



ELECTROMAGNETIC SPECTRUM

CAMPAIGN PLAN



DEPARTMENT OF THE NAVY

Foreword

In today's Global War On Terror (GWOT), our Sailors and Marines are using every available and necessary asset to assure mission success and safety. These assets include cellular tactical satellite radios, Unmanned Aircraft Systems (UAS), munitions guided by Global Positioning Systems (GPS), and a myriad of other communications-electronics resources to provide a technological advantage over the enemy. A dependence on the electromagnetic spectrum (spectrum) is common to most systems on the GWOT battlefield. As a result, access to the spectrum is vital to the successful training and combat use of communications, sensors, and weapons systems being employed on terrorist targets.

The following spectrum goals will be our "focus of effort" for the next eighteen months. We will ensure that the Department of the Navy's (DON's) Spectrum priorities are in accordance with those identified in Secretary of the Navy (SECNAV) Instruction 2400.1, and fully support the DoD Electromagnetic Spectrum Management Strategic Plan ⁽¹⁾, the Joint Staff's Command, Control, Communications and Computers (C4) Campaign Plan ⁽²⁾, and the Marine Corps' C4 Campaign Plan ⁽³⁾.

Working together, we will attain the greatest degree of spectrum access possible for the current and future Navy/Marine Corps team.



D. M. Wennergren

Department of the Navy Chief Information Officer

I ntroduction

The DON's role in the GWOT highlights the importance of unencumbered access to spectrum to support the full range of United States Navy (USN) and United States Marine Corps (USMC) operations around the world. As enemy tactics evolve, the USMC and USN must create new capabilities through rapidly fielded technologies to overcome developing threats. Many of these new technologies and capabilities increase our spectrum requirement. A critical challenge for the DON is to ensure access to spectrum. The use of UAS, robotics, and a growing list of fielded capabilities, including electronic warfare, will further add to the importance of unencumbered access to Spectrum.

The DON's GWOT responsibilities include overseas and homeland defense roles. Significant challenges to federal and non-federal domestic spectrum use are presented through the urban employment of communications equipment generally considered tactical, as well as interoperable, with U.S. federal, state, and local anti-terrorism and force protection authorities.

The GWOT is a sustained, worldwide effort. Given the unique physics of the electromagnetic spectrum, the unique legalities associated with it, and that the world's economic climate is increasingly influenced by spectrum use, assuring access to spectrum is no simple task. Success requires consistent, dedicated effort from the strategic to the tactical levels of the DON, the USMC, and the USN. Unconstrained access to the electromagnetic spectrum is the Department's highest spectrum priority.

Spectrum management and policy play vital roles in both training exercises and real world operations. Due to spectrum's critical role, it must be a primary consideration in acquisition, operational planning, Command and Control (C2), and personnel training. The Secretary of the Navy (SECNAV) recently published SECNAV Instruction 2400.1, *Electromagnetic Spectrum Policy and Management*, which provides overarching policy for the planning, management, and use of spectrum, as well as the acquisition of spectrum-dependent systems, ensuring the DON appropriately addresses spectrum.

SECNAV Instruction 2400.1 establishes and delineates the DON secretariat and service-level spectrum roles and responsibilities. The instruction, while recognizing the changing spectrum landscape in conducting coalition and domestic support operations, provides both strategic and operational focus to fundamental spectrum goals to achieve worldwide spectrum access for the USMC and the USN.

Goal 1:

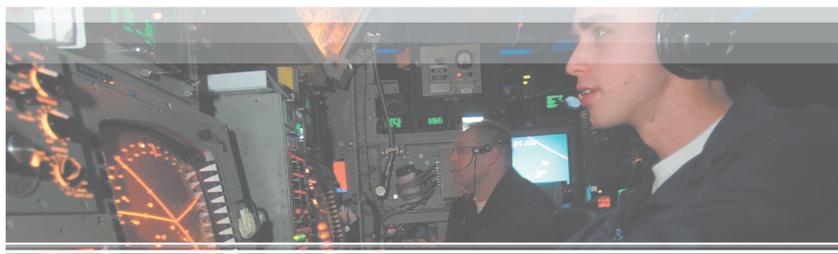
Endorse and exploit technology and transformation.

Whether through government research or commercial development, new and emerging technologies provide the basis for transformation within the DON. A wide variety of new technologies are being introduced into the USN and USMC. These include: Radio Frequency Identification (RFID), which is redefining logistic operations both ashore and afloat; cellular satellite communications used extensively in Operation Iraqi Freedom (OIF); and the Marine Corps Rapid Response System (RRS), a transportable Land Mobile Radio (LMR) system that has been successfully employed in Homeland Defense initiatives, a National Special Security Event ⁽⁴⁾ (NSSE), and natural disaster recovery operations ⁽⁵⁾.

In addition to enhancing our capabilities, spectrum-efficient technologies have proven to effectively reduce the DON's requirement for spectrum, thereby supporting the Secretary of the Navy's policy for efficient spectrum use while enabling spectrum support of legacy applications. Exploitation of new and emerging technologies has and must remain a mainstay in our quest to continually improve Naval operational effectiveness.

SUPPORTING OBJECTIVES:

- Define and comply with DoD and DON RFID implementation and use policy.
- Streamline the DON equipment certification process to better support dynamic technology acquisition efforts in order to speed equipment delivery to the fleet and operating forces.
- Replace legacy wide-band LMR with narrow-band LMR in order to comply with the federal narrow-band mandate and provide interoperable communications between DON first responders and federal, state, and local authorities.



Goal 2:

Influence DoD, federal, national, and international spectrum policies that benefit the Naval services.

DoD, federal, national, and international spectrum policy all impact the DON's ashore and afloat operations. The DON Chief Information Officer (DON CIO) develops DON strategic spectrum policy and is the DON's representative to DoD, federal, national, and international spectrum policy bodies, ensuring that appropriate effort is dedicated to this "misunderstood"⁽⁶⁾ resource. In so doing, the DON CIO coordinates with the Chief of Naval Operations and the Commandant of the Marine Corps.

Past successes include: the coordinated reissuance of DoD Directive 4650, *Policy for Management and Use of the Electromagnetic Spectrum*, which includes specific spectrum certification requirements for equipment acquisition; and influencing past World Radio Conference (WRC) actions that minimized risk to USN and USMC worldwide spectrum use. However, serious new challenges have been identified in the (WRC-07) agenda. The DON CIO, DON Deputy CIO USMC, and DON Deputy CIO USN, in coordination with the Assistant Secretary of the Navy for Research, Development, and Acquisition, (ASN RD&A) continue to address spectrum utilization concerns. Specifically, the DON advocates requirements validated by competent technical support from the USN and USMC and the DON's acquisition community.

SUPPORTING OBJECTIVES:

- Update acquisition guidance documents (DoD 5000 series, Mil HDBK 237C, etc.) to include equipment certification and Electromagnetic Environmental Effects (E3) requirements in the acquisition process.
- Participate in international deliberations in preparation for WRC-07, to include preparations for, and attending bilateral meetings on WRC issues.
- Conduct related WRC-07 assessments and engineering analyses on critical DON/DoD issues. Prepare and distribute preparatory WRC-07 position papers and advisories for the DON, USN, and USMC spectrum stakeholders.
- Actively support DoD / Federal and Mexico / Canada / US spectrum sharing negotiations to ensure Naval spectrum needs are protected.



Goal 3:

Increase efficiency through spectrum-related administrative actions.

Past spectrum reallocations have highlighted the necessity to not only be a good spectrum administrator, but also ensure that use of radio frequencies is as efficient as possible. Timely and accurate completion of federal spectrum administrative actions, such as frequency assignment modifications and five-year reviews, establish the DON as a premier federal steward of electromagnetic spectrum.

In this regard the DON must “raise the bar.” Spectrum administrative actions contribute to frequency assignment data accuracy within DoD and federal databases. The benefits of detailed and precise spectrum databases include: an ability to accurately identify Hazards of Electromagnetic Radiation to Ordnance, Personnel, and Fuel (HERO, HERP, and HERF); reducing the potential for harmful radio frequency interference; and increasing savings when fee-based frequency assignments, no longer required by the DON, are released for redistribution to another agency. The timely completion of federal administrative actions helps to ensure the efficient use of a finite resource.

SUPPORTING OBJECTIVES:

- Reduce the requirement for temporary frequency assignments by ensuring all Naval installations within the United States and Possessions (US&P) acquire sufficient permanent frequency assignments.
- Continue to reduce overdue five and ten year frequency assignment reviews. Eliminate frequency assignments that are no longer required for use by the USMC and USN.
- Streamline spectrum-related administrative processes and implement actions to enhance the accuracy of organizational data for all DON frequency assignments.



Goal 4:

Develop and update department and service spectrum publications, directives and policy.

Due to the DON's worldwide reliance on spectrum, appropriate service and department-level publications and directives must be continuously updated to ensure DON policies are applicable and synchronized with DoD, federal, national, and international spectrum policies. While the majority of the DON's spectrum use is at the USMC and USN tactical levels, we must ensure installations and ranges providing invaluable day-to-day training have sufficient spectrum to support sustaining operations such as security, medical response, and firefighter capabilities.

The Department's spectrum requirements span from the strategic requirements of the DON and the DoD to the tactical service level. Up-to-date and relevant policy ensures the USMC's and USN's use and management of spectrum are effective and efficient. In this regard, SECNAV Instruction 2400.1 supports secretariat and service-level spectrum policy efforts while identifying operational authority and organizational responsibilities.

SUPPORTING OBJECTIVES:

- Review and update SECNAV policies, ensuring that the acquisition and use of spectrum-dependent systems and the use of the electromagnetic spectrum is consistent with SECNAV Instruction 2400.1.
- Review and update OPNAV Instruction 2400.20E; Navy Management of the Radio Frequency Spectrum.
- Review and update MCO 2400.2; Marine Corps Management of the Radio Frequency.



Goal 5:

Ensure Navy and Marine Corps uniformed personnel are well trained and possess capable automated spectrum tools.

The 2004 Joint Staff's C4 Campaign Plan states: "Professional spectrum managers are the backbone to successful network operations (7)." This statement reinforces the DON's requirement for a well-trained, competent, spectrum management workforce throughout tactical, operational, and strategic levels. Spectrum management requirements exist within nearly all USN and USMC functional areas, and the requirement for spectrum training must be adequate to support each functional area. Personnel in acquisition must possess a keen appreciation of spectrum certification requirements to ensure that USN and USMC equipment is fielded as rapidly as possible with maximum Spectrum Supportability. Personnel involved with fleet or expeditionary force Spectrum Management must have a considerable understanding of the joint processes to coordinate and manage the vast and increasing array of spectrum-dependent systems that support DoD operations around the world.

While training is paramount for USN and USMC spectrum personnel, there is also a need for automated spectrum planning and management tools. These must be designed and developed to provide interoperability with legacy systems, as well as new and emerging capabilities such as the Joint Tactical Radio System (JTRS). Spectrum automation tools must be fielded with pre-planned lifecycle management that is capable of interfacing with the Navy Marine Corps Intranet (NMCI).

SUPPORTING OBJECTIVES:

- Create a Departmental Composite Uniformed Spectrum Personnel Plan.
- Outline a career progression strategy for USN and USMC spectrum management personnel.
- Monitor joint, allied, and coalition spectrum management personnel assignments.
- Support the development of programs-of-record for spectrum management automated tools.
- Outline a DON migration strategy for automated spectrum management tools, identifying near-term, mid-term, and far-term requirements.



R eference documents

(1) Department of Defense, Office of Assistant Secretary of Defense (Command, Control, Communications and Intelligence), Electromagnetic Spectrum Management Strategic Plan, October 2002

(2) Joint Staff, Command, Control, Communications, and Computer Systems Directorate (J-6), Joint C4 Campaign Plan, September 2004

(3) U.S Marine Corps, Command, Control, Communications, and Computers (C4), C4 Campaign Plan, "Transforming Marine Corps C4"

(4) NSSE event – NATO Defense Ministers Conference, October 2003

(5) Natural disaster recovery operations – Naval Air Station Pensacola, FL (Hurricane Frances), September 2004; New Orleans, LA and Gulfport, MS (Hurricane Katrina), September 2005

(6) Page 28, Joint Staff, Command, Control, Communications, and Computer Systems Directorate (J-6), Joint C4 Campaign Plan, September 2004

(7) Page 30, Joint Staff, Command, Control, Communications, and Computer Systems Directorate (J-6), Joint C4 Campaign Plan, September 2004

