstances, it is necessary to obtain host nation approval to conduct electromagnetic spectrum operations before United States military forces operate any spectrum-dependent system in a foreign nation. Misuse of spectrum resources or unauthorized electromagnetic spectrum use within a host nation may be a violation of international treaties, international law, or national laws and regulations. Seek assistance from the servicing staff judge advocate with understanding international treaties, regulations, and host nation laws, where applicable.

## Chapter 2

### ROLES AND RESPONSIBILITIES

#### 2.1. ROLES AND RESPONSIBILITIES.

##### 2.1.1. Department of the Air Force Spectrum Operations.

2.1.1.1. Host Installation Commander or Director. The commander or director is responsible for all electromagnetic radiation emanating from their installation and from those outlying activities hosted by the installation in accordance with DoDI 4650.01. **(T-0)** Host installation commanders or directors will:

2.1.1.1.1. Ensure a viable spectrum operations program for the site and areas under the control of the host installation. **(T-2)**

2.1.1.1.2. Deconflict all spectrum-dependent systems to resolve potential interference to mission essential electromagnetic equipment in accordance with NTIA Manual and DoDI 4650.01. **(T-0)**

2.1.1.1.3. Appoint a full-time spectrum operations specialist (i.e., 1D7X2) to organize and carry out the spectrum operations program and notify the parent command, appropriate spectrum operations office and the Department of the Air Force Spectrum Management Office. **(T-2)**

2.1.1.1.4. Ensure hosted spectrum-dependent devices (SDD) comply with the NTIA Manual and MC4EB Frequency Panel spectrum policy and guidance. **(T-0)**

2.1.1.1.5. Ensure spectrum is considered as part of installation encroachment considerations to identify potential mission sustainment hazards in accordance with AFI 90-2001, *Mission Sustainment*. **(T-3)**

2.1.1.1.6. Ensure appropriate real property procedures are in place and followed (e.g., documentation, competition, fair market value) in order to execute a real estate agreement in accordance with AFI 32-9003, *Granting Temporary Use of Air Force Real Property*, to support deployment of wireless technologies along with other wireless requirements in compliance with Public Law 104-104, *Telecommunications Act of 1996*. **(T-0)** This includes compliance with the requirement that the installation spectrum manager ensures that an electromagnetic compatibility site analysis is performed, and the proposed commercial spectrum-dependent system will not negatively impact Department of the Air Force missions in accordance with the AFI 32-9003. **(T-0)**

2.1.1.1.7. Ensure compliance with the requirements of the Frequency Assignment Review Program described in NTIA Manual, Annex F. **(T-0)**

2.1.1.2. Installation Communications Commander or Director. The commander or director will:

2.1.1.2.1. Ensure the installation spectrum manager has, or is able to attain, the security clearance as indicated on the unit manning document required to perform spectrum operations duties. **(T-2)**

- 2.1.1.2.2. Ensure the installation spectrum manager has Secret Internet Protocol Router Network (SIPRnet) access with SPECTRUM XXI and data exchange capabilities as well as co-located Non-Classified Internet Protocol Network (NIPR) access. **(T-3)**
- 2.1.1.2.3. Evaluate the complexity of the electromagnetic environment by conducting threat assessments against mission needs using available spectrum analyzers. **(T-3)**
- 2.1.1.2.4. Publish an installation spectrum operations instruction and forward draft copies to the parent command for review before publishing. **(T-2)** The local instruction includes:
  - 2.1.1.2.4.1. Designate Cyberspace Infrastructure Planning System (CIPS) as the dedicated system for all SDD requested by customers to allow the ISM to perform spectrum supportability risk assessments (SSRA) before determining purchase approval.
  - 2.1.1.2.4.2. Discuss SDD with the ISM in Configuration Control Board (CCB) meetings to determine purchase approval and mission supportability for customers.
  - 2.1.1.2.4.3. Review of memoranda of understandings or memoranda of agreements that pertain to the use of spectrum-dependent systems. **(T-3)**
- 2.1.1.3. Installation and Garrison Spectrum Manager. The Installation spectrum manager (ISM) is responsible to the installation commander, through their chain of command, for managing all spectrum use on the sites and areas under the control of the installation commander. The ISM will:
  - 2.1.1.3.1. Ensure using organizations understand the technical parameters and any imposed operational restrictions of their assigned frequencies. **(T-3)**
  - 2.1.1.3.2. Maintain current frequency management records of all frequencies assigned to the sites and areas hosted by the installation and provide using organizations with a spectrum authorization (license) for their records. **(T-3)**
  - 2.1.1.3.3. Meets with all unit points of contact (POC) at least every 6 months to discuss current spectrum management issues and conduct customer training.
  - 2.1.1.3.4. 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 the appropriate command channels. **(T-2)**
  - 2.1.1.3.5. Maintain a continuity binder containing documents necessary to run a successful ISM program. The binder may be digital or physical, this will be determined by the lead ISM.
    - 2.1.1.3.5.1. ISM continuity binder must contain at a minimum the following up to date documents: Emitter survey records, Emitter Listing, ISM appointment letter, Unit Frequency Monitor (UFM) contact list/training status. UFM training slides, MOU/MOAs.
  - 2.1.1.3.6. Provide spectrum operations assistance and guidance to tenant activities. **(T-3)**

- 2.1.1.3.7. Support local exercise coordination requirements. **(T-3)**
- 2.1.1.3.8. Review operational plans and requirement documents and obtain frequency support through command channels. **(T-3)**
- 2.1.1.3.9. Assist deployable units with identifying spectrum requirements for exercises and contingencies. **(T-3)**
- 2.1.1.3.10. 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. **(T-0)**
- 2.1.1.3.10.1. When conducting frequency assignment reviews, use the Frequency Assignment Review Checklist found in DAFI17-220\_USAFE-AFAFRICASUP 9 JULY 2024 Attachment 11 as a guide. ISMs must send all the review information to USAFE-AFAFRICA Spectrum Management Officer (SMO) for processing.
- 2.1.1.3.10.2. When operating within the EUCOM and AFRICOM Area of Responsibility (AOR), the only frequencies that do not require a specific assignment for US forces are those emergency and distress frequencies defined in International Telecommunication Union (ITU) Radio Regulation Article 31.
- 2.1.1.3.11. Update frequency records in the Frequency Resource Record System. **(T-3)**
- 2.1.1.3.12. Maintain a current point of contact list for using activities. **(T-3)** Contact list includes name, unit, e-mail address, and phone number. **(T-3)**
- 2.1.1.3.13. Ensure contractor activities using the Department of the Air Force's frequency assignments follow federal and MC4EB Pub 7, *Frequency Resource Record System (FRRS) Standard Frequency Action Format (SFAF)*, for electromagnetic spectrum policies and guidelines. **(T-0)**
- 2.1.1.3.14. Educate spectrum users on the importance of obtaining spectrum supportability guidance and validation prior to entering a contractual obligation for all spectrum-dependent systems in accordance with the NTIA Manual and DoDI 4650.01. **(T-0)**
- 2.1.1.3.14.1. Attend Configuration Control Board (CCB) meetings hosted by 52 CS to discuss SDD purchase request by units and give guidance to communications commander on determining approval of equipment.
- 2.1.1.3.14.2. Review local purchases or government purchase card orders for SDD to determine sustainment of spectrum supportability in accordance with NTIA, MC4EB, and Spectrum 21 prior to the obligation of funds. Requests will be routed to ISM with the use of CIPS ticket before any approvals are made. Once approved, necessary MOU/MOA will be established along with the remaining frequency approval process.
- 2.1.1.3.15. 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. **(T-3)**

2.1.1.3.16. Coordinate new and renewal requirements with appropriate Department of Defense area frequency coordinator in accordance with NTIA Manual and ACP 190 US SUPP-1(D). **(T-0)**

2.1.1.3.17. Immediately notify Department of Defense area frequency coordinator and USAFE requesting interference resolution assistance to initiate an investigation to locate and determine the offending source and report the interference in accordance with AFI 17-221. **(T-1)**

2.1.1.3.18. 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 in accordance with AFI 91-208, *Hazards of Electromagnetic Radiation to Ordnance (HERO) Certification and Management*. **(T-1)**

2.1.1.3.18.1. Provide parametric data for spectrum-dependent systems. **(T-3)**

2.1.1.3.18.2. Coordinate spectrum-dependent system relocation or parametric data changes with the user and safety office. **(T-3)**

2.1.1.3.18.3. Coordinate with the installation safety office to identify any hazard of electromagnetic radiation to fuel and the bioenvironmental engineering flight to support health hazard evaluations and inventory accuracy in accordance with AFI 48-109, *Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program*. **(T-1)**

2.1.1.3.19. Submit proposals for units through USAFE AFAFRICA command spectrum channel. **(T-2)**

2.1.1.3.20. Submit proposals for tenant units supporting the host mission to USAFE AFAFRICA command spectrum channel. **(T-2)**

2.1.1.3.21. Submit proposals for tenant units not supporting the host mission to the supported unit's parent command with a copy to the host and tenant unit spectrum commands. **(T-2)** See examples below:

2.1.1.3.21.1. Submit frequency requirements for a Headquarters Air Combat Command maintenance expediter net on a Headquarters Air Mobility Command installation to Headquarters Air Combat Command with a copy to Headquarters Air Mobility Command.

2.1.1.3.21.2. Submit frequency requirements for a Headquarters Air Force Materiel Command unit in support of Air Combat Command on an Air Mobility Command installation to Headquarters Air Combat Command with a copy to Air Force Materiel Command and Air Mobility Command.

2.1.1.3.21.3. Ensure all electromagnetic attack events for test, training, and exercises are processed in accordance with CJCSM 3212.02E, *Performing Electronic Attack in the United States and Canada for Tests, Training, and Exercises* or CJCSM 3212.03A, *Performing Tests, Training, and Exercises Impacting the Global Positioning System (GPS)*. **(T-0)**

2.1.2. User Organization. User organizations, to include but not limited to acquisition, program, operational, test, and tenant units will:

2.1.2.1. Submit a CIPS ticket and receive approval through the ISM for all SDD's prior to purchasing or entering any contractual obligations for the use of the SDD in accordance with the NTIA Manual, paragraph 10.1.2 and DoDI 4650.01. **(T-0)**

2.1.2.1.1. US Federal Communications Commission (FCC) approved non-licensed devices are not approved for usage within the EUCOM and AFRICOM AOR. The majority of these devices (i.e. baby monitors, wireless phones, or walkie talkie radios) will cause harmful interference to Host Nation (HN) emergency responders and should not be used in this AOR.

2.1.2.1.2. Any such device that requires usage within Germany must have a COTS worksheet completed with an EU letter of conformity attached. Forward completed paperwork to USAFE-AFAFRICA SMO for processing.

2.1.2.2. Obtain a frequency assignment through the installation spectrum manager prior to operation of any spectrum-dependent devices that radiate radio frequency energy per NTIA Manual, Chapter 8. **(T-0)**

2.1.2.3. Maintain a digital or physical continuity binder that must contain, up to date: signed appointment letter, Radio Frequency Authorization (RFA) Site license, Completed training signature. Continuity binder management will be determined by the lead ISM.

2.1.2.4. Maintain a copy of frequency authorizations received from the installation spectrum manager. **(T-3)**

2.1.2.5. Ensure spectrum-dependent system operations comply with authorized parameters identified in the frequency assignment notification in accordance with NTIA Manual, Chapter 8. **(T-0)**

2.1.2.6. Act promptly to notify the installation spectrum manager to report and assist in resolving incidents of interference in accordance with AFI 17-221. **(T-1)**

2.1.2.7. Use radiation-suppression devices when tuning, testing, or experimenting with any equipment that emits radio frequency. **(T-3)**

2.1.2.8. Maintain and identify a point-of-contact to the installation spectrum manager for unit frequency matters. **(T-3)**

2.1.2.9. Document and forward documentation for frequency assignment deletions to the installation or garrison spectrum manager. **(T-3)**

2.1.2.10. Obtain approval from the installation spectrum manager before modifying any existing spectrum-dependent systems or antennas (i.e., increase power, change antenna height or gain), if outside of the assigned parameters of the frequency authorization in accordance with the NTIA Manual, Chapter 10. **(T-0)**

2.1.2.11. Assist the installation spectrum manager in reviewing and verifying equipment parameters during mandatory and periodic reviews, in accordance with NTIA Manual, Annex F. **(T-0)**

2.1.2.12. Contact the installation spectrum manager for interpretation or guidance of any national or military-level spectrum management policy. **(T-3)**

2.1.2.13. Process spectrum supportability risk assessments in accordance with DoDI 4650.01. **(T-0)**

2.1.2.14. Submit host nation coordination requests to the installation spectrum manager in accordance with CJCSM 3320.01C. **(T-0)**

2.1.2.15. Obtain electromagnetic attack (EA) authorizations from the Department of the Air Force Spectrum Management Office prior to test, training, or exercises in accordance with CJCSM 3212.02E or CJCSM 3212.03A. **(T-0)**

## Chapter 3

### SPECTRUM SUPPORTABILITY ACTIONS

#### 3.1. SPECTRUM SUPPORTABILITY ACTIONS.

3.1.1. Spectrum Certification. Spectrum certification is the statutory process whereby national regulatory bodies, NTIA and Federal Communications Commission review telecommunications systems for compliance with national spectrum standards and determine electromagnetic compatibility. This applies to SDD and COTS, unless specifically exempt, in accordance with the NTIA Manual, Chapter 10.

3.1.1.1. Local purchases of spectrum-dependent systems will be reviewed by the installation spectrum manager in accordance with NTIA and Spectrum 21 to evaluate spectrum supportability prior to the obligation of funds. If the system will be deployed outside the United States, DAF policy is that HN coordination is required in accordance with the DoDI 4650.01. **(T-0)**

3.1.1.1.1. Any such device that requires usage in USAFE-AFAFRICA must be handled on a case-by-case basis through USAFE-AFAFRICA SMO. Sole decision authority rests with the HN.

3.1.1.1.2. Host nation spectrum supportability coordination in EUCOM AOR is required in accordance within the ECM 6901.01, USEUCOM Spectrum Management Manual.

3.1.1.2. The NTIA, Spectrum Planning Subcommittee, may approve out-of-band requirements with an analysis and justification. Out-of-band operations are operated on a strict non-interference basis. Program offices provide justification for non-compliant systems in accordance with NTIA Manual, Chapter 10. **(T-0)**

3.1.1.3. To protect receive only systems (e.g. global/weather broadcast receivers) supporting a critical operation, national level spectrum certification is required. The certification application should contain a narrative that describes the criticality of the operation at a specified location. Once spectrum certification is approved, an assignment request is submitted to the NTIA to protect the receive frequency.

3.1.1.4. Electromagnetic attack systems are exempt from the national spectrum certification process and are supported through the Joint Staff, MC4EB, and Equipment Supportability Permanent Working Group.

3.1.2. SSRA, an assessment must be performed by the Department of the Air Force acquisition programs and materiel developers to identify risk as early as possible and affect design and procurement decisions for all SDD. Review these risks at each milestone decision point as outlined in DoDI 4650.01.

3.1.2.1. The following categories of equipment in the EUCOM and AFRICOM AOR are exempt from the spectrum certification process: **(T-0)**

3.1.2.1.1. Signal generators.

3.1.2.1.2. Bench test or antenna-testing equipment.

- 3.1.2.1.3. Electronic fuses that activate detonation devices.
  - 3.1.2.1.4. Unmodified European Conformity (EC) approved COTS Family Radio Service (FRS) transceivers.
  - 3.1.2.1.5. Unmodified EC approved COTS low power cordless telephones.
  - 3.1.2.1.6. Cellular telephones used to access a commercial service provider.
  - 3.1.2.1.7. International Maritime Satellite (INMARSAT) terminals.
  - 3.1.2.1.8. Infrared and ultraviolet systems used, among other things, to measure heat intensity and spectral signatures of various targets.
  - 3.1.2.1.9. Lasers and other systems that operate above 3000 Gigahertz (GHz).
  - 3.1.2.1.10. Global Positioning System receivers universally marketed for civil, industrial, private, and military applications.
  - 3.1.2.1.11. Radio and radar control heads, bus units, and software or hardware devices that interface with transmitting and receiving equipment, but by themselves do not radiate nor receive electromagnetic energy, except wireless RF modem devices.
  - 3.1.2.1.12. Antennas that do not radiate RF energy, unless excited from a separate transmitting source.
- 3.1.2.2. Department of the Air Force acquisition or materiel development programs, including electromagnetic attack systems, will submit spectrum supportability risk assessment at each milestone decision point in accordance with DoDI 4650.01. **(T-0)**
- 3.1.2.3. Quick response programs enter at Milestone C (production and deployment) and go directly to initial operational test and evaluation in accordance with DoDI 4650.01. **(T-0)**
- 3.1.2.4. The program manager will insert the NTIA certification stage and number, and approval date into the Information Technology Investment Portfolio System in accordance with AFI 17-110, *Information Technology Portfolio Management and Capital Planning and Investment Control*.
- 3.1.3. Department of Defense Electromagnetic Compatibility Standards. Military-Standard-464, *Electromagnetic Environmental Effects (E3) Requirements for Systems*, provides important electromagnetic compatibility and electromagnetic environmental effects standards for DOD SDDs. The Department of the Air Force spectrum programs will adhere to Military-Standard-464 and DoDI 3222.03, *DoD E3 Program*. **(T-0)**

WILLIAM D. LUTMER, Colonel, USAF  
Commander

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

- ACP 190 US SUPP-1(D), *Guide to Frequency Planning*, January 2015
- AFI 17-110, *Information Technology Portfolio Management and Capital Planning and Investment Control*, 23 May 2018
- AFI 17-221, *Spectrum Interference Resolution Program*, 11 May 2018
- AFI 32-9003, *Granting Temporary Use of Air Force Real Property*, 24 October 2018
- AFI 48-109, *Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program*, 1 August 2014
- AFI 90-2001, *Mission Sustainment*, 31 July 2019
- AFI 91-208, *Hazards of Electromagnetic Radiation to Ordnance (HERO) Certification and Management*, 24 October 2019
- CJCSM 3212.02E, *Performing Electronic Attack in the United States and Canada for Tests, Training, and Exercises*, 17 June 2019
- CJCSM 3212.03A, *Performing Tests, Training, and Exercises Impacting the Global Positioning System (GPS)*, 8 November 2013
- CJCSM 3320.01C, *Joint Electromagnetic Spectrum Management Operations in the Electromagnetic Operational Environment*, 14 December 2012
- DAFI 17-220, *Spectrum Management*, 16 March 2017
- DAFI 17-220\_USAFESUP, *Cyberspace Spectrum Operations Supplemental*, 9 July 2024
- DAFMAN 90-161, *Publishing Processes and Procedures*, 15 Apr 2022
- 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
- ITU Radio Regulation Article 31, (*Current Edition*)
- International Telecommunication Union, *Radio Regulations*, Edition 2020
- JP 3-85, *Joint Electromagnetic Spectrum Operations*, 22 May 2020
- Manual of Regulations and Procedures for Federal Radio Frequency Management*, National Telecommunication and Information Administration (NTIA), January 2023 revision
- Public Law 104-104, *Telecommunications Act of 1996*, 8 February 1996
- Prescribed Forms and Adopted Forms***
- DAF Form 847, Recommendation for Change of Publication

*Abbreviations and Acronyms*

**ACP**—Allied Communications Publication

**AFI**—Air Force Instruction

**CE**—European Compliance

**CJCSM**—Chairman of the Joint Chiefs of Staff Manual

**DLMC**—Data Link Management Cells

**DoDI**—Department of Defense Instruction E3—Electromagnetic Environmental Effects

**FCA**—Frequency Clearance Agreement

**IPF**—Interference Protection Features

**ITU RR**—International Telecommunication Union Radio Regulation

**JP**—Joint Publication

**JTIDS**—Joint Tactical Information Distribution System

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

**NTIA**—National Telecommunications and Information Administration

**SDD**—Spectrum Dependent Devices

**SSRA**—Spectrum Supportability Risk Assessments

**TSDF**—Time Slot Duty Factor

*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 general 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: ITA 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.