



Center for Strategic and Budgetary Assessments

**STUDIES**

## **Winning The Airwaves: Regaining America's Dominance In The Electromagnetic Spectrum**

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The electromagnetic spectrum (EMS) is one of the most critical operational domains in modern warfare, but its use in military operations is rapidly changing. In the same way smartphones and the Internet are redefining how the world shares, shops, learns, and works, the development and fielding of advanced sensors and networking technologies will enable some militaries to gain significant new advantages over competitors that fail to keep pace.

Unfortunately, "failed to keep pace" is an appropriate description of the Department of Defense's (DoD) investments in EMS warfare capabilities over the last generation. As a result, America's once significant military advantage in the EMS domain is eroding, and may in fact no longer exist. This does not have to remain the case. DoD now has the opportunity to develop new operational concepts and technologies that will allow it to "leap ahead" of its competitors and create enduring advantages in EMS warfare.

CSBA's report analyzes military use of the EMS over the last century and identifies how it is likely to change over the next several decades. The study then proposes operational concepts and technologies that will enable U.S. forces to dominate the next phase of EMS warfare. The report concludes with an assessment of the barriers DoD faces in implementing a new approach to EMS warfare and recommends a series of actions to overcome these barriers and allow the U.S. military to once again own the airwaves.