Headquarters United States Forces Korea Unit #15237 APO AP 96205-5237

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**Information Management** 

# SPECTRUM MANAGEMENT

\*This regulation supersedes USFK Reg 25-10, dated 10 September 1991.

FOR THE COMMANDING GENERAL:

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**Summary.** This regulation prescribes policies, responsibilities, and procedures for implementation of signal operating instructions (SOI), formerly the communications electronics operating instructions (CEOI), including SOI related support systems, for United States Forces Korea (USFK).

**Summary of Change.** This regulation has been substantially changed. A full review of its contents is required.

**Applicability.** This regulation applies to all U.S. components, staffs, agencies, organizations and any reinforcing units (herein referred to as U.S. Forces) that are using or interfacing with USFK systems in the Republic of Korea (ROK) and to those forces augmenting U.S. Forces for exercises and contingencies, whether operating in single channel or spread spectrum modes, also called frequency hopping.

**Supplementation.** Issue of further supplements to this regulation by subordinate commands is prohibited unless prior approval is obtained from HQ, USFK, Unit #15237, (FKJ631), APO AP 96205-5237.

**Records Management.** Records created as a result of processes prescribed by this regulation must be identified, maintained, and disposed of according to AR 25-400-2 or applicable service regulations. Record titles are available on the Army Publishing Directorate website at <a href="https://www.arims.army.mil">https://www.arims.army.mil</a>.

Forms. USFK forms are available at <u>www.usfk.mil</u>.

**Suggested Improvements.** The proponent of this regulation is HQ USFK, (FKJ631). Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to the HQ USFK, (FKJ631), Unit #15237, APO AP 96205-5237.

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# CONTENTS

#### Chapter 1 Introduction, page 1

- 1-1. Purpose
- 1-2. References
- 1-3. Abbreviations and Special Terms
- 1-4. Scope
- 1-5. Policy

# Chapter 2 Managing the Radio Frequency (RF) Spectrum, page 2

- 2-1. General
- 2-2. Authorities and Responsibilities
- 2-3. Frequency Assignment Records Review
- 2.4 Security of Frequency Proposals/Assignments

# Chapter 3

# Equipment Spectrum Supportability, page 6

- 3-1. General
- 3-2. Process and Guidance
- 3-3. Additional Host Nation Coordination Guidance

# Chapter 4

# Frequency Actions - Peacetime, page 8

- 4-1. General
- 4-2. Lead-Times
- 4-3. Frequency Coordination and Application Channels
- 4-4. Frequency Review Program
- 4-5. Special Use Frequencies
- 4-6. Frequency Assignment Records Reviews

## Chapter 5 Frequency Actions - Exercise/Contingency, page 12

- 5-1. General
- 5-2. Crisis/Contingency
- 5-3. Training/Exercises

# Chapter 6 Systems Guidance, page 14

- 6-1. General
- 6-2. Non Licensed Devices
- 6-3. Family Radio Service (FRS)
- 6-4. General Mobile Radio Service (GMRS)
- 6-5. Commercial-Off-the-Shelf (COTS)
- 6-6. Trunking
- 6-7. Joint Tactical Information Distribution System/Multifunctional Information Distribution System (JTIDS/MIDS)
- 6-8. Enhanced Position Location Reporting System (EPLRS)

#### Chapter 7 Satellite Coordination, page 15

7-1. General

7-2. Responsibilities

#### Chapter 8 Information Operations – Electronic Warfare (EW), page 16

8-1. General

8-2. Policy

8-3. Procedures

# Chapter 9 Joint Spectrum Interference Resolution (JSIR), page 17

- 9-1. General
- 9-2. Reference
- 9-3. Scope
- 9-4. Policy

# Chapter 10 Spectrum XXI Automation, page 18

10-1. General

- 10-2. System Description
- 10-3. Use Of E-Mail Notifications

# Appendix A. References, page 20

Glossary, page 22

## Chapter 1 Introduction

# 1-1. Purpose

To provide guidance, applicable instructions, and technical information pertaining to the effective operational utilization and central management of the military electromagnetic spectrum.

# 1-2. References

Required and related references are listed at Appendix A.

# 1-3. Abbreviations and Special Terms

Abbreviation and terms used in this regulation are explained in the Glossary.

# 1-4. Scope

This regulation applies to all U.S. components, staffs, agencies, organizations and any reinforcing units (herein referred to as U.S. Forces) that are using or interfacing with USFK systems in the Republic of Korea (ROK) and to those forces augmenting U.S. Forces for exercises and contingencies, whether operating in single channel or spread spectrum modes, also called frequency hopping.

# 1-5. Policy

a. The electromagnetic spectrum, or "spectrum," is a critical element of USFK communications systems. Access to the spectrum is vital to support effective military operations. Proper management and use of this finite resource shall be an essential and integral part of all military planning, and operations involving spectrum-dependent systems, and must be managed and administered in accordance with applicable international, host nation, and Department of Defense (DoD) rules and regulations.

b. In the ROK, intense competition for spectrum resources exists among Korean civil and governmental agencies, as well as U.S. Forces on the peninsula. Effective and efficient management of this valuable resource is of utmost importance and will, in all instances, be carefully planned.

c. The following spectrum management principles must be adhered to in order to achieve the objectives outlined in this instruction.

(1) Management will be exercised to ensure spectrum requirements are satisfied, while concurrently minimizing harmful impact to other authorized spectrum users.

(2) Applicable international, Korean, and U.S. policies and procedures on spectrum management will be observed at all times.

(3) Spectrum guidance will be provided to subordinate unified commanders and joint task force (JTF) commanders in formulation of Communications-Electronic (C-E) plans and orders requiring spectrum support.

(4) Spectrum-dependent C-E systems and equipment will be operated using the most efficient spectrum-use mode or method available, i.e., narrowband vs. wideband, trunking vs. single channel, and with minimum power, bandwidth, etc., necessary to effectively support the mission.

## Chapter 2 Managing the Radio Frequency (RF) Spectrum

# 2-1. General

a. U.S. Pacific Command (USPACOM). USPACOM has the authority and responsibility for coordinating and assigning frequencies to U.S. Forces during peacetime (including contingencies) and crises within USPACOM area of responsibility and also within territories designated as part of the U.S. and possessions (US&P) as required during crisis periods where the unified commander determines safety of life or property and/or urgency of military requirement does not permit timely coordination with the Military Communications-Electronics Board (MCEB).

b. USFK J6. In the ROK, assignment authority is delegated to USFK J6, Joint Frequency Management Office (JFMO), per USPACOM INST 0708.1 (U.S. Pacific Command Joint Electromagnetic Spectrum Management Instruction). USFK J6, JFMO represents the Commander, USFK on the combined ROK/U.S. Joint Military Frequency Committee.

c. Joint Military Frequency Committee (JMFC). Per UNC/CFC/USFK Regulation 105-25 (ROK/U.S. Joint Military Frequency Committee), and through Memorandum of Agreement, the JMFC, composed of senior Korean and U.S. communications representatives, has overall spectrum management responsibility and assignment authority for all military forces in the ROK.

# 2-2. Authorities and Responsibilities

a. USFK. USFK, a subordinate unified command of USPACOM, per USPACOMINST 0708.1, has been delegated the authority and responsibility for the overall management and control of all U.S. Forces use of the frequency spectrum within 200NM radius of the ROK, and in that capacity:

(1) Is responsible for overall management and control of all U.S. Forces use of the radio frequency spectrum within the ROK.

(2) Will establish a JFMO responsible for the coordination of all U.S. Forces requirements within its applicable area of responsibility.

b. USFK Joint Frequency Management Office – Korea (JFMO-K). JFMO-K is the primary office responsible to USFK, Assistant Chief of Staff, J6, for overall spectrum management and control of U.S. Forces use of the radio frequency spectrum in accordance with USPACOM INST 0708.1. JFMO-K will:

(1) Act, where applicable, as the single point of contact (POC) for coordinating U.S. Forces frequencies with the host government.

(2) Represent the Commander, USFK, on the ROK/U.S. Joint Military Frequency Committee and in that capacity ensure the efficient coordination and use of spectrum for all U.S. Forces in the ROK.

(3) Assign frequencies for intra-area use per existing national and international instructions and agreements and as authorized by higher authority.

(4) Coordinate, and approve when possible, all Electronic Warfare (EW) training requirements per USPACOM INST 0523.1 (Information Operations), CFC PUB 3-4.2 (Electronic Warfare Operations-Korea) (located under CFC Publications Hierarchy at http://usfk.smil.mil), and other applicable host nation agreements.

(5) Ensure that an adequate number of frequencies are assigned to meet the needs of contingency operations, exercises, civil disturbances and/or emergencies.

(6) Conduct periodic spectrum management seminars addressing spectrum management policy, procedures, and records management. Emphasis will be placed on compliance with host government and DOD policy and accuracy of U.S. Forces assignment records.

(7) Act as the single POC for coordinating Electromagnetic Interference (EMI) with the host government.

(8) Act as the focal point for resolution of EMI in their area of responsibility.

(9) Resolve EMI problems at the local level when possible. When unable to resolve an EMI problem at the local level, will refer the matter through command channels to JFMO PAC for assistance.

(10) Review and provide supportability comments on C-E systems to be employed in their area of responsibility per USPACOM Instruction 0708.1.

(11) Implement USPACOM instructions regarding spectrum management and provide HQ USPACPOM and component Service headquarters with copies of implementing directives.

(12) When available, forward to HQ USPACOM copies of agreements pertaining to host government spectrum management coordination and host government frequency allocation tables as well as all changes thereto. Proposed changes affecting utilization of the spectrum will be forwarded to USPACOM for review.

(13) Advise using activities that a frequency assignment does not constitute radiation hazard (RADHAZ) approval.

(14) Provide Spectrum Management Bi-Monthly Activities reports to USPACOM as outlined in USPACOM INST 0708.1, Appendix D.

c. USFK Subordinate Commands, Agencies, and Activities will:

SUBORDINATE CMD/REP

(1) Establish a spectrum management office responsible for the coordination of all spectrum activities and requirements within their command. They will forward their consolidated requirements to JFMO-K.

(2) Effect overall management and control of assigned use of the radio frequency (RF) within their command as delineated below:

8th Army (G6)	All assigned, attached and direct support units
7th Air Force (7 AF/A6X)	All assigned, attached and direct support units
7th Fleet/CNFK (C7F ACOMMO/N6)	All assigned, attached and direct support units
MARFOR-K (G-6)	All assigned, attached and direct support units

SOCKOR (J-6)

All assigned, attached and direct support units

(3) Act, where applicable, as the single POC for coordinating component spectrum use within their designated areas of responsibility.

(4) Ensure using activities understand the parameters of their assigned frequencies.

(5) Maintain a current listing or electronic database of all frequencies assigned to the installation and outlying activities hosted by the installation. Provide all units with a Spectrum XXI generated Site License for all frequencies used.

(6) Conduct a spectrum management customer education program.

(7) Process frequency proposals, and applications for frequency allocations, and ensure submission through the appropriate command channels.

(8) Provide frequency management assistance and interpret guidance to host installation and tenant activities.

(9) Review installation operations plans (OPLANs) and requirements documents, and obtain frequency support through command channels.

(10) Performs a base, post, or camp-wide emitter survey in coordination with USFK J6, JFMO spectrum management office at least once every 3 years.

(11) Maintain a current POC listing (name, unit, E-mail, address, and phone number) for each unit and provide updates in writing to USFK J6, JFMO.

(12) Maintain, at a minimum, the following frequency management publications:

(a) USPACOM INST 0708.1, USPACOM Joint Electromagnetic Spectrum Management Instruction.

(b) UNC/CFC/USFK REG 105-25, ROK/U.S. Joint Military Frequency Committee.

(c) USFK REG 25-10, Information Management - Spectrum Management.

(d) MCEB Pub 7, Frequency Resource Record System (FRRS), Standard Frequency Action Format (SFAF).

(e) Service unique spectrum policies, instructions, or regulations.

d. Other supporting Commands and DoD Agencies. Will comply with local spectrum policies and submit all spectrum requirements directly to JFMO-K for action.

e. Using Activities - Each organization operating an RF device shall:

(1) Obtain a frequency assignment before using devices that intentionally emit RF energy.

(2) Maintain a copy of frequency authorizations received from the assignment issuing authority.

(3) Request the minimum number of frequencies necessary to accomplish the mission.

(4) Request minimum transmitter power and antenna gain/height necessary to ensure adequate coverage.

(5) Ensure electromagnetic radiating equipment operations comply with authorized parameters identified in the frequency assignment record.

(6) Act promptly to report and resolve incidents of interference according to established instructions.

(7) Use radiation-suppression devices (dummy loads) as much as possible when tuning, testing, or experimenting with any equipment that emits radio frequencies.

(8) Provide, in writing to its responsible spectrum management office, the name and phone number of a POC for unit frequency matters, and provide updated information when the POC changes.

(9) Immediately notify its responsible spectrum management office when frequencies are no longer required.

(10) Ensure the appropriate spectrum supportability is accomplished prior to purchasing any RF equipment or entering into any contractual obligations involving the use of RF dependent devices.

(11) Obtain approval before modifying any existing emitters or antennas (i.e., increase power, change antenna height or gain).

# 2-3. Frequency Assignment Records Reviews

a. A continuous review process of all frequency records within the Korea Theater of Operations must be maintained by each office of responsibility to ensure an accurate frequency database exists at all times. No later than 90 days prior to the end of the authorized period, each assignment must be reviewed and forwarded via the appropriate chain of command, utilizing format procedures contained in the current MCEB Pub.

b. Frequency assignments are reviewed every five years. However, due to the high personnel turnover rate, USFK units should examine all records as part of their end of tour hand over procedures.

c. Unless a modification transaction is submitted, temporary assignments greater than 90 days that have been posted to the JSC FRRS central server and regional servers are automatically deleted from the FRRS database upon their expiration dates. Temporary assignments of 90 days or less are deleted from regional servers upon their expiration dates unless the expiration data is extended prior to deletion date by the controlling organization.

d. Each assignment will be reviewed to confirm that frequency assignments are:

(1) In current use and are correctly reflected in the FRRS listing of authorized frequency assignments.

(2) Required for continued operations for the purpose stated in their justification.

- (3) Still in conformance with national and international radio regulations.
- (4) Complying with ROK/USFK policy and guidance.

## 2-4. Security of Frequency Proposals/Assignments

a. The FRRS database contains UNCLASSIFIED, CONFIDENTIAL, and SECRET data requiring special handling instructions. The procedure for applying the classification to SFAF records is contained within the current MCEB Pub.

b. Much intelligence is gained through intercept of radio transmissions. Tactical operating frequencies should be changed regularly when practical, both to prevent assembly of information by intercept and as an aid in the prevention of Electronic Countermeasures (ECM). Frequency power should be selected so as an aid in the prevention of ECM. Frequency and power should be selected so as to limit transmission range to the minimum required for successful communications.

c. Information contained in proposals and assignments such as date/time of use, geographic locations, special users, operational purpose, unique equipment, and other remarks can be operational security concerns.

d. The responsibility for determining the security classification of frequency proposals/assignments rests with the user per DoD Directive 5200.1-R.

#### Chapter 3 Equipment Spectrum Supportability

# 3-1. General

a. DOD Directive 4650.1, Policy for Management and Use of the Electromagnetic Spectrum:

(1) 5.4.2.2 provides: [Components shall] "submit, through appropriate channels to the MCEB, requests for a spectrum supportability assessment as early as possible prior to the development or procurement of any spectrum dependent equipment or system and fully address MCEB guidance and recommendations. Requests for spectrum supportability assessments shall include identification of those host nations into which deployment is likely or planned."

(2) 5.4.2.3 provides: [Components shall] "not procure or purchase off the shelf or other non developmental spectrum-dependent systems without first requesting spectrum supportability guidance from the MCEB, fully considering that guidance and making the determination required by para 4.5."

b. International, National, and DOD policies and procedures for the management and use of the electromagnetic spectrum, or spectrum, direct program managers developing spectrumdependent systems/equipment to consider spectrum supportability requirements early in the development process. Due to the complex environment, both physical and political, in which U.S. Forces operate, early and thorough consideration is vitally important. The spectrum supportability process ensures the following:

(1) Spectrum-dependent systems/equipment being acquired can operate within the proper portion of the spectrum.

(2) Permission is, or can be obtained from designated authorities of sovereign "host" nations to use the equipment within their respective boarders.

(3) Newly acquired equipment can operate compatibly with other spectrum-dependent equipment already in the intended operational environment.

c. Because the process requires coordination at the national and international levels, starting the process early helps a program manager address the full range of considerations and caveats, obtain the necessary approvals to proceed through the acquisition process, and successfully deliver capabilities that will work to the warfighter.

#### 3-2. Process and Guidance

Obtaining the necessary authority operate an RF dependent communication systems outside the U.S. is a three-step process.

a. Spectrum Certification: Spectrum certification is the process of reviewing the equipment characteristics to determine realistic supportability expectations to include conformance with the international and national frequency allocation tables, and EMC standards. This process, often referred to as equipment certification, is required for all RF emitters (transmitters or receivers) including COTS and non-developmental item purchases, unless specifically exempt. This process is initiated within the respective MILDEP and coordinated for approval by the MCEB.

b. Host Nation Equipment Supportability: Because RFs are a national asset controlled and managed differently by each nation, it is important that RF dependent equipment be coordinated with the applicable host nation prior to bringing it into the country and prior to requesting frequencies. Spectrum certification by the USMCEB must be accomplished prior to requesting host nation coordination.

c. Following the completion of the certification and host nation coordination process, obtain a frequency assignment approval for each discrete frequency required.

# 3-3. Additional Host Nation Coordination Guidance

a. Foreign Disclosure. Obtain foreign disclosure approval in advance of coordinating hostnation frequency support for systems designed or planned to operate outside the US&P. The fieldlevel foreign disclosure office (FDO), the major command (MACOM) FDO, or the Service Secretary level FDO provides disclosure guidelines according to DOD foreign disclosure policies and guidance.

b. Program managers must ensure the developing or acquiring organization obtains the foreign disclosure approval, including the field-level FDO case number, and provide a copy of the approval release with the DD Form 1494 (Application For Equipment Frequency Allocation) through the chain of command to USPACOM.

c. USPACOM, upon receipt of the DD Form 1494 and approved foreign disclosure, will direct JFMO-K to coordinate with the Korean Government for spectrum supportability. JFMO-K will forward the Korean response to USPACOM.

## Chapter 4 Frequency Actions - Peacetime

# 4-1. General

a. USFK does not own any spectrum exclusively for military use. In fact, spectrum is not owned by any organization, but rather is "allocated" or managed by the sovereign host nation. In the ROK, the Korean Communications Commission (KCC) manages all spectrum.

b. All RF emitters must have a frequency assignment prior to operation. Before receiving a permanent or temporary frequency assignment, the RF equipment must have spectrum certification and host nation support via a DD Form 1494. Unless specifically exempted, all frequency assignment parameters must match the technical characteristics of the equipment as indicated in the spectrum certification paperwork.

c. Frequency actions will comply with MCEB Publication 7, Frequency Resource Record System (FRRS) and Standard Frequency Action Format (SFAF). Alternate formats may be employed when directed by USFK J6, JFMO or higher authority.

d. Types of Frequency Assignments. There are two types of frequency assignments.

(1) Permanent Assignment: A frequency assignment for a specified period of time greater than 90 days. Permanent assignments will include SFAF item 142 which indicates the ROK Korean Communications Commission (KCC) frequency assignment expiration date.

(2) Temporary Assignment: A frequency assignment for a specified period of time less than 90 days. Temporary assignments will have a SFAF item 141 (expiration date), but may be renewed for additional periods, if necessary. Coordinate this type of assignment at the subordinate command level and submit to JFMO-K for assignment. Refer to Chapter 5 of this regulation for crises and exercise procedures.

e. Frequency Proposals. A proposal is used for the following frequency assignment actions.

(1) NEW (N): To apply for a new permanent frequency assignment, the particulars of which, when approved is entered into the FRRS. In some cases, a NEW assignment is used to replace an existing assignment (see MCEB Pub 7 for instructions for submitting a SERIAL REPLACE action).

(2) MODIFICATION (M): Used to apply for the addition, subtraction, or removal of one or more of the particulars, other than Frequency (SFAF 110), the Agency Serial Number (SFAF 102), or the Transmitter State/Country (SFAF 300), of an existing frequency assignment.

(3) RENEWAL (R): To apply for the extension of a temporary assignment and to simultaneously update other particulars of the assignment.

(4) DELETION (D): To apply for the cancellation of a frequency assignment and the removal of all its particulars from the FRRS.

(5) TEMPORARY (T): To apply for a temporary assignment. This type of temporary assignment must include a start date and an expiration date. (See Chapter 5 for crises/exercise procedures)

f. The following sequential serial numbers are assigned and will be used in line 102 of the SFAF proposal (YY = 2 digit year, i.e., 05 for 2005):

(1) PAC YY7000 - PAC YY7333 8A

(2) PAC YY7334 - PAC YY7666 7AF

(3) PAC YY7667 - PAC YY7999 7TH FLT/CNFK, MARFOR-K, SOCKOR

#### 4-2. Lead-Times

a. Lead-times provide the time necessary to coordinate and process applications for frequency actions. If the following lead-times are not met, the frequency request must include justification and a mission impact statement if the assignment is not granted by the date requested. Limit such requests to only those cases where very serious consequences, such as endangerment of life, will occur due to any delay in granting the request, and to urgent matters of national security. In all cases, requesting users/commands must document when the requirement does not meet the required lead-time. Lead-times start when proposals are received by JFMO-K.

b. Requirements not in accordance with the Korean Table of Allocations, or that have unusual technical parameters, may require additional engineering time or study, consequently requiring even longer lead-times. It is not uncommon for such requests to take more than 6 months.

c. JFMO-K Lead-Times:

(1) Temporary Frequencies: Should be in the JFMO-K SXXI box 90 days prior to the requirement.

(2) Permanent Frequencies: Should be in the JFMO-K SXXI box 120 days prior to the requirement; however, approval from the Korean Government for complex requirements can take longer.

(3) Equipment Certification: New systems can take as long as one to two and a half years to be certified by the Korean Government depending on compliance with Korean allocation tables and EMC standards, and the operational environment.

#### 4-3. Frequency Coordination and Application Channels

a. In order to ensure interference free communications, necessary coordination and applicable engineering analysis must be accomplished before radio frequencies can be assigned.

b. ROK/U.S. JFMC reviews all requests for frequency assignment actions and coordinates between both ROK and U.S. Forces to mitigate potential interference.

c. Subordinate and component commands must ensure that the necessary coordination is accomplished between and with affected commands when user operations will occur in proximity to or on other command installations, bases, ranges, posts, or camps. Furthermore, subordinate and component commands must stipulate additional coordination requirements in accordance with applicable local guidance.

d. Occasionally, frequency sharing may be required and or assigned by the JFMC or KCC. When this occurs, JFMO-K will provide the necessary coordination data, usually in SFAF Line 520.

e. Amateur Radio Operations by U.S. personnel in the ROK will comply with USFK Regulation 25-6.

f. Installation Spectrum Manager (ISM). The ISM is responsible to the installation commander for managing all frequency use on the installation. Therefore, all units and organizations assigned to an installation submit their frequency application proposals to the ISM. The ISM sends these proposals as follows:

(1) Submits proposals for host installation units to the host service component spectrum office (e.g., 7AF, 8A, 7FLT).

(2) Submits proposals for tenant units, when the requirement supports the host installation mission, to the host service or component command spectrum office (even if the tenant is the sole user of the frequency) with a copy to the tenant unit's service or combatant command spectrum office. For example, the ISM for Osan Air Base would submit a frequency proposal for an Army unit assigned to Osan AB, which will use the frequency to support an Osan AB mission, to the 7AF spectrum office with a copy to 8A spectrum office.

(3) Submits proposals for tenant units, when the requirements are not in support of the host installation's mission, to the supported unit's service command or component command with a copy to the host and tenant installation senior service or combatant command spectrum office. For example, the ISM for US Army Garrison-Yongsan would submit a frequency proposal for an Air Force unit assigned to Yongsan Garrison, which will not use the frequency to support a Yongsan Garrison mission, to the 7AF spectrum office with a copy to 8A spectrum office.

(4) Coordinates spectrum requirements via command channels responsible for the actual management and use, not just by location of use. ISMs must review requests and deconflict potential interference issues before forwarding proposals for coordination and or assignment.

g. U.S. Forces. U.S. Forces deploying to the ROK send frequency actions in SFAF to their theater service component spectrum management office via their service HQs spectrum management office.

h. ROK-Based Organizations. ROK-based units/organizations send frequency actions in SFAF for their units deploying outside the ROK to USPACOM (JFMO-PAC) w/copy to JFMO-K. JFMO-PAC, in turn, processes these actions IAW the established USPACOM theater procedures.

#### 4-4. Frequency Review Program

a. Modifications will not be submitted for FRRS ID, agency serial number, frequency, or transmitter state/country.

b. Routine modification proposals should be submitted 90 days before the required modification date.

c. Unless otherwise directed by USPACOM, or higher authorities, all modification proposals shall be submitted per the SFAF.

#### 4-5. Special Use Frequencies

a. General. Certain frequencies have been designated by national and international agreements to be used for specific purposes. This chapter lists those frequencies that pertain to military operations.

b. Combat Scene of Action. A combat scene of action frequency is one designated as a "Simplex" channel for tactical communication in a situation in which two or more elements of a combat force are employed in circumstances precluding the prior agreement on a communications plan. These frequencies are used only for initial contact. Once contact is established, immediate arrangements are made for the use of other frequencies in continuing communication. The use of these frequencies for purposes that jeopardize combat effectiveness must be avoided.

c. <u>Distress And Emergency</u>. Certain frequencies have been reserved for use in emergencies. Distress and emergency frequencies will be used only to provide a communication channel to and from airborne and ground stations or surface craft experiencing an actual emergency or distress condition. This includes immediate assistance by other aircraft or surface units in the vicinity acting to alleviate or avert the distress or emergency condition, but does not include communications incident to a coordinated search and rescue operation. Search and rescue communications are to be conducted on appropriate frequencies as directed. The use of the following frequencies is more specifically described in ACP 190, paragraph 105. The frequencies are:

- (1) 500 KHZ (carrier frequency)
- (2) 2182 KHZ (carrier frequency)
- (3) 8364 KHZ (carrier frequency)
- (4) 40.5 MHZ
- (5) 121.5 MHZ
- (6) 279.4 MHZ

# 4-6. Frequency Assignment Records Reviews

a. The purpose of the Frequency Review Program is to ensure the FRRS accurately reflect current operations. Users submit reviews NLT 60 days before the date shown in SFAF Item 142 to ensure the frequency assignment is updated and current by the review date. During the review process, the ISM or appropriate spectrum office will work with the user to verify the frequency is in use and still required to meet mission requirements. In addition, the ISM reviews all the technical parameters of the assignment.

b. Radio frequency records maintained by each office of responsibility are to be reviewed at least once every 5 years.

c. Additional frequency review guidance can be found in MCEB PUB 7.

#### Chapter 5 Frequency Actions – Exercise/Contingency

# 5-1. General

a. Unless otherwise specified herein, or in supplemental instructions or directives, frequency requests in support of short-term spectrum requirements will be consolidated by component commands (or their designated subcommands) and forwarded in SFAF by SPECTRUM XXI to JFMO-K. All requests will provide the minimum lead time(s) specified in Chapter 4 of this instruction.

b. Requests shall not, unless specifically directed by USPACOM or higher authority, be addressed to host nation agencies, Department of State, or U.S. Defense Attache Office activities.

c. All exercise and training requests will contain an appropriate releasability statement to allow for coordination with host nation regulatory agencies.

d. Short-term crisis/contingency requirements will be handled on a case-by-case basis. In all instances, such requests will be accompanied by sufficient justification to warrant coordination and processing under reduced/no lead time conditions.

e. Lack of prior planning and/or notification for routine scheduled exercises and training is not adequate justification for inadequate lead time. Short notice requirements submitted without adequate lead time will be considered only if there is a serious impact to the command.

f. Standard requirements in support of port visits will continue to be submitted in accordance with OPNAVINST C3128.3T (Ports Visits by U.S. Navy Ships to Foreign Countries).

g. Include JFMO PAC as an information addressee on all requirements.

h. Subject to all security constraints, JFMO-K is to be considered a "trusted agent" for any and all tactical, training, exercise or evaluation requirements in Korea so as to preclude undue delay in receipt of short term spectrum requirements.

# 5-2. Crisis/Contingency

a. Requests for spectrum support not provided for under existing OPLANs or directives during times of crisis or contingency will be submitted directly to JFMO-K with JFMO PAC as information addressee; and lead time permitting, shall contain the following SFAF items at a minimum:

- (1) 005
- (2) 110
- (3) 140
- (4) 141
- (5) 300/301
- (6) 400/401
- (7) 502
- (8) 803

b. When inadequate or no lead time exists, requests, subject to security constraints, shall be submitted directly to JFMO-K by the most expeditious means available to the requesting unit. If by electronic message, include JFMO PAC as information addressee. Such requests will, at a minimum, provide the following:

- (1) Brief narrative description of the nature of the requirement.
- (2) Number(s)/range(s) of frequencies required (e.g., 40/2000-10000 KHZ).
- (3) Geographical area(s) of involvement (specific site(s)/location(s) if known).
- (4) Date(s)/time(s) frequencies are required.
- (5) POC for additional information.

c. JFMO-K will respond to all requests either by the same mode as requests are received or by the most expeditious method available. JFMO PAC will be included as an information addressee.

#### 5-3. Training/Exercises

a. General. Spectrum management operations will comply with USPACOM INST 0708.1, and this regulation.

b. Purpose. The purpose of spectrum management in support of military exercises is to accommodate all required communications and electronics systems within a congested environment, both physical and electromagnetic, without suffering or causing degradation to such system(s) capabilities. To support this purpose, the following must be considered:

(1) Frequency requirements in support of exercises, regardless of composition or magnitude, must be identified from the lowest level of participating forces(s) upwards (e.g., CTE-CTU-CTG-CTF, etc.) as early on in the exercise planning phase as possible. This will allow for:

- (a) Complete and comprehensive identification of requirements.
- (b) Sequential chain-of-command concurrence/non-concurrence.
- (c) Lengthy coordination if/as required.
- (2) EMC must be assured before deployment to any congested operational area(s).

(3) All levels of command must actively encourage spectrum management participation throughout all exercise evolutions.

# Chapter 6 Systems Guidance

# 6-1. General

The following paragraphs provided general information and guidance on some common communications equipment.

# 6-2. Non-Licensed Devices

A non-licensed device is a low power intentional, unintentional or incidental radiator or device that does not require specific approval to operate. Non-licensed devices used outside the US&P require submittal of a DD Form 1494 through command channels to USPACOM for host nation supportability statement (see Chapter 3 of this regulation). There is no corresponding international non-licensed device classification. Any equipment that radiates RF energy in a foreign country requires host nation approval prior to operation.

# 6-3. Family Radio Service (FRS)

FRS is a FCC unlicensed low powered service that provides coverage up to 2 miles using frequencies within the FRS frequency pool. Use of FRS outside US&P is subject to host country and international regulations. Korea does not have an FRS, and has allocated to other users the frequencies in which FRS operates. Therefore, use of FRS radios within Korea is not authorized. You assume great personal risk operating radio transmitting devices in another country without permission.

# 6-4. General Mobile Radio Service (GMRS)

The GMRS is a FCC licensed high-powered radio service that provides coverage up to 5 miles. This service is expressly forbidden for use by government entities or employees in the line of duty. Additionally, the GMRS frequencies required for use are not approved for use in Korea. Again, *you assume great personal risk operating radio transmitting devices in another country without permission.* 

# 6-5. Commercial Off The Shelf (COTS)

COTS equipment purchased outside of Korea must be approved by the Korean government prior to operation. COTS equipment purchased in Korea should already have approval, but does not in all cases. Check with JFMO-K prior to entering any contractual agreement to purchase RF emitting equipment. Frequencies will not be assigned to non-approved equipment.

# 6-6. Trunking

The Korean Government has established the 380-400 MHz band for TRUNKED radio systems. No other communications services will be approved in this band.

# 6-7. Joint Tactical Information Distribution System/Multifunctional Information Distribution System (JTIDS/MIDS)

JTIDS is a communications, navigation and identification system intended to exchange surveillance and command and control information among various airborne and ground platforms. It operates in the 960-1215 MHz band using advanced synchronous time division multiple access, spread spectrum technology, frequency hopping and cryptographic security. JTIDS randomly hops on fifty-one center frequencies and also uses 1030 and 1090 MHz for identification. The system is jam resistant, providing joint interoperability, battlefield situational awareness, and information superiority through the exchange of tactical digital information link (TADIL) J and Link 16 messages among JTIDS and Multifunctional Information Distribution System (MIDS) terminals. USFK has designated 7AF as the Joint Information Control Officer to manage this network

# 6-8. Enhanced Position Locating Reporting System (EPLRS)

EPLRS provides secure, jam-resistant, near real-time data communications. Full, permanent spectrum access in Korea has never been approved. Single, low power, temporary frequencies can be granted on a case by case basis. Assignment lead times must be strictly followed.

#### Chapter 7 Satellite Coordination

# 7-1. General

Use of satellite communications is a multi-step process that consists of obtaining equipment certification and host nation supportability; establishing satellite access (to include channel assignment); and ensuring the assigned channel(s) frequencies are coordinated and approved for use at the location(s) where they will be used. Temporary frequency assignment on the apportioned channels will be coordinated in accordance with DOD, USPACOM INST 2400.1F and this regulation.

a. Equipment Approval. Before planning to install, deploy, or use a satellite terminal, the user must ensure that equipment has received approval from all host nations in where it will operate. Additionally, the terminal must be contained in an authorized Satellite Database.

b. Satellite Access. Obtaining satellite access involves forwarding a request for satellite access in a specified format, normally C4 (Command, Control, Communications, Computer) Access Request System (CARS), to the applicable satellite manager for the particular satellite or satellite system involved. The access approval usually specifies certain limiting parameters such as specific operating frequencies, allowed transmit power, bandwidth, antenna type, azimuth, elevation, and gain, and will outline times and dates on which the user may use the satellite. Satellite access approval does not constitute frequency authorization.

c. Frequency Authorization. Before actually radiating on any frequency specified for use by the access authority, the user must ensure all frequencies are cleared with the nations/areas of intended operation. Frequency clearance involves submission of a frequency request or proposal through the respective component spectrum management office, i.e., 7AF, who in turn submits the request to USFK J6, JFMO for coordination with the Korean Government. Satellite users are strongly advised that satellite access approval does not give authorization to radiate on the access frequency or frequencies. Likewise, frequency approval does not grant authority to access the satellite. Each process is separate and distinct.

# 7-2. Responsibilities

Responsibility for obtaining frequency approval falls upon both the user and the frequency manager as outlined below.

a. Requester/User. Obtain satellite access approval from the appropriate satellite manager. Deployment or use of satellite equipment should not take place until after the equipment is approved for use. The satellite manager will provide operational constraints (such as access frequency, power limitations, bandwidth, and antenna gain parameters) to the user. Additionally, access will be subject to host nation frequency approval. Submit frequency proposal(s) if prior frequency approval has not been obtained. The frequency proposal must provide the local frequency manager with the technical information necessary to obtain host nation frequency approval. Both satellite access and host nation frequency approval should be accomplished with sufficient lead time to meet all command and host nation time requirements.

b. Frequency Managers. Frequency managers are responsible for providing guidance and assistance in the following areas.

(1) Assist user in determining status of equipment certification and host nation supportability. Provide guidance where appropriate.

(2) Process frequency proposal(s) in proper format, through appropriate channels, within the required lead time according to Chapters 4 and 5 above.

(3) Notifying the user, satellite manager, and other addressees of host nation approval/disapproval of frequency and or equipment certification and supportability requests, including any limiting factors imposed by the host nation.

#### Chapter 8 Information Operations (IO)/ Electronic Warfare (EW)

## 8-1. General

a. IO/EW operations in Korea will adhere to guidance provided in DODD 3222.4 (EW and Command and Control Warfare (C2W) Countermeasures), USPACOM INST 0523.1 (Information Operations), and CFC PUB 3-4.2 (Electronic Warfare Operations-Korea).

b. During peacetime, all IO/EW operations must be coordinated with JFMO-K. JFMO-K will coordinate and obtain approval from the Korean Government via the JMFC.

## 8-2. Policy

In order to ensure compatibility of U.S. tactical C2W systems, and to avoid unintentional disruption of other U.S. or allied systems, all C2W/IO/EW operations must be closely coordinated.

#### 8-3. Procedures

All C2W/IO/EW users will:

a. Carefully plan operations and submit complete requirement for C2W/IO/EW that has been validated by the CFC EW staff a minimum of 90 days prior to the start of operations.

b. Provide "stop buzzer" information, to include name, rank, and position of immediate contact person, contact cell or land line number, and E-mail address, as applicable. Failure to provide this information may delay or limit approval.

c. Provide detailed C2W/IO/EW technical information to include location. Technical information should include power, frequencies, method of jamming if applicable. Location information must include latitude and longitude, altitude, etc.

# Chapter 9 Joint Spectrum Interference Resolution (JSIR)

# 9-1. General

This section provides a general overview of requirements for reporting interference incidents in Korea.

# 9-2. References

- a. CJCSI 3320.02C, JSIR
- b. CJCSM 3320.02A, JSIR Procedures

# 9-3. Scope

a. Effective EMI management is critical to obtaining and maintaining information superiority. Timely and accurate identification, verification, characterization, reporting, geo-location of the source, analysis, and resolution of EMI is essential to maintaining command and control.

b. As outlined in references (a) and (b) of paragraph 9-2, DOD established the JSIR program in October 1992. The JSIR program's focus is the reporting, analysis, and resolution of persistent, recurring interference incidents.

# 9-4. Policy

a. In Korea it is essential that an efficient, practical interference resolution program be established by USFK component commanders and representatives IAW references (a) and (b).

b. All components will resolve frequency interference problems at the lowest possible level using organic and/or other assets available. Those incidents that cannot be resolved locally will be referred up the chain of command, and resolution shall be attempted at each level. USFK J6 will initiate a request for assistance for problems that cannot be resolved at lower levels.

c. All interference will be reported, regardless of type, frequency, and source as outlined in references (a) and (b). This will enhance the JSIR central database maintained at the JSC, which can be used to determine trends in areas of interference. Every effort should be made to complete as much of the required information as accurately as possible in the initial JSIR report. However, the search for information should not delay the timely transmission of a report. Do not use service, agency or program specific terminology, acronyms, or abbreviations in the report. Terminology differences between the services create confusion and misunderstanding. Only USFK J6 endorses a JSIR report to higher authority outside the theater of operations.

d. JSIR reporting is required throughout the incident. EMI reports require submission of the following reports as outlined in reference (b) from the initial through final report.

(1) Initial JSIR Report. Once a user determines interference is EMI and not equipment malfunction, the user elevates the issue to higher HQ through an initial JSIR report. The initial JSIR report provides at least a characterization of the interference.

(2) Follow-Up or Feeder JSIR Report. After submission of the initial JSIR report, specific EMI resolution activities are set into motion. Further signal characterization, geo-location, information correlation, and the application of additional resources occur, based on the severity

and extent of the impact. Follow-up JSIR reports are submitted on an as-needed basis to apprise the user and all required addressees of any significant new information of a change in status.

(3) Final JSIR Report. The user, Combatant Command (COCOM), Joint Task Force (JTF), Defense agency, or service HQ (or as directed in reference (b)) submitting the initial JSIR incident, will initiate the final JSIR report when the EMI is resolved and the impacted frequency is returned to operational use. Final JSIR report may be submitted if the EMI has not been resolved, but the emanating source has been identified as a hostile transmitter. The decision by USPACOM may be made to take no further action. However, the expressed intent is to pursue EMI to successful resolution, which USPACOM J6 may pursue after conclusion of the initial EMI incident.

## Chapter 10 Spectrum XXI Automation

# 10-1. General

The Spectrum XXI (SXXI) software program is the primary frequency management automation tool used for generating and processing of SFAF transactions within DOD. The SXXI program was developed by the JSC under the direction of the Joint Chiefs of Staff as the standard DOD spectrum management information system. SXXI processes frequency requirements and assists in maintaining the DOD FRRS database via the worldwide regional server network. Alternate delivery methods may be utilized if data transfer via SXXI and regional servers is unavailable.

# **10-2.** System Description

a. SXXI FRRS is a DOD distributed database processing system operating within a worldwide secure computer network throughout the United States, European, Central Command, Atlantic, and Pacific theaters. The USPACOM FRRS consists of a RS in place at the Defense Enterprise Computing Center, Pearl Harbor Hawaii. SXXI FRRS relies on the Secure Internet Protocol Router for interconnectivity and access to the other RS facilities at the SECRET level.

b. The RS Facility is a computer system with the necessary hardware and software components to support USPACOM and the DOD frequency database. Each regional server (RS) is interconnected to allow for the maximum amount of automatic data transfer and replication of data sources, such as the FRRS, the Government Master File (GMF) as well as temporary assignments supporting the exercises and sustaining base operations.

c. At present, four RSs exist for users to access the FRRS and Government Master File (GMF) database (PACIFIC, EUROPE, CONUS and CENTCOM), the same information can be obtained from any server user's access. Access is granted to those users with valid Oracle accounts and assigned Job account. A central server (the fifth server) is restricted access to specific agencies for maintaining and building spectrum databases.

- d. SXXI Capabilities.
  - (1) Maintain background frequency proposal/assignment data.
  - (2) Manage frequency proposal/assignment transactions.
  - (3) Nominate and validate frequencies.
  - (4) Generate and maintain allotment plans.

- (5) Manage temporary frequency resources.
- (6) Engineer networks and links.
- (7) Perform EW deconfliction.
- (8) Prepare and process interference reports.
- (9) Analyze interference.
- (10) View and maintain JRFL data.
- (11) Maintain spectrum management reference information.

(12) Status tracking of frequency proposals.

e. SXXI Help.

(1) For guidance on the initial setup of SXXI and obtaining an account for trained personnel, contact JFMO-K.

(2) Additional assistance can be found at the SXXI Help Desk. Telephone (410) 573-7451, or DSN 281-2511 x7451. FAX numbers: Commercial (410)573-7350 and (410)293-2412 or DSN 281-2412.

#### 10-3. Use Of E-Mail Notifications

a. The use of e-mail notifications to inform all concerned of frequency related issues is encouraged to promote timely and efficient actions. The primary method of exchanging spectrum related data, (i.e., frequency proposals, modifications, deletions, etc.) is via the SXXI software program into a Regional Server (RS) addressed to specific parties of action/interest.

b. E-mail has the capability of transferring SXXI data from an offline terminal, where a user may not be capable of data exchanging frequency information via SXXI RS. This should not take the place of SXXI and should only be considered when user accounts are unable to access the RS.

## Appendix A References

# Section I. Required Publications

- ITU-R (Radio Communication Sector)
- DODD 3222.3 (Department of Defense Electromagnetic Environmental Effects (E3) Program)
- DODD 3222.4 (Electronic Warfare (EW) and Command and Control Warfare (C2W) Countermeasures)
- DODD 4630.05 (Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS))
- DODD 5100.35 (Military Communications-Electronics Board (MCEB))
- DODI 4650.01 (Policy and Procedures for Management and Use of the Electromagnetic Spectrum)
- CJCSI 3100.01B (Joint Strategic Planning System)
- CJCSI 3320.01B (Electromagnetic Spectrum Use in Joint Military Operations)
- CJCSI 3320.02D (Joint Spectrum Interference Resolution (JSIR)
- CJCSI 3320.03A (Joint Communications Electronics Operation Instruction)
- OPNAVINST C3128.3U (Ports Visits by U.S. Navy Ships to Foreign Countries)
- OPNAVINST 2400.20F (Electromagnetic Environmental Effects (E3) and Spectrum Supportability Policy and Procedures
- USPACOM INST 0508.2 (Joint Exercise Program)
- USPACOM INST 0523.1 (Information Operations)
- USPACOM INST 0708.1 (US PACOM Command Joint Electromagnetic Spectrum Management
- Instruction (USPACOM JESMI))
- MCEB Pub 7 (Frequency Resource Record System (FRRS), Standard Frequency Action Format (SFAF)
- UNC/CFC/USFK REG 105-25 (ROK/U.S. Joint Military Frequency Committee)
- CFC PUB 3-4.2 (Electronic Warfare Operations-Korea)

# Section II. Related Publications

- AFI 33-118 (Electromagnetic Spectrum Management)
- AFMAN 33-120 (Electromagnetic Spectrum Management)
- AK Pam 25-1 (Army Knowledge Management and Information Technology), Section VI, Para 22(Army Management of Electromagnetic Spectrum)
- AR 5-12 (Army Management of the Electromagnetic Spectrum)
- NTP 6 (Spectrum Management Manual)

USFK Regulation 25-6 (Amateur Radio Operations Control for US Personnel in the ROK)

## Glossary

## Section I. Abbreviations C-E **Communications-Electronics** CARS C4 (Command, Control, Communications, Computer) Access Request System CEOI **Communications Electronics Operating Instructions** CFC **Combined Forces Command** COCOM **Combatant Command** COTS Commercial Off the Shelf C2W **Command and Control Warfare** DES **Digital Encryption System** DISA Defense Information Systems Agency DMS Defense Message System DOD Department of Defense DSCS Defense Satellite Communications System EMC Electromagnetic Compatibility EMI Electromagnetic Interference EPLRS Enhanced Position Location Reporting System EW Electronic Warfare FDO Foreign Disclosure Office FRRS Frequency Resource Record System FRS Family Radio Service General Mobile Radio Service GMRS

- HQ Headquarters
- IO Information Operations
- ITU International Telecommunications Union
- JACS Joint Automated Communications-Electronics Operating Instructions System
- JCEOI Joint Communications-Electronics Operating Instructions

JFMO-K	Joint Frequency Management Office-Korea
JFP	Joint Frequency Panel
JMFC	Joint Military Frequency Committee
JSC	Joint Spectrum Center
JTF	Joint Task Force
JRFL	Joint Restricted Frequency List
JSIR	Joint Spectrum Interference Resolution
JSME	Joint Task Force Spectrum Management Element
JSMS	Joint Spectrum Management System
JTIDS	Joint Tactical Information Distribution System
KCC	Korean Communications Commission
LMR	Land Mobile Radio
MACOM	Major Command
MCEB	Military Communications-Electronics Board
NSS	National Security Systems
POC	Point of Contact
RADHAZ	Radiation Hazard
RF	Radio Frequency
RFI	Radio Frequency Interference
RS	Regional Server
ROK	Republic of Korea
SFAF	Standard Frequency Action Format
SOI	Signal Operating Instructions
SPINS	Special Instructions
UNC	United Nations Command
USFK	United States Forces Korea
USPACOM	Pacific Command

## US&P United States and Possessions

#### Section II. Terms

**Allocation**. Entry in a table of frequency allocations of a given frequency band for the purpose of its use by one or more radio communication services under specified conditions.

**Allotment.** Entry of a designated frequency channel in an agreed plan, adopted by a competent spectrum authority, for use by one or more administrations for radio communication service in one or more identified countries or geographical areas and under specified conditions.

**Assignment.** Authorization given by an administration for a radio station to use a radio frequency or radio frequency channel under specified conditions.

**C-E.** For spectrum management purposes, refers to equipment or systems designed to transmit/receive electromagnetic energy to accomplish its designed function.

**Data Item.** A data item is made up of a data item number, a data item security classification indicator (if required), and the data entry.

**Data Item Number.** A data item number (also referred to as a data item identifier or SFAF item) is used to identify each data item in a SFAF frequency assignment transaction. It consists of a unique three-digit number followed by a period and a space. For example, 005. is used to identify the record's security classification. Appendix A of the Military Communications Electronics Board (MCEB) Pub 7 contains a sequential listing of all valid data item numbers and applicable remarks/instructions.

**Electromagnetic Compatibility (EMC).** The ability of C-E equipment, systems, and subsystems, together with electromechanical devices (such as vehicles, engine generators, and electrical tools) to operate in their intended environments without suffering or causing unacceptable degradation of service due to unwanted electromagnetic radiation or response. EMC embraces both susceptibility and vulnerability.

**Electromagnetic Interference (EMI).** Any electromagnetic disturbance which interrupts/obstructs communications/electrical equipment. It can be induced intentionally, as in some forms of electronic warfare (EW), or unintentionally, as a result of spurious emissions and responses, intermodulation products and the like.

Electromagnetic Spectrum Management. The function whereby:

a. Validated frequency requirements are satisfied using standardized telecommunications engineering without degrading other validated users of the spectrum, both civil and military.

b. Control of the use of the electromagnetic spectrum is exercised.

**Frequency Assignment.** A frequency assignment is an authorization to operate, within prescribed parameters, electronic equipment that emits RF energy. The authorization contains the assignment's technical parameters and administrative information.

**Frequency Assignment Record.** A frequency assignment record is a grouping of data entries pertaining to an authorized frequency assignment stored within a database.

**Joint Frequency Management Office-Korea (JFMO-K).** The office designated by unified command or subordinate unified command representative to manage electromagnetic spectrum matters within the command or representative's geographic area of responsibility. In Korea, this office is JFMO-K.

**Joint Military Frequency Committee (JMFC).** Established in June 1972, The JMFC is composed of members from USFK Assistant Chief of Staff, J6, and Republic of Korea (ROK), Joint Chief of Staff. The JMFC is responsible for coordinating all spectrum management matters between UNC and CFC units and the KCC, to include controlling, coordinating and assigning all military radio frequencies. This includes the necessary coordination between US and ROK RF requirements within the Korean geographical area of responsibility.

**Proposal.** A formatted grouping of data entries used to request a new assignment, an update, or a deletion of a frequency assignment. A transaction always starts with Data Item 005. (Security Classification) and ends with the highest numbered data item used for that transaction.

**Spectrum Certification.** A formal statement provided by a responsible agency attesting that a radio frequency dependent device, equipment, or system has met EMC, and has reasonable assurance of the availability of sufficient frequencies for its intended use.

**Spectrum Supportability.** The authority to use the electromagnetic spectrum necessary for supporting the operation of a spectrum-dependent equipment or system during its expected life cycle. The system must be authorized to use spectrum that is, or shall be, available from system development, through developmental and operational testing, to actual operation in the electromagnetic environment. The assessment of an equipment or system having "spectrum supportability" requires, at a minimum, receipt of equipment spectrum certification. When operating overseas, host nation spectrum supportability approval is required.