Audit Report

COORDINATION OF ELECTROMAGNETIC FREQUENCY SPECTRUM AND INTERNATIONAL TELECOMMUNICATIONS AGREEMENTS

Report No. 99-009 October 9, 1998

Office of the Inspector General
Department of Defense

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Acronyms

CENTCOM	U.S. Central Command
COTS	Commercial Off-The-Shelf
DISA	Defense Information Systems Agency
EUCOM	U.S. European Command
ITA	International Telecommunications Agreement
MCEB	Military Communications and Electronics Board
MTW	Major Theater War
PACOM	U.S. Pacific Command
QDR	Quadrennial Defense Review
SPACECOM	U.S. Space Command
UFO	Ultra-High Frequency Follow-On
UHF	Ultra-High Frequency
USFJ	U.S. Forces Japan
USFK	U.S. Forces Korea

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October 9, 1998

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY
ASSISTANT SECRETARY OF DEFENSE (COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE)
DIRECTOR, DEFENSE INFORMATION SYSTEMS AGENCY
CHAIRMAN, BOARD OF DIRECTORS, ARMY AND AIR FORCE EXCHANGE SERVICE
COMMANDER, NAVY EXCHANGE SERVICE COMMAND
HEAD, MARINE CORPS EXCHANGE
DIRECTOR, JOINT STAFF

SUBJECT: Audit Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements (Report No. 99-009)

We are providing this report for review and comment. This report is the third in a series resulting from our Audit of Communications Capability Within DoD to Support Two Major Regional Conflicts Nearly Simultaneously. We considered management comments on a draft of this report in preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. Comments from the Office of the Under Secretary of Defense for Acquisition and Technology indicated that the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence and the Defense Information Systems Agency were reviewing guidance for the acquisition community. We have added those organizations as addressees for this report and request that they comment on the nature and expected completion dates of those reviews. The Office of the Under Secretary of Defense for Acquisition and Technology did not reply to Recommendation A.5. and is requested to do so. Also, we request additional information from the Joint Staff on Recommendations B.1. to B.5. The additional comments are requested by December 9, 1998.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Mr. Robert M. Murrell at (703) 604-9210 (DSN 664-9210) (e-mail rmurrell@dodig.osd.mil) or Ms. Nancee K. Needham at (703) 604-9209 (DSN 664-9209) (e-mail nkneedham@dodig.osd.mil). See Appendix I for the report distribution. The audit team members are listed inside the back cover.

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Report No. 99-009 October 9, 1998
(Project No. 6RD-0056.02)

Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements

Executive Summary

Introduction. This report is the third in a series resulting from our audit of DoD communications capability in major regional conflict scenarios. The report discusses coordination of electromagnetic frequency spectrum support from host nations and the management of international telecommunications agreements. Report No. 97-187, "Communications Capability Within DoD to Support Two Major Regional Conflicts Nearly Simultaneously," July 14, 1997, discussed military satellite communications and the requirements determination process for deliberate planning of national military strategy. Report No. 98-009, "Demand Assigned Multiple Access Terminals," October 14, 1997, discussed management of the fielding and funding of demand assigned multiple access terminals.

Audit Objectives. The overall audit objective was to evaluate DoD communications capabilities to support two major theater wars. Specifically, we evaluated the coordination of electromagnetic frequency spectrum requirements with host nations for deployed communications equipment and the management of international telecommunications agreements. The audit also reviewed the management control program as it applied to the overall audit objective.

Audit Results. At least eighty-nine telecommunications systems, including the spectrum-dependent components of other major systems, were deployed within the European, Pacific, and Southwest Asian theaters without the proper frequency certification and host-nation approval. In addition, the Military Exchanges were selling products that were not covered by or compliant with host-nation frequency agreements. As a result, communications equipment deployed without host-nation approval and frequency assignments cannot be utilized to its full capability for training, exercises, or operations without risking damage to host-nation relations and degraded performance. Further, the program costs associated with 15 of the 89 systems that cannot be fully utilized in foreign nations, totaled almost $39.5 billion (Finding A).

DoD did not periodically evaluate the validity of international telecommunications agreements with allied nations, provide a strategy of coordinating accountability of international telecommunications agreements throughout the communications management community, or ensure that the unified commands and Defense Information Systems Agency complied with existing policies and guidelines governing international telecommunications agreements. The most recent register of telecommunications agreements published by the Defense Information Systems Agency was over 4 years old. As a result, the ability to plan, manage, and properly allocate scarce telecommunications resources is hampered and telecommunications support to the two major theater war-scenarios may be impaired (Finding B). Both findings constitute material management control weaknesses. See Appendix A for details on the management control program.

Summary of Recommendations. We recommend establishing procedures for requiring spectrum supportability, including host-nation frequency assignment, as a part of the acquisition milestone process; updating the system acquisition training program; and making the military exchange services more responsive to overseas frequency spectrum limitations. We also recommend revising existing policies to assign responsibility for centralized management and oversight of international telecommunications agreements, and establishing a common database.

Management Comments. The Director, Joint Staff, concurred with the findings and recommendations and stated that national sale of the frequency spectrum and the associated international policy issues are at the root of the problem. More emerging technology demands worldwide, plus increasing international consensus for decreasing worldwide frequency spectrum set-asides for military use, will eventually negate the stated DoD goal of "spectrum supremacy." Global commercial interests will have coopted spectrum supremacy while eroding individual nations' regulatory authority. Proposing regulatory changes is of limited value when the policy predetermines failure. The Director, Acquisition Programs Integration, stated that the Office of the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) is actively addressing the adequacy of current policy and that new procedures are being developed to ensure that the requirements of spectrum management are met prior to programs going forward. The Director of Test, Systems Engineering and Evaluation, acknowledged that the potential exists for problems if systems are deployed overseas. The Director initiated actions to help ensure that testing for and compliance with spectrum management policies is addressed at every milestone during the development process. The Deputy Under Secretary of Defense (Acquisition Reform) did not comment on the recommendation to update training on obtaining frequency assignments.

The Army and Air Force Exchange Service, and the Navy affirmed that actions would be taken to coordinate with the Joint Frequency Management Offices to confirm frequency spectrum-dependent products are compatible with host nations, and to cease selling noncompliant products.

Audit Response. In response to management comments, we revised portions of the report as it was necessary. We agree with the Director, Joint Staff, that loss of the available frequency spectrum is a major policy issue for the Department. We request additional comments from the Under Secretary of Defense for Acquisition and Technology; the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence; the Director, Defense Information Systems Agency; and the Director, Joint Staff, provide additional comments by December 9, 1998.

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Part I - Audit Results

Audit Background

This report is the third in a series resulting from our audit of "Communications Capability Within DoD to Support Two Major Regional Conflicts Nearly Simultaneously." The report discusses coordination of electromagnetic frequency spectrum support from host nations and the management of international telecommunications agreements (ITAs). Report No. 97-187, "Communications Capability Within DoD to Support Two Major Regional Conflicts Nearly Simultaneously," July 14, 1997, discussed military satellite communications and the requirements determination process for deliberate planning related to the national military strategy. Report No. 98-009, "Demand Assigned Multiple Access Terminals," October 14, 1997, discussed the management of the fielding and funding of access terminals.

Bottom-Up Review. In March 1993, the Secretary of Defense initiated a comprehensive review of the nation's defense strategy. The Secretary requested the review because of the dramatic changes that had occurred in the world as a result of the end of the cold war and the dissolution of the Soviet Union. The report, "Bottom-Up Review," was issued in October 1993. The report provides direction for changing the focus from a strategy to meet a global Soviet threat to one designed for aggression by regional powers. The report states that the United States must "field forces capable, in concert with its allies, of fighting and winning two major regional conflicts that occur nearly simultaneously."

The two major regional conflict scenarios that were selected for planning and assessment purposes included aggression by Iraq against Kuwait and Saudi Arabia, and aggression by North Korea against South Korea. Those scenarios were to serve as baselines by which to assess the capabilities of U.S. forces.

Quadrennial Defense Review. In May 1997, the Secretary issued the "Report of the Quadrennial Defense Review (QDR)." The report provides a comprehensive assessment of the nation's defense requirements. That assessment was based on emerging threats to U.S. security over the next two decades and a strategy that maintains American leadership, engagement, and military superiority into the 21st century. The QDR strategy had three main elements:

- the ability to shape the international environment by promoting regional stability, preventing or reducing conflicts and threats, and deterring aggression and coercion on a day-to-day basis in key regions of the world;

- the need to respond quickly to the full spectrum of crises, from conducting concurrent smaller-scale contingency operations, to fighting and winning two major theater wars; and

- the mandate to prepare now to meet the security challenges of an unpredictable future and discourage prospective rivals from embarking on a military competition with the U.S.

During the QDR, the terminology "Two Major Regional Conflicts Nearly Simultaneously" was changed to "Two Major Theater Wars with Overlapping

Time Frames." The remainder of this report will replace the designation, "two major regional conflicts," with "two major theater wars (MTWs)."

MTWs and Other Contingencies. The current defense strategy determined by the QDR is that U.S. forces must be capable of fighting and winning two MTWs that occur within overlapping time frames. In addition, the QDR stated that the U.S. needs to place greater emphasis on maintaining continuous overseas presence to shape the international environment and to be able to respond to several smaller-scale contingencies and asymmetric threats. Further, the report states that the U.S. must place more emphasis on preparing for the future to defend against new capabilities. Future planning must achieve new levels of effectiveness in contingencies.

Information Superiority. Information superiority has been determined to be a major factor in operations planning. The QDR defines information superiority as the ability to collect and distribute an uninterrupted flow of information to U.S. forces throughout the battlefield while denying the enemy's ability to do the same. According to the Secretary's message in the QDR, "the key to the success is an integrated 'system of systems' that will give them superior battlespace awareness, permitting them to dramatically reduce the fog of war." The system of systems:

> . . . will integrate intelligence collection and assessment, command and control, weapons systems, and support elements. It will connect the commanders to the shooters and suppliers and make available the full range of information to both decision-makers in the rear and the forces at the point of the spear.

Telecommunications in Two MTWs. To accomplish the national military strategy of preparing for two MTWs, the U.S. military forces have established a specific operational objective of defeating an enemy quickly, decisively, and with few casualties. The objective relies heavily on the ability to transfer information critical to the warfighter at rates superior to the enemies' ability to do so. Communications resources transfer information to the warfighter by terrestrial wires, line-of-sight microwave broadcast, fiber optic cables, satellite relays, and wireless devices.

Electromagnetic Frequency Spectrum Management in the International Community. The International Telecommunications Union, an almost 200 nation member organization, regulates the radio frequency spectrum worldwide and promotes international cooperation in the efficient use of telecommunications. A key rule of the International Telecommunications Union is that the electromagnetic frequency spectrum is a national resource to be managed by each country. Granting approval to transmit within a country and protecting local receivers from electromagnetic interference are key issues at the discretion of each host nation. In ever-increasing global competition for limited frequency spectrum, the DoD must provide for mutual compatibility and agreement regarding use of the electromagnetic frequency spectrum in the international community. The DoD recently realigned the responsibilities for spectrum management, including those responsibilities pertaining to host-nation agreements for spectrum use. The procedures that DoD developed for establishing host-

nation agreements for spectrum use are referred to as the JF-12 process and are described in Appendix D.

The Office of Spectrum Management. DoD Reform Initiative Directive No. 31, "Realignment of DoD Spectrum Management Responsibilities," March 23, 1998, directed that:

- The Office of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence, designate a Special Assistant for spectrum management to carry out policy, planning, and oversight functions associated with DoD spectrum.

- The Director, Defense Information Systems Agency (DISA), establish an office of spectrum analyses and management to coordinate joint spectrum matters and to assist in strategic spectrum planning.

- The Military Departments co-locate their respective frequency management offices with the DISA office of spectrum analyses and management to facilitate coordination and development of joint positions for DoD spectrum management.

The Office of Spectrum Management reported specific issues and its plan of action to the Deputy Secretary of Defense in August 1998.

Audit Objectives

The overall audit objective was to evaluate DoD communications capabilities to support two MTWs. Specifically, we evaluated the coordination of electromagnetic frequency spectrum support from host nations for deployed communications equipment and the management of international telecommunications agreements. The audit was limited to the DoD regulations and procedures established to manage electromagnetic frequency spectrum within the parameters of public and international policy. The audit also reviewed the management control program as it applied to the overall audit objective. See Appendix A for a discussion of the audit scope, methodology, and a review of the management control program. See Appendix B for a summary of prior coverage and Appendix C for a glossary of technical terminology used in the report.

Finding A. Coordination of Electromagnetic Frequency Spectrum with Host Nations

At least eighty-nine telecommunications systems, including the spectrum-dependent components of other major systems, have been deployed within the European, Pacific, and Southwest Asian theaters without the proper frequency certification and host-nation approval. This occurred because systems acquisition program managers have not complied with DoD Directive 4650.1 and DoD Regulation 5000.2-R requiring submission and completion of DD Form 1494 during the conceptual, experimental, developmental, and operational stages of system acquisition. As a result, communications equipment was deployed without host-nation approval and frequency assignments cannot be utilized in foreign nations without risking damage to host-nation relations and degraded performance of U.S. or host-nation equipment.

Electromagnetic Frequency Spectrum

The electromagnetic frequency spectrum is analogous to a biological ecosystem; composed of small, medium, and large subecosystems. Just as the introduction of a new species into an ecosystem can cause environmental damage, so can the attempt to accommodate a multitude of spectrum-dependent communications and electronics systems in the electromagnetic frequency spectrum. Spectrum support for a piece of equipment implies that a user will be able to operate the equipment without interference and will have protection if harmful interference is detected. The DoD spectrum support is coordinated using DD Form 1494 and approved in the JF-12 process and document. See Appendix D for further details on the J-12 process and DD Form 1494.

Policies and Procedures

DoD Directive 4650.1, "Management and Use of the Radio Frequency Spectrum," June 24, 1987, and DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs and Major Automated Information System Acquisition Programs," March 15, 1996, provide policies and procedures for acquiring systems that use frequency spectrum. The guidance requires that all systems and equipment (including commercial-off-the shelf) that emit or receive electromagnetic (hertzian) waves to determine spectrum supportability prior to initiating cost estimates for development or procurement. See Appendix E for a discussion of the policies and procedures. Further, host nations have sovereign rights over the frequency bands in their countries and frequency usage is specifically regulated. Therefore, the use of U.S. commercial

and military communications systems in host nations requires coordination and negotiation by the U.S. including approvals and certifications.

Electromagnetic Frequency Spectrum Management

Frequency spectrum management is the process where operating frequency requirements are requested, reviewed, and assigned for operation of systems emitting or receiving hertzian waves. The objective of spectrum management is to enable those electronic systems to perform functions in the intended environment without causing or suffering unacceptable interference. In DoD, the following conditions have necessitated more emphasis on our ability to obtain spectrum support as rapidly as possible.

- Competition for use of electromagnetic spectrum has increased in certain frequency bands where technology is mature.

- There have been national sales of the frequency spectrum and the associated international policy issues.

- Because technology demands are increasing worldwide and the consensus for decreasing worldwide frequency spectrum for military use.

- Shortened acquisition cycles have resulted from greater reliance on commercial off-the-shelf (COTS) technology that requires frequency spectrum use.

- Reliance on wireless technology has increased in both civil and military functions.

- The nature of military operations and doctrine have changed because of rapidly changing technology.

Fielded Equipment

At least eighty-nine telecommunications systems, including the spectrum-dependent components of other major systems, have been deployed to overseas theaters U.S. Central Command (CENTCOM), U. S. European Command (EUCOM), and U.S. Pacific Command (PACOM) without the proper frequency certification and host-nation approval for operation of the systems. See Appendix F for information on the systems in question.

CENTCOM. Four systems were deployed to the Southwest Asian theater without proper frequency certification and host-nation approval as required by the JF-12 process. Two systems, the SPS-40 and SPS-49 radar systems, are unusable because the equipment operates on a frequency that interferes with the Bahrain telecommunications services. The SPRINT Sailor Phone, a commercial telephone system used by the U.S. Navy, interferes with the Bahrain mobile phone system.

Further, DISA Commercial Satellite Communications Initiative contracted for a transponder for use in Southwest Asia at the request of CENTCOM. In December 1996, the Air Force leased a terminal, for $1.4 million annually, to use the transponder before host-nation approval for landing rights had been negotiated. Saudi Arabia did not approve the landing rights. As a result, the $1.4 million terminal was not used and the lease expired.

EUCOM. Seven systems were deployed into the European theater without proper frequency certification and host-nation approval. Frequency supportability for those seven systems (such as the Predator Unmanned Aerial Vehicle and the Joint Surveillance and Target Attack Radar System) has been denied, and EUCOM is unable to operate any of those systems in the European theater. Use of Predator in Bosnia was a one-time exception, since open spectrum access was negotiated in the Dayton Accords.

European countries, like the U.S. Government, are selling frequency spectrum to commercial users to raise government funds. As a result, available frequencies are becoming an increasingly scarce resource. As the resources become scarce, the European countries are very protective of their frequencies. For example, Germany has passed a law which states that, if a piece of equipment accesses a frequency that has not been approved, the German government can confiscate the equipment, and fine or imprison the user or country representative.

PACOM. Seventy-eight systems were deployed into the Pacific theater without proper frequency certification and host-nation approval. In Korea, 50 U.S. Forces Korea (USFK) systems are in theater without frequency supportability and in Japan, 28 U.S. Forces Japan (USFJ) systems lack frequency supportability.

Program Costs for Systems Affected by the Lack of Frequency Supportability

To demonstrate that large investments are being put at risk by inadequate planning, we determined that program costs totaled more than $39 billion for 15 of the 89 systems whose full use is hampered in some foreign nations because frequency certification and host-nation approval had not been obtained. We did not obtain the costs for all 89 systems because of the lack of readily available records, audit resource constraints, and our determination that the costs for the 15 systems amply illustrated the point that substantial investments are involved. See Table 1 for the costs associated with the fifteen programs.

Table 1. Research, Development, Testing, & Evaluation and Procurement Costs for Systems Affected by Lack of Frequency Supportability (in millions)

System Name	Prior Years	Fiscal Years 1998-2003	Future Years	**Total**
AN-SPS40[1]	$ 62.4	$ .7	$ 0	**$ 63.1**
CSCI[2]	43.4	81.4	7.2	**132.0**
EHF SATCOM[3]	231.9	401.7	0	**633.6**
GBS[4]	59.0	250.0	706.0	**1,015.0**
JSTARS[5]	4,240.0	2,607.0	262.0	**7,109.0**
JTIDS[6]	1,545.1	489.4	144.0	**2,178.5**
JTUAV[7]	259.5	118.4	0	**377.9**
MILSTAR[8]	11,838.2	1,838.2	308.7	**13,863.5**
Patriot	7,424.6	2,910.0	2,134.0	**12,468.6**
Pioneer	187.0	17.0	0	**204.0**
Predator	-	-	-	**898.7[12]**
SPS-49[9]	20.3	24.9	0	**45.2**
Trojan	45.1	20.2	0	**65.3**
UFO 4 and 8[10]	198.0	198.0	0	**396.0**
VSC-7[11]	14.7	27.7	0	**42.4**
				$39,492.8

[1] Two-dimension air search radar
[2] Commercial Satellite Communications Initiative (procurement costs only)
[3] Extremely high frequency satellite communications
[4] Global Broadcast Service
[5] Joint Surveillance/Target Attack Radar System
[6] Joint Tactical Information Distribution System
[7] Joint Program Tactical Unmanned Aerial Vehicle
[8] Military Strategic and Tactical Relay System
[9] Shipborne air search radar
[10] Ultra high frequency follow-on (procurement costs only)
[11] A manpack and vehicular satellite ultra high frequency terminal
[12] Source provided an aggregate cost rather than fiscal year costs

Timeliness in the Preparation of the DD Form 1494

Acquisition programs use "milestones" to measure progress. Electromagnetic frequency certification is usually managed according to "stages" of development of communications systems. The graphic below shows the correlation between the various stages and milestones.

Table 2. Frequency Allocation Stage and Acquisition Milestone Matrix

FREQUENCY ALLOCATIONS
REQUIRED THROUGH PROGRAM LIFE CYCLES
DoD SYSTEM ACQUISITION PHASES

	PHASE 0	PHASE I	PHASE II	PHASE III
DETERMINING MISSION NEEDS & IDENTIFYING DEFICIENCIES	CONCEPT EXPLORATION	PROGRAM DEFINITION & RISK REDUCTION	ENGINEERING & MANUFACTURING DEVELOPMENT	PRODUCTION, FIELDING/ DEPLOYMENT, & OPERATIONAL SUPPORT
MILESTONE*	0	I	II	III
FREQUENCY ALLOCATION STAGES**	(CONCEPTUAL)	(EXPERIMENTAL)	(DEVELOPMENTAL)	(OPERATIONAL)
DEVELOPMENT ACTIVITIES	o CONCEPT STUDIES o EVALUATE ALTERNATIVE CONCEPTS	o PROTOTYPING o DEMONSTRATIONS o REDUCE TASKS o TRADE OFFS o INTEROPERABILITY CONSIDERED o DEVELOPMENTAL TEST & EVAL	o COMPLETE COST-EFFECTIVE DESIGN o VALIDATE PRODUCTION PROCESSES o DEMONSTRATE CAPABILITIES BY OPERATIONAL TESTING & EVAL o LRIP	o FULL SCALE PRODUCTION o DEFICIENCIES CORRECTED o OPERATIONAL SUPPORT o ANNUAL OPERATIONAL TESTING

DoD Regulation 5000.2R, Change 2 dated 6 Oct 1997
**SPECTRUM ALLOCATION REQUEST (DD FORM 1494) may be initially submitted at any life cycle stage

Program managers failed to initiate the DD Form 1494 by the end of the Conceptual Stage and, further, did not complete the process by the Operational Stage to assure frequency supportability was in place before the equipment was fielded. It is important that supporting commands and program managers identify all potential theaters for deployment.

Commercial-Off-The-Shelf (COTS) Equipment

Not all COTS equipment designed to operate in the continental United States frequency bands can be used overseas. Purchasers of COTS equipment in the U.S. are not considering the frequency implications if the equipment is deployed overseas. The acquisition of COTS equipment does not change the requirement for frequency spectrum support. For example, U.S. Forces Japan (USFJ) components in mainland Japan spent in excess of $480,000 for pagers to provide key base personnel and hospital representatives a paging system to reach stand-by personnel in the surrounding area. The pagers were delivered before it was determined that they were not cleared for use in Japan. Frequency authorization could not be granted because the pagers operate in a segment of the frequency spectrum reserved for aeronautical use. Utilization of these pagers would not only interfere with the aeronautical band but would be in direct violation of our treaty with Japan. There is no guarantee that those assets will ever be useable in Japan.

Army and Air Force Exchange Service. The Army and Air Force Exchange Service was further complicating the frequency spectrum management problem by selling COTS equipment and cordless phones that were not authorized for use in Japan. Those cordless telephones, sold by the Army and Air Force Exchange Service in Okinawa, interfered with Japanese emergency frequencies. When notified of the problem by frequency management officials, Army and Air Force Exchange Service personnel stated they would continue to sell the cordless telephones, but with warning signs that the telephones could not be used in Japan. However, when we visited Army and Air Force Exchange Service stores, we did not see any warning signs displayed.

In Europe, the Army and Air Force Exchange Service was selling infant crib monitors manufactured in the U.S. The use of those monitors in Germany caused interference with the local emergency telephone frequencies. The Army and Air Force Exchange Service policy to continue selling communications devices with frequencies not authorized in host nations promotes the potential illegal use of equipment. Further, this practice creates additional friction with host nations and complicates the mission of unified commands' frequency management offices.

DD Form 1494 Data. The data collected by the DD Form 1494 is just as necessary for the system review of COTS systems as it is for any other DoD system acquisition. The DD Form 1494 for a COTS system must be provided to the system review process far enough in advance of the actual acquisition to allow for spectrum support to be obtained. A DD Form 1494 is required for each COTS system procurement.

Mission Impact

Telecommunications systems and spectrum dependent-components of other major systems have been deployed into overseas theaters without completion of the JF-12 process and therefore in the absence of host-nation frequency certification and frequency assignments. The unified commands are unable to use the equipment for training, exercises, or actual contingencies without risk of damaging relations with the host nation or degrading U.S. or host-nation equipment

performance because the equipment causes interference with other host-nation systems sharing the frequency band. In some cases, fully functional equipment sits idle while its useful life expires.

Host Nation Denials of Frequency Assignments. Host nations have denied frequency assignments for U.S. systems because of the interference caused to other in-country telecommunications systems. Those systems may include, for example: broadband users; cellular and other mobile phones; commercial telephone systems; civil aviation, civil defense, and other civil bands; government bands; meteorological bands, military bands, radar, and satellite systems. Failure to complete the JF-12 process results in extraordinary, although usually unsuccessful, efforts by the unified commands or theater frequency managers to attempt to gain spectrum access after the equipment arrives in theater.

MTW Scenarios. The unified commands have developed operations plans for the MTW scenarios that include all units and equipment that will be deployed into a theater in the event of an MTW. However, an unknown number of the systems that will be arriving into the theaters during a contingency will not be useable for the mission. The following examples represent the impact on the two-MTW scenario when equipment is deployed overseas without host-nation frequency spectrum approval.

Ultra-High Frequency Follow-On (UFO) Satellites. Worldwide ultra-high frequency (UHF) user communications requirements are rapidly increasing. New communications networks are emerging and UHF radios are inexpensive and capable of meeting Service requirements. The DoD is fielding the UFO satellite constellation. UFO is a proposed constellation of nine advanced UHF military telecommunications satellites that will support a worldwide network, serving U.S. ships at sea and a variety of fixed and mobile terminals. The objective of the constellation is to provide two satellites per footprint with a mix of 5 and 25 kilohertz channels.

The transition to the new UFO constellation has resulted in a decline in the number of UHF satellite accesses with frequencies cleared in Japan. The current number of authorized channels does not meet the UHF satellite communications requirements of USFJ, and continues to result in frequent denial and preemption of UHF satellite communications access. The entire Pacific UHF constellation includes only ten-25 kilohertz channels cleared for use in Japan, with four-25 kilohertz channels cleared for use in Japanese territorial waters. One of the UFO satellites with a footprint covering Japan is the UFO-4 satellite.

In the current UFO-4 frequency plan, there are only two-25 kilohertz channels authorized for use in Japan. The JF-12 process was not initiated far enough in advance of the launch of UFO-4 to obtain frequency approvals for new channels from Japan. Further, UFO-8, another satellite with a footprint to cover Japan was launched in the Pacific theater in February 1998. As of December 1997, the program manager (Navy) had not initiated the required actions to obtain Japan frequency clearances for UFO-8. The MTW strategy depends on the UHF satellite support of the tactical warfighter. Without approved Japanese frequency clearances for UFO-8, the mission of the tactical warfighter is degraded. Total costs associated with UFO-4 and UFO-8 are $396 million.

Patriot Missile System. The mission of Patriot battalions is to provide Air Defense protection from all types of airborne threats to critical theater assets and forces. The objectives of Patriot operations at all levels are to disrupt and destroy the enemy's ability to mount an effective air operation, thus retaining command and control capabilities, the freedom to maneuver, and the ability to support operations for U.S. forces.

The Patriot system was designed to be deployed into various theaters of war, however, acquisition personnel did not consider the deployment of the system to host nations in regard to the use of the frequency spectrum.

Several components of the Patriot system require frequency supportability; radios, radar, data link terminals, and seekers. The South Korean Ministry of Information and Communications has denied permanent frequencies for the Patriot system until U.S. Forces Korea (USFK) has provided the exact frequency bands and frequency numbers required. Temporary frequencies have been assigned on a 90-day basis to operate the Patriot UHF radios. Those temporary frequencies have to be periodically deconflicted because of interference with Korean civilian cellular phone users. If denied the use of those temporary frequencies, the Patriot batteries will not be able to communicate data between the firing units and the battalion fire control center.

The Patriot radar systems have also been assigned temporary frequencies on a 90-day basis. If those frequency assignments are ever denied, the battalion cannot perform its mission because of inoperable communications links.

The Patriot battalion uses four additional frequency-dependent electronic systems: the data link terminal, up and down link to the missile equipment, multimode seeker, and the missile seeker. Those systems operate in frequencies that conflict with the Korean civil band. If denied the use of those frequencies, the battalion cannot perform its mission because of inoperable communications links.

DoD Regulation 5000.2-R Training. DoD Regulation 5000.2R states that DoD systems and equipment shall comply with applicable national and international spectrum management policies and regulations. However, the regulation does not provide guidance relating to system acquisition training for personnel involved in the requirements development, acquisition, and deployment of systems and equipment outside the continental U.S. Spectrum certification, frequency assignments, and host-nation approvals are not considered early enough in the frequency certification process by acquisition managers. A program may reach the developmental or operational stages before frequency certification from a host nation is determined necessary. At that time, the acquisition process may be too near completion to establish certification before the equipment is ready to be deployed overseas. Personnel involved in the requirements development, acquisition, and frequency certification process need to be trained on the requirements of the JF-12 process and on potential problems that may be encountered when equipment is deployed overseas.

Conclusion

Increasing demands on radio frequency spectrum to support emerging technology and the increased propensity of national governments (including the U.S.) to sell the radio frequency spectrum to various international commercial interests create spectrum congestion, increase potential for degraded telecommunications services and harmful interference, and impact the DoD goal of spectrum supremacy. Electromagnetic frequency spectrum supportability must be part of the requirements development and acquisition process. Electromagnetic compatibility cannot be assumed by requirements developers and acquisition managers, yet those managers should assume that U.S. communications systems may be deployed anywhere in the world. The requirements developers and acquisition managers must plan and program early in the acquisition process for electromagnetic compatibility analysis to ensure successful integration of communications equipment into the operating force. Further, electromagnetic frequency spectrum management must also play a proactive role in doctrine development and equipment design. Electromagnetic compatibility analysis must be planned for early in the acquisition process to help facilitate successful integration of communications equipment into the operating forces worldwide.

Recommendations, Management Comments, and Audit Response

We recommend that the Under Secretary of Defense for Acquisition and Technology obtain input from the Assistant Secretary of Defense for Command, Control, Communications and Intelligence, and the Director, Defense Information Systems Agency, for the purpose of establishing procedures in DoD Directive 4650.1, DoD Directive 5000.1, DoD Regulation 5000.2-R, or other appropriate guidance documents to:

A.1. Require acquisition program managers to obtain Military Communications and Electronic Board spectrum supportability guidance prior to each acquisition milestone, including Milestone 0, for all systems and equipment that emit or receive hertzian waves. In addition, host-nation coordination should be obtained via the Military Communications and Electronics Board JF-12 process prior to Milestone III.

A.2. Track and validate the submission of the DD Form 1494, and completion of the JF-12 process, and frequency assignment by a host nation, for all commercial off-the-shelf purchases of systems and equipment that emit or receive hertzian waves.

A.3. Establish procedures that require each acquisition milestone decision authority to certify completion of the appropriate JF-12 process and compliance, with Military Communications and Electronics Board guidance, prior to approval to proceed to the following acquisition phase.

A.4. Initiate the JF-12 process for all systems and equipment that emit and receive hertzian waves, that are in acquisition Milestone 0 or later.

Under Secretary of Defense for Acquisition and Technology Comments. The Director of Acquisition Program Integration, Office of the Under Secretary of Defense for Acquisition and Technology, stated that DoD Directive 5000.1 and the accompanying DoD Regulation 5000.2-R provide only broad general guidance and were never intended to provide detailed guidance on matters such as those addressed in this report. However, the Director further stated that the Office of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence is actively addressing the adequacy of both the policy and procedures contained in the existing directives. Two newly formed spectrum offices are developing new procedures to ensure that the requirements identified in DoD Directive 5000.1 and DoD Regulation 5000.2-R are met prior to programs going forward.

The Director of Test, Systems Engineering and Evaluation, Office of the Under Secretary of Defense for Acquisition and Technology, stated that their office did not acquire any of the systems identified in the report, and that the acquisition programs they manage are exempt from DoD Directive 5000.1. However, the Director acknowledged that the potential exists for problems if any acquisitions are deployed overseas. The Director initiated actions to ensure that acquired systems can be operated under the spectrum management laws of any potential host-nation. The Director will modify their test project directives to require a certification of compliance with DoD Directive 4650.1 at each program milestone, and require annual reporting of the status of DD Form 1494 and the JF-12 process. In addition, the Director will require all Central Test and Evaluation Investment Program managers to report on the DD Form 1494 status.

Audit Response. Based on management comments, we revised the recommendations to the Under Secretary of Defense for Acquisition and Technology. The Director, Acquisition Program Integration, comments indicated that his office looked to the new offices for spectrum management in the Office of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence, and in the Defense Information Systems Agency to determine what additional guidance is needed on these technical issues. We request those components to provide comments on the scope of their reviews, when their reviews will be completed, and how results will be promulgated. Also, the comments from the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence should address the U.S. Central Command comments that recommended replacing the JF-12 process with a U.S. Government and Industry Spectrum Strategy.

The Director, Test, Systems Engineering and Evaluation, comments on DoD Directive 4650.1 are responsive but did not specify a completion date. We request that a date be provided in response to the final report.

We recommend that the Deputy Under Secretary of Defense (Acquisition Reform):

A. 5. Update DoD system acquisition training to include a section on the JF-12 process to obtain spectrum certification, frequency assignments, the certification of spectrum support, and frequency assignment approvals by host nations for the use of U.S. systems.

Deputy Under Secretary of Defense (Acquisition Reform) Comments. The Deputy Under Secretary of Defense (Acquisition Reform) did not respond to the draft report. We recognize that guidance and procedures will be changing as the result of other actions that are taken in response to this report or were already in progress. However, we still seek a commitment that acquisition community training will be enhanced and adjusted to help improve performance in this vital area. We request the Under Secretary of Defense (Acquisition Reform) provide comments in response to the final report.

We recommend the Chairman, Board of Directors, Army and Air Force Exchange Service; the Commander, Navy Exchange Service Command; and the Head, Marine Corps Exchange, direct their respective exchanges to:

A.6. Cease selling frequency spectrum-dependent products which interfere with host-nation frequencies; and

A.7. Coordinate with Joint Frequency Management Offices within the unified commands to determine which frequency spectrum-dependent products can be used and sold within a host nation without interfering with the host-nation frequencies.

Army and Air Force Exchange Service Comments. The Chairman, Board of Directors, Army and Air Force Exchange Service, concurred with the finding and recommendations. The Chairman stated that actions would be taken to coordinate with the Joint Frequency Management Offices to confirm frequency spectrum-dependent products are compatible with host nations. Further, the Chairman stated that stocks would be reviewed to ensure conformance to the frequencies of the host-nation and noncompliant stocks will be transferred.

Navy Comments. The Deputy Assistant Secretary of the Navy, Planning, Programming, and Resources, Office of the Assistant Secretary of the Navy, Research, Development, and Acquisition, provided comments for the Navy Exchange Service Command and the Head, Marine Corps Exchange. The Navy and Marine Corps concurred with Recommendations A.6. and A.7. The Navy Exchange Command will coordinate with the Joint Frequency Management Offices to determine which frequency spectrum-dependent products are not in compliance with frequencies of host countries. The Navy agreed to take necessary actions to cease selling noncompliant products. The estimated completed date for the Navy is September 30, 1998.

The Marine Corps agreed to take action to cease the sale of products interfering with host-nation agreements and coordinate with the respective Joint Frequency Management Office in determining acceptable products by June 30, 1998.

Other Management Comments

Director, Joint Staff Comments. The Director, Joint Staff, provided comments on the finding. Also, comments from the Joint Spectrum Center are included in the Joint Staff response.

Audit Response. The Joint Staff provided a number of technical changes to the report narrative, most of which we added to the report.

United States Central Command Comments. The U.S. Central Command stated that the SPS-40 and SPS-49 [radars] are, in fact, usable in theater. However, the radars are not usable within 50 nautical miles of the Bahrain Airport because of interference with its land-based systems. In addition, CENTCOM stated that the treatment of the frequency spectrum as a marketable asset has stripped the JF-12 host-nation coordination process of usefulness. CENTCOM believes that the JF-12 process should be replaced with a U.S. Government and Industry Spectrum Strategy. This strategy would provide a means for the unified commands to approach host-nations for spectrum usage in coalition warfighting.

United States Pacific Command Comments. The U.S. Pacific Command stated that the frequency certification process needs to be addressed early in the program and that acquisition personnel need to be more involved in frequency certification. PACOM disagreed with the title of Appendix F, stating that it implies that all of the systems in the table are or have been deployed into PACOM before being coordinated with the host governments. PACOM stated that those systems are in or have completed coordination with the host nations.

Audit Response. We considered the CENTCOM and PACOM management comments when preparing the final report and made suggested changes we believed necessary. We did not revise the report to replace the JF-12 process with a new policy because that is beyond the scope of the audit. Also, the new Office of Spectrum Management is the appropriate office for making such a major policy change and we referred the comments on replacing the JF-12 process to that office through the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence. We obtained the information on the systems deployed without frequency spectrum supportability from USFK and USFJ staff officials during the course of the audit. The title of Appendix F states that those systems are without frequency spectrum supportability in the host-nations and the current status, as of the time of the audit, is shown in the column under "Host-Nation Comments." We were unable to consider the PACOM objections because PACOM did not provide any support documentation.

Finding B. International Telecommunications Agreements

DoD did not periodically evaluate the validity of ITAs with allied nations, provide a strategy of coordinating accountability of ITAs throughout the communications management community, or ensure that the unified commands and DISA complied with existing policies and guidelines governing ITAs. The 1994 DISA register of ITAs showed a total of 377 ITAs related to the 4 unified commands we reviewed. However, we were only able to identify a total of 117 ITAs (51 were recorded on the DISA register and 66 were not) at the 4 commands we visited. This occurred because there is a lack of centralized management, centralized oversight, and monitoring mechanisms for ITAs within DoD. As a result, the ability to plan, manage, and properly allocate scarce telecommunications resources is hampered and telecommunications support to the two MTW scenario may be impaired.

Communications Support For Two MTW

Inspector General, DoD, Report No. 97-187, "Communications Capability Within the DoD to Support Two Major Regional Conflicts Nearly Simultaneously," July 14, 1997, identified DoD-owned satellite capacity shortfalls needed to satisfy the rapid growth of information transfer requirements. DoD must rely on other telecommunications resources, because of those shortfalls, to supplement DoD-owned assets in support of military requirements for two MTWs. Two sources are U.S. leased commercial satellite capacity, and telecommunications resources belonging to allied nations. An ITA is the document that provides for U.S. use of an allied nations communications resources or obligates the U.S. to provide telecommunications resources to an ally.

Policies and Procedures for International Telecommunications Agreements

DoD Directive 5530.3, "International Agreements," June 11, 1987; Chairman of the Joint Chiefs of Staff Instruction 2300.01, "International Agreements," September 15, 1994; and Chairman of the Joint Chiefs of Staff Instruction 6740.01, "Military Telecommunications Agreements and Arrangements Between the United States and Regional Defense Organizations or Friendly Foreign Nations," September 18, 1996; provide policy and procedures for negotiating, concluding, maintaining repositories, and delegations of authority for ITAs. See Appendix G for a complete discussion of policies and procedures.

Evaluation of ITAs

DoD did not periodically evaluate the validity of ITAs that have been negotiated with allied nations. ITAs that provide for joint use of telecommunications resources normally involve cost sharing for implementing telecommunications interconnections and procuring, operating, and maintaining shared telecommunications systems. Agreements may also provide for the exchange of telecommunications system access between the United States and another government or international organizations. Some agreements include the exchange of support on a reimbursement basis, by replacement in kind, or by exchange of supplies or services of equal value.

For example, in one ITA reviewed, the Navy prepared estimates showing the cost associated with exchanging satellite support among allied nations. The estimate showed that an allied nation could owe the U.S. $70,000 to $700,000 for access to one satellite channel for a year, depending on the size of the channel and the mission to be performed. Credits and liabilities were to be liquidated at least quarterly under those conditions.

We were unable to validate that ITAs containing sharing provisions were being evaluated for the liquidation of those credits and liabilities. Further, communications managers were unable to assure an accurate reconciliation of the exchange or sharing of assets. At the unified commands visited, we were unable to identify an activity that performed those functions.

Accountability of ITAs

DoD did not provide a comprehensive strategy of coordinating accountability of ITAs throughout the communications management community.

Joint Staff Responsibility. The Joint Staff, Command, Control, Communications and Computer Directorate (J6) is the approving authority for ITAs. The J6 has the responsibility to coordinate approval to negotiate and conclude the agreement with all functional areas of the Joint Staff. However, J6 is not responsible for maintaining historical records of all approved ITAs.

DISA Register of ITAs. The Chairman, Joint Chiefs of Staff, tasked DISA with preparing a telecommunications agreements register by January 31 each year. DISA published the initial register of ITAs in 1975. No register was published between 1976 and 1988. The next register published by DISA was in 1989, and a yearly register was published through 1994. The 1994 DISA register, which was the last register published, contained information on ITAs associated with the four unified commands included in our review. We used the 1994 DISA register to establish a baseline for ITAs in the unified commands associated with the two MTW scenarios: CENTCOM, EUCOM, PACOM, and U.S. Space Command (SPACECOM). At each of the unified commands visited, we compared ITAs kept in the files with the DISA register. We used the information in the J6 files to

attempt to compile a database and reconcile the total number of existing ITAs to the DISA register and to the ITA files maintained by the unified commands visited.

Reconciliation of ITAs. There was little similarity between the number of agreements held by the unified commands and the DISA register. Duplicated, expired, and superseded ITAs were listed in the DISA register. The 1994 DISA register showed a total of 377 ITAs related to the 4 unified commands we reviewed. However, we were only able to identify a total of 117 ITAs at the 4 commands we visited. We located 51 of those agreements included in the DISA register and at the unified commands. In addition, we identified 66 ITAs at the unified commands but not included in the DISA register. Table 2 shows the results of the comparison of the DISA register to the information at the unified commands.

Table 2. DISA Register Versus ITAs Found at the Unified Commands

	DISA Register	On DISA Register and at Command	Not on DISA Register at Command Only
CENTCOM	8	6	0
EUCOM	200	1	1
PACOM	157	40	54
SPACECOM	12	4	11
Total	**377**	**51**	**66**

Finally, we found that there was no correlation between the J6 files and either the DISA register or the unified commands' ITA files.

Compliance with Policies and Guidelines

DoD did not ensure that unified commands and DISA complied with existing policies and guidelines governing ITAs.

Although current DoD policies and guidelines relating to international agreements assign responsibility to various organizations, those policies and guidelines were not always implemented among the user community.

For example, the unified commands were not reconciling the master indexes of agreements with the subordinate commands each year and were not forwarding a copy of the reconciled index to the Director, Joint Staff. In addition, DISA was not updating the register or publishing it on a annual basis. The DISA register did not identify ITAs that require monetary payments or payments-in-kind.

DISA personnel are aware that the register is inaccurate. DISA personnel are in the process of trying to update and validate the information before publishing the next issue. DISA has forwarded requests to unified commands requesting updated information but has not received the necessary responses. This lack of accurate information from the unified commands prevents DISA from publishing an updated register.

Centralized Management of ITAs

We were unable to accurately determine the total number of ITAs in existence in the unified commands' areas of responsibility because no centralized management exists and each unified command we reviewed uses a different monitoring mechanism.

The Office of the Judge Advocate, CENTCOM, maintained an alphabetical index of international agreements by country and expiration dates. However, their database did not include additional information on each of the agreements, therefore, a manual process was necessary. The CENTCOM J6 was unaware of what information was maintained by the Judge Advocate and of what telecommunications agreements were in existence.

The Office of the Judge Advocate, EUCOM, had responsibility for tracking all international agreements. The EUCOM J6 was able to account for two ITAs within the theater. However, the EUCOM J6 did not maintain a database containing additional information on the agreements.

The PACOM maintained the most sophisticated system for tracking overall international agreements. Headquarters, USFK, initiated an effort to establish a viable international agreements control system that applies to all international agreements including ITAs. The Chief of Staff, USFK, directed the staff to account for all international agreements within its area of responsibility. Each organization within USFK responded by reporting their total number of agreements which enabled creation of a database.

At SPACECOM, the Office of the Judge Advocate, Air Force Space Command, maintained the ITAs, keeping a historical file of the negotiating process, and updated the status of compliance to DoD General Counsel. Air Force Space Command maintained an alphabetical index of international agreements, however, additional information had to be extracted manually from the files.

The four unified commands that we visited did not have a common indexing system for tracking ITAs, and the existing systems did not converge into a central indexing system. Therefore, the DISA register cannot be compiled or accurately relied upon for an aggregate number of ITAs in existence or as a source of common information concerning all ITAs. The lack of a central indexing system and database prevents creditable tracking, reviewing, validating, and management of ITAs by a single organization. Centralized management and oversight for all ITAs should be assigned to the Joint Staff J6 to ensure those functions are performed.

Indexing and Cross-Referencing ITA Databases

The USFK international agreements control system involves establishing and maintaining a database, tracking and reporting the collected information, and establishing and dispersing written procedures for maintaining records. The USFK was amending their regulation on international agreements to include a requirement to maintain the database and, in addition, an instruction is being drafted, detailing how to maintain the database.

The USFK, using a commonly available database software package, identified certain standard fields and developed a common indexing system for use throughout the PACOM theater. USFK had entered over 800 international agreements into its database. Because that database existed, USFK provided us with the 19 ITAs that were within their area of responsibility. PACOM adopted the USFK system and all PACOM agreements are being entered into the international agreements control system database enabling a validation process. The effort is labor intensive because of the number of agreements in the PACOM area of responsibility, however, completion is expected by the end of FY 1998. See Appendix H for detailed information on the database entry form and indexing system.

Impact of ITAs on Mission Effectiveness

The lack of military satellite capacity requires closer monitoring of telecommunications resources available to support U.S. forces. The warfighter's ability to identify U.S. communications resources that have been provided to allied nations, rendering them unavailable for U.S. use, is impaired because of the inability to identify the total number of ITAs. In addition, the warfighter's ability to identify useable telecommunications resources available from allied nations is also impaired. It is critical to deliberate planners and crises planners that all available scarce telecommunications resources be easily quantifiable to develop operation plans. Further, communications managers are unable to assure an accurate reconciliation of the exchange or sharing of assets.

The planners' lack of awareness of all telecommunications resources impacts mission effectiveness, impairs efficient communications management, and increases costs. As a result, DoD is hampered in determining what U.S. telecommunications resources are unavailable for execution of an MTW, what resources are available from allied nations for execution of an MTW, and who is delinquent in reimbursing DoD in payment-in-kind or cash for use of U.S. resources.

Because of current military satellite communications shortfalls, the Joint Staff must prioritize and adjudicate conflicts for use of existing telecommunications resources. The Joint Staff, through augmenting capabilities, must decide how to support warfighter requirements. This is accomplished by downloading users from military satellite communications to leased commercial capacity, other military terrestrial systems, or host-nation communications assets. Without the knowledge of host-nation assets provided through ITAs, the Joint Staff cannot make effective augmentation decisions.

It would be beneficial to have a DoD universal tracking and monitoring system such as the one developed by USFK for ITAs. Such a system would enhance the ability of planners to identify resources for the deliberate planning process. The Secret Internet Protocol Router Network, a classified internet, is widely used by the unified commands, military services, and other DoD agencies to provide on-line access to classified information. Since the DISA register is classified, the Secret Internet Protocol Router Network would increase access and dissemination of the ITA database among the telecommunications community.

Recommendations, Management Comments, and Audit Response

We recommend that the Director, Joint Staff, revise Chairman of the Joint Chiefs of Staff Instruction 6740.01, "Military Telecommunications Agreements and Arrangements Between the United States and Regional Defense Organizations or Friendly Foreign Nations," September 18, 1996, to:

B.1. Assign responsibility for centralized management and oversight of all international telecommunications agreements to the Office of the Joint Chiefs of Staff, Director for Command, Control, Communications and Computers Systems.

B.2. Assign responsibility for administrative maintenance of a certified copy of all international telecommunications agreements to the Defense Information Systems Agency and require the Defense Information Systems Agency to establish a common database to collect, maintain, and monitor all international telecommunications agreements; including relevant information on international telecommunications agreements which require monetary cash payments or payment-in-kind to DoD or owed by DoD.

B.3. Require the Defense Information Systems Agency to designate a common indexing system for international telecommunications agreements throughout the DoD.

B.4. Require the unified commands, military services, and other relevant DoD agencies to submit all new, changed, or terminated international telecommunications agreements information to the Defense Information Systems Agency for entry into the common database.

B.5. Require the Defense Information Systems Agency to maintain this current data base on the Defense Information Systems Agency's Secret Internet Protocol Router Network homepage.

Director, Joint Staff Comments. The Director, Joint Staff, concurred with the findings and recommendations.

Audit Response. The Director, Joint Staff, comments are partially responsive. We request the Director, Joint Staff, provide more specific comments in response

to the final report. Those comments should describe actions taken or planned in response to agreed-upon recommendations and provide the completion dates of the actions.

Other Management Comments

Defense Information Systems Agency (DISA) Comments. DISA stated that centralized management and oversight of ITA's should be a Joint Staff responsibility and the the Joint Staff should define the types of agreements to be placed in the register. In addition, DISA stated that a common indexing system of ITA's and a common database should be established and maintained on the Secret Internet Protocol Network, known as Single Internet Protocol Router Network.

United States Central Command Comments. CENTCOM stated that the management and administration of international agreements had been addressed in a separate IG, DoD report.

Audit Response. The finding and recommendations concerning ITAs were only partly addressed in our prior report. We believe that ITAs merited a more detailed discussion in this report. This was decided because it is critical to deliberate planners and crisis planners that all available scarce telecommunications resources be easily quantifiable to develop operations plans.

Part II - Additional Information

Appendix A. Audit Process

Scope

To evaluate DoD communications capabilities to support two MTWs, we evaluated the management of ITAs and communications resources available through ITAs. We also evaluated communications constraints related to the coordination of electromagnetic frequency spectrum for communications equipment with host nations. We performed the audit at the Joint Staff and DISA and at the unified commands associated with the two MTW scenarios: CENTCOM, EUCOM, PACOM, and SPACECOM.

DoD-wide Corporate Level Government Performance and Results Act Goals. In response to the Government Performance and Results Act, the Department of Defense has established 6 DoD-wide corporate level performance objectives and 14 goals for meeting these objectives. This report pertains to achievement of the following objectives and goals:

Objective: Shape the international environment through DoD engagement programs and activities. **Goal:** Enhance coalition warfighting. **(DoD-1.2)**

Objective: Shape the international environment and respond to the full spectrum of crises by providing appropriately sized, positioned, and mobile forces. **Goal:** Support U.S. regional security objectives **(DoD 2.1)** and fight and win two nearly simultaneous major theater wars. **(DoD-2.4)**

Objective: Prepare now for an uncertain future. **Goal:** Pursue a focused modernization effort that maintains U.S. qualitative superiority in key warfighting capabilities. **(DoD-3.)**

Objective: Maintain highly ready joint forces to perform the full spectrum of military activities. **Goal:** Maintain high military personnel and unit readiness. **(DoD-5.1)**

General Accounting Office High Risk Area. The General Accounting Office has identified several high risk areas in DoD. This report provides coverage of the Defense Weapons Systems Acquisition high risk area.

Methodology

In evaluating DoD communications capabilities available to support two MTWs, we:

- conducted interviews with users and management for all organizations visited and contacted;

- reviewed and analyzed documentation, dated from May 1958 through December 1997, concerning ITAs and frequency supportability;

- reviewed the process for issuing, managing, and tracking ITAs;
- reviewed and analyzed databases containing ITA summaries;
- compiled a database from information obtained at audit sites to use as a cross reference and validation tool;
- evaluated the methodologies for archiving ITAs at audit sites;
- reviewed and evaluated the process for obtaining frequency spectrum approval from host nations;
- identified systems used in host nations that lacked frequency supportability;
- identified the costs for major systems affected by the lack of frequency supportability; and
- assessed the effectiveness of the implementation of the CENTCOM, EUCOM, PACOM, SPACECOM, USFK, and DISA internal management control programs.

Computer-Processed Data. The audit relied on computer-processed data from the USFK International Control System. That system was used to determine the type of information that a database should contain to monitor ITAs. CENTCOM, EUCOM, and SPACECOM did not have formal ITA databases, therefore, we did not rely on computer processed data from those commands.

Audit Type, Dates, and Standards. We performed this economy and efficiency audit from June 1997 through February 1998. The audit was performed in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD.

Contacts During the Audit. We visited or contacted individuals or organizations within the DoD. Further details are available on request.

Management Control Program

DoD Directive 5010.38, "Management Control Program," August 26, 1996, required DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of the Review of the Management Control Program. We reviewed the adequacy of management controls related to the communications capability within the DoD to support two MTWs with overlapping time frames. Specifically, we reviewed the Joint Staff, CENTCOM, EUCOM, PACOM, SPACECOM, USFK, USFJ, and DISA management control programs as they applied to the overall audit objective.

Adequacy of Management Controls. We identified material management control weaknesses for the Under Secretary of Defense (Acquisition and Technology) and the Director, Joint Staff, as defined by DoD Directive 5010.38. The DoD management controls were inadequate to ensure that telecommunications equipment would not be fielded overseas without the proper frequency certification and host-nation approvals. Also, management controls for the implementation of international telecommunications agreements were not adequate to ensure accountability and compliance with existing policies and guidelines throughout the communications management community. Recommendations A.1. through A.6., if implemented, will ensure that telecommunications equipment fielded and sold outside of the United States will be useable by U.S. forces. Recommendations B.1. through B.5., if implemented, will improve the management and oversight of international telecommunications agreements. A copy of the report will be provided to the senior official responsible for management controls in the offices of the Under Secretary of Defense for Acquisition and Technology and the Director, Joint Staff.

Adequacy of Management's Self-Evaluation. In their FY 1997 Annual Statements of Assurance, the Department of Defense and the Joint Staff did not identify the material management control weaknesses identified by the audit.

Appendix B. Summary of Prior Coverage

The Office of the Inspector General, DoD, issued three reports in the last 5 years that discussed the management and administration of international agreements. In addition, two reports have been issued concerning the management and planning for telecommunications resources involved in the two MTWs scenario.

Inspector General, DoD, Report No. 98-025, "Management and Administration of International Agreements in the Department of Defense," November 19, 1997.

Inspector General, DoD, Report No. 98-009, "Demand Assigned Multiple Access Terminals," October 14, 1997.

Inspector General, DoD, Report No. 97-187, "Communications Capability within the DoD to Support Two Major Regional Conflicts Nearly Simultaneously," July 14, 1997.

Inspector General, DoD, Report No. 97-173, "Management and Administration of International Agreements in the US Pacific Command," June 23, 1997.

Inspector General, DoD, Report No. 93-119, "Agreement with North American Treaty Organizations Allies," June 21, 1993.

Appendix C. Glossary

Bandwidth. The range of electrical frequencies a communications device can handle. The wider the bandwidth, the greater its capacity.

DoD Satellite Communications. DoD satellite communications systems encompass the operation, control, and employment of military systems operating in several frequency bands, leased capacity on commercial satellite systems, and satellite service provided by allied nation systems.

Deliberate Planning. A planning process for the deployment and employment of apportioned forces and resources that will occur in response to a hypothetical situation. Deliberate planners rely heavily on assumptions regarding the circumstances that will exist when the plan is executed.

Electromagnetic Spectrum. The electromagnetic spectrum includes the range of frequencies of electromagnetic radiation extending from gamma rays to the longest radio waves and including visible light. Most telecommunications of concern to the military planner operate using the radio frequency band of the spectrum.

Footprint. The area of the earth's surface where the signal from a specific satellite can be received.

Hertz. A unit of frequency in cycles per second. One hertz equals one cycle per second; 1 kilohertz equals 1,000 cycles per second; 1 megahertz equals 1 million cycles per second; and 1 gigahertz equals 1 billion cycles per second.

Hertzian waves. A name also used for electromagnetic waves. Radio waves or other electromagnetic radiation resulting from the oscillations of electricity in a conductor.

International Telecommunications Agreements. Any agreement between nations to provide, receive, or exchange telecommunications services.

Military Communications-Electronics Board. Oversees policy for the military use of frequency spectrum.

Military Satellite Communications. Military satellite communications systems encompass DoD-owned and operated or commercially leased satellite communications systems.

Radio frequency spectrum. The region of the electromagnetic spectrum, usually between 500 kilohertz and 300 gigahertz, in which radio or radar transmission and detection techniques may be used.

Telecommunications. Any transmission, emission, or reception of signs, signals, writings, images, and sounds or information of any nature by wire, radio, optical, or other electromagnetic systems.

Transponder. A transponder is radio relay equipment onboard a communications satellite that receives a signal, amplifies it, changes its frequency, and sends it back down to earth.

Ultra-High Frequency. The ultra-high frequency is part of the radio frequency spectrum, ranging between 300 megahertz and 3 gigahertz.

Ultra-High Frequency Follow-On. A new generation of satellites, operating in the Ultra-high frequency band, that will replace the aging Navy Fleet Satellite Communications System.

Appendix D. JF-12 Process

Systems acquisition program managers did not comply with DoD Directive 4650.1 requiring submission and completion of DD Form 1494 during the conceptual, experimental, developmental, and operational stages of system acquisition.

Certification Process. The purpose of the certification process is to ensure that the operational frequency band and type of service (for example, microwave, radar, radio, satellite, wireless, etc.) are in conformance with respective national and international tables of spectrum allocation; that the equipment conforms to applicable statutes, regulations, directives, standards, and specifications; and that the equipment can operate in its intended environment without causing harmful interference to other equipment operating in the same environment. The entire JF-12 process usually requires between six to twenty-four months to complete.

The DoD acquisition process, for communications systems and the spectrum-dependent components of other major systems, usually includes four stages of development associated with frequency spectrum certification.

- Stage 1-Conceptual (at Milestone 0). The initial planning effort has been completed including proposed frequency bands and other system characteristics.

- Stage 2-Experimental (to occur before Milestone 1). The preliminary design has been completed, and radiating signals, using test equipment or preliminary models, may be required.

- Stage 3-Developmental (to occur before Milestone 2). The major design has been completed and radiating signals may be required during testing.

- Stage 4-Operational (to occur before Milestone 3). System development has been essentially completed, and final operating constraints or restrictions required to assure compatibility need to be identified.

Preparation and Submission of the DD Form 1494. During the initial stage of a program for procurement of a system that emits or receives hertzian waves, the program manager should consult with the spectrum management community and prepare a DD Form 1494 " Application for Equipment Frequency Allocation." The DD Form 1494 requires that the frequencies with which a system will operate be entered on the form. Those frequencies are determined during Stage 1 and are available for program mangers to use in completing the form. It is critical that program managers begin coordinating frequency supportability by the end of Stage 1, so that sponsoring commands can determine if the equipment is realistically useful for the intended theaters, prior to commitment of funding.

The U.S. Military Communications Electronics Board (MCEB). The DD Form 1494 should be submitted to the MCEB, JF-12 Frequency Panel Permanent Working Group through the Service frequency organizations. The MCEB JF-12 Frequency Panel coordinates with the National Telecommunications and Information Administration (spectrum planning subcommittee) to obtain spectrum

certification and frequency assignment for the use of frequencies within the continental United States.

Host Nation Coordination. The DD Form 1494 is forwarded to the unified commands where the system will be deployed overseas. It is the responsibility of each unified command joint frequency management office to coordinate, review comments, and obtain host-nation approval for the use of the specified frequency. After host-nation approval has been obtained for a system, the unified command must request that the host nation assign one of the approved frequencies for the use of that equipment.

Appendix E. Policies and Procedures for Management and Use of the Electromagnetic Frequency Spectrum

Background

Spectrum certification is defined as the authority to experiment, develop, or procure new spectrum-dependent equipment (a builder's permit). Frequency assignment is defined as, the authority to use a specific frequency under specified operating conditions (an operator's license). Spectrum support is both the spectrum certification and a frequency assignment. Within DoD, spectrum support is coordinated using DD Form 1494 and approved in the JF-12 process and document. For DoD, a National Telecommunications and Information Administration Form 44 and a subsequent frequency assignment is considered Certification of Spectrum Support within the continental United States. However, in overseas theaters, the DD Form 1494 and JF-12 documents are used by a unified command to obtain a frequency assignment from a host nation. DoD systems being deployed overseas require coordination by a unified command to request frequency spectrum authorization and host-nation approval to use those systems during peace time, training and exercises, and wartime operations within the host nation.

Policies and Procedures

DoD Directive 4650.1, "Management and Use of the Radio Frequency Spectrum," June 24, 1987, assigns responsibility to the Under Secretary of Defense (Acquisition and Technology) for establishing policy for acquiring systems that use the radio frequency spectrum and for ensuring compliance with radio frequency spectrum supportability procedures. The directive states that all DoD Components shall:

> Obtain radio frequency spectrum guidance for communications-electronics systems from the Military Communications-Electronics Board as early as possible during the concept exploration and demonstration and validation stages of system acquisition. MCEB guidance must be obtained before assuming contractual obligations for the full-scale development, production, or procurement of those systems. Radio frequency spectrum support requirements shall be sent through the MCEB, for coordination with host nations where this equipment is intended to be deployed, as early in the acquisition as practical. Host-nation coordination must be initiated before contracting for a system's full-scale development.

DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisition Programs and Major Automated Information System Acquisition Programs," March 15, 1996, Part 4.4.7 Electromagnetic Environmental Effects and Spectrum Management states:

> All electric or electronic systems shall be designed to be mutually compatible with other electric or electronic equipment within their expected operational environment. Systems and equipment that emit or receive hertzian waves shall comply with OMB Circular A-11 to determine spectrum supportability prior to initiating cost estimates for development or procurement. All DoD components shall obtain spectrum utilization guidance from the Military Communications-Electronics Board. Systems and equipment shall comply with applicable national and international spectrum management policies and regulations. Requirements for foreign spectrum support shall be forwarded to the Military Communications-Electronics Board for coordination with host nations where deployment of the system or equipment is planned.

Appendix F. Equipment Fielded Without Frequency Supportability

Table 1. Systems Deployed Without Frequency Spectrum Supportability to ENTCOM

System	Type	Stage JF-12 Coordinated	Host-Nation Comments
Sprint Sailor Phone	Telephone	Unknown	Unknown
SPS-40 Radar	Radar	Unknown	Unknown
SPS-49 Radar	Radar	Unknown	Unknown
Terminal to access Commercial Satellite Communications Initiative Transponder	Terminal	Unknown	Unknown

Table 2. Systems Deployed Without Frequency Spectrum Supportability to EUCOM

System	Type	Stage JF-12 Coordinated	Host-Nation Comments
AN/MSQ-126 Forward Deployed Command Center	Terminal	Unknown	Unknown
AN/PRC 137-138 Radio	Radio	Unknown	Unknown
AN/TSQ 190 Trojan Spirit	Terminal	Unknown	Unknown
Downsized Deployable Terminal	Terminal	Unknown	Unknown
Joint Surveillance and Target Attack Radar System	Combination	Unknown	Unknown
MINI FLAIL	Mine detection	Unknown	Unknown
Predator UAV	Combination	Unknown	Unknown

Table 3. Systems Deployed Without Frequency Spectrum Supportability to PACOM, USFK

System	Type	Stage JF-12 Coordinated	Host-Nation Comments
AAFES Inventory System	Data processing	4-Operational	Support denied- operates in civil band
AN/ARN-147	Radio	4-Operational	At Joint Frequency Management Office
AN/BPS-16	Radar	4-Operational	Authorized in single frequency mode only
AN/GRC-206(V)5	Radio	4-Operational	In coordination
AN/GSQ-261	Combination	4-Operational	Support denied- operates in civil band
AN/MRC-140	Radio	4-Operational	Approved with restrictions- must operate in preapproved military bands only
AN/PRC-113 (V) 1,2, and 3	Radio	4-Operational	Approved with restrictions
AN/PSC-1	Combination	4-Operational	Approved with restrictions- must operate in preapproved
AN/TLQ-17A (V)	Countermeasures	4-Operational	Support denied- to prevent interference with civil users
AN/TSC-152	Combination	4-Operational	In coordination
AN/USC-38	Combination	4-Operational	Support denied- operates in civil band
AN/USQ-59 Transit Case LMST	Combination	4-Operational	At Joint Frequency Management Office
AN/VRC-99	Radio	3-Developmental	Support denied- operates in civil band
AN/VSC-7	Combination	4-Operational	Approved with restrictions- must operate in preapproved military band only
AN/WSC-3	Combination	4-Operational	At Joint Frequency Management Office
AN/ZSW-1	Combination	3-Developmental	In coordination
C-2020 Wireless Security System	Unknown	4-Operational	Support denied- operates in civil band
CAPS II	Wireless inventory system	4-Operational	Approved for on-post-use- some frequencies denied
Closed Circuit Flightline Video System	Video	Unknown	In coordination

Table 3. Systems Deployed Without Frequency Spectrum Supportability to PACOM, USFK (continued)

System	Type	Stage JF-12 Coordinated	Host-Nation Comments
E-TCAS	Enhanced traffic alert and collision avoidance system	4-Operational	In coordination
EAS System	Electronic article surveillance system	4-Operational	Support denied-operates in civil band
Ellason Portable Tactical Weather Radar	Radar	4-Operational	In coordination
EOD remote controlled tools	Electromechanical	4-Operational	Video link denied-operates in civil band
ICOM Radios	Radios	4-Operational	Support denied-operates in civil only band
IFSAR	Radar	3-Developmental	Approved with restrictions
INTERMEC Wireless Barcode System	Data processing	4-Operational	Approved with restrictions
INTESECT Wireless Lan	Data processing	4-Operational	Support denied-operates in civil only band
Joint Tactical Information Distribution System	Combination	Unknown	In coordination
Joint Tactical Unmanned Aerial Vehicle	Combination	4-Operational	Support denied-operates in civil only band
MIDS	Combination	4-Operational	Support denied-operates in civil only band
MILSTAR	Combination	4-Operational	In coordination
MITLA	Barcode device	4-Operational	In coordination
Mobile Giant Voice	Wireless public address system	4-Operational	Approved with restrictions
MOPMS	Mine detection	4-Operational	Support denied-operates in Republic of Korea protected frequency
MRSR	Unknown	3-Developmental	Approved with restrictions

Table 3. Systems Deployed Without Frequency Spectrum Supportability to PACOM, USFK (continued)

System	Type	Stage JF-12 Coordinated	Host-Nation Comments
MUST RT-1273 AG	Unknown	4-Operational	In coordination
Patriot Missile	Combination	4-Operational	Support denied- operates in civil band
MX-22 Remote	Demolition System	4-Operational	Approved with restrictions
Phillips Lab experimental transportable ground terminal	Terminal	2-Experimental	In coordination
Pioneer Unmanned Aerial Vehicle	Combination	4-Operational	Some frequencies denied- operates in civil only band
SAVI RF LINK	Radio	4-Operational	Support denied- operates in civil only band
SAWDS	Terminal	4-Operational	At Joint Frequency Management Office
Scope Shield II	Security and intrusion detection	4-Operational	In coordination
Seek Smoke Air Base Defense System	Classified	3-Developmental	In coordination
TASS AN/USQ-139	Combination	4-Operational	In coordination
Tater SCINS	Terminal	3-Developmental	In coordination
TFT-C	Terminal	4-Operational	In coordination
TiltRotor Unmanned Aerial Vehicle	Combination	Unknown	In coordination
UHF Line of Sight Transceiver	Radios	2-Experimental	Support denied- operates in civil band
WXR-700X	Radar	4-Operational	In coordination

Table 4. Systems Deployed Without Frequency Spectrum Supportability to PACOM, USFJ

System	Type	Host-Nation Comments
AAFES Inventory Control System	Data processing	Support denied- operates in mobile and cellular telephone bands
AN/APN-169C station keeping equipment	Radar	Support denied- frequency is used for fixed and mobile service
AN/APN-169C station keeping set	Radar	Support denied- frequency is used for fixed and mobile service
AN/APN-240 (V)	Radar	Support denied- frequency is used by broadband subscribers
AN/FRC-181 (V)2 EHF Ground Command Post Terminal	Radio	Support denied- interference with Japanese satellite system
AN/PRC-104B	Radio	Support denied- frequency is used for mobile service and long distance radio communications
AN/TMQ-31 Meteorological Data System	Combination	Support denied- operates in meteorological and mobile satellite service
AN/TPN-22 Precision Approach Radar	Radar	Support denied- operates in existing and planned radar bands
AN/TPS-73 Airport Search Radar	Radar	Support denied- operates in civil aviation and civil defense bands
AN/TSQ-190 Transportable Trojan Spirit-II Satellite System	Combination	Support denied- operates in telecommunications carriers frequency
Global Broadcast System	Carrier	JF-12 paperwork has not been submitted
HP 8341B Sweeping Signal Generator	Radar	Support denied
ICOM IC-20 Radio	Radio	Support denied- not compatible with band allocations
IC-M125 Radio	Radio	Support denied- not compatible with band allocations
INTERMEC Wireless Barcode Inventory System	Data processing	Support denied- operates in cellular telephone bands

Table 4. Systems Deployed Without Frequency Spectrum Supportability to PACOM, USFJ
(continued)

System	Type	Host-Nation Comments
Invoiconics Vision Plus Wireless Security System	Unknown	Support denied- frequency is allocated to mobile service
Joint Surveillance and Target Attack Radar System	Combination	JF-12 paperwork has not been submitted to USFJ
Joint Tactical Information Distribution System	Combination	Support denied- interference with civil systems leading to flight or life hazards
LRT 3800 hand held terminals	Communications system	Support denied- frequency is used for meteorological aids and disaster preventive systems
Motorola Astro Trunked Radio System	Radio	Support denied- frequency is congested with public correspondence systems throughout Japan
Remote Controlled Tool Data and Video Link	Video	Support denied- operates in Japanese Government bands
SAVI RF Link	Radio	Support denied- operates in cellular telephone bands
Single Channel Ground and Airborne Radio System	Radio	Support denied- Japan does not allow frequency hopping equipment
Stage 2 UHF LOS Transceiver	Radio	Support denied- band has future uses
Stage 3 KASARCOM Earth Station and KASATCOM Beacon Transmitter	Terminal Radio	Cannot be supported due to uncompleted registration procedures
Ultra-High Frequency Follow-On Satellite (UFO-4)	Carrier	JF-12 paperwork has not been submitted
Ultra-High Frequency Follow-On Satellite (UFO-8)	Carrier	JF-12 paperwork has not been submitted
Wireless Broadband System	Radio	Support denied- frequency is used by broadband subscribers

Appendix G. Policies and Procedures for International Telecommunications Agreements

Within DoD, the authority to negotiate and conclude an ITA resides with the Secretary of Defense.

DoD Directive 5530.3. DoD Directive 5530.3, "International Agreements," June 11, 1987, provides policy for developing international agreements. The directive assigns the responsibilities for central repositories of international agreements, assigns the responsibilities for controlling the negotiations in the conclusion of agreements with foreign governments by DoD personnel, assigns the authority to approve or conduct such negotiations or to delegate such authority for specified categories of such agreements, and establishes procedures by which such approval shall be obtained before the initiation of negotiation. The directive also delegates authority to negotiate and conclude an international agreement to the Secretaries of the Military Departments, Under or Assistant Secretaries of Defense, the Joint Chiefs of Staff, and Directors of Defense agencies.

Chairman of the Joint Chiefs of Staff Instruction 2300.01. Chairman of the Joint Chiefs of Staff Instruction 2300.01, "International Agreements," September 15, 1994, further delegates to the commanders-in-chief of the unified commands the authority to negotiate and conclude agreements for which approval authority has been delegated to the Chairman of the Joint Chiefs of Staff. The instruction assigns responsibility to each organizational element exercising delegated authority to name a single office of record for administration and control of international agreements, to include maintaining a repository of agreements and carrying out other record-keeping functions as required. It further states that combatant commands will:

- reconcile their master indices of international agreements with their subordinate commands at the end of each calendar year; and

- forward a copy of the complete reconciled index to the Director, Joint Staff.

In addition, the instruction designates the Secretary, Joint Staff, as the central office of record for:

- receiving requests;

- assigning action to the cognizant staff agency;

- forwarding completed actions;

- providing a single repository for the receipt, retention, and retrieval of records of international agreements negotiated and concluded under the authority of the Chairman of the Joint Chiefs of Staff;

- providing an annual list of terminated international agreements to the office of the DoD General Counsel; and

• reconciling the Office of the Chairman, Joint Chiefs of Staff, master index of international agreements with DoD General Council's list of international agreements.

Chairman of the Joint Chiefs of Staff Instruction 6740.01. Chairman of the Joint Chiefs of Staff Instruction 6740.01, "Military Telecommunications Agreements and Arrangements Between the United States and Regional Defense Organizations or Friendly Foreign Nations," September 18, 1996, provides policy on negotiating and concluding international military telecommunications agreements and arrangements to sell or exchange telecommunications support or services to allow the transfer of data and voice traffic between the United States and regional defense organizations. It also provides for delegation of authority for certain kinds of telecommunications agreements. Further, the instruction assigns responsibility for maintaining a register of telecommunications agreements to DISA. The register is to be updated, completed, and distributed yearly by January 31. The register will record the concluding authority, title, references, U.S. signature date, date agreement entered into force, expiration date of the agreement, and the location of the original agreement. Updating is to occur, as required, before reissuing the register every year.

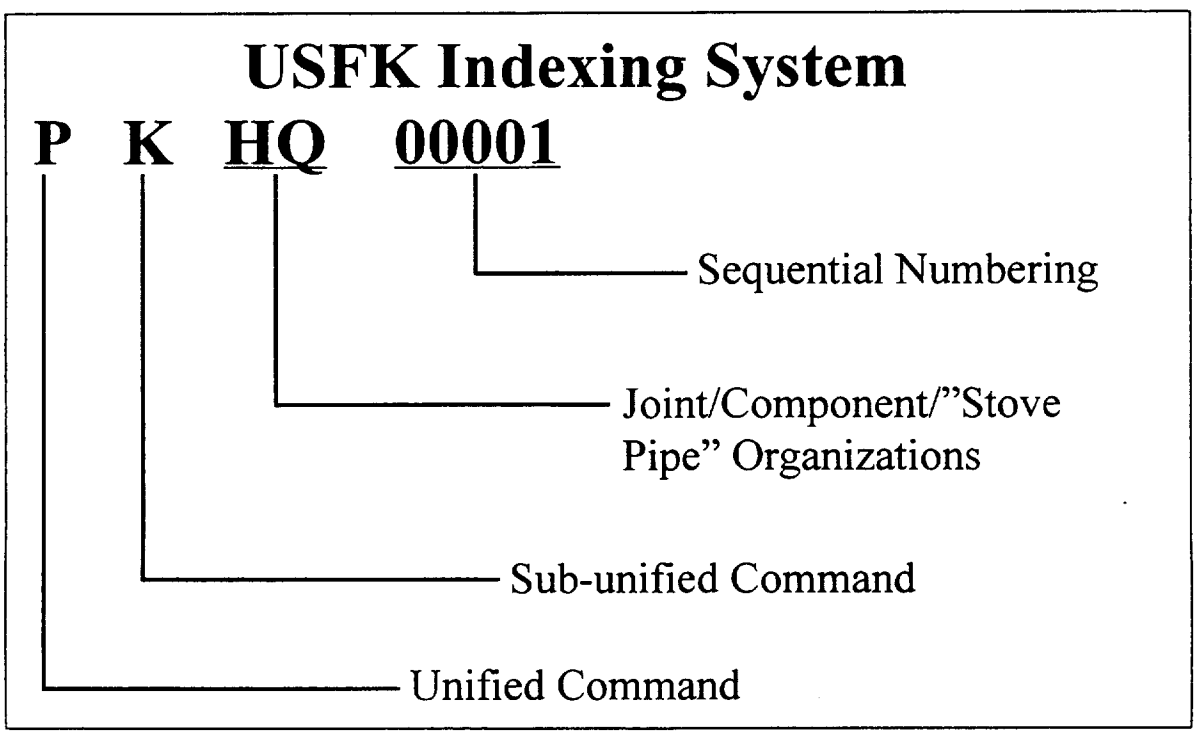
In addition, the instruction requires the command concluding the telecommunications agreement to maintain historical records. The concluding command is to compile a complete agreement negotiating history. The command is to maintain a permanent record of each completed action, including all applicable coordination and authorizations.

Appendix H. U.S. Forces Korea Database and Indexing System

USFK provided us with a description of their indexing system for international agreements. There are eight letters and numbers to identify an agreement. The first letter identifies the unified command that made the agreement (for example, C = CENTCOM, E = EUCOM, P = PACOM, etc.). The second letter identifies the sub-unified command that manages the agreement (for example, J = USFJ, K = USFK, etc.). The third and fourth letters identify the Joint/Component/ "Stovepipe" organizations that are concluding the agreement (for example, HQ = Joint headquarters agreement, AF = Air Force agreement, DI = DISA agreement, etc.). The final portion of the indexing system provides five positions for the sequential numbering of agreements. Representative examples of the indexing system include:

- PKHQ00001 identifies PACOM/USFK/Joint Agreement/Number 1,
- PKAF00001 identifies PACOM/USFK/7th Air Force/Number 1, and
- PKDI00001 identifies PACOM/USFK/DISA/Number 1.

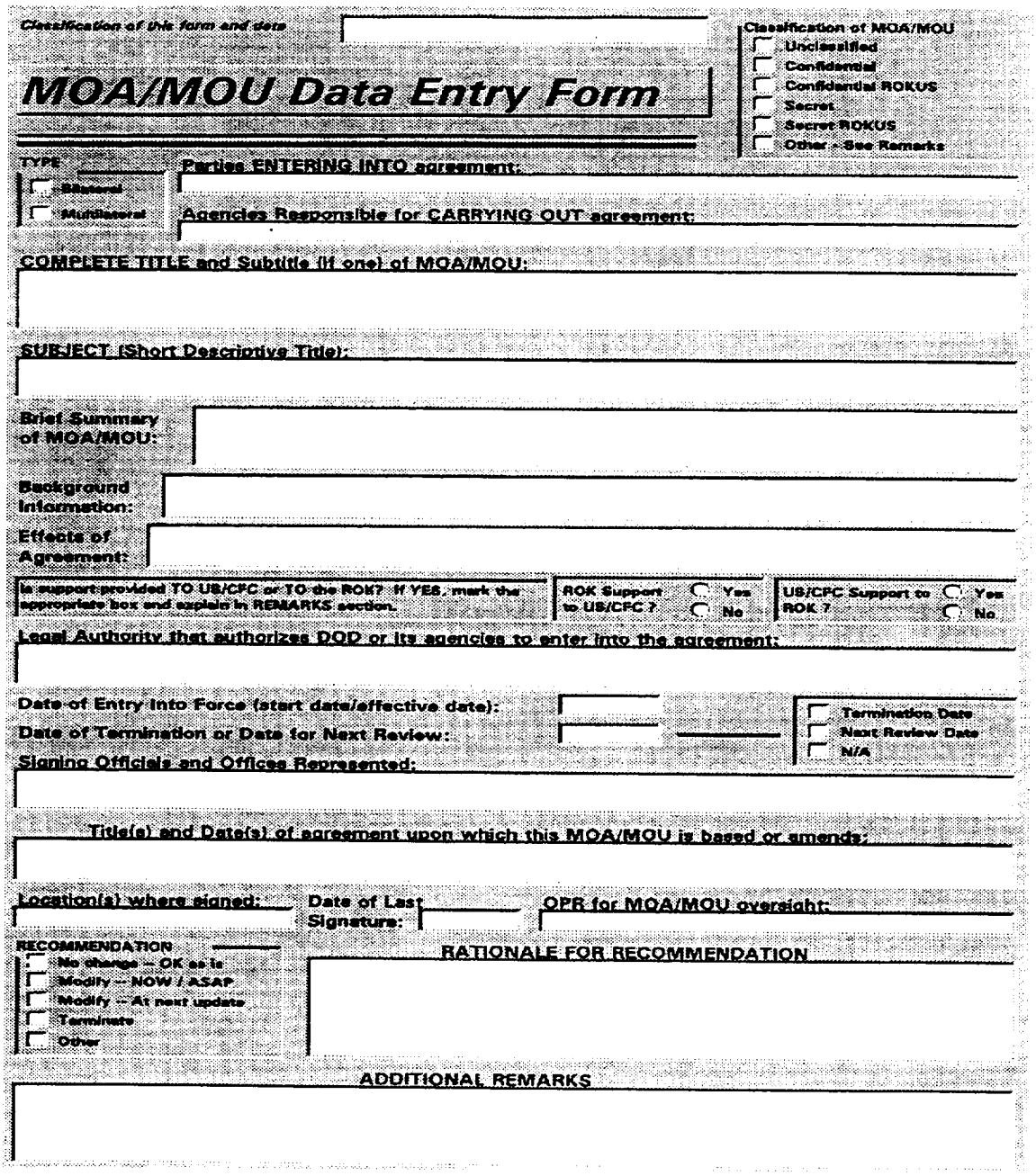
The indexing system that PACOM has adopted for use in its area of responsibility is shown below.



USFK also provided a copy of their international agreements control system data entry form. This form has been adopted by PACOM for all components of

Components are compromising on some of the data fields. Shown below is a copy of the international agreements control system data entry form.

USFK International Agreement Control System Data Entry Form



Appendix I. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Deputy Under Secretary of Defense (Acquisition Reform)
  Director, Acquisition Program Integration
  Director, Test Systems Engineering and Evaluation
  Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
  Deputy Chief Financial Officer
  Deputy Comptroller (Program/Budget)
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)
  Director, Command, Control, Communications, Computers, and Intelligence, Integrated Support Agency
Assistant Secretary of Defense (Public Affairs)

Joint Staff

Director, Joint Staff
  Director for Operations (J-3)
  Director for Strategic Plans and Policy (J-5)
  Director for Command, Control, Communications, and Computers (J-6)
  Director for Force Structure Resources and Assessment (J-8)

Department of the Army

Secretary of the Army
Auditor General, Department of the Army
Director of Information Systems for Command, Control, Communications, and Computers
Army Spectrum Manager

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy
Commander, Navy Exchange Service Command
Head, Marine Corps Exchange

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force
Air Force Communications and Information Center
Air Force Frequency Management Agency

Unified Commands

Commander in Chief, U.S. Central Command
Commander in Chief, U.S. European Command
Commander in Chief, U.S. Pacific Command
Commander in Chief, U.S. Space Command
Commander in Chief, U.S. Special Operations Command

Other Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Information Systems Agency
  Deputy Director for Operations (D-3)
    Office of Spectrum Analysis and Management
  Deputy Director for C^4I Modeling, Simulation and Assessment
  Inspector General, Defense Information Systems Agency
Director, Defense Logistics Agency
Director, National Security Agency
  Inspector General, National Security Agency
Inspector General, Defense Intelligence Agency
Chairman, Board of Directors, Army and Air Force Exchange Service

Non-Defense Federal Organizations

Office of Management and Budget
Technical Information Center, National Security and International Affairs Division, General Accounting Office

Chairman and ranking minority member of each of the following congressional committees and subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Commerce, Science, and Transportation
Senate Subcommittee on Communications, Committee on Commerce, Science, and Transportation
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on Commerce
House Subcommittee on Telecommunications and Finance, Committee on Commerce
House Committee on Government Reform and Oversight
House Subcommittee on Government Management, Information and Technology, Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
House Committee on National Security

Part III - Management Comments

Under Secretary of Defense for Acquisition and Technology Comments

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION AND TECHNOLOGY

12 JUN 1998

MEMORANDUM FOR DIRECTOR, CONTRACT MANAGEMENT DIRECTORATE

SUBJECT: Draft Audit Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements (Project No. 6RD-0056.02)

This is in response to your request for comments on the subject draft report.

DoD Directive 5000.1 and the accompanying DoD Regulation 5000.2-R provide only broad, general guidance on Electromagnetic Environmental Effects (E3) and Spectrum Management. It was never the intent of these issuances to provide detailed implementation guidance to the Program Manager on a variety of management and technical issues such as spectrum supportability, training, and compliance.

Because spectrum congestion is becoming a major problem for the Department, the Office of the Assistant Secretary of Defense for Command, Control, Communications and Intelligence is now actively addressing the adequacy of both the policy and procedures contained in the existing DoD Directives. The newly formed Spectrum Directorate in OASD(C3I) and the newly formed Office of Spectrum Analysis at the Defense Information Systems Agency are developing procedures to ensure that the requirements identified in DoD Directive 5000.1 and 5000.2-R are met prior to programs going forward.

The OASD(C3I) point of contact is Ms. Cindy Raiford, Acting Director, Spectrum Management, (703) 697-1029.

Daniel B. Czelusniak
Director, Acquisition
Program Integration

ACQUISITION AND TECHNOLOGY

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

18 MAY 1998

MEMORANDUM FOR DIRECTOR CONTRACT MANAGEMENT DIRECTORATE, OFFICE OF INSPECTOR GENRAL

SUBJECT: Review of OIG Draft 6RD-0056.02, "Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements"

We have reviewed the subject report and have no comments on the findings. None of the systems identified in the report were acquired by our office, and acquisition programs managed by us are exempt from DoD Directive 5000.1. In addition, we do not manage or administer International Telecommunications agreements. We recognize, however, that there are potential problems should any of our acquisitions be deployed overseas. Therefore, to ensure that systems acquired under our oversight can be operated under the spectrum management laws of any potential host nation, we will take the following actions immediately:

1. We will modify our applicable Test Project Directives to require a certification of compliance with DoD Directive 4650.1 at each program milestone.
2. We will modify our applicable Test Project Directives to require annual reporting of the status of DD Form 1494 and the JF-12 process
3. We will direct all current Central Test & evaluation Investment Program (CTEIP) Project Directors to report on the status of their DD Form 1494. Any project found deficient in this area will be provided assistance in complying with DoD Directive 4650.1.

Should you need additional information, my action officer for electromagnetic frequency spectrum matters is Mr. Derrick Hinton, who may be reached at (703) 578-8222 or hintond@acq.osd.mil.

Patricia Sanders
Director, Test, Systems
Engineering and Evaluation

Joint Staff Comments

THE JOINT STAFF
WASHINGTON, DC

Reply ZIP Code:
20318-0300

DJSM-551-98
18 May 1998

MEMORANDUM FOR THE INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

Attention: Director, Contract Management Directorate (Paul J. Granetto)

Subject: Audit Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements (Project No. 6RD-0056.01)

The Joint Staff has reviewed the subject report and concurs subject to incorporation of the enclosed comments into the report. The Joint Staff point of contact is Major Peggy Palmer or Sergeant First Class Pitts in J6B at (703) 614-7923.

DENNIS C. BLAIR
Vice Admiral, U.S. Navy
Director, Joint Staff

Enclosure

Final Report Reference

ENCLOSURE

Comments on the Inspector General memo, dated 16 March 1998 Audit Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements (Project No. 6RD-0056.01)

I. Concurrence with the proposed report is subject to incorporation of the following changes:

J8:

1. Page 12, Finding A "Conclusion" : Concur with comments: — Page 11 Revised

a. Change the first sentence of the paragraph to make the sentence read as follows: " Increasing demands on radio frequency spectrum to support emerging technology and the increased propensity of National governments (including the U. S.) to sell the radio frequency spectrum to various international commercial interests create spectrum congestion, increase potential for degraded telecommunications services and harmful interference, and impact the DoD goal of spectrum supremacy ".

RATIONALE: National sales of the frequency spectrum and the associated international policy issues are at the root of the problem. More emerging technology demands worldwide plus increasing international consensus for decreasing worldwide frequency spectrum for military use will eventually negate the stated DOD goal of "spectrum supremacy". Global commercial interests will have coopted spectrum supremacy while eroding individual nations regulatory authority. This is a major policy issue and a minor procedural issue. This report needs to state that up front, otherwise it will fall far short in corrective action implementation by emphasizing procedural deficiencies over unfavorable policy practices. Proposing more regulatory changes to failing regulations is of limited value when the policy predetermines the failures. — Page ii Revised

b. Change the last two sentences of the paragraph to make the sentence read as follows: "Further, electromagnetic frequency spectrum management must also play a proactive role in doctrine development and equipment design. Electromagnetic compatibility analysis must be planned for early in the acquisition process to help facilitate successful integration of communications equipment into the operating forces worldwide". — Revised

RATIONALE: The fact that assured frequency compatibility is needed early in an acquisition program to facilitate worldwide use is a strong point of the conclusion, but it should also be emphasized that establishing compatibility with host nation(s) does not "ensure" assured future use worldwide.

Enclosure

Agreements reached early in the acquisition process may not be valid at the time of system fielding to Services operating forces, or more assuredly at times of deployment of Services operating forces to a CINC's Area of Responsibility (AOR) in support of a theater CINC/JTF OPLAN. Frequency allocation agreements made with country A that support a JTF network may not be supported by country B, which also lies within the network. Agreements with country A that support compatibility at a certain milestone of the systems acquisition may not be in place at the time of system deployment due to changed host-nation national policy, or more certainly through international sales of frequency blocks to the commercial market. Country A may have a political or economic reason for denial of a deployable system and will use denial of frequency allocation as a tool to block deployments.

The "best case" for any semblance of assured frequency compatibility is coordination of what is reasonable to expect for adequate frequency allocation to be facilitated within any CINC's AOR. This is situationaly dependent in the majority of cases. Although the responsibility of each unified command to gain specified frequency approval from supporting host nations for deploying equipment within the AOR is still the appropriate interface to facilitate frequency compatibility during specific operations, contingencies, and exercises, the translation of assured compatibility for all occasions back into acquisition objectives during specific system development is still obscure. The JF-12 process does not address this (see non-concurrence below). Meeting specific Service requirements with a specific equipment set is predictable. Meeting variable regulatory conditions for allocation of frequency resources under the multitude of international controls with specific, operationally based equipment is not predictable. That is why there is this overarching policy problem in the first place. Situational dependency and individual host-nation approval processes preclude narrowing of the variance into specific equipment assured access worldwide.

2. Pages 12-13 Recommendations for Corrective Action: Concur with comments:

a. 4. Concur with comment. JF-12 process may be included in the J-6 Interoperability Certification process that is built into the Mission Needs Statement (MNS) and Operational Requirements Document (ORD) staffing process (CJCSI 3170.01) to consider when operational frequencies become visible.

RATIONALE: The ORD contains performance and related operational parameters for the proposed system, and may be revised by the user community at each milestone; beginning with Milestone I, Concept Demonstration Approval, when the ORD is first required.

Joint Spectrum Center Comments:

Enclosure

RECOMMENDED CHANGES TO DoDD 5000.1 DATED MARCH 15, 1996

AND DoD REGULATION 5000.2-R DATED OCTOBER 6, 1997

DoDD 5000.1: Page 4: Paragraph D. POLICY , Subparagraph 1.e. Total System Approach. Line six: Insert ", electromagnetic" after "Biological and Chemical (NBC) and before "or information warfare)" and in line seven: Insert "including electromagnetic compatibility" after "the system's compatibility" and before ", interoperability,"

RATIONALE: "electromagnetic compatibility" must be specifically stated otherwise it gets generalized under "compatibility" and may get treated as "interoperability" only.

DoD Regulation 5000.2-R:

1. Part 4, Program Design, page 10, paragraph 4.4.7 Electromagnetic Environmental Effects (E3) and Spectrum Management, line two: Insert the following sentence: "Ordnance shall be designed to preclude inadvertent ignition or performance degradation during or after exposure to the external radiated electromagnetic environment."

RATIONALE: Ordnance inadvertent ignition is not covered, but should be due to its danger.

2. Page II-2 of Appendix II "Operational Requirements Document Mandatory Procedures and Format, Paragraph 4.c. Other System Characteristics. Line seven: Insert "(DD Form 1494)" after "spectrum certification" and before "and supportability" on line eight.

RATIONALE: "The Frequency Authorization (Oct 1966) DoD FAR 252.235-7003, paragraph (b) specifically states "DD 1494, "Application for Frequency Allocation," shall be used for this purpose and shall be prepared in accordance with instructions contained on the form." Paragraph (c) of the FAR further states "This clause including this paragraph (c), shall be included in all subcontracts which call for developing, producing, testing, or operating a device for which a radio frequency authorization is required." Specifically calling for the DD 1494 in the ORD will eliminate ambiguity as to what a PM should do to obtain a frequency certification for their system.

3. Page III-5 of Appendix III, Test and Evaluation Master Plan Mandatory Procedures and Format

a. Paragraph 1. PART I-SYSTEM INTRODUCTION, Subparagraph e. Critical Technical Parameters, Sub-subparagraph (4), line one: Insert "to include electromagnetic compatibility" after "Compatibility" and before ", interoperability..."

Enclosure

RATIONALE: "electromagnetic compatibility" must be specifically stated otherwise it gets generalized under "compatibility" and may get treated as "interoperability" only.

b. Paragraph 3. PART III-DEVELOPMENTAL TEST AND EVALUATION OUTLINE, Subparagraph b. Future Developmental Test and Evaluation, Sub-subparagraph (3) Developmental Test and Evaluation Events, Scope of Testing, and Basic Scenarios, third to the last line: Insert "including electromagnetic compatibility," after "compatibility" and before "with other weapon..."

RATIONALE: Same as 2.a. above.

Paragraph 4. PART IV-OPERATIONAL TEST AND EVALUATION OUTLINE, Subparagraph c. Future Operational Test and Evaluation, Sub-subparagraph (3) Operational Test and Evaluation Events, Scope of Testing, and Scenarios, line seven: Insert "to include electromagnetic compatibility," after "compatibility testing" and before "with other United States/Allied..."

RATIONALE: Same as 2.a. and b. above.

Recommend following memo be sent:

MEMORANDUM FOR DIRECTOR, DEFENSE ACQUISITION REGULATORY COUNCIL

SUBJECT: DFAR 252.235-7003

The following is a proposed change to the Defense Federal Acquisition Regulation (DFAR). The format below is in accordance with DFAR 201.201-1.

Problem: DFAR 252.235-7003, Frequency Authorization. The language in paragraph (b) is inconsistent with the current DoD acquisition phases. Also, this paragraph does not address the procurement of commercial items. Paragraph (c) causes some confusion in obtaining radio frequency authorization.

Recommendation: Make the proposed changes as shown in TAB A.

Discussion: The names of the DoD acquisition phases have changed and this brings the DFAR in line with these changes. It also clarifies that the requirement exists for each applicable phase of that acquisition and when it is due at the milestone review prior to each phase. Also, since many commercial items are being procured in today's acquisition environment, it is necessary that their procurement follow these guidelines as well. Requiring DD Form 1494 on all radio frequency authorizations is appropriate for DoD acquisitions and eliminates confusion. It is necessary that the frequency allocation request be made as early as possible so that necessary spectrum certification can be

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coordinated and approved to avoid potential overlap and/or electromagnetic interference with other systems, and when required, obtain international certification.

TAB A:

FREQUENCY AUTHORIZATION (DEC 1991)

(a) The contractor shall obtain authorization for radio frequencies required in support of this contract.

(b) For equipment[, including commercial items,] for which the appropriate frequency allocation has not been made, the Contractor shall provide the technical operating characteristics of the proposed electromagnetic radiating device to the Contracting Officer during the initial planning, experimental, or developmental phases of contractual performance [at the milestone review prior to each of the DOD Acquisition Life-cycle Phases, that are applicable to the equipment being procured: Phase 0, Concept Exploration; Phase I, Program Definition and Risk Reduction; Phase II, Engineering and Manufacturing Development; and Phase III, Production, Fielding/Deployment and Operational Support].

(c) The Contracting Officer shall furnish the procedures for obtaining radio frequency authorization [The contractor shall use DD Form 1494, Application for Frequency Authorization, to obtain radio frequency authorization].

(d) The Contractor shall include this clause, including this paragraph (d), in all subcontracts requiring the development, production, construction, testing, or operation of a device for which a radio frequency authorization is required.

ALTERNATE I (DEC 1991)

Substitute the following paragraph (c) for paragraph (c) of the basic clause if agency procedures authorize use of DD Form 1494, Application for Frequency Authorization.

The contractor shall use DD Form 1494, Application for Frequency Authorization, to obtain radio frequency authorization.

United States Army Comments:

The Army concurs subject to incorporation of the following changes:

AR-1 (U) Page 4, Finding A Paragraph, line 6, change to read: "...Directive 4650.1 and DOD Regulation 5000.2-R requiring submission and completion of DD Form 1494....." Revised

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REASON: (U) This regulation governs all acquisition and requires spectrum supportability. This addition must be included as noted above.

Revised

AR-2 (U) Page 4, Finding A Paragraph 3, Policies and Procedures, line 6, change to read: "...all systems and equipment (including commercial-off-the-shelf) that emit or receive electromagnetic (hertzian) waves....."

REASON: Clarity. This addition correlates with Page 9, Finding A COTS Equipment.

Revised

AR-3 (U) Page 6, Finding A Paragraph 2, EUCOM. Add the following at the end of the paragraph: " Use of Predator in Bosnia was a one-time exception, since open spectrum access was negotiated in the Dayton Accords."

REASON: (U) Accuracy..

Revised

AR-4 (U) Page 9, Last Paragraph under COTS Equipment, DD Form 1494 Data, last sentence, change to read: "The DD Form 1494 is required for each COTS system procurement.

REASON: (U) Correctness. There is no distinction made between COTS or developmental systems in the spectrum certification process.

AR-5 (U) Page 11, Finding A Paragraph five under 'Patriot Missile Systems', first sentence, change to read: "The Patriot battalion uses three additional frequency-dependent electronic systems: The data link terminal, up and down link to the missile equipment, and the missile seeker."

REASON (U) Correctness. The multi-mode seeker will not be purchased or fielded. Certification for this component should cease.

AR-5 (U) Page 27, Appendix C, Glossary, the word 'Hertz", delete the first sentence and substitute: " A unit of frequency in cycles per second."

REASON: (U) Correctness.

Page 28 Revised

AR-6 (U) Page 27, Appendix C, Glossary, the words 'Hertzian waves', delete and substitute: " Radio waves or other electromagnetic radiation resulting from the oscillations of electricity in a conductor."

REASON: (U) Correctness

Page 30 Revised

AR-7 (U) Page 29, Last paragraph, change to read: "Preparation and Submission of DD Form 1494, " first sentence: During the initial stage of a program for procurement of a system that emits or receives hertzian waves, the program manager should consult with the spectrum management community

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and prepare a DD Form 1494, "Application for Equipment Frequency Allocation."

REASON: (U) Programs should not arbitrarily decide what frequency band to choose without discussing their concept with the spectrum management community. In the case of the Army, PMs should contact the Communications-Electronics Service Office.

AR-8 (U) Page 43, Appendix I, Report Distribution, change to read: Add the following Department of the Army distribution: Page 44 Revised

"Director of Information Systems for Command, Control, Communications, and Computers"

"Army Spectrum Manager"

REASON: (U) Correctness.

AR-9 (U) Page 44, Appendix I, Report Distribution, change to read: Add the following Other Defense Organizations distribution under the Director, Defense Information Systems Agency: Page 45 Revised

"Office of Spectrum Analysis and Management"

REASON: (U) Correctness

United States Air Force Comments:

See attached AFAUDIT.TIF file

United States Navy Comments:

See attached USNAUDIT.TIF file

Enclosure

DEPARTMENT OF THE NAVY
Office of the Chief of Naval Operations
2000 Navy Pentagon
Washington, DC 20350-2000

N61
NPM 308-98
30APR98

MEMORANDUM FOR THE DIRECTOR FOR COMMAND, CONTROL, COMMUNICATIONS AND COMPUTER SYSTEMS (J-6), JOINT STAFF

Subj: NAVY PLANNER'S MEM ON AUDIT REPORT ON COORDINATION OF ELECTROMAGNETIC FREQUENCY SPECTRUM AND INTERNATIONAL TELECOMMUNICATIONS AGREEMENTS (PROJECT NO. 6RD-0056.02) (SJS 98-01466)

Ref: (a) Joint Staff Memo SJS 98-01466 of 31 March 1998

Encl: (1) Navy Comments on DOD IG Project No. 6RD-0056.02

1. Reference (a) requested comments on the DOD IG Project No. 6RD-0056.02, draft audit report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements. Enclosure (1) provides Navy comments on the DOD IG draft audit report.

2. The Navy concurs with the DOD IG Project No. 6RD-0056.02 report with the understanding that the modifications identified in enclosure (1) will be incorporated into the final report.

3. My points of contact for this matter are CAPT Ted Kaye, Director Information Transfer Division, CNO N61 at 703-604-6880 or Mr. Bruce Swearingen, Director Naval Electromagnetic Spectrum Center at 202-764-2463.

W. C. CASTAN, JR.
Captain, U.S. Navy
Assistant to the CNO
for JCS Matters

NAVY COMMENTS ON DOD IG PROJECT NO. 6RD-0056.02
DRAFT AUDIT REPORT ON THE COORDINATION OF ELECTROMAGNETIC FREQUENCY SPECTRUM AND INTERNATIONAL TELECOMMUNICATIONS AGREEMENTS

FINDING A. **CONCUR - WITH THE FOLLOWING RECOMMENDED CHANGES**

Page 5, Section titled "**Fielded Equipment**"; subsection titled "**CENTCOM**", paragraph 1, change to read as follows:

"**CENTCOM**. Four systems were deployed to the Southwest Asian theater without proper frequency certification and host-nation approval as required by the JF-12 process. Two of those systems, the SPS-40 and SPS-49 radar systems are ~~unusable because the equipment operates on a frequency that interferes with the Bahrain telecommunications services.~~ only authorized to operate IAW (S) COMUSNAVCENT message 151106Z JUN 95 and (S) COMFIFTHFLT 100946Z JUN 96 message which provides guidelines and restrictions. Operation of the AN/SPS-40 and AN/SPS-49 systems in accordance with the messages listed above will minimize interference to local Bahrain telecommunications services, however, it places operational guidelines and restrictions on U.S. Navy operations. The SPRINT Sailor Phone, a commercial telephone system used by the U.S. Navy, interferes with the Bahrain mobile phone system.

Reason: Substantive: Paragraph, as originally written, does not accurately reflect the potential for interference to Bahrain telecommunications services from the SPS-40 and SPS-49 radars deployed to the Southwest Asian theater. There are two secret messages addressing the AN/SPS-40 and 49 radars. COMFIFTHFLT message 100946Z Jun 96, subject is "AN/SPS-49 OPERATIONS WITHIN NAVCENT AOR", and COMUSNAVCENT message 151106Z Jun 95, subject is "AN/SPS-40 OPERATIONS WITHIN NAVCENT AOR". Both of these messages address the problems of the AN/SPS-40/49 radars and provide guidance to commanders regarding standard operating procedures and restrictions for operating the AN/SPS-40 and AN/SPS-49 radar systems in the NAVCENT AOR.

ENCLOSURE (1)

Final Report Reference

Page 6, Section titled "**Fielded Equipment**"; subsection titled "**EUCOM**", paragraph 1, change to read as follows:

"**EUCOM**. Seven systems were deployed into the European theater without proper frequency certification and host-nation approval. Frequency supportability for those seven systems (such as the Predator Unmanned Aerial Vehicle and the Joint Surveillance and Target Attack Radar System) ~~has been denied~~ cannot be determined due to the lack of releasable J/F-12s necessary for host nation coordination, and therefore, EUCOM is unable to operate any of those systems in the European theater.

Reason: Substantive: Clarification of the situation. Host nations cannot officially deny spectrum supportability until the U.S. officially requests that the host nation provide supportability comments. With respect to Appendix F, table 2 (Systems Deployed Without Frequency Spectrum Supportability to EUCOM), and specifically the Predator UAV and the AN/MSQ-126, complete and releasable host nation coordination requests are still being prepared. Spain has provided spectrum support for an earlier version of the AN/MSQ-126 which is being updated.

Revised

Page 10, Section titled "**Mission Impact**"; subsection titled "**Ultra-High Frequency Follow-On (UFO) Satellites**", paragraph 3, change to read as follows:

"In the current UHF UFO-4 frequency plan, there are only two 25 kilohertz channels authorized for use in Japan although thirty-eight 25 kilohertz channels, and seventy 5 kilohertz channels were coordinated with Japan through the International Telecommunications Union (ITU) and available for use in Japan. ~~The JF-12 process was not initiated far enough in advance of the launch of UFO-4 to obtain frequency approvals for new channels from Japan.~~ Further, UFO-8, another satellite with a footprint to cover Japan is scheduled for launch in the Pacific theater in February 1998. ~~As of December 1997, the program manager (Navy) had not initiated the required actions to obtain Japan frequency clearances for UFO-8.~~ The MTW strategy depends on the UHF satellite support of the tactical warfighter. Without ~~UHF capacity,~~ approved Japan frequency clearances for UFO-8, the mission of the tactical warfighter is degraded. Total costs associated with UFO-4 and UFO-8 are $396 million."

Reason: Substantive: Provide complete and up to date picture of the situation.

The J/F-12 process was initiated far enough in advance of the launch of UFO-4 to obtain frequency approvals. The J/F-12 process for both the UFO-4 and UFO-8 satellite networks has been coordinated under the name FLTSATCOM, FLTSATCOM-A, and FLTSATCOM-C (Fleet Satellite Communications).

The transition to the new UFO constellation (discussed in paragraph 2 of this subsection) refers to the transition from the FLTSATCOM and FLTSATCOM-A constellation to the new FLTSATCOM-C constellation. The FLTSATCOM-C constellation has the capacity required to support the mission of the tactical warfighter.

The FLTSATCOM-C (UFO) networks (10 orbital locations) have been coordinated through the J/F-12 process and have been registered with the International Telecommunications Union (ITU) as required. Coordination and registration of the UFO within the ITU identified the availability of 4 broadcast, thirty-eight 25 kilohertz channels, and seventy 5 kilohertz channels for use by the FLTSATCOM-C (UFO) satellites visible in Japan. Host nation coordination of most associated satellite earth terminals (i.e. AN/WSC-3, AN/FRC series radios, etc.) was conducted and Japan provided frequency supportability comments with respect to the associated UHF earth terminals. Those comments were provided via COMUSJAPAN MSG 020628Z of MAY 88 and USCINCPAC MSG 041700Z of APR 90, and were issued as a Note-to-Holders of J/F-12/3505/2 (AN/WSC-3) on 19 December 1990.

NAVEMSCEN is currently working with USCINCPAC and USFJ to resolve frequency coordination issues (i.e. specific frequency assignments for specific locations) with respect to Japan frequency clearances for UFO-8, as well as UFO-4 to gain access to the additional UHF frequencies made available for use in Japan during the ITU and Host Nation coordinations. No additional JF-12 actions (or Navy Program Manager actions) are required for frequency supportability of UFO-4 and UFO-8.

FINDING A. Recommendations for Corrective Action: **CONCUR WITH NO COMMENTS**

FINDING B. **CONCUR WITH NO COMMENTS**

Final Report Reference

FINDING B. Recommendations for Corrective Action: **CONCUR WITH NO COMMENTS**

APPENDIX C. Glossary - **CONCUR - WITH THE FOLLOWING RECOMMENDED CHANGES**

Page 28 Revised

Page 27, definition for "**Hertz**", change the first sentence to read:

"**Hertz**. ~~**Bandwidth is expressed in hertz, whichare cycles per second.**~~ A unit of frequency in cycles per second."

Reason: Substantive: Correct. More than bandwidth is expressed in units of hertz.

Page 28 Revised

Page 27, definition for "**Hertzian waves**", change to read:

"**Hertzian waves**. Radio waves or other electromagnetic radiation resulting from the oscillations of electricity in a conductor."

Reason: Substantive: Correct definition.

Page 27, definition for "**Radio frequency spectrum**", change to read:

"**Radio frequency spectrum**. The region of the electromagnetic spectrum, between ~~500~~ 3 kilohertz and 300 Gigahertz, in which radio or radar transmission and detection techniques may be used."

Reason: Substantive: Correct definition.

Page 29 Revised

Page 28, definition for "**Ultra-High Frequency Follow-On**". Delete the words "single channel" in the first sentence.

Reason: Substantive: UFO satellites carry multiple transponders and more than one channel can be operated simultaneously on the satellite.

APPENDIX F. Equipment Fielded Without Frequency Supportability - **CONCUR - WITH THE FOLLOWING RECOMMENDED CHANGES**

Page 38, continuation for "Table 4. Systems Deployed Without Frequency Spectrum Supportability to PACOM, USFJ". Change the table entry under "Host-Nation Comments" for the Ultra-High Frequency Follow-On Satellite (UFO-4) and Ultra-High Frequency Follow-On Satellite (UFO-8) systems to read as follows:

"~~J/F-12 paperwork has not been submitted~~ In Coordination"

Reason: Substantive: The J/F-12 paperwork has been filed and coordinated as required. Specific frequency assignment work is currently in progress to resolve this issue.

5

ENCLOSURE (1)

Final Report Reference

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE

AFPM _____

MEMORANDUM FOR JCS J-6B Attn: Maj Palmer

SUBJECT: AUDIT REPORT ON COORDINATION OF ELECTROMAGNETIC FREQUENCY SPECTRUM AND INTERNATIONAL TELECOMMUNICATIONS AGREEMENTS

The Air Force concurs with the Report in principle. The following changes are recommended to emphasize a more reflective finding within the Acquisition Community

Revised

AF-1. CRITICAL. Page 4, Finding A Paragraph, line 6, change to read: "...Directive 4650.1 and DoD Regulation 5000.2-R requiring submission and completion of DD Form 1494....."

RATIONALE: This regulation governs all acquisition and requires spectrum supportability. This must be included along with DoDR 4650.1 in Finding A paragraph, "Coordination of Electromagnetic Frequency Spectrum with Host Nations."

Revised

AF-2. SUBSTANTIVE. Page 9, Last Paragraph under **COTS Equipment**, *DD Form 1494 Data*, last sentence, change to read: "The DD Form 1494 ~~should be~~ is required for each COTS system procurement."

RATIONALE: Correctness. There is no distinction made between COTS or developmental systems in the spectrum certification process.

Revised Page 30

AF-3. CRITICAL. Page 29, Last full Paragraph, change to read: "Preparation and Submission of DD Form 1494," first sentence: During the initial stage of a program for procurement of a system that emits or receives hertzian waves, the program manager should consult with the spectrum management community and prepare a DD Form 1494 "Application for Equipment Frequency Allocation."

RATIONALE: Program Managers should not arbitrarily decide what frequency band to choose. Program Manager should discuss the options with the Spectrum Management

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community and make the best trade-off possible. By including this phrase, it will about an awareness that the spectrum management community must be included in the initial coordination process of acquisition procedure.

AF-4. SUBSTANTIVE. Same paragraph, last sentence, line 8, change to read: "...frequency supportability by the end of Stage ~~1~~ 2, so that sponsoring commands can ..."

RATIONALE: Stage 1 data is often too incomplete to determine Host Nation supportability. Once sufficiently accurate data is available, we start Host Nation coordination. This is usually at the end of Stage 2 or beginning of Stage 3.

AF-5. ADMINISTRATIVE. Page 35, Table 3, first entry, change to read: Correct acronym "E-TACS" to read "E-TCAS" and under Type Column change to read, "Enhanced Traffic Alert and Collision Avoidance System."

Page 36 Revised

RATIONALE: Correctness.

AF-6. ADMINISTRATIVE. Page 43, Appendix I, Report Distribution, change to read: Add the following to the Department of the Air Force distribution:
"Air Force Communications and Information Center"
"Air Force Frequency Management Agency."

Paage 44 Revised

RATIONALE: Correctness.

cc:

US Army HQDA/ASIS-PAS-M
NAVEMSCEN

United States Central Command Comments

UNITED STATES CENTRAL COMMAND
7115 SOUTH BOUNDARY BOULEVARD
MACDILL AIR FORCE BASE, FLORIDA 33621-5101

11 MAY 1998

CCIG

MEMORANDUM FOR DEPARTMENT OF DEFENSE, INSPECTOR GENERAL
400 Army Navy Drive
Arlington, Virginia 22202

SUBJECT: Audit Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements (Project No. 6RD-0056.02)

REF: Your report, same subject, dated 16 Mar 98

1. The following response to subject draft report has been coordinated in Central Command (CENTCOM) and with the Defense Information System Agency (DISA) representative to CENTCOM. There are two findings:

a. Coordination of electromagnetic frequency spectrum with host nations.

(1) Concur with comments in your report. Pags 5 and 6 of subject report describe USCENTCOM systems fielded and unusable due to the lack of frequency coordination. Page 7 associates dollar figures with these unusable systems.

(2) The SPS-40 and SPS-49 are, in fact, usable in the USCENTCOM Area of Responsibility. Some channels and frequencies are not used within 50 nautical miles of Bahrain Airport due to interference with their land-based systems.

(3) The CSCI transponder was held in "First Right of Refusal" status until it was activated on 1 Aug 97 to support a customer in Kuwait. No funds were spent on the transponder until the customer was prepared to use the band width. Air Combat Command executed a contract to lease and took delivery on a commercial satellite terminal on 15 Nov 96. Our best information indicated host nation approval by the Kingdom of Saudi Arabia (KSA) was imminent, which would have provided authorization to operate that commercial terminal from KSA. The terminal was leased for one year, and was not renewed at the end of the year since KSA had still not provided host nation approval for terminal activation.

(4) Host nation coordination during the acquisition cycle is futile without a National Spectrum Strategy to coordinate international spectrum use. Foreign governments' reallocation of frequency spectrum is occurring faster than the acquisition process, and it is occurring unevenly. Spectrum reallocated or sold by one government may still be available from another. Rather than aiding the acquisition process, the JF-12 procedures along with mandatory host nation approval by milestone III, threaten acquisitions through indecision over spectrums use. The treatment of the frequency spectrum as marketable asset has stripped the JF-12 host nation coordination process of usefulness. It should be replaced with a U.S. Government and Industry Spectrum Strategy. Such a strategy would provide a platform for CINCs to approach host nations for allied spectrum use in coalition warfighting. It would also allow an avenue for program managers to project spectrum use allowing CINCs and host nations to project future needs together. The United States started the now worldwide trend of selling off bandwidth, and must now lead an effort to preserve access to the full spectrum of frequencies to protect national security.

b. International Telecommunications Agreements (ITA).

(1) Non-concur with comments. The management and administration of international agreements have recently been addressed in a separate DoD IG audit (project No. 6RA-0085.01). We are complying with the recommendations contained in the report on the management and administration of international agreements in the DoD. These recommendations ignore the parallel efforts of the audit. We strongly urge the two audit teams to agree on one process to manage international agreements and one database to use in updating and extracting data.

2. Point of contact is COL Nash, DSN 968-6660 or commercial (813) 828-6660.

Arnold Fields
Brigadier General, USMC
Inspector General

United States Pacific Command Comments

COMMANDER IN CHIEF, U.S. PACIFIC COMMAND
(USCINCPAC)
CAMP H.M. SMITH, HAWAII 96861-4028

J053
7500
Ser/ [illegible]
MAY 14 1998

To: Department of Defense Inspector General
(Attn: Ms. N. Needham, Audit Project Manager)
400 Army Navy Drive, Arlington, VA 22202

Subj: USCINCPAC COMMENTS TO THE DEPARTMENT OF DEFENSE INSPECTOR GENERAL (DODIG) DRAFT AUDIT REPORT ON COORDINATION OF ELECTROMAGNETIC FREQUENCY SPECTRUM AND INTERNATIONAL TELECOMMUNICATION AGREEMENTS (PROJECT NO. 6RD-0056.02)

Ref: (a) DODIG ltr of 22 Jan 98
(b) DODIG ltr of 16 Mar 98

Encl: (1) USCINCPAC Comments to DODIG Draft Report

1. Reference (a) provided information on the subject audit. The DODIG conducted phase one Pacific theater field work (5 September to 4 October 1996), phase two (15 September to 29 October 1997) and phase three (23 March to 03 April 1998) at USCINCPAC, CINCPACFLT, HQ PACAF, USARPAC, MARFORPAC, SOCPAC, DISA-PAC, DITCO-PAC, NCTAMS-EASTPAC, and U.S. Forces, Korea. Reference (b) provided USCINCPAC an opportunity to review the third in a series of DODIG draft reports and provide comments.

2. Enclosure (1) contains the USCINCPAC Command, Control, Communications, and Computer Systems (C4) Directorate (J6) comments to the draft report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements. DODIG questions to the USCINCPAC comments, if any, should be directed to the USCINCPAC project officers: MAJ Purvis, USAFR at DSN (315) 477-2520 or LT T. Wester, USN at DSN (315) 477-1061.

3. The USCINCPAC point of contact is Mr. Wayson Lee at DSN (315) 477-1182 or commercial (808) 477-1182 or fax (808) 477-0535 or e-mail (leewc000@hq.pacom.mil).

J. B. KOEHLER
Captain, S.C., U.S. Navy
Comptroller

1. General comments: Concur with the stated purpose, intent, conclusion and most of the recommendations of the report. The frequency certification process needs to be addressed from day one of the concept phase. Acquisition personnel need to be more intimately involved in frequency certification for Commercial off the shelf (COS) equipment. No system should be deployed to an overseas operating location until it has received that host-nation's frequency support.

2. Page 6, paragraph 4: *Do Not Concur*. As written, the statement that seventy-eight systems were deployed into the Pacific Theater without proper frequency certification and host-nation approval **is not true**. Those systems listed in Appendix F, tables 3 and 4 are equipment/systems which have or are being coordinated with the host governments of Korea (GOK) and Japan (GOJ). The fact that they are being coordinated with the host-governments **does not** imply that they have already been deployed into theater. Generally, equipment/systems are not deployed until they have received host-nation frequency support.

3. Page 11, paragraph 6:

   a. *Recommendation*: Change last sentence to read as follows: Personnel involved in the requirements, development, and acquisition of telecommunications systems need to be trained on the requirements of the frequency certification (JF-12) process and on the potential problems that may be encountered when equipment is deployed overseas.

   b. *Rationale*: As written, this implies that personnel currently involved in the frequency certification process need to be trained on the JF-12 process, however, these people are already aware of the problems. The individuals who require training are those who are not normally involved in or aware of the frequency certification process.

4. Page 12/13, Recommendations for Corrective Action: *Concur* with recommendations, but be aware that item A.7 may have an adverse impact on the Unified command's JFMO. The JFMOs do not have the additional personnel needed to research which frequency dependent products could be sold in the Service's Exchange systems.

5. Appendix D. JF-12 Process, page 30, paragraph 1: *Recommendation*: Substitute the following:
A releasable DD Form 1494 (JF-12) is forwarded to the unified commands where the system will be deployed overseas. The unified command Joint Frequency Management Office (JFMO) will then review the JF-12 and coordinate it with the host-nation to obtain host-nation comments/frequency support approval for the system. After host-nation comments/frequency support has been obtained for the system, the unified command concurs/non-concurs with the host-nation comments/frequency support and requests that a "note to holder" be issued showing the host-nation's comments/frequency support. If host-nation frequency support has been granted then the user of the system

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must submit a frequency proposal in Standard Frequency Action Format (SFAF) through the JFMO or unified command to obtain a frequency assignment before the equipment can be used.

6. Appendix F, Table 3, page 34:

a. *Do not concur* with title of table. Title now used implies that all of the systems in the table are or have been deployed into PACOM, supporting USFK, before being coordinated with the host government of Korea (GOK). **This is not true.** The systems listed are in or have completed coordination with GOK. Some of the systems can't be used to their full military capability (i.e., limited support geographically, frequency bands or number of frequencies), but the limited support does allow for training using those systems.

b. The only systems that this office is aware of, deployed to Korea before the JF-12s were coordinated with GOK, were the Patriot (JF-12 2227/4, 2439/6, 2443/6, 3639/6, 5330/2 and 6381/1) and JSTARS. The Patriot is in coordination. Releasable JSTARS JF-12 documents have been requested from the Air Force Frequency Management Agency.

7. Appendix F, Table 4, page 37:

Page 38

a. *Do not concur with* title of table. As written, the title now used implies that all of the systems in the table are or have been deployed into PACOM, supporting USFJ, before being coordinated with the host government of Japan (GOJ). **This is not true.** The systems listed are in or have completed coordination with GOJ. Some of the systems can not use their full military capability (i.e., limited support geographically, frequency bands or number of frequencies), but the limited support does allow for training using those systems.

b. The only system that this office is aware of, deployed to Japan before the JF-12s were coordinated with GOJ, was the HAWK Missile System (JF-12s 0767/4, 0768/2, 1192/4 and 1193/2) in 1986. The system did not go operational until after releasable JF-12s were obtained and coordinated with GOJ.

Defense Information Systems Agency Comments

DEFENSE INFORMATION SYSTEMS AGENCY
701 S. COURTHOUSE ROAD
ARLINGTON, VIRGINIA 22204-2199

IN REPLY REFER TO

Inspector General

18 May 1998

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTEMENT OF DEFENSE
ATTN: Director, Contract Management

SUBJECT: Draft Audit Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements (Project No. 6RD-0056.02)

Reference: DODIG Audit Report, subject as above, 16 Mar 98

The DISA Regulatory/General Counsel has reviewed the subject draft audit report and generally concurs with the findings and recommendations. Detailed management comments to the recommendations are enclosed. The point of contact for this action is Ms. Sandra J. Sinkavitch, Audit Liaison, and (703) 607-6316.

FOR THE DIRECTOR:

1 Enclosure a/s

RICHARD T. RACE
Inspector General

Quality Information for a Strong Defense

DoDIG Draft Audit Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements (Project No. 6RD-0056.02)

Comments to the Recommendations

Recommend the Director, Joint Staff, revise Chairman of the Joint Chiefs of Staff Instruction 6740.01 to:

Recommendation B1: *Assign responsibility for centralized management and oversight of all ITAs to the OJCS, Director for C4 Systems.*

Response: Concur. DISA agrees that centralized management and oversight should be a Joint Staff responsibility. DISA also believes that the Joint Staff should clearly define types of agreements to be placed in the register. Currently, there is no clear consensus among the commands as to what should be included in the register.

Recommendation B2: *Assign responsibility to DISA for administrative maintenance of all ITAs; establish a common database to collect, maintain and monitor all ITAs, and ensure DISA includes relevant information on ITAs, which require monetary cash payments or payment-in-kind to DoD.*

Response: Concur. DISA believes that specific offices within each command or service should be tasked to provide DISA with certified copies of signed ITAs. The DISA RGC, which maintains the register, agrees that a common database should be established. Preliminary discussions have occurred between RGC and DISA staff regarding establishing the database; however, funds are not currently available for this effort. With appropriate funding and cooperation from all commands and services involved, the database could be operational in approximately two years.

Recommendation B3: *Require DISA to provide a common indexing system for ITAs throughout DoD.*

Response: Concur. DISA agrees that a common indexing system needs to be established and, with funding, will incorporate this function into the common database.

Recommendation B4: *Require that unified commands and other relevant DoD agencies submit all new, changed, or terminated ITAs to DISA for entry in a common database.*

Response: Concur. DISA believes that the best solution would be to establish a database that could be accessed, updated and changed directly by the unified commands and services. This will be discussed with the database developers once funding becomes available.

Recommendation B5: *Require that DISA maintain the common database on the DISA SIPRNET.*

Response: Concur. DISA believes that the common database should be maintained on the SIPRNET and will work with DISA operational personnel once funding is available.

Specific Comments

Page 16, Compliance with Policies and Guidelines, paragraph 3 states that the DISA register did not identify ITAs which require monetary payment or payment-in-kind due to, or owed by, DOD. The statement should be clarified to indicate that CJCSI 6740.01 does not require that the register contain this information.

Page 17, paragraph 1 states that DISA has sent requests to unified commands asking for updated information but has not received the necessary responses. After the DODIG visit to DISA, the Agency has since received updates from the Atlantic Command and European Command.

Army and Air Force Exchange System Comments

DEPARTMENTS OF THE ARMY & AIR FORCE
Headquarters Army & Air Force Exchange Service
Dallas, Texas 75266-0202

18 MAY 1998

SUBJECT: AAFES Comments on Audit Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunication Agreements (Project No. 6RD-0056.02)

THRU: Lieutenant General John G. Coburn, USA
Chairman, Board of Directors
Army & Air Force Exchange Service
1290 Air Force Pentagon
Washington D.C. 20330-1290

TO: Department of the Air Force
Office of Assistant Secretary
Director, Audit Liaison and Followup
Attn: Mr. Vaughn E. Schlunz

1. This is in reply to your memorandum dated 25 March 1998, Subject: DoDIG Draft Report, Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements, (Project No 6RD-0056.02) requesting the Assistant Secretary of the Air Force (Financial Management and Comptroller) to provide Air Force comments on subject report.

2. The Army and Air Force Exchange Service (AAFES) concurs with the Office of Inspector General, DoD, that the selling of communications devices with frequencies not authorized in host nation, even though not intended for use in the host nation, may result in the illegal use of the equipment and has the potential to create friction with host nations and complicate the mission of unified command's frequency management offices.

3. While prior action has been taken, I have directed the AAFES senior merchandising staff to take the following actions to preclude this situation from repeating:

- Confirm which frequency spectrum-dependent products can be used and sold with a host nation without interfering with the host-nation frequencies. This will be accomplished through coordination with Joint Frequency Management Offices within the unified commands.

- Review current stock assortments of frequency spectrum-dependent products to insure they do not interfere with host-nation frequencies.

MR
SUBJECT: AAFES Comments on Audit Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunication Agreements (Project No 6RD-0056.02)

- Transfer any illegal/non-compliant merchandise from OCONUS stock assortment.

- Ensure that all new frequency spectrum-dependent products that are added to our stock assortments conform to the frequencies of the host nation.

4. If you have any questions or need for additional information, please contact Eugene Miller, Deputy Director, Audit Division at DSN 977-3191 or (214) 312-3191.

KATHRYN G. CARLSON
Brigadier General, U.S. Army
Acting Commander

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Navy Exchange Service Command Comments

DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
RESEARCH, DEVELOPMENT AND ACQUISITION
1000 NAVY PENTAGON
WASHINGTON DC 20350-1000

MEMORANDUM FOR DEPARTMENT OF DEFENSE ASSISTANT INSPECTOR GENERAL FOR AUDITING

SUBJECT: DEPARTMENT OF DEFENSE INSPECTOR GENERAL (DODIG) DRAFT AUDIT REPORT ON COORDINATION OF ELECTROMAGNETIC FREQUENCY SPECTRUM AND INTERNATIONAL TELECOMMUNICATIONS AGREEMENTS (Project No. 6RD-0056.02) - INFORMATION MEMORANDUM

REFERENCE: (a) DODIG memo of 16 Mar 98

ENCLOSURE: (1) Department of the Navy Comments
(2) Marine Corps Comments

In response to reference (a), our comments are provided in enclosures (1) and (2). We concur with recommendations A.6. and A.7.

D Tellepsen for

WILLIAM J. SCHAEFER
Deputy Assistant Secretary
of the Navy
Planning, Programming, and
Resources

Copy to:
ASN(FM&C) (FMO-31)
NAVSUP (91F)
CMC (RFR-20)

Department of the Navy Comments
on
DODIG Draft Audit Report
on
Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements
(Project No. 6RD-0056.02)

Recommendations for Corrective Action (U)

We recommend the Chairman, Board of Directors, Army and Air Force Exchange System (AAFES); the Commander, Navy Exchange Service Command (NEXCOM); and the Head, Marine Corps Exchange direct their respective exchanges to:

A.6. Cease selling frequency spectrum-dependent products which interfere with host nation frequencies; and

A.7. Coordinate with Joint Frequency Management Offices within the unified commands to determine which frequency spectrum-dependent products can be used and sold within a host nation without interfering with the host nation frequencies.

Department of the Navy Comment

Concur. NEXCOM will develop a plan to address recommendations A.6. and A.7. as follows:

a. Coordinate with the Joint Frequency Management Office within the unified commands to determine which frequency spectrum-dependent products are not in compliance with frequencies of the host countries.

b. Determine if these products are being sold in the exchanges and are included in overseas existing merchandise inventory stock assortment, and take necessary action to bring them in compliance or delete from assortment and cease selling them.

c. Ensure all new frequency spectrum-dependent products included in the assortment meet the requirements.

We will coordinate, where feasible, with the Marine Corps and AAFES to resolve this issue.

Implementation is ongoing. Estimated completion date is 30 September 1998.

Enclosure (1)

Marine Corps Exchange Comments

4060
MWX
20 MAY 1998

PERSONNEL AND FAMILY READINESS DIVISION COMMENTS on DODIG Route Sheet of 16 March 1998

Subj: DODIG DRAFT AUDIT ON COORDINATION OF ELECTROMAGNETIC FREQUENCY SPECTRUM AND INTERNATIONAL TELECOMMUNICATION AGREEMENTS (PROJECT NO. 6RD-0056.02)

1. We have reviewed the subject report and concur with action related to Finding A, Coordination of Electromagnetic Frequency Spectrum with Host Nations.

2. MCAS Iwakuni is the only overseas exchange operated by the Marine Corps and affected by the subject agreements. We will instruct MCAS Iwakuni to cease the sale of products interfering with host agreements and to coordinate with Joint Frequency Management Office in determining acceptable sale products.

3. Our point of contact Mr. Bruce Bendele at Commercial (703)784-3837 or DSN 278-3837.

K. J. Lewis

K. J. LEWIS
By direction

United States Forces Korea Comments

Final Report Reference

HEADQUARTERS, UNITED STATES FORCES, KOREA
UNIT # 15237
APO AP 96205-0010

REPLY TO ATTENTION OF:

FKJA-IA

5 April 1998

MEMORANDUM FOR FKIR (Bill Kanik)

SUBJECT: DoDIG Draft Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements – Project No. 6RD-0056.02

Page 19

1. We have received the draft report referenced above and provide the following comments:

a. On page 17, last paragraph, the report states: "The four unified commands that we visited did not have a common indexing system for tracking ITAs,..." Actually, PACOM does have a common indexing system used throughout its area of responsibility. This is acknowledged elsewhere in the report. However, the cited language seems to indicate this is not the case. I believe what is intended to be stated is that there is no single indexing system common to all four unified commands visited. If this is the case, I recommend that the cited language be replaced with: "There is no single indexing system for tracking ITAs common to all four of the unified commands we visited, ..."

b. On page 18, the first paragraph under Indexing and Cross-Referencing ITA Databases, states that USFK was amending its regulation on international agreements to include a requirement to maintain the database and, in addition, an instruction is being drafted, detailing how to maintain the database. The regulation is in its final editing and the instruction on how to maintain the database has been concluded (attached). In the second paragraph, the report indicates that USFK has entered over 800 international agreements into its database. That should be updated to reflect over 1000 agreements having been entered.

c. Appendix H. Since the DoDIG team's visit, USFK has modified one element of its indexing system. The sequential numbering field has been changed from a number field to a text field. By changing this to a text field, we are now able to use numbers and letters together to create a single unique key field. This gives more flexibility to the sub-unified command and subordinate components enabling them to more easily and clearly identify the agreement without viewing any of the other fields. For example, "671104FA2559" is the designator used to identify the 2559th facilities and areas (FA) agreement signed on November 4, 1967. Given the hierarchical scheme of the overall indexing system, the change of this field from a number to a text field does not adversely affect the unified command's use of the data. This sequential numbering field is within the purview of the sub-unified command and its subordinate components.

FKJA-IA
SUBJECT: DoDIG Draft Report on Coordination of Electromagnetic Frequency Spectrum and International Telecommunications Agreements – Project No. 6RD-0056.02

d. Appendix H. As you indicate in your draft report, PACOM, the sub-unified commands and components were in the process of reaching a compromise on the data fields that would be included in the International Agreements Control System. Having reached agreement, we have modified the database data entry form and a updated copy of that form is attached.

2. The underlying recommendations of the draft report regarding common indexing systems and databases for international agreements are sound. As the United States faces a future of possible multiple contingency actions, it would be beneficial to have a DoD universal indexing system and database for international agreements. If such a system existed, combatant commanders would have access to information about agreements potentially supporting their mission. In addition, when negotiating agreements, it would be beneficial to know of other like agreements. We believe the indexing system we have developed here at USFK is sufficiently flexible to serve as the basis of a DoD-wide system and urge DoD to adopt the recommendations of this report.

a/s

DAVID E. SPROWLS
Lt Col, USAF
Chief, International Affairs Division

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Audit Team Members

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