



Center for Strategic and Budgetary Assessments

## STUDIES

# Mosaic Warfare: Exploiting Artificial Intelligence and Autonomous Systems to Implement Decision-Centric Operations

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Resources: Future Warfare & Concepts

The United States is increasingly engaged in a long-term competition with the People's Republic of China (PRC) and the Russian Federation—a competition in which U.S. defense leaders and experts argue the U.S. military is falling behind technologically and operationally. U.S. forces, however, may be unable to gain and maintain superiority over their great power competitors by simply using improved versions of today's forces to conduct modest variations on existing tactics. The capabilities DoD developed to help win the Cold War—including stealth aircraft, precision weapons, and communication networks—have proliferated to other militaries, and potential adversaries had ample opportunity to observe U.S. operations during post-Cold War conflicts.

Instead of competing with other great powers using capabilities and operational concepts that have already proliferated to adversaries, the U.S. military should consider new approaches to warfare that offer the potential of gaining a prolonged advantage. During the Cold War, for example, the United States was able to combine prominent emerging technologies with new operational concepts to overcome the numerical superiority of Soviet forces; first with nuclear weapons and later with precision weapons and stealth.

Emerging operational concepts such as Multi-Domain Operations and Distributed Maritime Operations are designed to improve the ability of U.S. forces to survive and destroy enemy units. To better address the operational challenges presented by great power competitors, this DARPA-sponsored study proposes that DoD should instead embrace operational concepts that succeed by making faster and better decisions than adversaries, rather than through attrition. Instead of attempting to destroy an adversary's forces until it can no longer fight or succeed, a decision-centric approach to warfare would impose multiple dilemmas on an enemy to prevent it from achieving its objectives. The report describes one example of decision-centric operations, called Mosaic Warfare, its implications for DoD operations and force development, and its potential effectiveness based on a series of wargames.