US Air Force Releases EMS Superiority Strategy

In April, the Department of the Air Force (DAF) published its first EMS Superiority Strategy to guide the US Air Force (USAF) and the US Space Force (USSF) and align these organizations with the DOD EMS Superiority Strategy published in September 2020. The strategy addresses three main goals: 1) establishing organizations; 2) rapidly developing and delivering "agile EW/EMS capabilities; and 3) developing the EW/EMS superiority force for the future."

In the strategy's foreword, Acting Secretary of the Air Force John Roth, Chief of Staff of the Air Force Gen Charles Brown, Jr., and Director of Space Operations Gen John Raymond stated, "As described in Joint Operating Environment 2035 and the 2018 National Defense Strategy, we face serious and accelerating challenges from competitors and adversaries. We must accelerate change or lose. The purpose of this strategy is to articulate how we must do so in the context of the EMS." The foreword also explains that the USAF's Electromagnetic Spectrum Superiority Directorate (HAF/A5L) and the

USSF's Chief Strategy and Resourcing Officer (CSRO) will act as the respective Offices of Primary Responsibility (OPR) for each organization and will oversee implementation of the EMS Superiority Strategy. This will include creating an Implementation Plan by September and reporting their progress quarterly.

The tone of the document is very focused on establishing an offensive framework for EMS operations. The introductory section of the Strategy describes some of the reasons why the US and the DOD are losing their competitive advantage in the EMS: "A lack of strategic focus on the EMS, constrained budgets, exponential increases in adversary capabilities, and

increased military and civil use of the EMS have led to a contested, congested, and constrained operating environment." Further on, it states, "To overcome these challenges, the DAF will require an overmatching, offensive approach, while continuing to improve its defensive capabilities, to maneuver within the EMS. This approach will force our adversaries to invest heavily to defend their growing reliance on the EMS to achieve offensive capability parity with the United States. Our competitors' and adversaries' dependence on the EMS offers the Joint Force increasing opportunities to exploit new attack vectors throughout the competition continuum. Fielding superior EMS-based capabilities that deny, degrade, or disrupt adversarial situational awareness, their ability to command and control forces, and employ weapons effectively will ensure we maintain a decisive advantage in the EMS. The accurate characterization of the space and terrestrial environment can also provide useful situational awareness of potential degradations or disruptions to adversary capabilities."

The strategy lays out definitions for electromagnetic warfare (EW) and other terms, as well as discussing the role of the EMS in the strategic environment, which includes Great Power Competition; EMS in the competition continuum; and exploding global demand and increasing spectrum scarcity.

The document then dives further into the DAF's three strategic goals in the EMS. The first goal focuses on leadership and organizations. Objectives in this area include unifying DAF-wide EMS Enterprise activities; promoting US and international EMS policies that support DOD capabilities and operations; increasing EMSO leadership; and dedicating intelligence support to the EMS Enterprise.

The strategy's second goal is materiel development. This includes rapid development of EW/EMS capabilities that also utilize open architectures. The strategy states, "The DAF must leverage technology and methods to proactively (vs reactively) respond to an adversarial threat. DAF must guide development

of the EMS GRA [Government Reference Architectures] and harvest best of breed

technologies from the Air Force Research Laboratory, the Defense Advanced Research Projects Agency, other DoD labs, and industry, to transform the DAF EMS capabilities. Additionally, The DAF must expand and leverage the use of technological capability and innovation investments from the private sector to address EMSO challenges."

The second objective under the materiel goal is to develop robust Electromagnetic Battle Management (EMBM) capabilities. The strategy states, "To support JADO, Joint All Domain Command and Control (JADC2) capabilities are being developed across the DoD. The DAF's primary contribution to JADC2 is Advanced Battle Management System (ABMS). The DAF will support the 2020 DoD EMS Strategy by funding and implementing ABMS as the DAF contribution to the multi-service technology and infrastructure needed to realize JADC2.

"ABMS is a network-focused approach that connects sensors, decision nodes, and weapons in all domains and moves data to enable rapid artificial intelligence-enabled decision-making and support EMBM. EMS Superiority and EMBM are prerequisites to ABMS, therefore, the deliberate development of robust EMBM capabilities is essential. EMBM technologies must operate in the JADC2/ABMS/Sensing Grid architecture with open systems for rapid implementation, adoption, and upgradeability." The third objective is to modernize the DAF's EMS operational test and training infrastructure.

The DAF's third and final strategic goal is to develop its EW/EMS Superiority Force. This includes three objectives: developing EMS Enterprise-wide expertise; ensuring "access and interoperability" with allies and partners; and accelerating EMS information integration into intelligence, operations and planning.

In the strategy's final summary, the document is very clear about the purpose and the path the DAF must pursue. "The Department of the Air Force must move in a new direction regarding EMSO. We must overcome the atrophy of our EMS skills and knowledge brought on by years of a false sense of US EMS dominance. We must invest in developing experienced EMSO leaders. Leaders that will be fundamental to achieving the EMS superiority objectives described in this strategy. A strategy that is focused on creating new joint and allied capabilities to provide a dynamic maneuver space for our forces, and complexity for our adversaries." – *J. Knowles*