

Spectrum Enterprise Services and Capabilities

Overview

- Electromagnetic spectrum superiority is a warfighting imperative that transcends all domains.
- The EMS is an integral part of the information battlespace. A comprehensive understanding of all EMS activity is essential, given the requirements for increased battle tempo, agile operations, coordination, training and surgical targeting.
- Everything wireless relies on the electromagnetic spectrum, which comprises energy frequencies ranging from short to long waves. The Defense Information Systems Agency Defense Spectrum Organization primarily focuses on enabling our warfighters to access the electromagnetic spectrum, preventing interference on their devices, and offering spectrum support to our allies and mission partners.
- Military spectrum requirements are extensive, diverse, complex and growing. Successful modern military operations in all domains (air, land, maritime, space and cyberspace) and across all joint functions (command and control, information, intelligence, fires, movement and maneuver, protection and sustainment) depend on EMS operations that dominate.
- Growing spectrum demand from consumers, commerce, the military and other government agencies is significantly increasing congestion in the most desirable portions of the EMS. While it is essential for our nation to spur economic growth, satisfy consumer demand and provide government services, we must concurrently ensure that the unique and vital requirements of our national security are met.
- DSO provides, enhances and evolves unique services and capabilities that support the complex task of managing the Department of Defense-apportioned EMS. DSO also keeps pace with a highly dynamic battlespace.
- DSO performs analyses to evaluate spectrum bands and supports balanced spectrum repurposing decisions at domestic and international spectrum and satellite network forums. The organization leads DoD preparations for the World Radiocommunication Conference, an international forum where radio regulations are periodically reviewed and revised.

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DoD Spectrum Support to the Warfighter

DoD spectrum management is a crucial element of our national defense and a critical component of DISA's support to the warfighter worldwide.

- **Bilateral Agreements.** Engaged in allied partner bilateral agreements with the United Kingdom, Australia and Canada under the auspices of memorandums of understanding between DoD and the allied defense agencies.
- **Missile Defense Agency Homeland Defense Radar - Hawaii.** Conducted an electromagnetic environmental effects analysis in support of the MDA HDR-H at the Pacific Missile Range Facility. The MDA is developing ballistic missile defense capabilities to protect the U.S. from ballistic missile attacks.
- **Mobile Service Provider Analysis Processes.** Optimized and streamlined the analysis processes associated with the DoD mobile service provider effort, which improves quality-of-life smartphone connectivity on DoD military installations through deployment of additional infrastructure. Analyses ensure this additional infrastructure does not interfere with DoD operations or introduce hazards to personnel, fuels or ordnance.
- **America Mid-Band Initiative Team.** Supported a DoD and multi-agency working group assessing national security and national economic goals to utilize spectrum in the 3400-3550 MHz range. Focus was on courses of action to support commercial access to at least 100 MHz of contiguous spectrum between 3400 and 3550 MHz.
- **Telecommunications Advanced Research and Dynamic Spectrum Sharing Systems.** Established a TARDyS3 program to lead the DoD activities in the 3550-3650 MHz band. This tool suite will provide interference prevention, detection and resolution.
- **2025-2110 MHz Spectrum Management Coordination System.** Developed an email-based interim capability to enable DoD to coordinate access to the 2025-2110 MHz band with the Broadcast Auxiliary Service community. This capability will be replaced by the initial operating capability of SMCS in the fourth quarter of fiscal year 2021.
- **EMS Superiority Strategy Support.** Participated in the first DoD Chief Information Officer-EMS cross functional team EMS Superiority Strategy implementation plan development core team meeting. Working integrated product teams were formed for each of the five goals. DSO led Goal 4 WIPT - Partnerships: International and National Spectrum Planning and participated in other goal-based WIPTs that involved DSO equities (e.g., software/material solutions, data, architecture, etc.)
- **Blockchain Use for Electromagnetic Spectrum Operations.** DSO drafted an emerging spectrum technology report to educate the EMS community on the use cases where blockchain could provide major benefits for EMSO.
- **Operational Support Teams Provide Global Support.** DSO facilitated detachments of the spectrum operational teams globally via onsite and reach-back support. These teams helped resolve electromagnetic spectrum interference issues, train field spectrum operators and conduct electromagnetic analysis. Those receiving assistance included combatant commands, the service components, coalition nations, NATO and other agencies.
- **Align and Integrate Data Delivery for EMSO Capabilities.** DSO prepared for the acquisition of the electromagnetic battle management system. The EMBM request for information was released, and the DSO team began analyzing the data to prepare for the request for proposal.

DSO Strategic Efforts

- Continue supporting DoD EMBM evaluation efforts to deliver dynamic EMS command and control capabilities to the warfighter.
- Support DoD's 2023 World Radiocommunication Conference equities. DSO's role is essential to ensuring DoD EMS equities are considered at WRC-23.
- Continue improving direct support to DoD components for effective spectrum operations.
- Advocate for a robust DoD EMS enterprise governance structure and policy and operational requirements definition.