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MEMORANDUM FOR ASSISTANT SECRETARY OF THE NAVY FOR RESEARCH,
DEVELOPMENT, AND ACQUISITION
DEPARTMENT OF THE NAVY DEPUTY CHIEF INFORMATION
OFFICER (NAVY)
DEPARTMENT OF THE NAVY DEPUTY CHIEF INFORMATION
OFFICER (MARINE CORPS)
DEPARTMENT OF THE NAVY CHIEF OF NAVAL RESEARCH
DEPUTY CNO FOR WARFARE SYSTEMS (OPNAV N9)
DEPUTY CNO FOR INTEGRATION OF CAPABILITIES AND
RESOURCES (OPNAV N8)

Subj: SPECTRUM-DEPENDENT ASSET VALUE DETERMINATION (S-DAVD)

- Ref: (a) OMB Circular A-11, Preparation, Submission, and Execution of the Budget, Section 31.12
(b) 10 USC Sec. 2434 - Independent Cost Estimates; Operational Manpower Requirements
(c) DoD Directive 5000.01, Subject: The Defense Acquisition System
(d) DoD Instruction 5000.02, Subject: Operation of the Defense Acquisition System
(e) DoD Directive 5000.04, Cost Analysis Improvement Group (CAIG)
(f) DoD 5000.4-M, Cost Analysis Guidance and Procedures
- Encl: (1) Spectrum-Dependent Asset Value Determination (S-DAVD) Requirements
(2) Example Requests for Proposal Required Text
(3) Methodology to Evaluate Spectrum Efficiency

The purpose of this memorandum is to establish Department of the Navy (DON) policy to comply with recent Office of Management and Budget requirements concerning spectrum-dependent (S-D) communications-electronics systems (reference (a)). S-D programs must now determine the value of the spectrum they will use when acquiring S-D systems/equipment and consider that value as a cost when making procurement decisions. References (b) through (f) provide management principles and mandatory policies and procedures for all acquisition programs.

The Department of Defense defines Spectrum Efficiency as "Use of the minimum amount of electromagnetic spectrum resources necessary to ensure maximum operational effectiveness in fully accomplishing the required mission while taking all practicable steps to minimize impacts to other systems in the electromagnetic environment." Per reference (a), "In some cases, greater investments in systems could enhance spectrum efficiency (e.g., purchase of more expensive radios that use less bandwidth); in other cases, the desired service could be met through other forms of supply (e.g., private wireless services or use of land lines)."

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To enable the DON to assess trade-offs between equipment and spectrum requirements investments, it is DON policy that:

- S-D asset value determinations (S-DAVDs) must be included in the development of budget justifications for procurement of S-D systems, including major telecommunication, broadcast, radar, and related systems. Enclosure (1) provides specific information on the requirements for S-DAVDs.
- Requests for Proposal (RFPs) for all S-D systems must require respondents to address spectrum efficiency factors. Enclosure (2) contains examples of language that can be used in RFPs for this requirement.
- S-DAVDs from selected and non-selected proposals must be included as an attachment to the program's Spectrum Supportability Risk Assessment.

Specific guidance on determining spectrum efficiency is provided in enclosure (3).

The DON Chief Information Officer (CIO), in coordination with the Assistant Secretary of the Navy (Research, Development, and Acquisition), will continue to review S-DAVD requirements and will update this policy as necessary.

The DON CIO point of contact for this effort is Mr. Tom Kidd. He can be reached at (703) 695-1978 or at thomas.kidd@navy.mil.



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Spectrum-Dependent Asset Value Determination (S-DAVD) Requirements

S-DAVDs must be included in budget justifications for procurement of spectrum-dependent systems, including major telecommunication, broadcast, radar, and related systems.

1. Each determination must indicate whether the system procured was the most spectrum efficient solution among qualified bids. If not, include:
 - a. The cost difference between the solution chosen and the more spectrum efficient qualified solution, and
 - b. The capability difference between the solution chosen and the more spectrum efficient qualified solution.
2. Each determination must include:
 - a. The Request for Proposal requirement for which respondents addressed spectrum efficiency factors and assessed trade-offs between investment in equipment and spectrum requirements.
 - b. Whether the system will share spectrum with existing Federal or non-Federal systems/operations. If so, a description of the nature and extent of the sharing relationship(s).
 - c. Certification that non-spectrum dependent and commercial spectrum dependent alternatives were considered.
3. For new DON systems, each determination must state whether the capability requirement can be met by sharing an existing Federal system and whether sharing capabilities of similar Federal users was considered.
4. For system improvements, each determination must include a spectrum efficiency and effectiveness comparison to the prior/existing system.

Example Requests for Proposal (RFP) Requirement Text

Procurement contracting officers will include the following text, or equivalent, in all RFPs for spectrum-dependent systems or devices.

1. Section C language for RFP solicitations of systems that affect the radio frequency spectrum:
"The contractor shall comply with the spectrum requirements set forth in Department of the Navy Chief Information Officer memorandum "SPECTRUM-DEPENDENT ASSET VALUE DETERMINATION (S-DAVD)" to address spectrum value-added dependencies."

2. Section L for RFP solicitations of systems that affect the radio frequency spectrum:
Procurement contracting officers will add a reference in one of the technical or management sub factors (in section L) which asks the offerors to address their spectrum selection (i.e., "efficiency" and "trade-offs") within the confines of the broader requirements identified in section C.

Methodology to Evaluate Spectrum Efficiency

1. Develop a baseline that provides:
 - a. The technical characteristics of the frequency used by the system.
 - (1) Use OMB A-11 Section 31.12 Table 1 to assign a weighting factor to the frequency utilized by the system.
 - b. The population of an area where spectrum is utilized.
 - (1) Use U.S. Census Bureau population information by metropolitan statistical area (MSA) or other relevant designation for non-metropolitan areas to develop estimates.
 - (a) Systems should only count the U.S. population impacted
 - (i) Shipboard systems operating exclusively outside the United States shall use a value of "1".
 - (ii) Shipboard systems operating in Coastal Waters shall use 29 percent of the U.S. population¹.
 - (iii) Shipboard systems operating in port, or in other specific metropolitan statistical areas, shall count the U.S. population impacted.
 - (b) Systems that utilize spectrum nationwide should use population information for the entire country.
 - c. The amount of bandwidth utilized (in megahertz).
 - (1) This amount should include the total amount of bandwidth needed to operate the system in terms of megahertz, regardless of whether that spectrum is necessary to support transmitting or receiving equipment.
 - (a) This calculation should include necessary guard bands.
 - (b) Bandwidth in Hz, KHz, GHz, THz, etc. must be converted to MHz.

To calculate spectrum efficiency, multiply the preceding three factors together.

2. Alternative methods for measuring spectrum efficiency must be approved by the Office of Management and Budget.

¹U.S. population data is available from <http://www.census.gov/newsroom/emergencies/> (or another value from an authoritative source may be used).