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Spectrum Enterprise Services & Capabilities

Overview

- Electromagnetic Spectrum (EMS) superiority is a warfighting imperative.
- The EMS is an integral part of the "Information Battle Space," and a comprehensive understanding of all EMS activity is essential, given the requirements for increased battle tempo, agile operations, coordination, training, and surgical targeting.
- 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, intelligence, fires, movement and maneuver, protection, and sustainment) are dependent on capabilities enabled by dominating EMS operations. Growing spectrum demand from consumers, commerce, and the military are significantly increasing congestion in the most desirable portions of the EMS. While it is essential for our nation to spur economic growth and satisfy consumer demand, we must concurrently ensure that the unique and vital requirements of our national security and safety are met.
- DISA provides, enhances and evolves unique services and capabilities that support the complex task of managing the DOD EMS and keeps pace with the highly dynamic battle space.
- DISA performs deliberate analyses to evaluate spectrum bands and ensures balanced spectrum repurposing decisions at domestic and international spectrum and satellite network forums. DISA leads DOD preparations for the World Radiocommunication Conference (WRC), an international forum where radio regulations are periodically reviewed and revised.

DOD Spectrum Support To The Warfighter

Department of Defense spectrum management is a crucial element of our national defense. Electromagnetic support is a critical component in carrying out DISA's priorities around the globe.

- **Exercise Support.** Provided spectrum management support for numerous exercises, including Federal Emergency Management Agency National Level Exercise, Exercise Judicious Response, Exercise Trident Spectre, Exercise Pacific Sentry and Exercise Austere Challenge.
- **Training Support.** Provided training for DOD components on Joint Spectrum Interference Resolution Online procedures, Coalition Joint Spectrum Management and Planning Tool, Automated Communications Engineering Software, Spectrum Situational Awareness System and DSO capabilities.
- **Digital upgrade decision**. Determined the feasibility of upgrading analog VHF and UHF communications networks in the CENTCOM AOR. The countrywide radio coverage analysis supported a digital upgrade decision for a theater of operation area.

- **Minimizing electromagnetic interference and maximizing operational effectiveness.** Supported the Homeland Defense Radar- Pacific program's effort to install a missile defense radar system at an OCONUS location.
- Developing Spectrum Plans. Began developing an EMS Strategy Roadmap and Action Plan Assessment update for the EMS Senior Steering Group and DoD leadership to enable them to make informed decisions and focus resources to achieve the strategy's goals and objectives.
- Developing Spectrum Management Architectures.
 - DOD EMS Enterprise Architecture (EMSE-A). This standardized technical framework improves interoperability between various EMS tools utilized within Combined Joint Task Force operations and across the DOD EMS Enterprise. The EMSE-A has a focus on Joint Electromagnetic Spectrum Operations (JEMSO) capabilities, activities, and services required to support Command & Control (C2) of EMS operations.
- Evaluating Emerging Spectrum Technology
 - · Participated in efforts to study electromagnetic battle management.
 - Explored innovative prototype approaches for visualization of spectrum-related use-cases and received prototype demonstration from contracted vendor.
 - Coordinated a Dynamic Spectrum Access (DSA) Transition Support Workshop to examine DSA technologies and identify barriers within current policies, business processes, and supporting infrastructure that may hinder transition of DSA Research and Development to DOD deployment.
- Global Electromagnetic Information System (GEMSIS) milCloud Fielding. GEMSIS Integrated Spectrum Desktop v2.0, Joint Spectrum Data Repository v3.0 and SXXI v5.0 SIPRnet capabilities were fielded in the milCloud environment.
- **Developing Integrated Spectrum Management Tools.** The GEMSIS team spearheaded the effort to convert a spectrum supportability record into the North Atlantic Treaty Organization (NATO) Spectrum Management Allied Data Exchange Format so that it could be imported into the Spectrum Management Information Repository Online NATO tool.
- **Supporting Spectrum Sharing.** DSO representatives participated in monthly Joint Working Groups with the National Telecommunications and Information Administration and Federal Communications Commission in efforts to share the 3.5 GHz spectrum band with industry.
- Protecting international DOD spectrum access. DSO supported numerous meetings in preparation for the World Radiocommunication Conference (WRC-19). During these meetings, DSO contributed to DOD's efforts to maintain spectrum access for DOD equities.

DISA DSO Current Strategic Efforts

- · Continue supporting efforts to develop an Electromagnetic Battle Management system
- Continue supporting DOD's WRC-19 preparation process. The agency's support is essential to ensuring DOD electromagnetic spectrum equities are considered throughout each WRC cycle.
- Publish an update to the Electromagnetic Spectrum Strategy Roadmap and Action Plan.
- Continue improving direct support to DOD components to enable effective spectrum operations.
- Advocate for a robust DOD EMS Enterprise governance structure and policy and operational requirements definition.