



Multi-Domain Battle: Evolution of Combined Arms for the 21st Century

2025-2040

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Foreword

From the Commanding General, U.S. Army Training and Doctrine Command

The world is changing rapidly, and the operating environment is becoming more contested, more lethal, and more complex. Additionally, our peer adversaries are challenging the ability of the U.S. and our allies to deter aggressive actions. These changes are not new endeavors, but how we wage war, the speed and violence of armed conflict, and its global impacts are beyond anything we have seen in the past. Over the last 20 years, our potential adversaries have studied our capabilities and developed the means to counter once-guaranteed domain overmatch. They have demonstrated asymmetric capabilities that deny our access to theaters, challenge the unity of coalitions, and negate freedom of action at the operational and tactical levels. Before this, it can be argued that the U.S. only had to deal with one contested domain – the land domain. Ground forces operated with uncontested air, maritime, and space support, and for the most part cyber support. Looking to the future, we will be contested in all domains and must be able to open windows of advantage for other domains from the land domain. Addressing these challenges demands a threat-based analytic approach that considers not only the U.S. military, but also intergovernmental and multinational partner contributions.

This concept builds on the Army Operating Concept and associated learning to identify how the Army, working as part of the Joint Force, will operate against these peer adversaries to maintain U.S. interests, deter conflict, and, when necessary, prevail in war. The purpose of the Multi-Domain Battle concept is to drive change and design for the future Army. It will provide the foundation on which TRADOC conducts capabilities-based assessments to refine required capabilities, identify gaps, and determine potential capability and policy solutions for future forces. This document describes the future vision of the Army and how we want to fight, while the more specific approach to fighting will be described in follow-on doctrine.

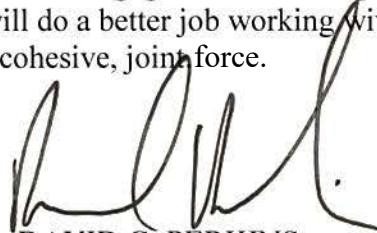
Multi-Domain Battle necessitates that the U.S. view the operating environment, potential adversaries, and their capability sets from a different perspective. We must define the warfighting problem based on the complexities of the modern battlefield, the rate of change in terms of information access and decision, and the role that non-traditional or proxy/hybrid actors play to shape operations, especially prior to armed conflict. Multi-Domain Battle requires the ability to maneuver and deliver effects across all domains in order to develop and exploit battlefield opportunities across a much larger operational framework. It must include whole-of-government approaches and solutions to military problems and address the use of multinational partner capabilities and capacity.

Multi-Domain Battle entails collaboration and integration of comprehensive effects and enablers. The rapid pace of modern conflict requires a mission command construct for executing Multi-Domain Battle that includes common networks, tools, and knowledge products. It also necessitates mission orders, shared understanding and visualization of the battlespace, and subordinate commanders executing operations with disciplined initiative within the senior commander's guidance that is empowered from above. Command and control is only a component of that philosophy.

To conduct Multi-Domain Battle, all domains and warfighting functions are integrated to deliver a holistic solution to the problem. Federated solutions will not work. We need a comprehensive, integrated approach inherent in our forces.

The operational framework of the future is critical. Multi-Domain Battle extends the battlespace to strategic areas for both friendly and enemy forces. It expands the targeting landscape based on the extended ranges and lethality delivered at range by integrated air defenses, cross-domain fire support, and cyber/electronic warfare systems. We must solve the physics of this expanded battlespace and understand the capabilities that each domain can provide in terms of echelonment, speed, and reach. Each Service's view of the operational framework will differ, but they are interdependent and must be viewed as such. Once we understand this future battlespace, we can begin to assess command and control relationships and how we will execute multi-domain mission command.

This document is the starting point to develop the future force capable of executing Multi-Domain Battle in competition and armed conflict. Today the Army and Marine Corps are working together to frame Multi-Domain Battle from the land domain's perspective, and the Army and Air Force are working together to understand the Multi-Domain Battle operational framework and key components required from the air domain. However, a comprehensive multi-service, interorganizational, and multinational engagement is lacking. As Multi-Domain Battle continues refinement, the community will do a better job working with our partners, including special operations forces, to build a cohesive, joint force.



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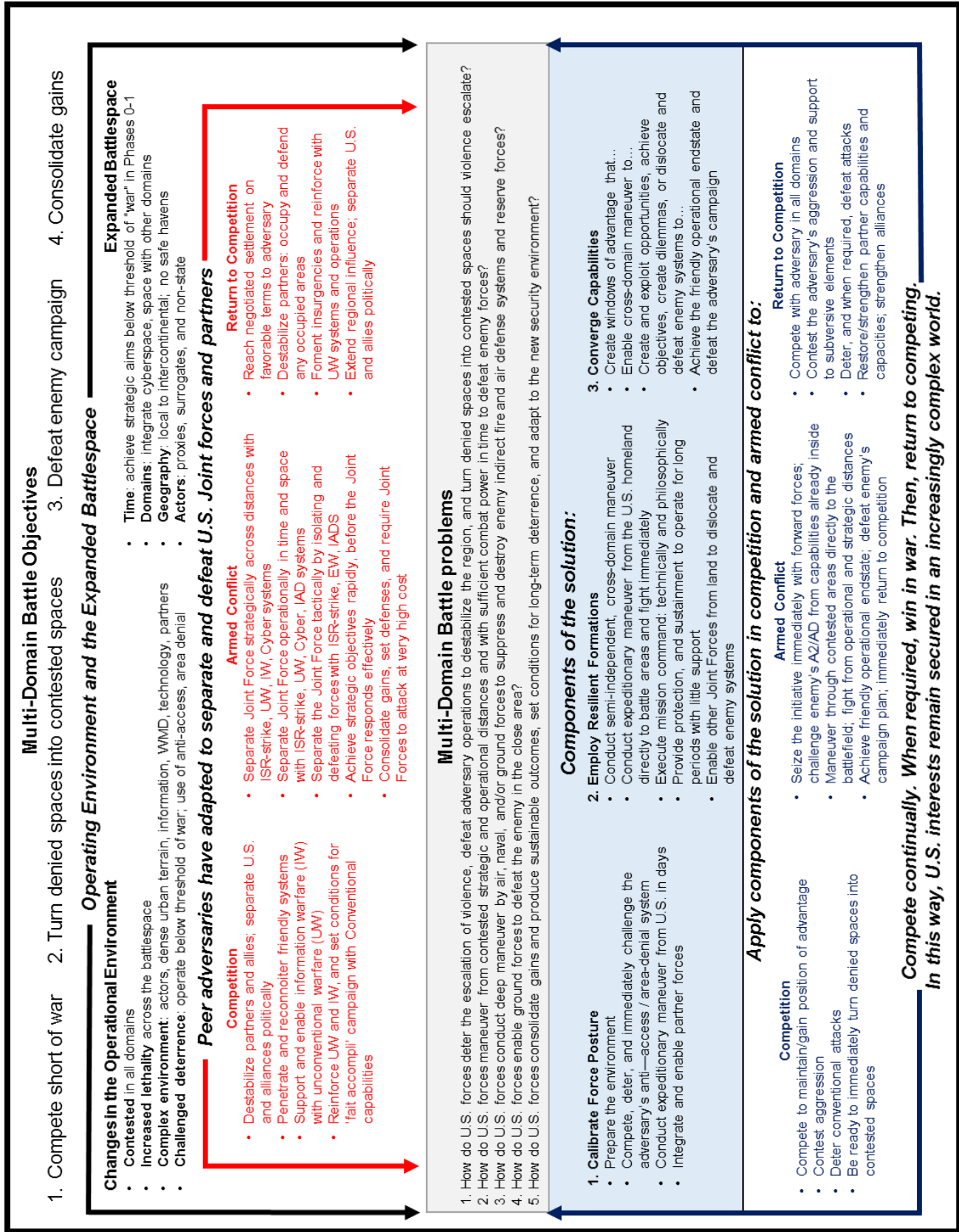


Figure 1. Multi-Domain Battle Logic Chart

Applicability. This document applies to all Department of the Army (DA) activities that develop doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) capabilities. It guides future force development and informs the Joint Capabilities Integration and Development System process. It also supports the Army capabilities development processes described in TRADOC Regulation 71-20 and functions as a conceptual basis for developing supporting concepts related to the future force within DOTMLPF.

Proponent and Exception: The proponent of this document is the Director, Army Capabilities Integration Center, Concept Development and Learning Directorate, TRADOC Army Capabilities Integration Center (ARCIC) (ATFC-ED), 950 Jefferson Avenue, Fort Eustis, VA 23604-5763.

Suggested improvements. Users are invited to submit comments and suggested improvements. Comments may be provided via the Army Suggestion Program online at <https://armysuggestions.army.mil> (Army Knowledge Online account required) or via DA Form 2028 to Director, TRADOC ARCIC (ATFC-ED), 950 Jefferson Avenue, Fort Eustis, Virginia 23604-5763. Suggested improvements may also be submitted using DA Form 1045.

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Chapter 1 Introduction

1-1. Purpose.

Multi-Domain Battle: The Evolution of Combined Arms for the 21st Century describes how Army forces, as part of the Joint Force and with partners, will operate, fight, and campaign successfully across all domains—space, cyberspace, air, land, maritime—against peer adversaries in the 2025-2040 timeframe.¹ Multi-Domain Battle is an operational concept with strategic and tactical implications. It deliberately focuses on increasingly capable adversaries who challenge deterrence and pose strategic risk to U.S. interests in two ways. First, in operations below armed conflict, these adversaries employ systems to achieve their strategic ends over time to avoid war and the traditional operating methods of the Joint Force. Second, if these adversaries choose to wage a military campaign, they employ integrated systems that contest and separate Joint Force capabilities simultaneously in all domains at extended ranges to make a friendly response prohibitively risky or irrelevant. In this context, the Multi-Domain Battle concept describes how U.S. and partner forces organize, practice, and employ capabilities and methods across domains, environments, and functions over time and physical space to contest these adversaries in operations below armed conflict and, when required, defeat them in armed conflict. Although it recognizes the unique capabilities and roles of the Services, the concept seeks a common and interoperable capability development effort to provide Joint Force Commanders complementary and resilient forces to prosecute campaigns and further the evolution of combined arms for the 21st Century.²

1-2. Why is a new concept required?

Since the end of the Cold War, the Joint Force has enjoyed considerable freedom of action in the air, land, maritime, space, and cyberspace domains. However, an increasing number and range of actors are achieving the ability to further deny or disrupt friendly forces' access to and action within air, maritime, space, and cyberspace domains from extended distances. Their capabilities challenge the Joint Force's ability to achieve military and political objectives. Many of these adversaries also contest U.S. strategic resolve and commitment to allies and partners because of reduced U.S. forward presence and decreased Joint Force capabilities and capacities. These problems continue to increase as adversaries pursue ways and means to challenge U.S. forces at greater distances and restrict friendly maneuver across all domains in both operations below armed conflict and in armed conflict. The "Multi-Domain Battle" concept was developed to address these issues. The concept addresses: how the environment and adversaries have changed; how adversaries systemically intend to accomplish their strategic ends; the specific problems adversaries pose to the Joint Force and partners; and systemic ways to compete with and, when necessary, defeat those adversaries.

¹ The joint domains are air, land, maritime, space, and cyberspace. These threats also contest U.S. forces in the electromagnetic spectrum, the information environment, and the cognitive dimension of warfare. This document uses the terms "adversary" and "enemy" to refer to these peers respectively in competition and in armed conflict. For purposes of this concept, the term "ground forces" used to describe friendly forces refers to Army, Marine Corps, and special operations forces operating in land-centric operations.

² This concept is intended to promote thought and discussion concerning the methods and capabilities required to confront sophisticated adversaries. It offers specific hypotheses to inform further concept development, wargaming, experimentation, and capability development.

1-3. Introduction of key ideas.

The Multi-Domain Battle concept introduces several ideas to address the operational challenges presented by peer adversaries. These ideas in many ways are evolutionary and build upon relevant past and present doctrinal practices. They, however, offer a new, holistic approach to align friendly forces' actions across domains, environments, and functions in time and physical spaces to achieve specific purposes in combat, as well as **before and after combat in competition**. Within this concept, Army forces operationalize Multi-Domain Battle with three interrelated components of the solution: **calibrating force posture** to defeat "hybrid war" and deter adversaries' "fait accompli" campaigns,³ **employing resilient formations** that can operate semi-independently in the expanded operational area while projecting power into or accessing all domains, and **converging capabilities** to create windows of advantage to enable maneuver.⁴ Converging capabilities across domains, environments, and functions at the scale and intensity required to prevail also requires a new **Multi-Domain Battle operational framework** to visualize combined arms that includes all capabilities and integrates their application in time and physical space.

a. **Competition.** In competition, U.S. forces actively campaign to advance or defend national interests without the large-scale violence that characterizes armed conflict. Although the idea of competition is not new, the current and future operating environments require a holistic approach to campaigning that links activities short of armed conflict with the execution of armed conflict. Peer adversaries compete to separate alliances and defeat partners below the threshold of armed conflict and challenge the traditional metrics of deterrence by conducting operations that make unclear the distinctions between peace and war. Friendly military competition activities have two purposes. The first deters and defeats threat efforts to accomplish their objectives short of armed conflict while maintaining or improving conditions favorable to U.S. interests. The second creates favorable conditions by demonstrating the ability to turn denied spaces into contested spaces and to seize the initiative should armed conflict commence. By conducting a campaign of competition below armed conflict, the Joint Force and partners defeat adversary aims below the threshold of armed conflict, strengthen alliances and partners, deter armed

Components of the Solution

Calibrate Force Posture:

Multi-Domain Battle requires a dynamic mix of forward presence forces and capabilities, expeditionary forces and capabilities, and partner forces to deter and, when required, to defeat an adversary plan within days.

Employ Resilient Formations:

Multi-Domain Battle demands formations capable of conducting semi-independent, dispersed, mutually supporting, cross-domain operations at operational and tactical levels. These scalable and task-organized units, empowered by the mission command philosophy, possess the essential protection, sustainment, and mission command capabilities to operate in lethal, contested environments while retaining the agility to mass capabilities at a desired place and time.

Converge Capabilities:

Multi-Domain Battle requires converging political and military capabilities – lethal and nonlethal capabilities – across multiple domains in time and space to create windows of advantage that enable the Joint Force to maneuver and achieve objectives, exploit opportunities, or create dilemmas for the enemy.

³ Hybrid war is the combination of operations by a state against one or more other states through non-attributable proxies and methods to destabilize the target state and achieve the aggressor state's strategic objectives short of war; importantly, its techniques leverage conventional and attributable capabilities in threatening ways that reinforce the non-attributable efforts. A fait accompli campaign is intended to achieve military and political objectives rapidly, presenting a fait accompli – a thing accomplished and presumably irreversible – before an allied response can prevent it.

⁴ Semi-independent operations are those friendly operations that, either through a commander's intent or an adversary's actions, are separated for a period of time from traditional control and support measures. The idea of semi-independence applies tactically and operationally, and best enables friendly forces to exercise initiative in highly contested and degraded environments. It also requires the entire force to anticipate, enable, and support semi-independent operations through mission command systems, sustainment, protection, and medical support and services.

conflict, and are postured to fight immediately and win when required. The goal during competition is to prevent armed conflict while making conditions more favorable for protecting national interests.

b. **Calibrating force posture.** Force posture is the positioning of capabilities to achieve a purpose. While calibrating force posture by itself is not a new idea, the cost of penetrating prepared enemy defenses is now too great for current conceptions of forward positioning and expeditionary maneuver to effectively deter adversaries and prevail in armed conflict. The Joint Force and partners also now require dynamic force posture to compete with adversaries by creating dilemmas and rapidly exploiting any vulnerabilities rather than reacting to adversary actions. This concept provides an understanding of the enemy and options to defeat its systems that informs new requirements for forward positioned and expeditionary forces.

c. **Employing resilient formations.** Resilient formations remain effective despite multiple forms of enemy contact and are cross-domain capable. Developing and employing formations that withstand enemy effects is not a new idea. The enemy's ability to fragment the Joint Force by contesting all domains at extended ranges, however, requires a new understanding of what allows forces to be effective in the future operating environment. Formations must maneuver semi-independently, without secured flanks, constant communications with higher headquarters, and continuous lines of communications. Formations must also be cross-domain capable, projecting and accessing power in all domains in order to present the enemy with multiple dilemmas. The intensity of operations and the enemy's ability to deny or degrade communications require resilient formations to conduct the mission command philosophy and employ new capabilities that express and communicate the integration of capabilities across domains, environments, and functions over longer time periods and expanded physical spaces.

d. **Convergence.** Convergence is the integration of capabilities across domains, environments, and functions in time and physical space to achieve a purpose. Converging capabilities is a new idea introduced in Multi-Domain Battle as an evolution of combined arms. Convergence is the act of applying a combination of capabilities (lethal and nonlethal, whether within a domain or cross-domain) in time and space for a single purpose. Friendly forces achieve victory through convergence by employing multiple combinations of cross-domain operations that create physical, virtual, and cognitive windows of advantage to enable cross-domain maneuver and fires to achieve objectives. Unlike integration, which the Joint Force does today through a federation of systems and processes, convergence requires organizations and elements that are organically organized, trained, authorized, and equipped to access, plan, sequence, and operate together in and across multiple domains at all times, not just in conflict.⁵ Although the ideas within convergence are an evolution of combined arms principles and practices, the Joint Force requires significantly new doctrine, organizations, and capabilities to integrate the full range of capabilities across time and space to create windows of advantage that enable maneuver in contested environments.

⁵ Cross-domain is any action having an effect from one domain to another, typically requiring the coordination and release of control by different organizations. In the context of the Multi-Domain Battle concept, it requires specific planning, coordination, and execution, as opposed to such inherently cross-domain effects as firing a round through the air that eventually returns to the ground.

e. **Multi-Domain Battle operational framework.** The operational framework allows commanders to visualize the posture and convergence of capabilities across domains, environments, and functions required to maneuver. Technological developments and the integration of a wider variety of capabilities into operations, along with increased adversary capabilities, drive the requirement for a new operational framework to succinctly describe the operating environment and organize friendly operations. The operational framework is a visualization tool that enables commanders to position and converge capabilities to produce windows of advantage that enable freedom of maneuver to defeat enemy systems and achieve friendly objectives outright. As outlined in section 2-3, the operational framework accounts for the extended ranges and complex relationships of all friendly and enemy capabilities across domains and levels of command (tactical, operational, and strategic).

Chapter 2

Operational Context

Joint forces face a rapidly evolving operating environment in which highly adaptive and innovative adversaries have altered the battlespace and created resilient systems to support their strategies. The environment continues to change in four fundamental and interrelated ways: adversaries challenge U.S. forces in all domains, the battlespace is becoming more lethal, operational complexity is increasing globally, and deterring aggressive acts is becoming more challenging. Both adapting to and driving change in the operating environment, adversaries continue to alter the battlespace in terms of time, geography, and domains and by blurring the distinctions between peace and war.⁶ These changes, combined with integrated systems that enable the convergence of capabilities in competition as well as armed conflict, compress the battlespace for U.S. commanders in two ways: tactically, by bringing lethal and nonlethal effects to bear from any place in the world and, strategically, by being able to challenge the deployment and echeloning of forces into the fight at all places simultaneously.⁷ Adversaries do this by fielding resilient, capable, and mutually supporting systems before, during, and after conflict. The following paragraphs present a detailed examination of the aspects that will enable U.S. forces to identify critical vulnerabilities in an adversary's systems and determine the problems the Multi-Domain Battle concept must solve.

2-1. The emerging operating environment.

Studies of the future security environment describe a future in which the U.S. is confronted by challenges related to contested norms and persistent disorder.⁸ Competitor states and some powerful non-state actors will increasingly challenge the rules that underpin the current global order. Meanwhile, fragile states will become increasingly incapable of maintaining order. Over time these two overarching security challenges suggest four major changes to the operating

⁶ The Joint Concept for Integrated Campaigning describes that the U.S. will always be either in competition or armed conflict against these adversaries.

⁷ Echeloning or echelonment refers to maneuver of forces from the Strategic and Operational Support Areas into the Tactical Support Area and Close Area. (These areas are described in the Multi-Domain Battle operational framework discussion in section 2-3).

⁸ Contested norms involve increasingly powerful revisionist states and select non-state actors using all elements of power to establish their own set of rules unfavorable to the U.S. and its interests. Persistent disorder is characterized by an array of weak states that become increasingly incapable of maintaining domestic order or good governance. Publications supporting this assessment include the Joint Operating Environment 2035; Worldwide Threat Assessment of the U.S. Intelligence Community, Senate Select Committee on Intelligence, Feb 2016; Military and Security Developments Involving the People's Republic of China 2015, Annual Report to Congress; and RAND, The Challenges of the "Now" and Their Implications for the U.S. Army.

environment that require adaptation by U.S. forces in order to operate successfully and win in future conflicts.

a. **Contested in all domains.** Peer adversaries have invested in and deployed capabilities to challenge and fracture the employment of the Joint Force across all domains. As a result, these adversaries increasingly will be able to both contest deployments from strategic and operational distances and to deny access by friendly forces with both lethal and nonlethal means. Closer to the potential battle area, capable peer adversaries can impede Joint Force freedom of movement and action across all domains, the electromagnetic spectrum (EMS), and the information environment and actively influence human perceptions against U.S. interests, which further fracture Joint Force capabilities. In competition, these adversaries will also employ sophisticated combinations of combined arms that include the use of space and cyberspace operations, economic influence, political shaping, information warfare, and lawfare to control the escalation and de-escalation of crises in ways that undermine U.S. influence and delay U.S. reaction times.⁹ Taken together, peer adversaries and enemies can contest U.S. forces in all domains with increasing effectiveness.

b. **Increased lethality across the operational area.** The growing capability and capacity of the adversaries' weapon systems will increase lethality throughout the operational area and across domains, and challenge Joint Force capabilities to create overmatch. Adversaries will employ advanced technologies to disrupt the Joint Force's ability to integrate across domains, across functions, and with partners. These adversaries have the capability to locate U.S. and allied forces and quickly target them throughout the depth of the battlespace. Adversaries will routinely integrate sensors, spies, special operations assets, unmanned aerial systems, and space-based imagery at strategic and operational depth to form a sophisticated intelligence, surveillance, and reconnaissance (ISR) network. When an adversary pairs the ISR network with highly capable fires systems as an ISR-strike system, it can locate, track, target, and attack U.S. and allied forces from the continental U.S. all the way to the theater of operations. No matter the means of detection, unmanaged signatures will become a critical U.S. vulnerability because the adversary's forces will increasingly possess the ability to find and attack U.S. and allied forces at strategic, operational, and tactical distances simultaneously. In addition, adversaries continue to acquire technologies and develop capabilities potentially superior to U.S. forces' capabilities (e.g., robotics, autonomous systems, nano-explosives, and artificial intelligence). Notably, adversaries empowered by additive manufacturing will be able to mass produce these capabilities to overwhelm U.S. forces. The capability and capacity of adversaries to bring lethal effects to bear will alter the U.S.'s strategic and operational calculus in new ways.

c. **Complex environment.** Six variables will challenge the Joint Force and its partners' ability to anticipate and adapt to change. First, accelerating information and technology developments are increasing the pace of change and allowing adversaries to leverage superior capabilities that could have a unexpected effects on future friendly force operations. Second, adversaries will increase complexity by combining regular and irregular forces with criminal and terrorist enterprises to attack the Joint Force's vulnerabilities while avoiding its strengths. The adaptability of these hybrid strategies will make them difficult to counter, particularly when

⁹ Lawfare is defined as a strategy of using—or misusing—law as a substitute for traditional military means to achieve an operational objective.

friendly forces are constrained by policy restrictions in peacetime. Third, densely populated areas with constricting topography and poor infrastructure will make friendly vehicular and aerial movement more observable and easily disrupted for forces operating from or into these places. Urban areas will also challenge the ability of U.S. forces to operate cohesively, resupply, communicate, conduct reconnaissance, and achieve surprise. Fourth, globally networked and information-enabled populations will react to viral versions of events and ideas moving at the speed of the internet, complicating the ability to gain and maintain an accurate, up-to-date, intelligence-driven understanding of the situation, as well as control of the information environment. Fifth, adversaries, including super-empowered individuals and small groups, use access to cyberspace, space, and nuclear, biological, radiological, and chemical weapons of mass effects to change the battlespace calculus and redefine the conditions of conflict resolution.¹⁰ Finally, the well-established need for U.S. forces to operate with joint, interorganizational, and multinational partners also presents challenges in this increasingly complex environment. Taking advantage of this complexity, adversaries have demonstrated abilities to operate in these environments, especially in the regions surrounding their homelands.

d. **Challenged deterrence.**¹¹ Adversaries present two main challenges to U.S. military deterrence. First, adversaries can and will operate with and through proxies and surrogates, artfully employing all elements of national power to achieve their strategic objectives below the threshold of armed conflict. Subversion, information warfare, and unconventional warfare (UW) are inherently difficult to attribute and subsequently to punish the originator, and therefore, almost impossible to deter. The Joint Force is not optimized to contest these threats. Second, adversaries seek to deter U.S. and combined forces through the use of sophisticated, all-domain, anti-access and area denial (A2/AD) capabilities that would impose significant losses on friendly forces.¹² If not challenged, these A2/AD capabilities will delay deployment and employment of expeditionary forces simultaneously across strategic and operational distances. In this environment, adversary operational systems can exploit existing U.S. weaknesses, such as force deployment responsiveness (due to time and distance), vulnerabilities in the homeland and partner nations (such as fixed bases, ports, and domestic populations), and fragmentation of the Joint Force by specialized function. The ability to delay the deployment of forces may enable an adversary to take rapid, decisive action and consolidate gains before U.S. and allied forces can respond with sufficient forces to prevent or challenge it. The increasing ability to challenge U.S. deterrence reflects how adversaries have changed the battlespace.

2-2. The changing battlespace.

a. The changing operating environment, rapidly evolving technologies, and adversaries' adaptations to them, produce three important effects on current and future battlespaces that

¹⁰ Super-empowered individuals and small groups are "wild cards" that may be leveraged by a peer adversary, act independently on behalf of a peer adversary, or work to their own separate goals.

¹¹ Challenged deterrence refers to the effectiveness of U.S. conventional deterrence being put into question both by the adversary's use of actions below the threshold of conflict to achieve strategic aims and by the adversary's potential ability to conduct aggressive actions and consolidate gains rapidly before the U.S. and allies can respond.

¹² Peer adversaries *aspire* to establish impenetrable defensive zones with "anti-access (A2)/area denial (AD)" capabilities. Although these integrated defenses are indeed vulnerable to interdiction and dismantling, individual components and platforms that make up these integrated defenses – such as anti-ship and land-attack ballistic and cruise missiles, submarines, and advanced air defenses – represent significant threats to air, land, and maritime forces and must be addressed.

demand a new approach to Joint Force operations. Previous frameworks led commanders and force developers to visualize a battlespace compartmentalized in time, over geographic space, and by function or domain. These frameworks did not link activities below armed conflict with activities within armed conflict and instead primarily focused attention on a battlespace measured in hundreds of kilometers rather than one spanning multiple interrelated theaters. The operating environment described above requires changing the operational framework because of how the battlespace is **expanded, converged, and compressed**.

b. **Expanded.** Adversaries have expanded the battlespace in four ways: time (phases), domains, geography (space and depth), and actors. In terms of time, adversaries have blurred the distinction between actions “below armed conflict” and “conflict,” enabling the achievement of strategic military objectives short of what the U.S. traditionally considers “war.” They have expanded the battlespace by making space, cyberspace, electronic warfare, and information key components of their operations. They have expanded the battlespace geographically, because the effects of space, cyberspace, electronic warfare (EW), information, and even conventional weapons with increasing ranges are less bound by geographic and time constraints and place all forces regardless of disposition “in contact.” Finally, they have expanded the battlespace by increasing the number of actors, using proxies and surrogates, and making conflicts transregional. Although they have expanded the battlespace from a U.S. and allied perspective, adversaries also continue to improve ways to converge capabilities to greater effect.

c. **Converged.** Adversaries use both technology and centralized political and military systems to converge capabilities in new ways to achieve objectives in time and space. The converged battlespace is a product of the adversary’s ability to integrate capabilities across many domains, environments, and functions in time to achieve effects at any geographic location. In competition, convergence involves the detailed and consistent integration of reconnaissance, unconventional warfare, information warfare, and conventional capabilities that achieve the adversary’s strategic aims short of armed conflict. Convergence in competition, however, also includes the ability for an adversary to immediately turn globally common or friendly sovereign territory into “denied” areas.¹³ This capability preserves the initiative to transition rapidly to armed conflict at a time of its choosing, seize strategic objectives, and consolidate gains. Having achieved its strategic gains, either through subversion or armed conflict, the adversary retains the ability to converge lethal and nonlethal capabilities to defend against potential U.S. and allied counterattacks in ways that compress the battlespace for the Joint Force and its partners.

d. **Compressed.** The ability of adversaries to both expand the battlespace and converge capabilities compresses the strategic, operational, and tactical levels of war for Joint Force and allied commanders. At the tactical level, this compression compels the Joint Force and partners to defend against attacks from virtually anywhere in the world. At the operational and strategic levels, this compression impedes the effectiveness of Joint Force and allied commanders’ attempts to deploy and echelon forces, enabling the enemy to isolate and tactically defeat friendly forward positioned forces. This strategic-to-tactical compression is a result of adversaries’ extended sets of conventional, information warfare, and unconventional capabilities

¹³ Global commons are large areas of the globe and beyond that do not and legally cannot belong to any nation (i.e. no political sovereignty), including most of the oceans and their resources, Antarctica, Earth’s atmosphere, outer space, and the Moon and other natural objects in space.

that place friendly formations at risk from multiple systems, both lethal and nonlethal, operating in dispersed locations, often outside the range of the friendly formation's systems and authority. Adversaries (or hostile forces) will seek to present multiple forms of contact simultaneously to friendly forces in many domains and locations. This compression shortens friendly commanders' decision cycles and severely inhibits the Joint Force's ability to identify, maneuver on, and isolate adversary capabilities geographically, functionally, or by domain. Understanding how adversaries create compression through integrated systems in competition and armed conflict is essential to determining the military problems Multi-Domain Battle must address.

2-3. Multi-Domain Battle operational framework.

a. The operating environment, threats, and problems envisioned in Multi-Domain Battle demand a framework that brings order to the complexities of a multi-domain environment. Because peer rivals contest and can deny all domains at extended distances, the current definitions of Deep, Close, and Support Areas are no longer adequate. Current and anticipated future problems exceed what could be assigned within a single area of operations under the current Joint operational framework. The Multi-Domain Battle operational framework must also account for all domains, extending to space and cyberspace, as well as the electromagnetic spectrum and information environment, because activities in these domains across time produce tactical, operational, and strategic effects not captured by the Deep/Close/Support framework. An expanded multi-domain framework allows commanders to arrange operations in the emerging operating environment. The Multi-Domain Battle operational framework (see Figure 2) provides an expanded physical framework from which to reference actions across all domains conducted by the Joint Force, partners, adversaries, and enemies.

b. Since the Multi-Domain Battle framework is operational, it is also grounded in physical spaces. Abstract aspects more evident in some domains are also grounded physically, despite their predominantly immaterial presentations. At some point, all the abstract elements (cognitive, virtual, informational, and human) demonstrate their effects physically at a place or in an area through a system or people. Representing these elements in a physically based framework clarifies an already very complex multi-domain operating environment for commanders and staffs. The following description of the framework places all friendly and enemy activities and physical locations in categories of physical space as the fundamental visualization layer.

c. The areas in the Multi-Domain Battle operational framework are defined by the mixture of capabilities (both friendly and enemy) available for use within each area. Multi-Domain Battle takes a different form in each area because the two contending sides have a different mixture of capabilities available for competing and fighting. Because of the expanded battlespace in which actions in one area can influence another, the breadth of the battlespace needs to be placed within a single, simple framework to illustrate these sometimes complex relationships. Though depicted geometrically for simplicity, the areas within the framework are not defined by geographic space or relationships. In some theaters, for example, a Deep Maneuver Area could be physically adjacent to an Operational Support Area due to the types of capabilities available to each side. The complementary nature of unique and interoperable Service capabilities

provides the Joint Force multiple options to maneuver in areas inaccessible to single-Service and single-domain solutions. Previous depictions of the battlespace did not capture the full range of places and times that friendly and enemy capabilities interact in the current and future operating environment. This increased number of battlespace areas, expansion in geographic area, and extended time horizons are new features of Multi-Domain Battle.

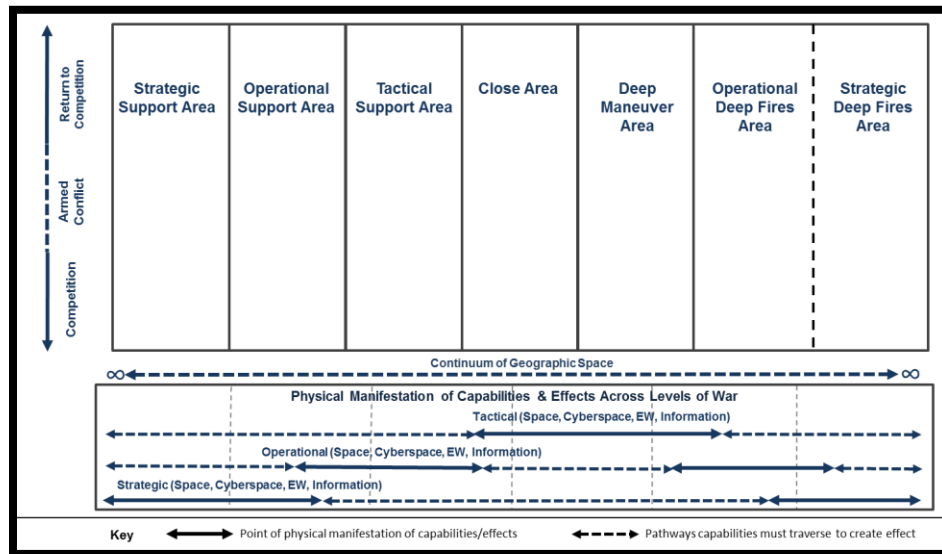


Figure 2. The Multi-Domain Battle Operational Framework

d. Multi-Domain Battle operational framework components.

(1) **Deep Fires Areas:** These areas are defined as the area beyond the feasible range of movement for conventional forces but where joint fires, special operations forces (SOF), information, and virtual capabilities can be employed. Operational and Strategic Deep Fires Areas are differentiated by the types of capabilities that can, or are authorized, to operate in each area. These areas are either too far (beyond operational reach) for conventional maneuver forces to enter or they are prohibited by policy (such as an international border).¹⁴ Therefore, operations in the Deep Fires Areas are limited to whatever physical and virtual capabilities are permitted by law or policy and that can operate in the heart of enemy defenses. This limited accessibility and the inherent difficulty of operating deep within enemy territory place a premium on the ability to combine and employ whatever capabilities are available from across all domains.

(2) **Deep Maneuver Area:** This area is the highly contested area where conventional maneuver (ground or maritime) is possible, but requires significant support from multi-domain capabilities; commanders must make a concerted effort to “break into” the Deep Maneuver Area. Because more friendly capabilities possess the range and survivability to influence or operate within this space than in the Deep Fires Areas, and because commanders can take advantage of

¹⁴ In cases where policy restrictions create a Deep Fires Areas, the areas might be geographically non-contiguous. For instance, in a counterinsurgency campaign the Joint Force might have full freedom of action within the host country but is allowed to use only virtual capabilities against the enemy sanctuary in a neighboring country. In that instance, the international border would represent the boundary between Close and Deep Fire Areas.

the combination of fire and movement, there are many more options for Joint Force employment than in the Deep Fires Areas. Moreover, the persistence of ground and maritime maneuver forces allows operations to persist for far longer than in the Deep Fires Areas, where effects will often be more transitory. In most anticipated campaign designs, many operational objectives are in the Deep Maneuver Area.

(3) **Close Area:** The Close Area is where friendly and enemy formations, forces, and systems are in imminent physical contact and will contest for control of physical space in support of campaign objectives. The Close Area includes land, maritime littorals, and the airspace over these areas. The new operating environment and improved enemy and friendly capabilities have expanded the Close Area. Operations in the Close Area require tempo and mobility in order to overcome these enemy capabilities through sufficiently integrated and concentrated combat power at the critical time and place. Characteristics of the Close Area present challenges to integrating cross-domain capabilities because of the reduced time available to access and employ enablers, such as centrally controlled, low-density capabilities. Commanders employ capabilities from all domains, organic and external, in the Close Area to generate complementary effects of combined arms, but speed of action, coordination, and synchronization of effects place a premium on organic capabilities. Operations in the Close Area are designed to create windows of advantage for maneuver to defeat enemy forces, disrupt enemy capabilities, physically control spaces, and protect and influence populations.

(4) **Support Areas:** Collectively, the Support Areas represent that space in which the Joint Force seeks to retain maximum freedom of action, speed, and agility and to counter the enemy's multi-domain efforts to attack friendly forces, infrastructure, and populations. The nature of these threats varies with the adversary, though with current technology virtually all adversaries will have reach into the homeland (for example, through cyberspace, information warfare, agents, sympathizers, and space), even if only by using social media to undermine public support and encourage "lone-wolf attacks." The reach of regional powers is also growing and the most potent adversaries already possess multiple advanced cyberspace, space, and physical capabilities (air, naval, special operations, and/or missile forces) that can contest the friendly rear areas at all times. Though enemy capabilities will vary with the situation, a common requirement will be the need to ensure that responsibilities, resources, and authorities are properly aligned among echelons, functions, and political organizations. Consequently, the Support Areas are divided according to friendly and enemy capabilities typically operating in each area.

(a) **The Strategic Support Area:** This area is the area of cross-Combatant Command coordination, strategic sea and air lines of communications, and the homeland. Most friendly nuclear, space and cyberspace capabilities, and important network infrastructure are controlled and located in the Strategic Support Area. Joint logistics and sustainment functions required to support Multi-Domain Battle campaigning throughout competition and armed conflict emanate from the Strategic Support Area. The enemy will attack the Strategic Support Area to disrupt and degrade deployments and reinforcements attempting to gain access to the Operational Support Area and move to the Close Area, taking advantage of the reach of strategic lethal and nonlethal weapons, as well as UW reconnaissance and strikes. Enemy engagements in the

Strategic Support Area will drive a rapid tempo of friendly operations in other areas to seek decision and limit enemy options for escalation.

(b) The Operational Support Area: This is the area where many key Joint Force mission command, sustainment, and fires/strike capabilities are located; these can be land or sea-based. This area normally encompasses many entire nations, thus making the Operational Support Area an important space for friendly political-military integration. Due to the political and military importance of the Operational Support Area, the enemy targets this area with substantial reconnaissance, information warfare, and operational fires capabilities. Friendly units maneuvering in the Operational Support Area, therefore, are never out of contact. The Joint Force will enable friendly operations in this area by dedicating significant capacity during armed conflict to open windows of advantage in the Operational Support Area that enable friendly operations.

(c) The Tactical Support Area: This is the area that directly enables operations in the Close, Deep Maneuver, and Deep Fires Areas. Many friendly sustainment, fires, maneuver support, and mission command capabilities are in the Tactical Support Area. The enemy directs information warfare, UW, tactical fires, maneuver forces, and even operational fires at friendly forces, populations, and civil authorities in the Tactical Support Area. Friendly units in the Tactical Support Area must be prepared to endure threat fires and defeat enemy ground force infiltration through and penetrations of the Close Area. Mobility and survivability are key requirements for friendly forces operating in or rapidly transiting this area.

e. As illustrated above, understanding the interaction between friendly and enemy capabilities is essential to understanding the Multi-Domain Battle operational framework. Current friendly methods and capabilities are optimized for a more narrowly defined battlespace in which friendly forces could assume relative superiority in almost all domains and have the luxury of isolating the enemy. The methods and capabilities required to execute Multi-Domain Battle in the new operating environment are described further in Chapter 3 and Appendix B, respectively. On the other hand, over the past 25 years enemy capabilities have evolved into integrated systems that deliberately affect friendly operations throughout the battlespace and in both competition and armed conflict. These enemy systems are depicted in Figure 3 and described in greater detail in the remainder of Chapter 2.

Adversary / enemy systems		
Competition	Armed conflict	Return to competition
<ul style="list-style-type: none"> • Reconnaissance • Unconventional warfare • Information warfare • Conventional forces 	<ul style="list-style-type: none"> • Conventional forces • Unconventional warfare • Information warfare • Nuclear weapons 	<ul style="list-style-type: none"> • Unconventional warfare • Information warfare • Nuclear weapons • Conventional forces
<p>Conventional systems:</p> <ul style="list-style-type: none"> • ISR-strike system • Integrated air defense system (IADS) • Ground maneuver formations • Maritime 		

Figure 3. Adversary/Enemy Integrated Systems and Sub-systems¹⁵

2-4. Primary adversary systems to compete below the level of armed conflict.

a. In competition, the adversary takes actions to achieve objectives below the level of armed conflict, as well as to posture forces to support the escalation of activity into armed conflict. In competition, the adversary’s primary aim is to separate or isolate friendly forces politically, limiting a coordinated allied response and destabilizing target states internally to attain its objectives below the threshold for armed conflict. The adversary in competition may consider itself already engaged in national conflict, and, therefore, employ all elements of its national power with few procedural limitations in a coordinated approach before the Joint Force receives authorization to use force. The adversary also positions systems to fragment Joint Force capabilities and make a potential U.S. response costly and ineffective in the event of escalation.

b. The adversary’s actions to achieve objectives below armed conflict are often colloquially known as operations in the “gray zone,” and include overt and covert pressure meant to coerce concessions, destabilize a region, or win strategic outcomes outright.¹⁶ This approach uses a flexible system intentionally designed to avoid a single point of vulnerability and to appear ambiguous. The adversary converges military and non-military capabilities through four interrelated systems – **reconnaissance**, **unconventional warfare (UW)**, **information warfare (IW)**, and **conventional forces** - and over time, across areas, and in purpose to fracture alliances and isolate targets, which may also create conditions for a *fait accompli* military campaign.¹⁷ Figure 4 depicts how adversary systems are employed across the Multi-Domain Battle operational framework.

¹⁵ This concept describes the threat activities broken out in competition, armed conflict, and a return to competition. Enemy aircraft are considered components of the ISR-strike system (interdiction and close air support) and the integrated air defense system (air to air).

¹⁶ The “gray zone” is an area between traditional norms of peace and conflict characterized by intense political, economic, informational, and military competition more fervent in nature than normal steady-state diplomacy, yet short of conventional war. Derived from Unconventional Warfare in the Gray Zone by Joseph L. Votel, Charles T. Cleveland, Charles T. Connett, and Will Irwin, National Defense University Press <http://smallwarsjournal.com/blog/unconventional-warfare-in-the-gray-zone>.

¹⁷ For purposes of this concept, adversary and enemy information warfare operations will be referred to with the acronym IW; to avoid confusion, any usage of the term “irregular warfare” will be spelled out.

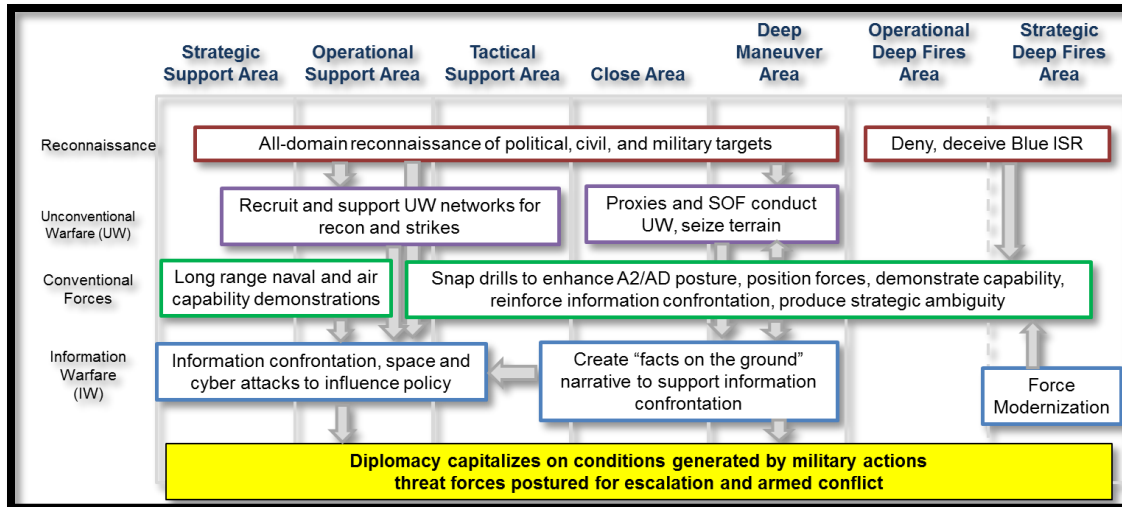


Figure 4. Adversary Military Systems in Competition

(1) **Reconnaissance.** The adversary’s ISR assets, to include national-level human and technical reconnaissance assets, detect political, military, and technological weak points in friendly systems over time. Its reconnaissance is active in all friendly geographic areas, from adjoining states, regional allies, and the U.S. homeland and against most capabilities, especially those that enable rapid response to escalation. The adversary’s conventional force posture, UW activities, and IW operations (to include cyber-attacks) enable, and are enabled by, reconnaissance activities. The adversary’s reconnaissance, however, is vulnerable to deception, technical penetration, and counter-espionage.

(2) **Unconventional warfare.** The adversary’s SOF, local paramilitaries, proxy forces, and activists conduct UW in the Close and Support Areas to destabilize target governments or to separate the government's control from a certain region or population. In the Close Area, adversary UW activities in competition become increasingly overt by coercing opposition and establishing de facto control over terrain, including littorals and populations, while setting conditions for potential denial or conventional force operations. In the Close and Support Areas, adversary UW activities in person and over the internet empower proxies and sympathetic networks to conduct a range of operations, including terrorism, subversion, destabilizing criminal activities, and direct action strikes. The adversary’s execution of UW, however, involves risk, as overly aggressive actions may create vulnerabilities in the information environment and with the populace in ways friendly forces and governments can exploit. When prepared and well supported, partner nation security forces can capitalize on an adversary’s vulnerabilities and overmatch its paramilitaries and proxies in the Close Area during competition.

(3) **Information warfare.** The adversary’s information warfare campaign is closely integrated with, and supported by, reconnaissance, UW, and conventional force activities to create a believable “facts on the ground” narrative for domestic and foreign audiences.¹⁸ The

¹⁸ An IW (or information environment operation for friendly usage) campaign employs various information related capabilities working together toward a common strategic or operational objective.

adversary conducts IW via media sources, cyberspace assets, diplomats, and leaders to control narratives and influence or shape opinions regionally and globally, including its domestic audiences, to set the pretext for future operations. With increasing frequency, adversaries conduct cyber-attacks on civil targets in the Support Area, to affect friendly decision making. In addition, the adversary's IW efforts seek to undermine friendly security cooperation activities and forces. Since the adversary's IW operations in competition often operate under centralized guidance with limited coordinating measures, it is vulnerable to a changing environment when the narrative cannot be integrated with the other functions and are shown to not reflect actions on the ground. Adversaries recognize this and seek to generate a flood of messages without regard for the truth in order to confuse, disrupt, and divert debate about their actions. This information "maneuver" creates sufficient ambiguity so that the friendly coalition is unable to take action. This flood of misinformation and disinformation is in essence a fixing maneuver.

(4) **Conventional forces.** The adversary's conventional forces use training exercises and other activities as a pretext to reinforce adversary UW operations in the Close Area as well as reinforce adversary IW narratives in the Support Areas. Conventional force actions also test friendly responses to generate enhanced reconnaissance and intelligence collection opportunities. The adversary's conventional forces in competition, however, attempt to keep support of SOF, proxy forces, and paramilitaries below a level that signals overt participation, while developing asymmetric capabilities to challenge friendly force operations.

c. In many respects, the adversary's actions to posture its forces for an escalation to armed conflict resemble operations to achieve objectives below the level of armed conflict. Actions to posture forces for armed conflict include the deployment of naval assets to forward offensive and defensive positions (land- and sea-based); deployment and supply of integrated air defense systems (IADS), surface-to-surface missile (SSM) batteries, and strike aircraft; deployment and posturing of terrestrial and on-orbit counter-space capabilities; activation of clandestine networks; and use of "snap drills" to mobilize and posture various elements of their forces to conduct offensive operations.¹⁹ The repeated execution of these drills desensitizes friendly intelligence and makes discerning the indications and warnings of an actual offensive very difficult, thus increasing an adversary's probability of achieving surprise.

d. The adversary's ability to fragment a potential Joint Force counteroffensive is enhanced by actions to posture forces to enable its rapid escalation into armed conflict. The adversary prepares for armed conflict either to exploit successful operations to isolate a target state or as a high-risk option to redress a severe setback in a vital area. The adversary's systems seek to fragment any Joint Force response by placing friendly formations in all areas in multiple forms of contact, often simultaneously, to limit maneuver and Joint Force integration. The Joint Force, however, retains considerable freedom of maneuver to execute flexible deterrent options (FDO)

¹⁹ Recent examples of the Russian operational employment of combined arms formations in Georgia, Crimea, and Ukraine demonstrate that the scale of mobilization required varies by situation. Operations demanding more surprise, but with limited capabilities and/or capacities available might require days of mobilization, while others will require more resources. Most threat units committed operationally prior to complete mobilization will be more vulnerable to prepared friendly defenses or immediate friendly counterattack. Integrated air defense systems (IADS) put all aerial sensors (such as radar, acoustic, visual observers, and other technical means), as well as anti-aircraft weapons (such as anti-aircraft artillery, surface-to-air missiles, air superiority fighters, etc.), under a common system of command and control.

and posture forces prior to the adversary's activation of IADS, firing of SSMs, or execution of large-scale cyber-attacks.

(1) In the Close Area, the adversary's conventional forces will either infiltrate the Close Area to overpower partner security forces before outside powers respond, or to exploit perceived temporal advantages by transitioning immediately from a snap exercise to attack friendly forces and seize terrain. IW narratives, backed by credible threats of force, can shape public opinion and policymakers in ways that constrain friendly options. Prior to deliberately initiating armed conflict, the adversary's IW narratives seek to create the perception among friendly audiences that any escalation by the adversary is defensive in nature and justified by friendly forces' provocations.

(2) When committed, adversary long-range fires, direct action SOF, empowered proxies, and stealthy maritime assets attack Joint Force inter- and intra-theater movement, ports, ships, airfields, rail and road hubs, transport and strike/reconnaissance aircraft, advanced logistic bases and mission command facilities with surface-to-surface missile, surface-to-air missile, and UW attacks. Cyberspace operations against critical transportation, mission command, and public networks and infrastructure exploit seams detected in competition to deny critical services and degrade friendly unit effectiveness. The adversary also attacks friendly satellites to disrupt movement, communications, and reconnaissance.

e. As outlined above, the adversary intends to achieve objectives outright in competition through UW and IW without risking escalation to armed conflict. The adversary operates from a position of relative conventional force strength to discourage friendly opposition and provide advantageous options should it choose to escalate. Its reconnaissance efforts during this period are continuous and linked to UW, IW, and potential conventional offensive operations. While it has no singular critical vulnerability in competition, the adversary faces critical risks to achieving long-term objectives in armed conflict unless it establishes and sustains an effective IW narrative to justify escalation beyond competition. The adversary seeks to create the perception through action and narratives among sufficient international, regional, and local elements that violence and coercion are justified and that friendly action is unjust. In so doing, the adversary's IW narrative will undermine, if not incapacitate, a friendly alliance's capacity to resist. When the adversary is unsuccessful at achieving its strategic aims short of armed conflict in competition, and it determines that conditions warrant the execution of a rapid military campaign, the adversary may transition to armed conflict to achieve its ends.

2-5. Primary enemy systems and methods for armed conflict.

a. Once engaged in armed conflict, the enemy attempts to accomplish objectives and achieve a favorable outcome quickly in order to limit the risk to its forces and civil stability. In armed conflict, enemy systems fragment the integrated employment of forward-positioned Joint Force elements and prevent follow-on deploying echelons from reinforcing the theater of operations in time to affect the outcome. **Conventional forces** are the enemy's main effort in armed conflict, supported by **unconventional warfare, information warfare, and nuclear capabilities** to

achieve a rapid, decisive victory. Figure 5 illustrates how and where enemy systems are employed during armed conflict.

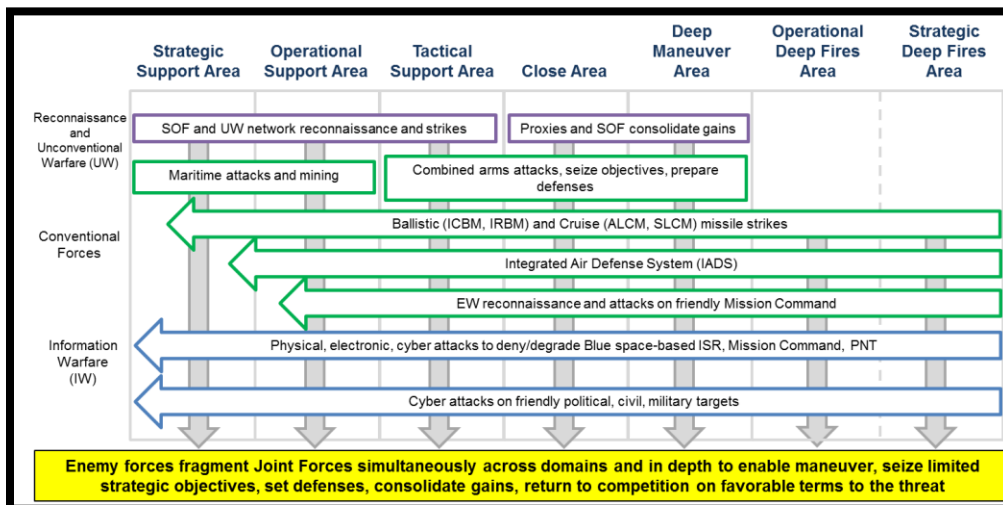


Figure 5. Enemy Military Systems in Armed Conflict

b. **Conventional forces.** Conventional forces are the enemy’s primary means of accomplishing objectives in armed conflict. Enemy conventional forces execute offensive operations to seize key terrain and destroy friendly formations as a follow-on operation that reinforces or exploits reconnaissance, UW, and IW activities initiated in competition. Enemy conventional forces transition to defensive operations that retain key terrain, destroy friendly formations, and incorporate UW and IW activities to consolidate gains. In both the offense and defense, the enemy converges its **ISR-strike system, IADS, ground maneuver formations, and maritime** capabilities in a systems approach that places the Joint Force in multiple, simultaneous forms of contact in all areas of the battlespace. Irregular forces often transition to a supporting role during armed conflict and conduct security operations that shape an occupied area (often through ethnic cleansing or other population-control measures) while offering the conventional forces a layer of immunity from claims of war crimes.

(1) **ISR-strike system.** The enemy’s ISR-strike system is its critical capability in armed conflict. It employs long-range, anti-surface strike and fires (air-launched, maritime-launched, and ground-launched cruise and ballistic missiles) integrated with ISR capabilities (including unmanned aerial systems, SOF, sensors, etc.) to overwhelm friendly headquarters, ground maneuver formations and naval concentrations, embarkation and debarkation air and sea ports, and sustainment facilities in the Strategic and Operational Support Areas. The attacks from this integrated system provide the enemy with its most effective means to delay and disrupt the Joint Force’s echelonment of forces into the theater of operations and to prevent it from integrating and sustaining combat power once in theater. The enemy’s attacks or the threat of attacks on civil targets also influence domestic and allied political decision making to deny the Joint Force use of key terrain and access to important additional military capacities. Although enemies possess large numbers of long-range fires platforms and supporting munitions, they do not have an infinite number or supply. Successful employment of the ISR-strike system depends on timely reconnaissance, sufficient logistics support, and adequate command, control,

communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) to engage dynamic friendly targets across the depth of the battlespace. The protection of enemy long-range fires by sophisticated IADS, ground maneuver formations, and maritime forces in many regions located in the sanctuary of the enemy homeland makes attacking them a challenge.

(2) **Integrated air defense system (IADS).** Integrated air defenses, consisting of firing batteries, radars, command and control (C2) networks, and air superiority aircraft, provide essential protection for the enemy's long-range fires, ground maneuver formations, maritime surface ships, bases and sustainment, and C2 functions. It restricts friendly airborne reconnaissance and strike systems throughout the depth of the battlespace, providing the backbone of adversary A2/AD capabilities. The IADS also contests friendly air superiority aircraft, exposing friendly ground formations, bases, and naval forces to both enemy airborne reconnaissance and attack. The enemy's firing batteries and radars generate physical and electronic signatures and have finite magazine capacity. This makes them vulnerable to attack, to include ground attack, by friendly conventional and unconventional ground forces. As a defense against friendly airborne reconnaissance and strike capabilities, sophisticated IADS networks are multi-layered, mobile, dispersed, and capable of autonomous operations. The IADS not only protects strike and fires systems, but also enables effective ground and maritime maneuver and challenges friendly forces' abilities to enter the theater.

(3) **Ground maneuver formations.** The enemy's ground maneuver formations depend on the effect of the ISR-strike systems and execute offensive and defensive combined arms operations to seize and hold key terrain to secure the enemy's primary military objectives, protect ISR-strike and IADS assets, and destroy friendly forces. Sophisticated enemy combined arms formations converge massed tactical fires; mobile, protected, lethal maneuver units; manned and unmanned reconnaissance and strike aircraft; tactical air defense; electronic warfare; chemical weapons; and C2 to overmatch friendly ground forces operating without tactical air superiority in the Close Area. The enemy's combined arms formations defeat friendly maneuver units in detail by enabling its tactical indirect fires, the ISR-strike, and IADS systems to position and together defeat friendly airborne and ground reconnaissance missions, as well as attack friendly command nodes and systems, tactical fires batteries, and sustainment activities.²⁰ This combined effect separates and isolates friendly maneuver units in the Close Area, where the enemy uses maneuver elements and other systems to fix friendly forces and tactical fires to destroy them. When sufficiently sustained and free from friendly deep reconnaissance and strike assets, enemy combined arms formations can execute operational maneuver that isolates friendly forces with limited mobility and penetrate defenses into the Tactical Support Area. The enemy's ground maneuver units, however, have a limited sustainment capacity, which can be exhausted in an extended or destructive campaign.

(4) **Maritime.** The enemy's maritime forces disrupt friendly inter-theater and intra-theater sea and air movement, attack friendly ships, and seize key littoral terrain. Enemy submarines provide reconnaissance for long range-fires and attack friendly ships in "blue water," act as launch platforms for submarine-launched cruise missiles, and lay mines to block important

²⁰ The enemy's tactical indirect fires system consists of tube and rocket artillery, command and control nodes, ammunition stocks and sustainment units, and communications networks.

maritime choke points and harbors. The enemy's surface combatants and amphibious forces exploit local sea control and seize key littoral terrain under the cover of enemy long-range fires and IADS, but are vulnerable if this coverage is limited or not available. Submarines are a growing threat to the friendly strategic and operational rear. The enemy's submarines have the ability to separate the strategic and operational movement of U.S. forces long enough to change the outcome of any campaign depending upon maritime support to maintain its lines of communications.

(5) In summary, the enemy can attack strategic, operational, and tactical targets simultaneously throughout the battlespace with capabilities from multiple domains to overwhelm existing mission command practices and systems and make friendly forward-deployed forces fight isolated, domain-centric battles without mutual support. Friendly air forces face sophisticated IADS and aviation threats in the air and massed fires against airfields and bases. The enemy can detect forward-positioned maritime forces at long range and attack them with massed shore-based fires, rendering them unable to contribute strikes or amphibious forces to the air and ground campaigns for operationally significant periods of time. Ground forces without air cover lack deep reconnaissance for fires and are exposed to enemy reconnaissance, air attack, and massed fires. Without the ability to operate semi-independently and across domains, friendly ground maneuver forces can be easily defeated in the Close Area by enemy combined arms formations.

c. **Unconventional warfare (UW).** The enemy's UW activities in armed conflict enable operations in the Close and Support Areas, especially when enabled by proxy forces. Enemy UW operations in the Strategic and Operational Support Areas provide the enemy invaluable reconnaissance for long range fires targeting and even limited ground attack capabilities. Enemy SOF and proxies in the Tactical Support and Close Areas assist in the reconnaissance effort and conduct attacks against undefended mission command, fires, and sustainment targets as economy-of-force efforts or in advance of enemy offensives. UW is also integral to the enemy's consolidation of gains in newly secured territory. However, effective security, counter-subversion, and policing can limit the enemy's ability to expand this capability in most areas. Also, unless supported by an effective IW narrative, high levels of enemy UW activity can strengthen, rather than reduce, friendly resistance.

d. **Information warfare (IW).** Enemy IW operations in armed conflict complement long-range fires and focus attacks on friendly cyberspace networks and space-based communications; intelligence; reconnaissance; and positioning, navigation, and timing (PNT) systems. Attacks on these systems complicate friendly forward-deployed forces' operations and delay reinforcing forces by restricting friendly space-based reconnaissance, preventing the Joint Force from conducting movement, and making distributed mission command difficult in all areas. The enemy's cyber and space attacks will originate from ambiguous or Deep Fires Areas, making them difficult to counterattack. The enemy's cyber-attacks pose a serious threat to friendly network-centric militaries and civil societies. These cyber-attacks, however, depend on extensive reconnaissance and preparation prior to execution, and risk generating large-scale collateral damage to neutral parties, as well as galvanizing international resolve against it, unless supported by an effective IW narrative. The propaganda narratives that dominate the enemy's

IW operations in competition underscore the flow of operations in armed conflict. These narratives enable the enemy to translate battlespace success to political success, or threaten (or justify) its employment of tactical nuclear weapons in an effort to terminate the conflict through escalation.

e. **Nuclear weapons.** In conjunction with IW activities, the enemy uses the psychological threat of employing nuclear weapons against population centers and military targets to coerce friendly decision makers and fundamentally alter negotiating calculus and end the conflict in its favor. Enemy nuclear weapons delivered by missiles, aircraft, and artillery, and inserted as area-denial ground placement into the Support and Close Areas produce specific physical and psychological effects to friendly forces, populations, and leaders, both military and political. The enemy employs nuclear weapon blast effects to destroy friendly force concentrations, critical infrastructure, and even civilian populations. Radiological effects deny key terrain and electromagnetic pulses destroy unhardened electrical circuits in a wide variety of military and civilian networks. The use of nuclear weapons against the U.S. or a treaty ally government, however, risks escalation to strategic nuclear systems and destruction of the enemy's society in a general nuclear exchange.

f. As outlined above, the enemy integrates its systems first in competition and then in armed conflict, presenting friendly commanders and forces with multiple interconnected problems they cannot solve before the enemy concludes its *fait accompli* campaign. The enemy's shaping operations in competition posture its forces advantageously for escalation, and enable both surprise and justification for an offensive campaign. During armed conflict, enemy conventional forces quickly separate and overwhelm friendly forward-deployed forces while enemy long range fires, IW, and UW prevent effective friendly echelonment from operational and strategic distances. Weakened friendly forces are then unable to effectively attack well-defended enemy critical capabilities in the Deep Maneuver and Fires Areas. The enemy seeks to rapidly defeat friendly forces with its ability to isolate forward-positioned forces and the Joint Force's corresponding inability to isolate enemy forces and fight them in an orchestrated sequence across domains.

2-6. Enemy systems and methods to deny decisive U.S. victory or avoid an unfavorable political outcome.

a. The enemy sets conditions in competition that enable its forces to achieve objectives in armed conflict quickly and decisively without significant risk to military formations or civil stability. It seeks to splinter friendly alliances, isolate weakly postured friendly military forces and defeat them in detail, and consolidate gains under the protection of a viable threat of tactical nuclear escalation. If the enemy achieves its objectives, a new competition begins on terms favorable to its military and government. Enemy miscalculations and battlespace defeats that disrupt this approach, however, produce a return to competition distinct in the inability of either side to produce a decisive result.

b. If the enemy cannot achieve a battlespace decision quickly, armed conflict will transition to a new period in which both sides retain operationally significant military forces, but neither

side can achieve decisive results without a substantial commitment of resources and risk of intolerable casualties. Extended armed conflict, therefore, will likely result in the exhaustion of critical munitions, as well as the destruction of many expensive weapons systems and highly trained formations on both sides. Enemy conventional forces will then lack offensive capabilities and capacities as high-readiness formations will be exhausted. Enemy forces in forward positions will develop deliberate defenses, while IW and the threat of nuclear weapons employment provide time to mobilize reserves, generate UW options, and support a negotiated settlement on favorable terms.

c. Unlike the initial competition prior to armed conflict, the battlespace in a return to competition after armed conflict will initially be characterized by widespread violence. Enemy conventional forces retain significant lethality and occupy some friendly terrain, preventing a rapid reduction in violence. Under these conditions, the enemy will seek to employ other, less expensive capabilities to prolong the conflict in its favor. An increased reliance on UW, IW, and potentially nuclear capabilities if enemy civil stability is threatened allows the enemy to rebuild conventional forces and retain (or reestablish) internal stability. These conditions provide a favorable position for a negotiated settlement and return to the lower levels of violence in competition.

2-7. Problems in the “new” battlespace.

Assessment of the emerging operating environment, the new battlespace, and adversary systems and methods in competition and armed conflict results in five main problems to U.S. forces:

a. How do U.S. forces deter the escalation of violence, defeat adversary operations to destabilize the region, and turn denied spaces into contested spaces should violence escalate?²¹ (Figure 6, item 1)

b. How do U.S. forces maneuver from contested strategic and operational distances and with sufficient combat power in time to defeat enemy forces? (Figure 6, item 2)

c. How do U.S. forces conduct deep maneuver by air, naval, and/or ground forces to suppress and destroy enemy indirect fire and air defense systems and reserve forces? (Figure 6, item 3)

d. How do U.S. forces enable ground forces to defeat the enemy in the Close Area? (Figure 6, item 4)

e. How do U.S. forces consolidate gains and produce sustainable outcomes, set conditions for long-term deterrence, and adapt to the new security environment? (Figure 6, item 5)

²¹ Denied spaces are those areas where the adversary can severely constrain U.S. and allied forces' freedom of action through A2/AD and other measures. Contested spaces are those areas where U.S. and allied forces can challenge the adversary's denial measures, maintain some degree of friendly freedom of action, and potentially deny adversary freedom of action.

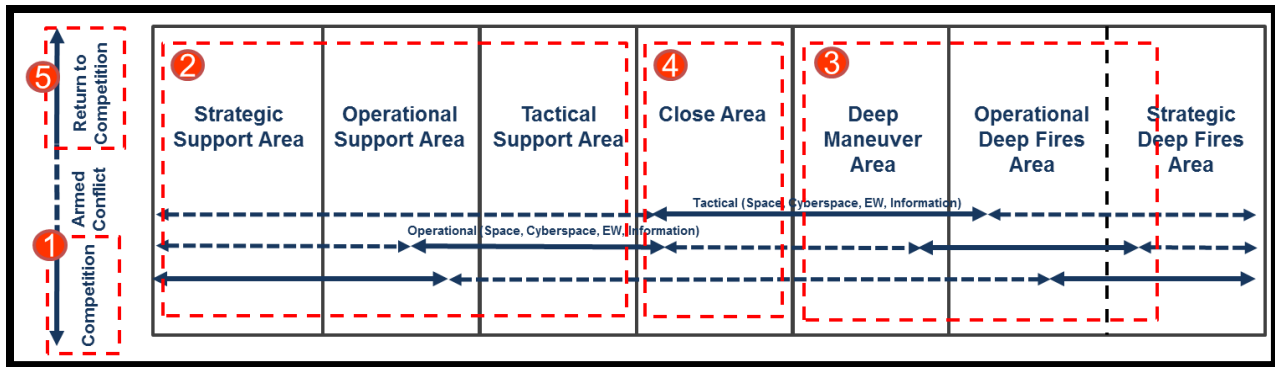


Figure 6. Problems in the “new” battlespace

Chapter 3

The Military Problem and Multi-Domain Battle’s Central Idea

3-1. Military problem.

How will Army forces, as part of the Joint Force and with partners, deter and defeat increasingly capable peer adversaries intent on fracturing allied and Joint Force cohesion in competition and armed conflict?

3-2. Central idea.

Army forces, as part of the Joint Force, conduct Multi-Domain Battle to deter and defeat increasingly capable adversaries in competition, armed conflict, and a return to competition by calibrating force posture; by employing resilient, cross-domain capable formations that can maneuver on the expanded battlespace; and by converging capabilities across multiple domains, environments, and functions to create windows of advantage that enable maneuver.

a. In competition, Multi-Domain Battle enables the Joint Force and its partners to deter and defeat adversary aggression by conducting proactive stabilization campaigns, contesting destabilization campaigns, deterring escalation through the application of flexible deterrent options and rapid deterrence response options, and preparing for transition immediately into armed conflict should the adversary attack.²² The Joint Force succeeds by sustaining alliances and partnerships and extending competition indefinitely on terms favorable to the U.S. and its partners, while preventing escalation to armed conflict. To accomplish this objective, the Joint Force and its partners defeat aggression by contesting, disrupting, or destroying the adversary’s systems that enable its operational approach. They do this by: contesting its reconnaissance, UW, and IW operations; and deterring its conventional forces through the strengthening of partners’ conventional and irregular capabilities, demonstrating the ability to turn spaces the adversary can deny into contested spaces, and demonstrating the ability to maneuver from operational and strategic distances. Together, these friendly actions combine with or complement other applications of the elements of national power to prevent the adversary from separating the U.S. and its partners politically, and maintain favorable and sustainable security.

²² A destabilization campaign is intended to cause internal strife in a targeted nation as a precursor or justification for other enemy actions within that country or as a distraction from intentions elsewhere.

b. In armed conflict, Multi-Domain Battle enables the Joint Force and its partners to defeat the enemy's conventional forces in a rapid campaign of maneuver across all areas of the expanded battlespace in multiple domains and locations simultaneously, denying the enemy its strategic objectives without escalation. The Joint Force and its partners succeed by repulsing the enemy's initial attacks, denying fait accompli objectives and setting conditions for a negotiated solution on favorable terms without further escalation. To achieve this objective, friendly forces defeat the adversary's systems and campaign design through four interconnected actions. First, conducting counter-reconnaissance, reconnaissance, and operational preparation of the environment allows Joint and partner forces to respond proactively to aggression.²³ Contesting the enemy immediately in all domains begins to degrade its critical capabilities and systems at the outset of conflict. Disrupting the enemy's main effort or attack buys time for further friendly response. Finally, deploying forces rapidly with the capability to defeat the enemy and achieve a desirable outcome enables victory. The tempo and lethality of the future operating environment will preclude friendly forces from planning and executing sequential lines of operations and require the Joint Force to execute these four efforts with a level of simultaneity that has yet to be realized in the force's current posture, capability, and capacity. Together, these actions deny the enemy its attempts to break the synergy of the Joint Force and deny it achieving its strategic objectives while enabling the U.S. and partner forces to return to competition on favorable terms.

c. Finally, in a return to competition, the Joint Force and its partners continue to face a still-capable peer adversary that is actively subverting and selectively attacking friendly activities to re-impose its will in the region. During this highly volatile period, Multi-Domain Battle enables the Joint Force to retain the initiative won during conflict and consolidate gains by helping restore public services, reestablish law and order, and isolate and defeat the adversary's subversive activities. Multi-Domain Battle enables the rapid and favorable transition from armed conflict to competition from a sustainable position of relative advantage. Joint and partner forces succeed by protecting partners (internally and externally) and by renewing the competition on terms favorable to the U.S. and its partners, while preventing a return to armed conflict. To accomplish this objective, friendly forces defeat the adversary's renewed subversion campaign and its supporting systems by: contesting the reconnaissance, UW, and IW actions to destabilize partners; deterring a return to armed conflict; and restoring and strengthening partner capabilities and capacities to operate effectively.²⁴ These actions deny the adversary its ability to leverage political instability and the vulnerable internal security environment of a partner or partners to separate the U.S. from its allies and partners and simultaneously enable a controlled return to a favorable and sustainable security.

d. The Multi-Domain Battle concept describes friendly force actions across domains, linked in time, function, and physical space to defeat the adversary's systems in competition, armed conflict, and a return to competition. In each one, Multi-Domain Battle describes how the Joint Force and its partners converge capabilities to create windows of advantage that enable

²³ Operational preparation of the environment is the conduct of activities in likely or potential areas of operations to prepare and shape the operational environment. (JP 3-05) This includes actions to set the theater such as developing relationships with partner-nation governments and their security forces, establishing basing and access rights, prepositioning equipment, developing a communications architecture, establishing baseline intelligence, and emplacing an intelligence architecture.

²⁴ A subversion campaign is intended to undermine the power and authority of an allied government to obtain operational or strategic aims.

maneuver. Maneuver (physically, virtually, and/or cognitively), executed simultaneously across the expanded battlespace, seeks to directly attack critical vulnerabilities in the adversary's systems and campaign plans in different ways to create multiple dilemmas for the enemy. Creating multiple physical, virtual, and cognitive dilemmas for the enemy overwhelms the adversary's systematic approach to fracturing friendly forces and allows the Joint Force and partners to achieve friendly objectives at acceptable risk.

3-3. Components and subcomponents of the solution.

a. **Components of the solution.** To execute Multi-Domain Battle, the Joint Force and its partners operationalize three components of the solution that allow friendly forces to succeed in the evolving operating environment. Army forces operationalize these interrelated components of the solution by calibrating force posture to prevent adversary fait accompli campaigns, employing resilient formations that can maneuver semi-independently on the expanded battlespace, and converging capabilities to create windows of advantage to enable maneuver. Appropriate **force posture** requires the calibration of forward presence, expeditionary forces, and integrated partner capabilities to deter the adversary and, when necessary, defeat the enemy's fait accompli campaign. Because sophisticated enemies will attempt to isolate and defeat friendly forces, Army formations must be **resilient** in order to withstand the enemy without Joint Force enablers or domain superiority for periods of time. To detect, create, and exploit windows of advantage, resilient formations are also organized to conduct semi-independent, cross-domain maneuver, while headquarters integrate operations with advanced capabilities and according to the mission command philosophy. **Converging** Joint Force capabilities to create windows of advantage across multiple domains enables operations to defeat the adversary's aggression in competition, defeat the enemy in armed conflict, and, in the return to competition, contest the adversary's renewed subversion campaign and consolidate gains by providing commanders multiple options and presenting the enemy with multiple dilemmas or defeat mechanisms. The combination of Multi-Domain Battle components in space and time varies based on the adversary, partners, and theater of operations. Application of these three components of Multi-Domain Battle enable Joint Force leaders to address the problems presented by peer adversaries by employing the most effective combinations of force posture, resilient formations, and convergence of capabilities to create windows of advantage, maneuver to defeat threat systems, and defeat the enemy's campaigns in competition and armed conflict.

(1) **Force Posture.** Multi-Domain Battle requires a dynamic mix of forward presence forces, expeditionary forces, and partner forces to deter an adversary and, if required, to defeat his plan within days and not months.²⁵ **Forward presence forces**, along with partners, are essential to success when competing to defeat and deter the adversary's UW and IW efforts and prevent fait accompli campaigns by posturing inside the adversary's anti-access systems. They must be capable of immediately turning denied spaces into contested spaces by attacking or threatening the enemy's critical vulnerabilities. **Expeditionary forces** (to include strategic attack capabilities) that can respond rapidly within days, not months, to reinforce forward-

²⁵ This timeline is based on the time for the enemy to achieve objectives, consolidate gains, and set defenses is derived from findings shown in RAND's study on "Reinforcing Deterrence on NATO's Eastern Flank". This assessment is broadly applicable to the aims of other adversaries who compete below armed conflict and, when advantageous, conduct rapid, limited military campaigns.

presence and partner forces are essential because the adversary's system will mask the indications and warnings required to adjust the calibration of forward presence forces prior to armed conflict. U.S. forces must have the expeditionary capacity, including strategic lift, to maneuver directly from home station or other theaters of operation (in the Strategic Support and Operational Support Areas) into battle because enemy lethal and nonlethal attacks will contest strategic and operational maneuver and prevent extensive reception, staging, and onward movement activities. **Partner forces** that are politically aligned and militarily integrated with the Joint Force provide essential capacity, unique capabilities, and key terrain required to defeat enemy systems in competition and armed conflict. Unique partner capabilities contribute immeasurably to friendly success in reconnaissance, countering UW, and information environment operations (IEO), while enhanced partner counter-A2/AD and conventional ground maneuver capabilities and capacities buy critical time for friendly forces to prevail against attacking adversary conventional forces.²⁶

(2) Resilient Formations.

(a) Multi-Domain Battle requires resilient formations capable of conducting semi-independent, cross-domain maneuver throughout the depth of the battlespace from any location in the world to the point of conflict to address the enemy's lethality and ability to contest the Joint Force in all domains. Regardless of initial posture, forward based or expeditionary forces, Army cross-domain capable tactical formations will be capable of combined-arms maneuver. Multi-Domain Battle demands formations able to conduct semi-independent, dispersed, mutually supporting, combined-arms operations with capabilities deployed to or accessible at the lowest practical tactical echelon to generate and exploit some advantage over the adversary. These scalable and task-organized units possess the essential ISR, firepower, endurance, and mobility to operate as distributed combined arms-capable forces, while retaining the agility to converge dispersed capabilities at a desired place and time to confront the full range of adversary challenges. They also composite layered, long-range precision fires capabilities – both kinetic and non-kinetic strike and integrated air and missile defenses – to disrupt, degrade, and hold at risk an adversary's enabling capabilities. Multi-domain convergence requires forces to operate and thrive in conditions of austerity within range of enemy long-range fires, and therefore, must be resilient.

(b) Because friendly forces face contact in all areas from a range of the adversary's capabilities at any given time, often from varying directions and domains, the battlespace is expanded and often noncontiguous. Conversely, the complementary capabilities of friendly forces enable commanders to conduct attacks from varying directions and domains to create surprise and increase survivability of the force. The absence of safe havens and assured domain superiority results in revised considerations for how Army formations conduct operations and how they are designed and trained. Resilient formations are **cross-domain capable; avoid detection and survive contact** with the enemy; maneuver and fight for periods **without continuous supply lines or secured flanks**; and **train cognitively to execute mission command in degraded conditions** with tools that allow commanders and staffs to converge capabilities across domains, environments, and functions. These qualities allow friendly

²⁶ See the Glossary and Appendix C for the definition and further explanation of information environment operations (IEO).

formations to operate without superiority in all domains and provide operational joint commanders options to prioritize high-value, low-density joint capabilities against operational problems other than enabling ground maneuver.²⁷ This allows formations to operate semi-independently when isolated and conduct noncontiguous cross-domain operations when needed to contest enemy actions, enable the echelonment of friendly forces from operational and strategic depths, and provide options to dislocate enemy operations and systems that enable the Joint Force greater freedom of action. Army forces contribute to solving these operational problems outside of the Close Area by employing capabilities, both organic and supporting, across **all domains** to enable and exploit friendly capability convergence.

(3) **Convergence.** (See Figure 7)

(a) Convergence is the integration of capabilities across domains, environments, and functions in time and physical space to achieve a purpose. Multi-Domain Battle requires converging interorganizational and military, as well as lethal and nonlethal capabilities, across multiple domains and environments in time and space to create windows of advantage that enable the Joint Force to maneuver or gain a position of advantage. The requirement to employ formations to create and exploit windows of advantage throughout the depth of the expanded battlespace over time ranging from seconds to years represents the greatest challenge for commanders posed by the new operating environment. Capability convergence produces physical, virtual, and/or cognitive windows of advantage that provide the freedom of maneuver required for forces to defeat adversary systems and ultimately achieve friendly objectives. Converging capabilities across domains, environments, and functions to produce **windows of advantage** requires a sophisticated understanding of the relationship between **time, spaces, and purpose**.

(b) **Windows of advantage.** Converging interorganizational and military, lethal and nonlethal capabilities across domains, environments, and functions produces windows of advantage that are places and times in which friendly forces or capabilities can maneuver to accomplish missions. These windows can be used to enable maneuver or set conditions for decisive, shaping, and sustaining operations. The Joint Force and partners converge capabilities to detect and create physical, virtual, and cognitive windows of advantage during competition that are often essential for success in armed conflict.²⁸ Windows of advantage are a requirement for maneuver in the increasingly lethal and complex operating environment where the enemy's systems are organized to place friendly forces in multiple forms of lethal and nonlethal contact at extended ranges over prolonged periods of time. Friendly forces exploit windows of advantage to accomplish campaign objectives outright or to better posture forces in positions of advantage that enable further capabilities convergence and windows of advantage. Resilient formations capable of semi-independent, cross-domain maneuver provide the commander multiple options

²⁷ Ground forces must still be capable of using joint fires to enable maneuver across all domains. Because joint fires are a limited resource, however, it is recognized that at times the priority of effort for joint fires may be elsewhere besides the Close Area, such as shaping operations in the Deep Areas or maintaining windows of advantage to enable sustainment operations through the Support Areas. Therefore, ground formations must not be fully dependent upon those capabilities, but instead be able to survive and operate at some level when that support is not available.

²⁸ Examples of windows of advantage created during competition that extend into, or are essential for success in armed conflict include territorial access (physical), authorities (physical, virtual, cognitive), popular or government support (cognitive), expanded partner capacity (physical), and reconnaissance posture and intelligence sharing (physical, virtual, cognitive).

to create and exploit windows of advantage non-linearly in order to present multiple dilemmas to the enemy.

(c) **Time.** Physical, virtual, and cognitive capabilities across the domains, environments, and functions often possess substantially different time characteristics that govern how they can be employed. When creating and exploiting windows of advantage, commanders must visualize and execute combined-arms maneuver in new ways because the varied characteristics of different capabilities that must be converged at a place or places to achieve a purpose impose unique time considerations to operations. The Joint Force and its partners must also reconsider time in terms of converging actions during competition to achieve objectives without resort to, but also through transition to, armed conflict and a return to competition. To support converging capabilities in time and purpose, Multi-Domain Battle proposes five elements—preparation time, planning and execution time, duration time, reset time, and cycle time—to visualize the convergence of capabilities. Preparation time is the time required to produce conditions required for a capability’s employment. Planning and execution time is the time required to initiate movement combined with the time required to move or transmit to the objective. Duration time is the time that a capability produces the intended effect. Reset time is the time required to regenerate a capability between employments. Cycle time is one iteration of planning through reset time. Understanding time is both art and science as elements of time for some capabilities, such as planning and execution time for a ballistic missile attack, can (or must) be known with great certainty while other aspects, such as duration of a cyberspace effect, can only be estimated.

(d) **Converging capabilities in spaces over time.** The Multi-Domain Battle operational framework and time elements describe where, when, and how friendly and enemy capabilities interact to produce windows of advantage that allow forces to maneuver. Virtual capabilities, in particular, offer an extreme illustration of the limitlessness in physical space, variability in elements of time, and wide variety of potential effects that create both complexities and opportunities of converging capabilities across domains, environments, and functions. To mitigate these complexities and seize opportunities, resilient formations must operate under the mission command philosophy because of the uncertain durations and physical extents or intensities of many virtual, cognitive, and even physical effects. Although physical, virtual, and/or cognitive capabilities are converged to produce windows of advantage, these conditions normally, though not exclusively, occur in physical space. The most commonly understood examples of capability convergence involve friendly forces creating windows of advantage in the Deep Maneuver Area during armed conflict for air, ground, and maritime forces to maneuver against enemy IADS and strike systems. Multi-Domain Battle, however, recognizes that friendly forces will also converge even greater quantities of capabilities over longer periods of time to prevail or set conditions in competition, as well as enabling essential activities in the Support Areas in armed conflict.

Convergence

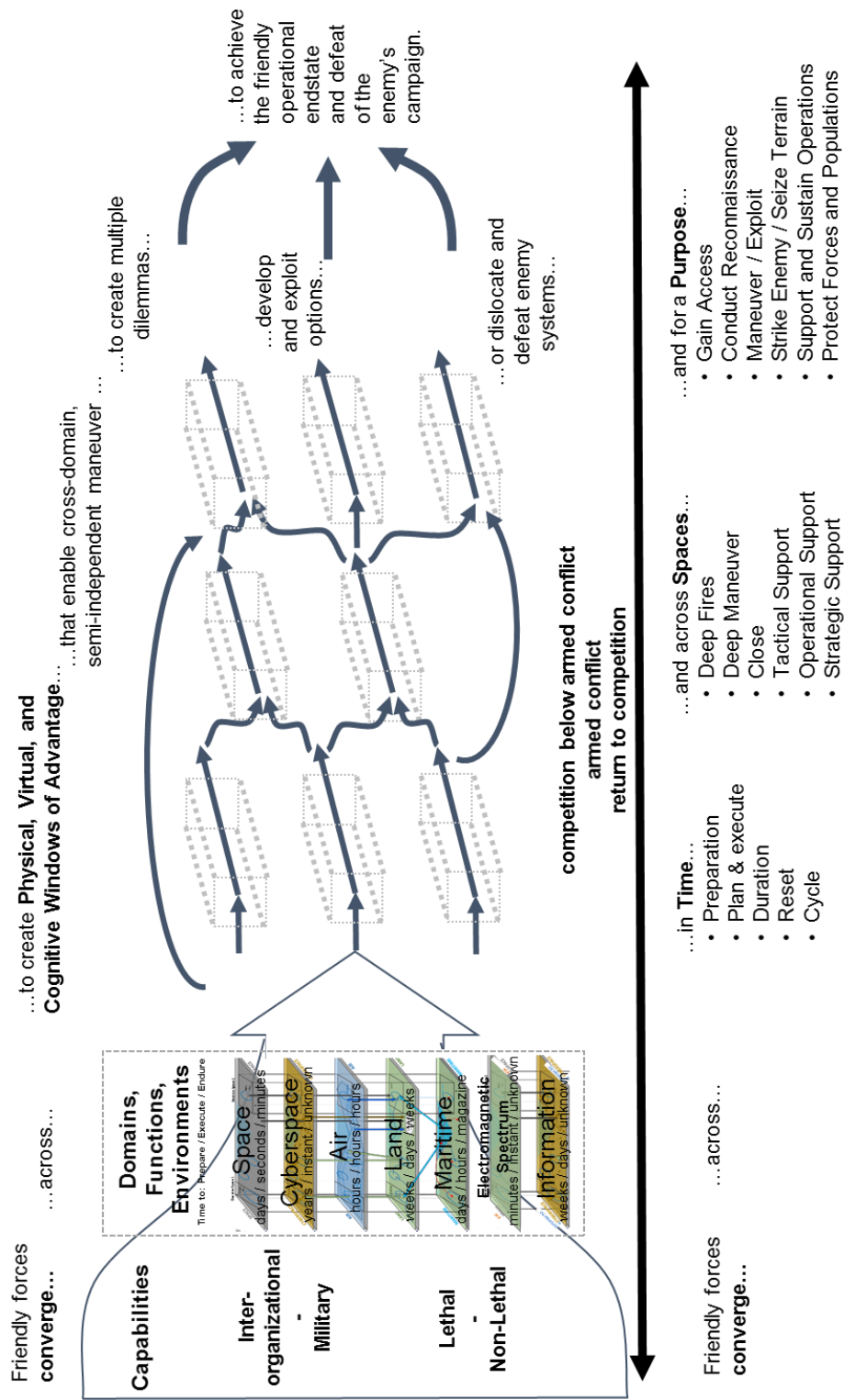


Figure 7. Convergence

(e) **Purpose.** The purpose of converging capabilities to detect, create, and exploit windows of advantage is to enable maneuver. Friendly forces maneuver through all domains and environments to achieve campaign objectives. In some cases, especially in competition, friendly forces maneuver through a single long-duration physical and cognitive window of advantage can achieve a campaign objective outright by deterrence and without armed conflict. Friendly forces, in other cases, exploit windows of advantage to advance the friendly information narrative and create conditions that achieve friendly objectives by gaining access, conducting reconnaissance, maneuvering to positions of advantage, and striking enemy forces to seize terrain, support and sustain operations, and protect forces and populations. These actions develop additional options for the Joint Force and partners to defeat and destroy enemy forces and present multiple dilemmas that dislocate and overwhelm enemy systems. Continued defeat or destruction of enemy capabilities reduces the enemy's physical ability and affects its cognitive will to resist.

b. The components of Multi-Domain Battle, applied in different ways at different periods against different adversary problems, enable commanders and forces to achieve objectives against the increasingly capable adversary systems outlined in Chapter 2. As will be described in sections 3-4, 3-5, and 3-6, the Joint Force and its partners calibrate force posture, employ resilient formations capable of semi-independent maneuver without domain superiority, and converge capabilities to create windows of advantage in different ways over time according to the situation on the expanded battlespace to solve the problems presented by a peer adversary. Applying these components and actions in competition, armed conflict, and a return to competition, the Joint Force in concert with partners can accomplish the following actions:²⁹

- Defeat the adversary's operations to fracture alliances and destabilize a region, deter the escalation of violence, and set conditions to turn denied spaces into contested spaces immediately should violence escalate.
- Maneuver from strategic and operational distances, across multiple domains and environments, while contested but with sufficient combat power in time to defeat enemy forces.
- Conduct deep maneuver by air, naval and/or ground forces to suppress and destroy enemy ISR-strike and IADS systems.
- Defeat the enemy in close combat with ground maneuver forces to destroy enemy systems and enable the Joint Force.
- Consolidate gains and produce sustainable outcomes, set conditions for long-term deterrence, and adapt to the new security environment.

²⁹ The first two actions are important because achieving relative success in these actions sets conditions to achieve success in the last three actions.

3-4. Defeat the adversary's aggression in competition.

a. In competition, U.S. forces and partners converge combinations of physical, virtual and cognitive capabilities at times and places of their choosing across the expanded battlespace to retain a favorable position while preventing escalation into armed conflict.³⁰ Army forces, in cooperation with joint forces and other partners, defeat aggression, prevent the escalation into armed conflict and extend competition on favorable terms indefinitely by **contesting the adversary's reconnaissance, UW, and IW** and by **detering its conventional capabilities**.

Europe (1967-89): Competition. With the adoption of Flexible Response in 1967, NATO formally recognized that Soviet nuclear parity and conventional strength undermined deterrence. Over the next 20 years, NATO countries resourced improved military capabilities and capacities; countered Warsaw Pact efforts to politically fracture the alliance; and demonstrated the capability to respond to potential escalation with exercises that enhanced readiness and integration, and demonstrated the ability to transition to armed conflict.

At the same time, U.S. forces and partners enhance deterrence and have **the ability to transition to armed conflict**, in response to the escalation of aggression by the adversary, by operationally preparing the environment and organizing forward-postured forces to fight immediately and to turn denied spaces into contested spaces. These efforts sustain alliances and partner-nation political systems the adversary seeks to fracture with its actions short of armed conflict.

b. Contest the adversary's reconnaissance operations.³¹

(1) The Joint Force and its partners contest the adversary's reconnaissance operations and preparation of the environment to maintain or create conditions that keep the adversary operating below armed conflict while denying him the ability to achieve offensive strategic objectives in competition. Friendly forces accomplish this task and sustain friendly freedom of action across the expanded battlespace by denying the adversary the ability to understand friendly intentions in three ways. First, the Joint Force and its partners protect critical networks, systems, and infrastructure for projecting power in days, not months. Second, they interdict the adversary's actions to prepare the environment to neutralize friendly reconnaissance and targeting. Finally, they take active and passive measures to contest the adversary's reconnaissance capabilities. Together these actions deny enemy objectives in competition while protecting friendly forces' freedom of action.

(2) The Joint Force and its partners protect core forward-postured and expeditionary maneuver capabilities from the adversary's active reconnaissance and surveillance efforts to enable the projection of power into a contested environment. Physically, virtually, and cognitively, the Joint Force and its partners protect air and sea ports, networks in the Strategic and Operational Support Areas, and strategic and operational transport assets from the adversary's surveillance by human means. This protection requires the convergence of civilian and military capabilities to operate against the adversary's SOF and human intelligence networks in both the homeland (Strategic Support Area) and partner states (Close Area). Additionally,

³⁰ The most favorable terms would be that the adversary has fewer ways and means of exerting coercion during competition and that its actions incurred a direct challenge to its hold on domestic power.

³¹ Adversary reconnaissance operations extend beyond the conventional battlespace into space and cyberspace.

U.S. forces closely monitor and defend critical space networks and assets from enemy activity, rapidly responding to attacks on these critical nodes and dynamically reallocating non-contested bandwidth as capability is lost. Virtually, defensive cyberspace operations protect interconnected military and civilian transportation and installations computer networks and PNT nodes across the expanded battlespace. Smart systems and networks detect adversary probing and intrusion and automatically apply appropriate active and passive cyberspace responses to allow the Joint Force to conduct the necessary level of mission command and maintain the tempo required to sustain tactical operations and operational and strategic maneuver. Cognitively, the Joint Force converges capabilities with partner military and civilian forces to protect against IW that disrupts key enabling populations (e.g, sea and airport workers and unions). Converging the capabilities of the Joint Force and partner's intelligence systems enables tracking and infiltrating adversary subversion networks. By gaining placement and access to information mediums and mechanisms, friendly forces challenge the adversary's information attacks on social media. These combined actions – from both forward-postured and expeditionary forces – contest the threat's active reconnaissance and preparations to protect the U.S. force's expeditionary maneuver capabilities.

(3) The Joint Force and its partners interdict the adversary's conventional preparation of the environment and neutralize its efforts to provide targets for its ISR-strike system. Physically, they identify the adversary's agents and proxies who provide intelligence on friendly forces and key infrastructure. They converge multi-source intelligence with law enforcement and military counterintelligence across agencies and nations to interdict threat espionage and subversion networks. Virtually, friendly cyberspace formations identify and prevent the adversary's attempts to attack friendly computer networks and systems used for air and maritime mobility, ISR, and air defense. The Joint Force and its partners interdict these actions using adaptive combinations of offensive and defensive cyberspace tools enabled by ISR of military and civilian networks. Protection relies on the convergence of intelligence, counter-espionage, and law enforcement operations, and the ability to contest the adversary's efforts to sabotage key military and civilian networks and infrastructure both physically and virtually through joint maneuver on the extended battlespace. The Joint Force will also coordinate with interorganizational, and multinational partners to mitigate effects in cyberspace by hardening networks at various points of conjunction.

(4) The Joint Force and its partners take direct action to contest and disrupt the adversary's UW reconnaissance activities, attempting to access friendly strategic and operational physical and virtual systems. Forward-postured friendly forces converge capabilities to identify and attack the adversary's proxy and special operations forces physically and cognitively. The convergence of physical and virtual intelligence and maneuver capabilities (police, conventional forces, and direct action SOF) leads to raids on adversary UW cells. Physically attriting the adversary's UW reconnaissance through killing, capturing, or forcing the surrender of members produces cognitive windows of advantage in the friendly civilian populace and against adversary UW networks and leadership. These cognitive windows enable other friendly reconnaissance, UW, IEO, and deterrence activities, and degrade similar adversary activities.

(5) The Joint Force and its partners continuously contest the adversary's conventional and UW reconnaissance to protect key systems and capabilities and preserve the credibility of their deterrent capability, while preventing the escalation of violence into armed conflict. By physically, virtually, and cognitively protecting key friendly systems and interdicting the adversary's reconnaissance, friendly forces create conditions that cause the adversary to adapt. Adversaries must either commit more resources and time to support preparation of the environment, or increase the pace, tempo, and visibility of reconnaissance, which increases the likelihood of exposing its techniques, networks, agents, and systems to friendly interdiction and exploitation by friendly counter-reconnaissance capabilities. Either decision the adversary makes contributes to the friendly objective of effectively competing short of armed conflict.

c. **Contest the adversary's UW campaign.**³² The Joint Force contests the adversary's UW campaign, aimed at fracturing partner political systems and alliances, primarily through the partner's national and local intelligence, police, and security forces, as well as their cyberspace capabilities. U.S. capabilities support efforts to oppose subversion in three ways. First, U.S. forces improve a partner's tactical and operational capabilities to attack the adversary's UW campaign. Second, the U.S. and partners converge physical, virtual, and cognitive capabilities to identify and exploit vulnerabilities in the adversary's UW system. Finally, the Joint Force and its partners conduct selective operations to defeat the adversary's UW campaign physically, virtually, and/or cognitively.

(1) The Joint Force improves a partner nation's tactical and operational capabilities to directly contest an adversary's proxy forces by conducting security cooperation activities and military support to governance. These activities provide specialized training, advice, and assistance to partner SOF, conventional forces, and policing to enhance the partner's ability to physically conduct the counter-UW campaign.³³ These activities occur principally in the Close and Support Areas and, therefore, require forward-postured U.S. forces able to assist the partner in the integration and application of military, police, intelligence, cyberspace, and governmental capabilities in the counter-UW campaign. Virtually enhanced units, linked to U.S. military, governmental, intelligence, and police experts in the Strategic Support and Operational Support Areas, enable security cooperation activities and military support to governance in the Close Area. The combination of these physical and virtual activities maintains and strengthens the cognitive links between the U.S. and partner forces and enhance a partner state's ability to contest the adversary's UW campaign.

(2) The Joint Force converges technical intelligence, cyberspace, and technical network analysis capabilities with our partners' human and local intelligence to identify vulnerabilities in the adversary's UW system. Physically, a partner nation's counter-subversion forces gain placement and access in the adversary's human networks. Converged with the U.S.'s virtual and analytical capabilities (e.g., machine learning and artificial intelligence), partner counter-subversion forces identify and attack the adversary's activities faster than the adversary can respond. Convergence of the partner's physical means with the U.S.'s virtual capabilities opens

³² A UW campaign employs activities to enable a resistance movement or insurgency intended to coerce, disrupt, or overthrow a government or occupying power by operating through or with an underground, auxiliary, or guerrilla force in a denied area.

³³ A counter-UW campaign is the friendly operations intended to defeat the enemy's UW campaign.

enduring windows of advantage that physically and cognitively isolate the adversary's special operations and proxy forces to contest the adversary's UW campaign.

(3) The Joint Force and its partners take direct action to disrupt and interdict the adversary's UW capabilities across the expanded battlespace. Forward-postured joint and partner forces converge physical and virtual capabilities, creating windows of advantage to attack the adversary's proxy and special operations forces discretely and successively even when intermixed with local populations in urban environments to degrade them physically and cognitively. To accomplish this convergence, U.S. and partner forces require timely and accurate intelligence, the ability to conceal their activities (physically and virtually), operational reach in the theater, and the ability on the objective to discern, exploit, and pursue. These direct action maneuvers sustain the friendly initiative and, over time, contest the adversary's UW systems and networks.

(4) A sustained effort by partners, combined with intelligence and direct action forces presents the adversary a dilemma to either escalate the intensity of its UW actions and increase the risk of exposing its proxy forces or decrease its UW activities in time and space to protect them. By persistently presenting the adversary with this dilemma, the friendly counter-UW campaign extends competition indefinitely and on increasingly favorable terms. Because the adversary uses its UW actions to generate events on the ground to support its IW narrative, the successful countering of the adversary's UW also creates positive effects in the friendly IEO campaign.

d. Counter the adversary's IW campaign. The Joint Force and its partners counter the adversary's IW campaign in two ways. First, to influence the cognitive dimension, they communicate the friendly narrative and actions in contrast to the adversary's narratives and actions to reinforce the alliance's political and military strengths to local, regional, and global audiences. Second, they employ virtual (cyberspace operations) and physical measures (e.g., network attack, kinetic fires or other physical capabilities) to directly contest the adversary's narrative. By challenging the adversary's IW campaign, U.S. forces and their partners limit the adversary's cognitive ability to fracture partner's political systems and friendly alliances.

(1) The Joint Force and its partners establish an enduring cognitive window by creating a separation between the friendly force's and adversary's respective narratives and actions. Positively, the Joint Force and its partners communicate the linkage between their narratives and events on the ground. Negatively, they communicate the incongruity between adversary's messages and actions (e.g., military exercises intended to influence a partner's populace and government). The difference between them creates a cognitive window the Joint Force exploits to communicate messages through social networks and cultural pathways that defeat the adversary's IW system. These IEO activities produce positive political and cognitive reciprocal effects that increase friendly forces' freedom of action to contest the adversary's UW system.

(2) The Joint Force and its partners directly contest the adversary's IW campaign by attacking its narratives cognitively, its delivery networks virtually, and its messengers and tools physically. This requires: identifying the adversary's messaging patterns and means of

delivery; accessing networks physically and virtually; analyzing messaging patterns; identifying messengers (physical and virtual); removing the adversary's messages in social media; and destroying computers and servers used to deliver those messages physically and virtually. The joint and partner IEO elements converge capabilities to create windows of virtual, physical, and cognitive advantage over time by identifying the adversary's messages and exploiting access to computer and human networks to disrupt, destroy, or remove those messages virtually, physically, or both. The Joint Force simultaneously employs capabilities to ensure the affected population has access to the internet or cellular networks to disseminate allied messages, aid legitimate governance, and enable the formation of cognitive mass in opposition of adversary action. These windows create cognitive opportunities to make friendly narratives more effective.

(3) Friendly IEO efforts, when enabled by effective friendly counter-reconnaissance and UW operations, disrupt and eventually neutralize the adversary's IW campaign. This compounds the dilemma the adversary already faces in the UW campaign. If it perceives it is losing the IW campaign against the partners and allies, the adversary must either reduce the tempo and intensity of its IW campaign, and the associated UW and reconnaissance actions that enable it, or increase its information activity and the UW and reconnaissance activities that support it in frequency, strength, or both. Reducing its IW and UW activities risks creating a cognitive and virtual window for the friendly narratives, and their supporting actions, to build up their effectiveness. But escalatory IW and enabling UW create conditions for the Joint Force and partners to both exploit disconnects between the adversary's subversive narrative and its ever more physical demonstrations of power. The converged friendly IEO activities—tactical to strategic; physical, virtual and cognitive—continuously disrupt the adversary's most influential mechanisms to shape the cognitive environment while also reinforcing friendly UW efforts. Joint Force IEO is also one of the means that can extend operational reach into the enemy's strategic rear and present challenges to its most central strategic concern of maintaining political control. The mutually reinforcing success in UW and IEO helps to extend competition on favorable terms.

e. **Deter conventional forces.** The Joint Force and its partners deter the adversary's use of conventional forces that both reinforce its subversion campaign and set conditions to conduct a fait accompli attack if and when it chooses. The Joint Force and its partners deter the adversary's use of conventional force physically, virtually, and cognitively. They do this in two primary ways. First, the Joint Force strengthens the partner's forces both conventionally and unconventionally. Second, the Joint Force deters by demonstrating its abilities to both turn denied spaces into contested spaces through resilient forward-postured forces and to maneuver strategically and operationally credible expeditionary forces within days not months into the Close Area. These actions may deter the adversary's aggression, support the friendly UW and IEO campaigns, and prevent the potential transition to armed conflict.

(1) The Joint Force strengthens partner forces both conventionally and unconventionally. Conventionally, it physically and virtually improves the partner's capacities and capabilities, enabling the partner to create its own A2/AD approaches and improve its defenses. By employing countermobility capabilities in combination with man-portable surface-to-surface and surface-to-air missiles, the partner's conventional forces alter the adversary's campaign calculus

by imposing unanticipated combat and time costs. Unconventionally, the Joint Force prepares partner forces to continue to resist in the event the adversary's forces occupy some or all of the partner's homeland and deny it the ability to consolidate gains. Enabled by joint SOF, these resistance forces place key adversary systems at risk by being able to conduct precision strikes against occupying forces in the Deep Maneuver Area and change the enemy's risk-benefit calculations when contemplating occupation of a partner nation. Enhancing forward posture by improving the capacities and capabilities of partner's conventional and irregular forces reinforces the friendly IEO campaign while also deterring the adversary.

(2) The Joint Force and partners may deter armed conflict by demonstrating its ability to turn denied spaces into contested spaces and the ability to maneuver expeditionary forces from operational and strategic bases to the Close Area. In the Close Area, forward-postured, resilient formations demonstrate their ability to immediately contest the adversary's physical and virtual actions to isolate them through maneuver. By continuing to maneuver, they physically challenge the adversary's ISR-strike system and IADS. Virtually, they detect and contest the adversary's fires and communications networks. In the Tactical and Operational Support Areas, friendly space, cyberspace, EW, joint strike, long-range fires, and counter-IADS systems demonstrate the ability to converge capabilities that create physical and virtual windows of temporary advantage. These windows enable the maneuver of expeditionary forces from strategic and operational bases directly into the Close and Deep Maneuver Areas. Through exercises and tests, the Joint Force deters the adversary with the demonstration of the abilities to turn denied spaces into contested spaces with forward-positioned formations and to maneuver expeditionary forces from operational and strategic bases deters the adversary when the Joint Force demonstrates them.

(3) These demonstrated abilities of U.S. and partner forces to turn denied spaces into contested spaces and to maneuver from strategic and operational depths present multiple dilemmas for the adversary. Because friendly forces demonstrate they can credibly present simultaneous counter-offensive capabilities immediately from the Close Area to the Operational Support Area, the adversary's primary mechanism to fracture the Joint Force—its ISR-strike system—is forced to spread or dilute its targeting and strike activities across many increasingly resilient targets. The friendly force's calibration of force posture and demonstrated abilities to both resist and rapidly deploy cause the adversary to change its fait accompli campaign calculus.

f. **Prepare to transition to armed conflict.** The ability to successfully deter an adversary requires demonstrating the ability to immediately transition to armed conflict and turn denied spaces into contested spaces. Without the capability and authorities to respond immediately, the ability to maneuver the Joint Force and challenge the adversary's actions and prevent a fait accompli becomes exponentially more challenging. An immediate response, however, requires extensive preparation. Forward presence and partner forces enable the immediate transition from deterring aggression to armed conflict by conducting ISR operations and preparation of the environment in all domains and environments during competition.

(1) Physically, joint and partner forces exercise regular changes in force posture combinations, through exercises and tests, to generate observable responses in the adversary's systems (e.g., IADS). These responses enable friendly forces to identify critical paths of

vulnerability (physical, virtual, and cognitive) that the Joint Force can exploit in conflict. Friendly forces also physically prepare the Close Area by employing arrays of camouflaged, stay-behind sensors; preparing key terrain and friendly urban areas for deliberate defenses in depth; establishing clusters of logistics and weapons caches in Close and Support Areas; and developing expeditionary operating bases in the Operational and Tactical Support Areas. The Joint Force and its partners also physically set the theater through actions such as developing relationships with partner-nation governments and their security forces, establishing basing and access rights, prepositioning equipment and supplies, creating a communications architecture, developing baseline intelligence, and emplacing an intelligence architecture. These actions enhance conventional force deterrence against adversary aggression and enable rapid entry, transition to operations, and sustainment of friendly forces when needed.

(2) Virtually, joint and partner forces map friendly and adversary use of the electromagnetic spectrum and computer networks to identify friendly vulnerabilities to protect and opportunities to exploit against the adversary. This analysis includes identifying critical nodes that may need to be defended to retain freedom of action in cyberspace. Joint and partner forces also establish and practice primary, alternate, and supplementary methods of communicating via different mediums in anticipation of a highly contested information environment in the Close and Deep Maneuver Areas. These actions enable semi-independent forces to operate effectively, partner forces to interoperate with U.S. forces, and military forces to communicate with local police and friendly resistance organizations. In terms of virtual resilience, they field and practice using operational and intelligence databases and systems that do not require connection to a live network or rely on outside systems for PNT.

(3) Cognitively, joint and partner forces prepare to operate in degraded and lethal environments, often isolated, and contested in all domains. They prepare their leaders to execute mission orders and to converge capabilities across multiple domains to identify or create windows of advantage for their units or other joint and partner elements. They enhance their forces' and populations' will to resist by aligning and sustaining their forces' actions with their narratives, and sustaining the congruence of actions and ideas, both militarily and politically. Additionally, joint and partner forces make efforts to ensure the survival and continuity of the legitimate partner government to facilitate an eventual transition back to civilian authority in the return to competition following conflict.

(4) In the face of peer adversaries, friendly preparation of the environment requires coordinated, deliberate efforts over months and years. The Joint Force and its partners capitalize on the physical, virtual, and cognitive freedom of action available in competition from the Close through the Strategic Support Areas to prepare for the transition to armed conflict. Doing so enhances deterrence while setting conditions to transition to armed conflict and fight successfully to defeat aggression. By thoroughly preparing the environment, fielding resilient formations, and being prepared to maneuver from operational and strategic depths within days, the Joint Force and partners deter aggression and postures forces to fight and win in the event of armed conflict.

3-5. Defeat the enemy in armed conflict.

a. Forward positioned and expeditionary Army forces, in cooperation with other joint forces and partners, defeat the enemy in armed conflict by simultaneously maneuvering through the contested Support Areas from strategic and operational depths and with sufficient combat power in time to defeat enemy forces; conducting deep maneuver (in the physical domains) to suppress and destroy enemy ISR-strike and integrated air defense systems; and enabling ground forces to defeat the enemy in close combat.³⁴

By converging combinations of physical, virtual, and cognitive capabilities at different places on the

expanded battlespace, U.S. and partner forces defeat the adversary's aggression. Successful execution of these tasks will deny the adversary's initial objectives of the fait accompli campaign (seize key positions and establish a prepared defense) and position friendly forces to achieve favorable and sustainable outcomes in support of U.S. strategic objectives.

October War (1973): Armed Conflict.

Successful deception operations and enhanced capacities enabled Egyptian forces to achieve initial success against the Israeli Defense Forces (IDF) in the Sinai. Forward-positioned and rapidly integrated reinforcing IDF forces, however, maneuvered in contact to develop the situation and detect, create, and exploit vulnerabilities in enemy systems, often at great cost. Using multiple options to attack Egyptian systems, in little more than two weeks the IDF recovered positions of advantage for a transition and return to competition on favorable terms.

b. Presenting enemy systems with multiple dilemmas or defeat mechanisms physically, virtually, and cognitively seizes the initiative, places the enemy on the defensive, and allows the Joint Force and its partners to identify vulnerabilities and converge capabilities to create and exploit windows of advantage more rapidly than the enemy can react. At the outset of armed conflict, the Joint Force and its partners maneuver semi-independently while in contact throughout the expanded battlespace, forcing and winning a meeting engagement with the enemy. Friendly maneuver is enabled by, and subsequently enables, active reconnaissance in all domains. Friendly forces seek information with regard to enemy dispositions, capabilities, and intentions through a combination of passive observations coupled with probes or pulses to gauge enemy reactions. The goal is to enable reconnaissance to identify opportunities for windows of advantage to support maneuver, avoid enemy strengths, and identify gaps through reconnaissance. The Joint Force and partners, however, must be prepared to maneuver in contact without a fully developed understanding of the enemy's dispositions. Maneuver allows friendly forces to avoid enemy strengths, such as its fires systems, and to exploit vulnerabilities, such as its tactical decision making. Converging multiple combinations of capabilities from forward-positioned and expeditionary forces to gain and maintain contact with the ISR-strike, ground, maritime, and integrated air defense systems on favorable terms prevents the enemy from accomplishing objectives and setting defenses within days of beginning armed conflict.

c. Once engaged, the Joint Force and its partners converge capabilities to enable maneuver from many locations simultaneously against the enemy, exploiting identified enemy vulnerabilities or developing the situation to detect vulnerabilities in the enemy's systems rather than methodically building combat power, or preparing the battlespace with intelligence and

³⁴ In armed conflict against a peer competitor, all movement can be contested and must be planned and executed as maneuver.

fires.³⁵ Understanding the interconnected purposes of attacking each enemy system contributes to realizing mission command that allows the Joint Force and partners to shift efforts rapidly to retain the initiative. **Defeating the enemy's ISR** through active and passive counter-surveillance/reconnaissance across multiple domains creates a cognitive window of advantage that degrades the effectiveness of its strike systems and allows friendly operations to achieve surprise against enemy ground forces, maritime forces, and IADS. **Defeating or suppressing the enemy's strike system** prevents the enemy from fracturing the operations of forward-positioned friendly forces and opens windows of advantage to echelon expeditionary forces into the operational theater. **Defeating or suppressing the enemy's IADS** opens windows of advantage for maneuver in the air domain against strike systems, ground forces, and maritime forces. **Defeating enemy maritime forces** prevents the enemy from projecting power from the sea into the air, maritime, or ground domain—in some theaters it is the only means of accomplishing objectives. Additionally, the defeat of enemy maritime forces provides an advantage to maneuver naval forces in support of the JFC objectives. **Defeating enemy ground forces** in the Close Area fractures enemy operations by forcing it to culminate prior to accomplishing its objectives, preventing it from establishing a prepared defense and allowing friendly forces to exploit success in the Close Area to attack the enemy's strike systems and IADS in the Deep Maneuver Area. The Joint Force and partners achieve objectives by converging capabilities to open windows of advantage to create the conditions for maneuver that defeats or bypasses enemy systems, enabling friendly forces to achieve positions (or conditions) for a favorable conclusion of armed conflict. Actions to minimize vulnerabilities, preparedness to mitigate effects and continue operations, an array of response options, and an effective IEO narrative help to **deter the use of nuclear weapons**. Rapidly reducing the enemy's capacity to resist and retaining/retaking key terrain contributes to an **IEO narrative** that enables translation of military results into political objectives for a sustainable outcome in the return to competition.

d. **Defeating the ISR-strike system.** The enemy relies on its ISR-strike system to delay friendly echelonment of forces and attack critical friendly capabilities. Its ISR-strike system is dependent, however, on timely reconnaissance, sufficient logistics support, adequate C4ISR, and protection from IADS and ground forces. The Joint Force and its partners defeat the enemy's ISR-strike system by attacking these vulnerabilities with resilient forward-positioned and expeditionary follow-on forces, and create freedom of maneuver by converging capabilities to open physical, virtual, and cognitive windows in enemy defenses. The goal is to create conditions where friendly forces can see, but not be seen. The Joint Force and its partners posture forces, operate semi-independently linked by a common purpose, and converge capabilities to defeat enemy ISR activities (largely active in the Support Areas) to produce a cognitive window of advantage that delays the enemy's decisions, disrupts its targeting cycle, defends locations and formations from strikes, deceives the enemy into expending munitions against false targets, and inhibits its massing of fires to create friendly maneuver space. The Joint Force and its partners exploit the cognitive window of advantage by converging capabilities to suppress or destroy the enemy's strike system, primarily located in the Deep Maneuver and Deep Fires Areas.

³⁵ Initial battle plan responses to enemy attacks likely will need to be scripted and rehearsed; however, these response options should be flexible so the Joint Force and its partners can adapt the situation to respond effectively.

(1) **Defeating ISR.** Efforts to defeat enemy ISR can generally be aligned in one of three categories: defeating the sensor, defeating the platform, and defeating the information stream. Resilient formations operate semi-independently in the Support Areas and converge capabilities enabling passive and active counter-reconnaissance that defeat the enemy's ISR assets that support its operational strike system. These resilient forward-positioned and expeditionary, follow-on formations execute semi-independent maneuver as a means to defeat the enemy's ISR by reducing signatures (EMS, physical, and virtual) and employing deception measures and obscurity, displacing and maneuvering dispersed, without a requirement for concentrated sustainment or time-consuming joint reception, staging, onward movement, and integration (RSOI) activities. Active counter-reconnaissance and protection measures defeat the enemy's technical ISR activities with space, offensive cyberspace (when sufficient preparation time is available), air defense, and EW capabilities to disrupt and degrade technical collection and communications between reconnaissance platforms and firing units. Friendly air and missile defense networks protect formations and locations from the enemy's aerial reconnaissance in the Tactical and Operational Support Areas. Active counter-reconnaissance operations conducted by police, counterintelligence, SOF, and conventional forces secure friendly Support Areas against enemy UW and SOF human reconnaissance assets by defending high-value targets (vulnerable populations, leadership, bases, and civil infrastructure), producing actionable intelligence and taking offensive action to destroy enemy UW networks operating in the friendly Support Areas. Successful counter-reconnaissance produces a cognitive window of advantage because the enemy cannot be certain of friendly locations or the effectiveness of its strikes. Successful counter-reconnaissance forces the enemy to either expend greater amounts of limited munitions and expose more assets to friendly counterattack or conserve its strike systems and allow the Joint Force and its partners greater freedom of maneuver.

(2) **Defeating strike systems.**³⁶ The Joint Force and its partners converge maneuver, reconnaissance, and fires capabilities to **gain and maintain contact with the strike system**; converge capabilities to open windows of advantage that allow **freedom of maneuver in the Deep Maneuver and Deep Fires Areas**; and defeat or suppress the strike system using multiple combinations of capabilities **to present the enemy with multiple dilemmas.**³⁷ The Joint Force and its partners conduct reconnaissance and maneuver throughout the expanded battlespace, in the Support and Close Areas as well as Deep Areas, to gain and maintain contact with the enemy's strike system. The Joint Force and its partners then converge capabilities to open physical, virtual, or cognitive windows in enemy ground, air, maritime, space, and/or cyber defenses that protect enemy strike systems in the Deep Maneuver and Deep Fires Areas.³⁸ Finally, the Joint Force and its partners employ multiple combinations of capabilities in all domains to suppress and ultimately defeat the strike systems, creating windows of advantage to exploit through continued maneuver against enemy strike systems, or to enable maneuver against

³⁶ The enemy's strike system is composed of missile launchers, missiles, sustainment functions, command nodes, and communications networks as well as computer hardware, software, and programmers executing offensive cyber.

³⁷ While conventional physical maneuver in the Deep Fires Areas may not be possible, friendly forces may attack there virtually and cognitively or with other unconventional means.

³⁸ Other aspects of protection and actions against the enemy strike system that do not occur in the Deep Areas include friendly forces converging defensive UW capabilities (police, counterintelligence, special operations forces, and conventional forces) to defeat enemy UW assault cells in the Support Areas and maritime capabilities to detect and destroy enemy submarines that threaten the Operational and Strategic Support Areas with submarine-launched cruise missiles against land and other weapons against shipping. Additional protection measures include hardening civil targets and preparing civil populations against enemy strikes and setting IEO conditions for such strikes to be seen as unprovoked rather than justified.

ground forces, maritime forces, or IADS. This approach is the primary mechanism of to attack the enemy's critical fires system capabilities.

(a) The Joint Force and its partner forces **gain and maintain contact with the enemy's strike system** by maneuvering semi-independently throughout the expanded battlespace. Friendly maneuver in the Support and Close Areas forces the enemy to react with strikes—exposing or expending components of its strike system against resilient formations and protected targets—or risks allowing the Joint Force and its partners to gain positions of advantage. Friendly capabilities, calibrated in sufficient capacity, posture to detect signatures and counterattack the enemy's strike systems. Friendly air and missile defense networks also protect critical facilities and maneuver forces against enemy strike systems. To supplement maneuver in the Support and Close Areas, a variety of friendly reconnaissance capabilities gain access to the Deep Areas, maintain overwatch of reconnaissance objectives, avoid or defeat enemy contact, transmit information, and self-sustain for periods of time up to weeks.³⁹ Gaining and maintaining access to the Deep Areas in armed conflict is difficult, therefore, force posture is calibrated to take advantage of the best friendly understanding of the enemy strike system's dispositions at the beginning of armed conflict.⁴⁰

(b) The Joint Force and its partners gain **freedom of maneuver in the Deep Maneuver and Deep Fires Areas** by converging capabilities to open physical, virtual, or cognitive windows in enemy ground, air, maritime, or cyber defenses protecting enemy strike systems.⁴¹ Converging capabilities to open windows of advantage for maneuver in the Deep Areas may require a significant amount of preparation time (if counter-space, offensive cyber, and UW capabilities are employed) and will require complex planning/execution time alignment, while the duration of windows of advantage in the Deep Areas is limited due to the strength of enemy defenses. Resilient mission command systems integrate preparation, planning/execution, and duration timelines to converge capabilities, such as dedicated ground and sea-based lethal and nonlethal fires, manned and unmanned aircraft operating from operational and strategic distances, ground maneuver forces, maritime combatants and amphibious forces, and offensive cyberspace to suppress enemy defenses and open windows of advantage in the Deep Maneuver Area. Range, strength of enemy defenses, and the required authorizations limit friendly capabilities available to operate in the Deep Fires Areas, so friendly forces generally can only suppress (rather than fully destroy) enemy strike systems located there.

(c) The Joint Force and its partner forces employ multiple combinations of capabilities to suppress or defeat the strike systems, **presenting the enemy with multiple dilemmas** (or defeat mechanisms) and creating windows of advantage to exploit with continued maneuver against enemy strike systems, ground forces, maritime forces, or IADS. Presenting multiple dilemmas

³⁹ Friendly reconnaissance platforms oriented on or operating in the Deep Areas include air platforms (manned and unmanned), space-based platforms, cyber reconnaissance, ground-based platforms (autonomous sensors, radars, signals intercept, UW networks, small robot-enhanced teams, and ground maneuver formations), and maritime (surface and subsurface) platforms. Some important friendly capabilities (e.g., cyberspace, UW reconnaissance assets, intelligence exploitation) require extended preparation time in competition to gain access to enemy systems in the Deep Areas. Friendly forces in the Deep Areas will need to operate semi-independently for periods ranging from minutes (e.g., aircraft) to weeks (e.g., special operations).

⁴⁰ For example, prior to hostilities, pre-positioned equipment will be dispersed, protected, and/or moved outside of the range of known enemy fires capabilities and SOF can develop networks in the Deep Areas that would enable UW operations.

⁴¹ Maneuver in the Deep Maneuver Area may be limited to cognitive and virtual activities if physical activities are too restricted.

prevents the enemy from concentrating to counter a single method (or limited number) and allows friendly forces to retain the initiative.⁴² Friendly forces present multiple campaign dilemmas to the enemy by maneuvering in contact with its strike system and suppressing protective IADS, ground forces, and maritime forces. The rapid pace of friendly expeditionary maneuver and semi-independent operations requires the enemy to expose its strike systems to increased friendly counterattack, or allow friendly forces to maneuver more freely. Additionally, semi-independent maneuver and friendly air and missile defense networks lessen the effectiveness of individual strikes and force the enemy to spread offensive combat power against a larger number of dynamic targets, or concentrate striking power against a smaller number of lower-payoff targets. Although the enemy's strike platforms positioned in the Deep Fires Areas will be difficult to destroy in most cases, suppressing the strike system not only opens windows of advantage for friendly maneuver, but also exposes vulnerabilities in the enemy's IADS, ground, and maritime forces that can be exploited to accomplish campaign objectives. Possessing multiple friendly alternatives to attack each enemy system presents the enemy with several vulnerabilities (within systems or related components) to protect against.

e. Defeating integrated air defense system (IADS).

(1) The Joint Force and its partners converge many of the same capabilities to suppress or defeat enemy IADS that are used against the enemy's strike systems in the Deep Maneuver and Deep Fires Areas, but for a different purpose. Short-duration suppression of enemy IADS provides friendly forces with windows of advantage to employ reconnaissance and other air capabilities against enemy strike systems, ground forces, and maritime surface combatants. As with attacking the enemy's strike systems, using multiple friendly capabilities to suppress or destroy IADS increases vulnerabilities and forces the enemy to employ additional resources to protect this system. These capabilities also provide the Joint Force and its partners multiple options to open windows of advantage in the air domain.

(2) While IADS is a critical capability that enable the enemy's strike system, ground maneuver, and maritime surface maneuver, the sophistication, density, and resiliency of defenses in the Deep Fires Areas generally preclude a longer-duration physical window of advantage in the air domain. When this occurs, resilient ground forces capable of semi-independent maneuver can enable the Joint Force in the Deep Maneuver Area. These forces can present ground-based dilemmas (or defeat mechanisms) to enemy ISR-strike system, IADS, ground forces, and maritime forces. This approach allows friendly forces to conduct operations without the necessity of defeating the enemy IADS at the outset of armed conflict.

f. Defeating maritime forces. In some theaters, maritime maneuver offers the most advantageous, and sometimes only, means of projecting power in the maritime, ground, or air domain. Projecting power from the sea requires naval forces to protect the sea lines of

⁴² For example, initial success by friendly forces in the Close Area against enemy ground or maritime forces presents a physical window of advantage that allows the Joint Force and partners to avoid localized IADS and gain access to the Deep Maneuver Area or position fire support platforms to attack targets in the Deep Fires Areas. In another example, intelligence exploitation conducted in competition allows offensive cyber to spoof missile guidance programming, operational fires to target known munitions caches at the outset of hostilities (or launchers immediately upon cueing), UW surveillance to be in position to monitor habitual launcher laager sites, and leave strike platforms (supported by suppression of enemy air defense capabilities as required) to dynamically target strike system command nodes and sustainment activities, simultaneously targeting multiple aspects of the enemy fires system.

communications (SLOC) and establish sea control in the littoral areas. Retaining or seizing key littoral terrain, to include expeditionary advanced bases (EAB), in support of sea control and ground maneuver supports the Joint Force's objectives of assured access, power projection, and protection of friendly ground forces from enemy naval attacks (surface, subsurface, air, and cyberspace), while it also increases options for the commander to attack the enemy's critical vulnerabilities.

(1) At the outset of armed conflict, forward postured forces will conduct operations to enable expeditionary maneuver of follow-on forces in days, protect SLOCs, air lines of communications (ALOC), aerial ports of debarkation (APOD), and sea ports of debarkation (SPOD), with airframes from maritime platforms and EABs, establish sea control in the littorals, and project power in support of ground combat operations toward the seizure of operational objectives. Secure SLOCs, ALOCs, APODs, and SPODs are critical to the timely introduction of forward-deployed forces, expeditionary follow-on forces, and sustainment. As with land forces, naval forces will converge joint and partner capabilities to establish windows of advantage in and from the maritime domain in support of sea control and power projection.

(2) To establish sea control in contested littorals and project power, naval forces will converge joint capabilities to establish windows of advantage to bypass or defeat enemy ISR, IADS (including against anti-ship cruise missiles), subsurface threats, mine warfare, fast-inshore attack craft, electronic warfare attacks, and cyber-attacks. Converging capabilities, as described in section 3-5a and 3-5b, in the littoral areas will open physical, virtual, and cognitive windows of advantage for naval, air, and ground forces throughout the operational area to maneuver against enemy critical vulnerabilities. The integration of amphibious raids and assaults by naval forces with the maneuver of landward forces in the littorals provides the Joint Force Commander land-based support to defeat sea-denial efforts by enemy forces. EABs enable naval, air, and ground operations within days of conflict initiation. Forces establish and execute EAB missions, through occupation or forcible entry, with formations which can conduct and support cross-domain fires in support of sea control and denial, power projection, and sustainment operations.

g. Defeating ground formations. Forward-positioned and expeditionary forces converge capabilities to defeat the enemy's ground offensives at the outset of armed conflict to prevent it from achieving campaign objectives and establishing a prepared defense. Army forces maneuver on land, in the air, and on water to take advantage of complex terrain where possible, to detect and exploit enemy vulnerabilities, and to avoid becoming fixed and then destroyed by enemy fires. The Joint Force and its partners defeat enemy reconnaissance, conduct aggressive reconnaissance and maneuver to identify gaps in enemy defenses, suppress the enemy's tactical indirect fires system to isolate enemy ground forces, and exploit success through joint maneuver in the Close and Deep Maneuver Areas.

(1) Defeating the enemy's reconnaissance – air (primarily unmanned aircraft systems (UAS)), ground (UW assets and conventional units), EMS, space, and cyberspace – reduces the effects of its tactical indirect fires against friendly support, sustainment, and mission command capabilities, which prevents the enemy from defeating friendly ground maneuver forces in detail. Defeating enemy reconnaissance in the Close Area, however, requires resilient Joint Force and

partner formations employing greater tactical air defenses due to the threat from inexpensive enemy tactical UASs and protection from enemy direct fires due to threats from increasingly lethal maneuver units, to operate semi-independently in the Close Area. These passive and active counter-reconnaissance capabilities converge to produce physical, and occasionally virtual (when cyberspace or offensive EW is used to spoof, temporarily degrade, or disrupt an enemy sensor or communication), windows of advantage that reduce the enemy's understanding of friendly dispositions. Reducing the enemy leadership's understanding of friendly dispositions creates a cognitive window of advantage for friendly forces to act and exploit faster than the enemy can react.

(2) Friendly reconnaissance identifies gaps in the enemy's disposition to defeat tactical indirect fires by suppressing components of the system or bypassing its effects. Physical, and in some cases virtual, gaps in enemy dispositions represent windows of advantage for friendly forces to exploit, requiring little or no capability convergence. Although capable of accessing the full range of Joint Force reconnaissance capabilities, friendly ground forces rely predominantly on organic reconnaissance capabilities to detect windows of advantage.⁴³ Organic reconnaissance units capable of operating semi-independently for days (or weeks for unmanned platforms) and, in combination, sensing and fighting in all domains, detect enemy tactical indirect fires system signatures and windows of advantage for maneuver.⁴⁴ Resilient mission command nodes synthesize this information into intelligence, leading to operations that combine lethal and nonlethal fires and maneuver capabilities to exploit or create windows of advantage that suppress the enemy's tactical indirect fires system.

(3) The Joint Force and its partners defeat the enemy's tactical indirect fires system by suppressing components of the system and maneuvering faster than the enemy's fires can react. Resilient friendly ground formations maneuver semi-independently along multiple dispersed axes enabled by cross-domain capabilities to exploit a window of advantage or develop an unknown situation for several days, without waiting for a complete intelligence picture, disorganization of the enemy's defenses by fires, or possession of continuous lines of communications. Unlike the enemy ISR-strike system, the enemy's tactical indirect fires system employs massed fires, uses technologically simple systems and a virtually endless supply of "dumb" munitions. These characteristics allow the enemy's tactical indirect fires system to service many targets, but offer fewer vulnerable components for friendly forces to attack. Friendly indirect fires, therefore, suppress the enemy's tactical indirect fires system to create specific windows of advantage in time and space that enable friendly ground force maneuver, rather than defeating the system with lethal and nonlethal fires alone. Combining the cognitive window of advantage produced by friendly counter-reconnaissance with physical and virtual windows of advantage detected by friendly reconnaissance or created by friendly maneuver allows friendly ground forces to outmaneuver the enemy's preplanned fires and destroy his ISR-strike and IADS in the Close and Deep Maneuver Areas.

⁴³ This resiliency is necessary because creating physical and virtual windows of advantage for effective air-based platforms consumes extensive Joint Force capacity, while limited-capacity national-level space and cyber-based platforms require extensive preparation time.

⁴⁴ Reconnaissance capabilities organic to ground formations at various echelons include combinations of autonomous sensors, UW assets, manned sensors (radars, signals intercept, cyber monitoring), small human teams paired with robots, and ground combined arms maneuver formations.

(4) Success against enemy ground forces in the Close Area allows the Joint Force and partners to present the enemy with additional dilemmas (or defeat mechanisms). Defeating the enemy's tactical indirect fires system isolates enemy ground formations, creating physical and cognitive windows of advantage for friendly ground forces to exploit through maneuver. Maneuver forces exploit these windows of advantage to concentrate combat power against isolated enemy strongpoints or repulse the enemy main effort, but can also disperse to infiltrate enemy defenses or maneuver against exposed flanks. Friendly forces exploit these windows of advantage to close with and destroy isolated enemy formations in the Close Area, or bypass isolated enemy forces to seize key terrain or defeat enemy IADS and strike systems in the Deep Maneuver Area.

(a) Friendly forces exploit the physical and cognitive windows of advantage created by defeating enemy reconnaissance and tactical indirect fires system to close with and destroy enemy ground formations, seizing or retaining key terrain and destroying irreplaceable enemy capacity. Ground forces exploit the cognitive window of advantage to react faster than an enemy isolated from its primary means of support. Ground forces exploit the physical window of advantage, maneuvering capabilities (out of contact) to arrive at exposed physical and virtual enemy gaps and seams at unexpected times. Resilient ground maneuver formations employ capabilities (lethal and nonlethal fires, maneuver support, reconnaissance, sustainment, mission command, and intelligence) organic to that echelon, closing with and destroying enemy forces and seizing terrain with mobile, protected, and lethal maneuver formations. In order to operate semi-independently, maneuver formations at each echelon require sufficient supporting capabilities to close with the anticipated enemy ground force even when not the higher echelon's main effort.

(b) Friendly forces exploit the physical and cognitive windows of advantage created by defeating enemy reconnaissance and tactical indirect fires system in the Close Area to bypass isolated enemy ground formations and seize key terrain or defeat enemy IADS and strike systems in the Deep Maneuver Area. Ground forces exploit success in the Close Area by maneuvering (on the ground, through air, on water) to seize key terrain in the Deep Maneuver Area, blocking lines of communications, securing population centers or infrastructure, reinforcing UW operations, or seizing advanced positions for land- and air-based reconnaissance and operational fires. Alternately, ground forces exploit success in the Close Area to attack components of the enemy's strike system and IADS. Ground forces can close with and destroy components of these systems, employ organic fires, or secure key physical areas (ground, air, maritime, EMS) for longer durations to enable Joint Force maneuver. Friendly ground formations in the Deep Maneuver Area, however, must be capable of semi-independent operations for up to one week because the enemy will take actions to close friendly windows of advantage. Sustaining independent operations for this period of time will require organic ability within friendly ground formations to generate or conserve classes of supply.

(c) Semi-independent maneuver requires joint sustainment forces to pre-position, generate, procure, or transport essential supplies and services to formations organized to

maneuver in austere conditions.⁴⁵ Stores and facilities are dispersed, camouflaged, redundant, and/or mobile, while sustainment forces possess the resiliency to counter enemy capabilities in the areas (Support Areas, Close Areas, and Deep Maneuver Area) where they are expected to operate. Additionally, formations at all echelons include the requisite organic sustainment capabilities to support semi-independent maneuver.

(5) Defeating enemy ground formations in the Close Area produces several dilemmas for the enemy that threaten the viability of its system of systems. Initial success against the enemy's ground forces in the Close Area prevents the enemy's system from operating as it is designed, to achieve objectives rapidly. Friendly success in the initial days of the campaign prevent the enemy from establishing a prepared defense that conceals vulnerabilities in its fires, sustainment, maneuver, and command and control systems. Defeating enemy ground forces also provides friendly forces additional defeat mechanisms to apply against enemy strike systems, IADS, and maritime forces. To overcome these setbacks, the enemy must mobilize or shift additional forces, which takes time or exposes other areas; direct operational fires to reinforce the effort in the Close Area, which makes friendly freedom of maneuver and expeditionary maneuver easier; or escalate the conflict with nuclear weapons or other weapons of mass effect, which poses great risk for only limited gains.

(6) SOF capabilities in armed conflict require preparatory efforts during competition. Indigenous combat power developed during competition provides the ability to attack enemy command and control nodes, air defense systems, and lines of communications with and through partner forces. Populations, prepared cognitively earlier, can now be mobilized to act through demonstrations, work force strikes, social discord, and reporting on enemy activities to support intelligence and targeting processes. SOF units can support, and in some cases conduct, joint forcible entry operations to establish airheads or beachheads for follow-on conventional forces. Precision targeting operations can be used to suppress or collapse threat, or proxy, networks through deliberate targeting of critical nodes in the enemy's UW, IW, IADS, and command and control infrastructures, especially those located in the Deep Fires Areas. SOF can be employed to deceive the enemy and shape the IEO narrative in support of U.S. and partner objectives.

h. Deterring the use of weapons of mass destruction (WMD). The Joint Force and its partners must deter escalation of violence beyond acceptable levels. When the enemy suffers significant conventional losses, it may assess that escalating the conflict by employing weapons of mass destruction or disruption could recapture the initiative or drive policymakers to the negotiation table to end the conflict on more favorable terms. Enemies may also use tactical nuclear weapons if presented an appropriate target contributing to the attainment of operational or strategic objectives. The Joint Force can employ capabilities to counter WMD such as curtailing sharing capabilities with proxies, but actions taken directly against the enemy's systems should not risk escalation through a perceived "use it or lose it" situation. To deter use of tactical nuclear weapons (or other weapons of mass destruction/disruption, such as an electromagnetic pulse, chemical, biological, radiological, or toxic industrial chemical/material attack), the Joint Force and its partners must conduct an effective IEO campaign on the dangers

⁴⁵ Austere and contested conditions will create challenges to providing supplies and services, such as evacuating large numbers of casualties rapidly and safely.

of employing WMD, minimize vulnerabilities, and demonstrate the ability to continue operations if attacked. If deterrence fails to preclude a tactical weapon of mass destruction or disruption attack, the Joint Force must rapidly counter with IEO aimed at sustaining the alliance and isolating the enemy internationally and regionally. To further deter enemy use against U.S. and allied forces, the homeland, or allied civilian targets, U.S. forces must maintain and exercise the use of an array of conventional and unconventional options (not precluded by treaty) to deter escalation.

i. **Information environment operations (IEO) in armed conflict.** As an essential component of their scheme of maneuver, commanders determine where and when to create cognitive windows of advantage and converge the appropriate physical and virtual capabilities to influence these populations. All formations contribute to creating the friendly IEO narrative. The operations described above against enemy military systems in armed conflict are, therefore, actions that enable an effective IEO campaign.⁴⁶ Cognitive perception and physical results are carefully balanced in maintaining an effective IEO narrative.⁴⁷ An effective IEO campaign translates the defeat of enemy forces and retention/seizure of key terrain into cognitive windows in the minds of enemy and friendly forces, political leadership, and populations. These cognitive windows enable Joint Force maneuver and ultimately lead ultimately to the attainment of political objectives.

j. **Achieve conditions for a favorable conclusion of armed conflict.** The Joint Force and its partners present the enemy with multiple dilemmas to defeat its forces in armed conflict. Multiple defeat mechanisms threaten vulnerabilities in individual enemy systems (ISR-strike, IADS, maritime forces, ground forces), while friendly forces shift the priority of attacking a system or systems to achieve maximum physical and cognitive effect on the enemy. Intelligence is critical to enable friendly forces to detect and develop these enemy vulnerabilities completely for rapid and efficient exploitation, and ISR must be actively pursued both prior to and during hostilities. When friendly ISR is incomplete, friendly forces maneuver to develop the situation, detecting and exploiting enemy vulnerabilities while in contact with the enemy. Friendly forces employ principally physical defeat mechanisms to destroy irreplaceable enemy units (ground, maritime, ISR-strike, IADS) and retain or retake key terrain that results in a favorable position sustainable over the long term and conducive to translation into political success through a negotiated settlement or strengthened alliance.

⁴⁶ Information warfare is an aspect of Multi Domain Battle for all forces and commanders to consider and not a proposed separate functional grouping for friendly capabilities and staffs.

⁴⁷ Balancing cognitive perception and physical results sometimes leads commanders to favor physically inefficient or difficult approaches over more direct or destructive options in order to maximize the cognitive IEO effect on a targeted population. In other instances, however an effective IEO narrative requires a more destructive and violent approach to influence a targeted audience. In Multi-Domain Battle, IEO integrates and builds upon combat results rather than offering an alternative to fighting the enemy.

3-6. Return to competition to maintain a favorable position.

a. In a conflict with a nuclear-capable enemy, it is unlikely that successful armed conflict operations will lead to a decisive victory or definitive political settlement. Complete destruction of an enemy's conventional forces may not be possible and creates a high risk of escalation that may be politically undesirable. If enemy and friendly forces find they can no longer achieve strategic objectives through operational maneuver, the campaign returns to competition. Because the enemy will still likely retain operationally significant forces capable of fomenting internal strife in friendly-controlled areas or presenting an external threat in a return to competition, the Joint Force and its partners must compete to maintain and improve the favorable positions achieved in armed conflict. A return to competition differs from pre-conflict competition because friendly forces will be in contact with enemy forces and/or their proxies and the level of violence can be considerable until a political agreement can be reached. In a return to competition, the Joint Force and its partners compete to maintain and improve conditions favorable to the U.S. and allied governments. Establishing these conditions entails deterring a return to armed conflict, isolating the territory from the adversary's external influence, and helping the supported partner nation restore security in "liberated" areas.

b. At the conclusion of armed conflict, the Joint Force and partners defeat the adversary's renewed subversion campaign and return to competition on enduringly favorable terms by **contesting the adversary's renewed subversion campaign (reconnaissance, UW, and IW), deterring any return to armed conflict, and strengthening and restoring partner capabilities and capacities.** These efforts maintain alliances and partner-nation political systems amid internal and external physical, virtual, and cognitive instability and continued contact with a weakened but still capable and determined adversary. Transitioning from conflict to the terms of negotiated settlement, the Joint Force and partners rapidly consolidate gains, especially by controlling ongoing pockets of violence and broader areas of physical and virtual insecurity. As in competition, friendly forces converge military capabilities, both lethal and nonlethal, with political actions to defeat the adversary's aggression short of armed conflict. In a return to competition, friendly forces de-escalate the physical, virtual, and cognitive violence and insecurity in ways that improve the friendly security environment and protect alliance cohesion while preventing any re-escalation back to armed conflict. The return to competition is facilitated by the return of the legitimate government from exile.

c. **Contest the adversary's renewed subversion campaign (reconnaissance, UW, IW).** The Joint Force and partners contest the adversary's critical systems that enable its renewed subversion campaign, relying on the methods in competition (outlined in 3-4), with three distinctions. First, in the IEO campaign, friendly forces take the virtual and cognitive offensive to attribute responsibility for the conflict on the aggressor, highlighting the adversary's ongoing efforts to foment unrest. They also cognitively reinforce the legitimacy of the partner's political systems and the alliances through virtual and physical means. Joint and partner forces will identify critical nodes, both physical and in cyberspace, that ensure the IEO campaign retains the right capacity and modalities to ensure the campaign reaches the desired audience. Second, Joint Force and partner UW and counter-reconnaissance forces enable the friendly IEO campaign. They create windows of advantage by anticipating and continuously contesting the adversary's

UW and reconnaissance activities that perpetuate physical violence and cognitive resistance in the partner's homeland. Joint Force and partner UW and counter-reconnaissance physical and virtual actions directly challenge those destabilizing actions, creating virtual and cognitive windows for the friendly IEO campaign to achieve its aims in the relative instability during a return to competition. Third, the Joint Force and partners re-establish physical, virtual, and cognitive security of their critical military and civilian systems, many of which have been breached and attacked by the enemy during armed conflict. They identify and eliminate the adversary's stay-behind virtual and physical tools (e.g., latent cyberspace weapons and hidden ISR systems), while also defeating the adversary's renewed attempts to penetrate facilities and networks physically and virtually in the return to competition, gaining new placement and access as joint and partner forces are consolidating gains. By immediately returning to competition and contesting the adversary's renewed subversion efforts, the Joint Force and partners sustain the competitive advantage and strengthen partner political systems and alliances.

d. Deter a return to armed conflict. Joint and partner forces manage the highly fragile security environment and deter the still potent adversary similarly to competition (outlined in section 3-4) with three areas of emphasis. First, the Joint Force and partners remain forward-postured at higher levels immediately following armed conflict to provide an instantaneous challenge to the adversary's remaining A2/AD capabilities, should it choose to re-activate them. Second, over time the Joint Force, in consideration of partners' capabilities and capacities in the return to competition, sustains regional security by calibrating and re-calibrating force posture to deter the adversary physically and virtually from employing its own conventional capabilities again. Third, the Joint Force continues to demonstrate, through exercises and tests, its ability to immediately contest spaces and open physical and virtual windows across the expanded battlespace to maneuver from operational and strategic distances. In a return to competition, the degraded adversary still retains significant capabilities and capacities to challenge the security environment. Because it considers a return to armed conflict as one means to achieve its ends, the Joint Force and its partners immediately take actions to return to competition, actively and continuously deterring armed aggression.

e. Restore and strengthen partner capabilities. The Joint Force reinforces its partnerships and alliances by immediately taking physical and virtual actions to restore and strengthen the partner nation(s)' security forces. The rapidity with which the Joint Force physically and virtually assists the supported partner nation to restore internal security and re-establish functioning safety, economic, and communication systems provides a cognitive window to enable the friendly IEO, as well as improve effectiveness of deterrent actions. Key Joint Force capabilities that converge to accomplish these actions include SOF, security force assistance, civil affairs, medical, and communications. The Joint Force will also coordinate activities with other interorganizational partners, such as the U.S. Department of State, the U.S. Agency for International Development, and other U.S. government agencies, non-governmental organizations, and intergovernmental agencies. The Joint Force also enables the supported partner nation to rapidly regain the ability to defend against the adversary's aggression, both conventionally and unconventionally. Conventionally, the Joint Force assists the supported partner nation to re-establish physical and virtual defenses that contribute to deterrence and strengthen the alliance. Unconventionally, the Joint Force enables the supported partner nation's

special operations to rebuild its capabilities and capacities to contest subversion. In a return to competition, the Joint Force provides high levels of both physical and virtual support, and may often be in the lead, to enable direct action. Finally, the Joint Force restores and strengthens the supported partner nation by enabling interorganizational efforts to rebuild and defend infrastructure and institutions as a means of protecting common security interests. These physical and virtual operations create cognitive and physical effects that restore and strengthen friendly systems and partner capabilities overall.

f. By rapidly returning from armed conflict to competition, U.S. forces, partners, and allies are able to establish the new security environment on favorable terms by contesting the adversary unconventionally and deterring it conventionally. It also assists the partner to restore its own internal security. These actions reinforce the consolidation of gains, re-establish deterrence on favorable terms, and pre-emptively challenge the adversary's return to campaigns of insurgency, subversion, destabilization, and intimidation by addressing the physical, virtual, and cognitive aspects of a return to competition. They also enable the Joint Force and partners to retain friendly freedom of action and to strengthen friendly partner political systems and alliances.

Chapter 4: Conclusion.

a. Multi-Domain Battle is fundamentally about how U.S. forces will deter and defeat adversary strategies below the level of armed conflict and, when necessary, fight and win to overcome rapidly evolving challenges posed by powerful and intelligent peer rivals. This concept allows U.S. forces to outmaneuver adversaries physically, virtually, and cognitively, applying combined arms in and across all domains. It provides a flexible means to present multiple dilemmas to an enemy by converging capabilities from multiple domains to create windows of advantage, enabling friendly forces to seize, retain, and exploit the initiative to defeat enemies and achieve campaign objectives. Employing the ideas in this concept, the Joint Force can credibly deter adversary aggression, defeat actions short of armed conflict, deny the enemy freedom of action, overcome enemy defenses, control terrain, compel outcomes, and consolidate gains for sustainable results.

b. This concept drives development of solution sets that can overcome the problems of future conflict in 2025-2040. It aims to promote discussion, drive experimentation, and inform the development and refinement of future warfighting capabilities. Building on current service and joint doctrine, Multi-Domain Battle aids the evolution of current doctrine to include not only those capabilities of the physical domains, but also those affecting space, cyberspace, the electromagnetic spectrum, the information environment, and the cognitive dimension of warfare. It provides recommendations of capabilities commanders might require to defeat an advanced enemy, and proposes a new framework for understanding the expansion of the 21st Century battlespace. Multi-Domain Battle is necessary for U.S. forces, together with allies and other partners, to successfully deter and win future conflict.

Appendix A References

Section I

Required References. Army regulations, Department of the Army (DA) pamphlets, field manuals, Army doctrine publications (ADP), Army doctrine reference publications (ADRP), and DA forms are available at Army Publishing Directorate home page <http://www.usapa.army.mil> TRADOC publications and forms are available at TRADOC Publications home page at <http://www.tradoc.army.mil/tpubs> Joint pubs are available on the Joint Electronic Library at http://www.dtic.mil/doctrine/new_pubs/jointpub_operations.htm or <https://jdeis.js.mil/jdeis/index.jsp?pindex=0>

Army-Marine Corps Multi-Domain Battle: Combined Arms for the 21st Century White Paper (2017, January 18)

Joint Operating Environment 2035, The Joint Force in a Contested and Disordered World

TRADOC Pamphlet 525-3-0
The U.S. Army Capstone Concept

TRADOC Pamphlet 525-3-1
The U.S. Army Operating Concept: Win in a Complex World (AOC)

Section II

Related References

A Cooperative Strategy for 21st Century Seapower

ADP 1-01

Air Force Future Operating Concept

Air Superiority 2030 Flight Plan

Annual Report to Congress, Military and Security Development Involving the People's Republic of China 2015. (2015, April 7). Retrieved from https://www.defense.gov/Portals/1/Documents/pubs/2015_China_Military_Power_Report.pdf

Capstone Concept for Joint Operations

Colby, E. A. (2016, January 12). Russia's Evolving Nuclear Doctrine and Its Implications [Report]. Center for a New American Security. Retrieved from <http://www.cnas.org/russia-evolving-nuclear-doctrine#.V4fGsDbr19A>

Colby, E. A. (2015, November). Countering Russian nuclear strategy in Central Europe. In *Frontline allies: War and change in Central Europe*. The Center for European Policy Analysis. 87-101. Retrieved from http://www.cnas.org/sites/default/files/publications-pdf/Bridge_SAG-Report.pdf

Cross-Domain Synergy in Joint Operations Planners Guide – January 2016

Expeditionary Advanced Based Operations

Fitzpatrick, M. (2016, February). *Asia's Latent Nuclear Powers Japan, South Korea and Taiwan*; International Institute for Strategic Studies, Adelphi series. Retrieved from <http://www.iiss.org/en/events/events/archive/2016-a3c2/march-1194/asias-latent-nuclear-powers-us-book-launch-2d5f>

FM 3-60
The Targeting Process

FM 3-90-1
Offense and Defense Volume 1

Fruhling, S., & Lasconjarias, G. (2016, March 21). NATO, A2/AD, and the Kaliningrad challenge. *Survival Magazine*, 58(2), 95-116. Retrieved from <https://www.iiss.org/en/publications/survival/sections/2016-5e13/survival--global-politics-and-strategy-april-may-2016-eb2d/58-2-07-fruhling-and-lasconjarias-de87>

Gerson, M. (2009). "Conventional Deterrence in the Second Nuclear Age," *Parameters*, Quarterly Journal of the U.S. Army War College. Retrieved from <http://strategicstudiesinstitute.army.mil/pubs/parameters/Articles/09autumn/gerson.pdf>

Grau, L.W. & Bartles C. K. (2017 July). *The Russian Way of War, Force Structure, Tactics and Modernization of the Russian Ground Forces*. Foreign Military Studies Office. Retrieved from: <https://community.apan.org/wg/tradoc-g2/fmso/p/fmso-bookshelf>

Grygiel, J. J., & Mitchell, A. W. (2016, February 23). *The Unquiet Frontier: Rising rivals, vulnerable allies, and the crisis of American power*. Princeton, NJ: Princeton University Press. Retrieved from <https://sites.google.com/site/ebooktsr/The-Unquiet-Frontier-Rising-Rivals-Vulnerable-Allies-and-the-Crisis-of-American-Power>

Grygiel, J. J. (2015, Autumn). *Arming our allies: The Case for offensive capabilities*. *Parameters* 45(3), 39-49. Retrieved from http://www.strategicstudiesinstitute.army.mil/pubs/parameters/issues/Autumn_2015/7_Grygiel.pdf

Hickins, K. (2010, March-April). *Strategic mobility*. *Army Sustainment*, 42(2) PB 700-10-02. Retrieved from http://www.alu.army.mil/alog/issues/MarApr10/spectrum_strategy_mobility.html

Johnson, D. (2016). The Challenges of the “Now” and Their Implications for the U.S. Army, RAND. Retrieved from <http://www.rand.org/pubs/perspectives/PE184.html>

Joint Concept for Access and Maneuver in the Global Commons

Joint Concept for Entry Operations

Joint Concept for Human Aspects of Military Operations

Joint Concept for Integrated Campaigning

Joint Operational Access Concept

Kaber, P. & Thibeault, P. (2016, May 13). Russia’s new-generation warfare. Army Magazine. Retrieved from <http://www.armymagazine.org/2016/05/13/russias-new-generation-warfare/>

Lindsey, E. (2014, October). “Beyond Coast Artillery, Cross-Domain Denial and the Army”, Center for Strategic and Budgetary Assessments. Retrieved from <http://csbaonline.org/publications/2014/10/beyond-coast-artillery-cross-domain-denial-and-the-army/>

Littoral Operations in Contested Environments

Retrieved from <https://marinecorpsconceptsandprograms.com/concepts/littoral-operations-contested-environment>

Marine Corps Operating Concept: How an Expeditionary Force Operates in the 21st Century

Paszewski, T. (2016, March 18). Can Poland defend itself. Survival Magazine, 58(2), 117-134. Retrieved from <http://www.iiss.org/en/publications/survival/sections/2016-5e13/survival--global-politics-and-strategy-april-may-2016-eb2d/58-2-08-paszewski-02f0>

Rinehart, I. E. (2016, March). The Chinese Military: Overview and Issues for Congress. Congressional Research Service. Retrieved from: https://digital.library.unt.edu/ark:/67531/metadc847539/m2/1/high_res_d/R44196_2016Mar24.pdf

Romjue, J. (1984, June). From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973-1982. Historical Office, U.S. Army Training and Doctrine Command. Retrieved from https://books.google.com/books/about/From_active_defense_to_AirLand_Battle.html?id=RqcZAAAIAAJ

Setting the Theater White Paper, Future Army Forces at the Strategic and Operational Level. TRADOC ARCIC. Available upon request from the proponent.

- Shlapak, D. and Johnson, M. (2016). “Reinforcing Deterrence on NATO’s Eastern Flank, Wargaming the Defense of the Baltics”, RAND. Retrieved from https://www.rand.org/pubs/research_reports/RR1253.html
- Skinner, D. (1988, September). AirLand Battle Doctrine, Professional Paper 463, Center for Naval Analysis. Retrieved from <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA202888&Location=U2&doc=GetTRDoc.pdf>
- Thomas, J. (2013, May-June). “Why the U.S. Army Needs Missiles: A New Mission to Save the Service,” Foreign Affairs, 92, No. 3. Retrieved from <https://www.foreignaffairs.com/articles/usa/2013-04-03/why-us-army-needs-missiles>
- Thomas, T. L. (2007). Decoding the Virtual Dragon: Critical Evolutions in the Science and Philosophy of China’s Information Operations and Military Strategy, Foreign Military Studies Office. Retrieved from <https://community.apan.org/wg/tradoc-g2/fmso/p/fmso-bookshelf>
- Thomas, T. L. (2016, May 2). Russia Military Strategy, Impacting 21st Century Reform and Geopolitics, Foreign Military Studies Office. Retrieved from [http://fmso.leavenworth.army.mil/E-Pubs/Epubs/Thomas_Russian%20Military%20Strategy_Final_\(2%20May%202016\).pdf](http://fmso.leavenworth.army.mil/E-Pubs/Epubs/Thomas_Russian%20Military%20Strategy_Final_(2%20May%202016).pdf)
- Weitz, R. (2014, August). “NATO Must Adapt to Counter Russia’s Next-Generation Warfare”; World Politics Review. Retrieved from <http://www.worldpoliticsreview.com/articles/13976/nato-must-adapt-to-counter-russia-s-next-generation-warfare>
- Worldwide Threat Assessment of the U.S. Intelligence Community, Senate Select Committee on Intelligence. (2016, February 9). Retrieved from <http://www.intelligence.senate.gov/sites/default/files/wwt2016.pdf>
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Appendix B

Key required capabilities and supporting actions

B-1. Introduction. These capabilities are broken out by the conceptual Army warfighting functions. The capabilities and supporting actions presented in this section will allow the Joint Force to implement the three components of the solution:

- Evolve U.S. force posture to prevent adversary fait accompli campaigns
- Employ resilient formations that can maneuver semi-independently on the expanded battlespace
- Converge capabilities to create windows of advantage to enable maneuver

B-2. Required capabilities and supporting actions. The following is a list of key required capabilities and supporting actions to execute the ideas identified in this concept. To conduct

Multi-Domain Battle in a highly contested environment, future ground combat forces require the following:

a. (Mission Command). **The capability to exercise mission command at all echelons in all conditions including denied and/or degraded conditions, such as disruptions to satellite, line-of-sight, and beyond-line of-site communications, and PNT data to command and control dispersed operations.** Supporting actions (detailed/specific associated capabilities) include the ability to:

- (1) Apply the principles of mission command and converge cross-domain capabilities (organic and partner) while conducting semi-independent operations.
- (2) Command and control distributed forces, including while moving, and maintain mission command systems to maneuver forces and open or exploit windows of advantage.
- (3) Access and apply information from joint and Service information systems and sensors to enable commanders to understand, visualize, describe, and assess complex problems rapidly.
- (4) Employ networks that are robust and self-healing, providing access and information at the point of need for dispersed and distributed formations and interorganizational partners.
- (5) Employ a combination of integrated and interoperable C4ISR systems and networks to enable joint and combined operations throughout the operational area.
- (6) Employ mission command systems capable of rapidly exchanging information, interfacing among components and functions and displaying common tactical and operational pictures of the Joint and Combined Force.
- (7) Employ mission command and a common operational picture between land and naval forces operating in the littorals.
- (8) Develop interoperability with partners through common tactics, techniques and procedures when system interoperability is not practical.
- (9) Composite, integrate and provide command and control of task organized formations (e.g., task force, task group, task unit) sourced from globally distributed forces based on mission requirements.
- (10) Employ common, collaborative, and adaptable planning processes to meet demands of rapid deployment, employment, and enroute mission planning.
- (11) Reliably access PNT information despite threat EMS or cyberspace attacks and during friendly EW operations.
- (12) Gain and maintain assured access to space capabilities; protect space assets and capabilities while maintaining the ability to degrade, disrupt, or deny the threat's access to space capabilities.
- (13) Task organize to the lowest practical level with capabilities that enable multi-domain distributed or semi-independent operations minimizing the need for enablers from higher echelons of command.
- (14) Exercise and employ standard coordinating and operating procedures that integrate critical forces (such as SOF) and joint enablers (including cyber, integrated air and missile defense, ISR, EW, close air support, etc.) to develop interoperability necessary for semi-independent operations at the tactical level.
- (15) Continue operations despite loss of access to complex networks for short time periods to maintain operations in degraded and denied environments.

(16) Rapidly form, maintain, and operate highly capable joint, interorganizational, and multinational teams to provide strength to partner forces, even when the U.S. is not the lead nation.

(17) Think individually and within teams across all domains and environments to achieve convergence of effects from all warfighting functions and other elements of national power.

(18) Conceptualize, plan, and execute operations organized across multiple windows of advantage (planned or unplanned) executed in both series and in parallel.

(19) Create deep trust within and across organizations quickly to support maximum delegation of authority, risk acceptance, and application of innovation and initiative.

(20) Continue operations through periods of both information isolation and overflow.

(21) Exercise initiative; identify all categories of risks for assessment and mitigation to confidently operate under conditions of extreme stress.

(22) Train commanders and staffs at all echelons to execute (the art and science of) mission command to integrate the employment of converged capabilities of Service, joint and partner forces operating dispersed.

(23) Detect and identify as friend or foe manned and unmanned systems operated by the Joint Force, adversaries, and third parties in all domains to expedite targeting cycles/decisions at the lowest tactical levels.

(24) Employ smart systems and networks that detect adversary probing and intrusion and automatically apply appropriate active and passive cyberspace responses to increase the resilience of friendly forces.

b. (Intelligence). **The capability to attain the necessary situational understanding at the point of decision in all environments to enable making informed, sound decisions rapidly.** Supporting actions include the ability to:

(1) Integrate intelligence from all domains and intelligence disciplines, with operations under degraded electromagnetic spectrum conditions to support commanders' situational understanding for decision making.

(2) Employ robotic and autonomous systems and artificial intelligence to conduct information collection and analysis to increase situational understanding in time and information competitive environments.

(3) Share intelligence among allies and partners and provide accurate assessment of the environment to interorganizational partners to support commanders' situational understanding in all operating environments.

(4) Provide space, cyberspace, EMS, and information environment situational understanding to facilitate decision making, maneuver planning, collaboration, and synchronization.

(5) Integrate a secure and robust intelligence architecture, encompassing sensors, platforms, and organizations, that is scalable and enables timely processing, exploitation, and dissemination, with shared analytics, distributed analysis, and collaboration tools in conditions of limited bandwidth and network outages to support commanders' situational understanding in all operating environments.

(6) Conduct continuous reconnaissance, surveillance, security, and intelligence operations across all domains, and within dense urban and complex terrain, during competition and armed conflict.

(7) Conduct and support IEO, UW, and ISR during competition to support information collection and to deter escalation by adversaries.

(8) Develop situational awareness regarding threat missiles, mines, air defenses, improvised explosive devices, cyberspace capabilities, and unmanned systems to enable rapid employment of friendly capabilities to exploit or open windows of advantage.

(9) Understand the operating environment, to include: military features, natural and man-made terrain, hydrography, the “human terrain” in the area (culture, society, economy, technology, and population concentration/dispersion), civilian traffic (air, sea, and land), the climate, and regional weather patterns.

(10) Employ, at the tactical level, interoperable ground- and ship-launched/recovered family of UAS for reconnaissance, surveillance, and attack missions that are interoperable with 5th generation aircraft to improve resilience and effectiveness of semi-independent formations.

(11) Conduct armed aerial reconnaissance from austere, unprepared landing zones (runway-independent) and maritime assets with improved speed, payload, endurance, survivability, reliability, and maintainability to increase situation awareness of semi-independent formations.

(12) Conduct improved processing of multi-intelligence data, including that from non-traditional sources such as social media, blogs, internet, and periodical media, to support deterrence and shaping operations short of armed conflict and during combat operations.

(13) Employ improved intelligence collection, analysis, and synthesis capabilities, particularly with regard to understanding and characterizing human terrain, the cognitive dimension, and indications/warnings for threats in competition.

(14) Create cross-domain synergy through complementary collection layers (space, aerial, subsurface, and terrestrial) of Service and intelligence partner collectors to support commanders’ situational understanding in all operating environments.

(15) Integrate information collection across the Services and the intelligence enterprise to support commanders’ situational understanding in all operating environments.

c. (Movement and Maneuver). **The capability to conduct and support strategic, operational, and tactical maneuver along multiple axes of advance by land, air, and sea to contest aggression and defeat the enemy.** Supporting actions include the ability to:

(1) Create conditions designed to generate overmatch using mutually supporting capabilities across the air, land, maritime, space, and cyberspace domains to present multiple dilemmas to the enemy, and enable the Joint Force to open and exploit windows of advantage and provide freedom of movement and action.

(2) Provide and integrate IEO understanding to facilitate maneuver planning, collaboration, and synchronization across competition and armed conflict.

(3) Conduct distributed operations maintaining the ability to rapidly aggregate and mass at decisive points to open and exploit windows of advantage.

(4) Conduct expeditionary maneuver and rapidly composite/integrate arriving forces into formations engaged in the fight.

(5) Conduct expeditionary maneuver with sufficient speed, payload, endurance, reliability, maintainability, and survivability and with the ability to operate in all environments.

(6) Conduct forcible entry operations, (raids, amphibious assaults, airfield seizures and other limited-objective operations) to support the initiation of sustained land operations.

(7) Complement land, air, and maritime maneuver capabilities with maneuver in space, cyberspace, and the electromagnetic spectrum to mitigate information warfare attacks versus friendly command and control systems and support the opening and exploitation of windows of advantage in support of the friendly operations.

(8) Employ modular active platform protection systems to improve survivability and allow lighter combat vehicles and aircraft to enhance mobility and deployability of task-organized formations.

(9) Conduct intra-theater air movement and maneuver of combat-configured personnel and equipment from land or sea bases to austere or unprepared landing zones.

(10) Employ and closely integrate SOF with conventional forces to gain situational awareness and conduct direct action missions in support of maneuver during competition and armed conflict.

(11) Establish expeditionary advanced bases to support sea denial, sea control, power projection, and sustainment operations in contested environments.

(12) Conduct sea-based inshore maritime raids and amphibious advanced force operations employing low-signature capabilities in support of power projection and littoral maneuver.

(13) Conduct entry operations into austere locations using shallow draft transport vessels, amphibious transport capabilities, short take-off and landing aircraft, and vertical lift capable of intra-theater transit in support of maneuver, power projection, and sustainment.

(14) Conduct and support operational maneuver over strategic distances along multiple axes of advance by air and sea.

(15) Employ robotic and autonomous systems to lighten the warfighter's physical workload and increase mobility, protection, lethality, and sustainment effectiveness.

(16) Execute a comprehensive training and exercise program to prepare selected task-organized units for short-notice joint and multinational operations to improve interoperability of forces and systems in support of deterrence and combat operations.

(17) Develop and maintain a combat vehicle and equipment complement that can be transported by existing and programmed aerial and surface assault lift assets in a timely manner to support forward presence forces.

(18) Conduct persistent, cross-domain (land, air, maritime, space, and cyberspace), combined arms, air-ground reconnaissance and security operations to collect, develop and report near-real time actionable combat information and provide early warning, reaction time, maneuver space, and security.

(19) Attain and sustain high team and individual performance, to enable seamlessly transitioning between high operational tempo and rapidly fluctuating forms of operations and under conditions of extreme stress.

(20) Move rapidly from strategic and operational distances and arrive with leaders and warfighters ready to conduct varying forms of operations across fluctuating and indeterminate levels of intensity.

d. (Fires). **The capability to converge, integrate, and synchronize cross-domain fires at the operational and tactical-levels to create windows of advantage to achieve friendly objectives, create dilemmas, or defeat enemy systems.** Supporting actions include the ability to:

(1) Synchronize and employ lethal and nonlethal cross-domain fires to project power from land by delivering timely and accurate effects into other domains, the EMS, and the information environment while preventing fratricide and minimizing collateral damage.

(2) Conduct both dynamic and deliberate targeting in all domains, including prioritizing targets, evaluating windows of vulnerability, completing target mensuration, performing collateral damage estimation, and selecting fires attack options.

(3) Clear, gain engagement authorization, and employ, organic, joint, or other mission-partner fires rapidly in all domains and the electromagnetic spectrum.

(4) Employ long-range precision land-based fires, including ballistic missiles, extended-range ground launched multiple rocket systems, enhanced artillery-delivered scatterable mines, and extended-range tactical missile systems to support maneuver and open or exploit windows of advantage.

(5) Provide land-based support to sea denial and sea control operations (e.g., coastal defense cruise missiles, rockets, artillery) with a common missile or family of missiles that can be launched from air, surface, subsurface, or land.

(6) Employ deception measures, including advanced decoys and false signatures, to engineer or exploit windows of advantage.

(7) Disrupt adversary command and control, movement, and maneuver, and intelligence capabilities and to protect our own by employing synchronized lethal and nonlethal effects.

(8) Support over-the-horizon amphibious assaults raids and assaults with integrated fires to enable establishment of EABs and support power projection.

(9) Integrate organic cyberspace and EMS sensors, EW attack and jamming capabilities, and automated electromagnetic battle management capabilities at the task-force level to attack or disrupt enemy systems while minimizing vulnerabilities of friendly systems.

(10) Employ cross-domain cueing and targeting to detect and engage in-depth to delay, disrupt, or destroy enemy systems.

(11) Employ multi-domain and counter-fire sensors to improve situational understanding and enable rapid neutralization or destruction of enemy systems or forces.

(12) Plan, integrate, and employ information related capabilities to conduct information environment operations, before, during, and after hostilities, to inform and influence selected audiences to facilitate operations before, during, and after hostilities.

(13) Protect the force, populations, and resources from enemy aircraft, unmanned aircraft, missiles, rockets, artillery, and mortars.

(14) Employ mounted and dismounted friendly elements with organic early warning identification capabilities to counter adversary UAS, aircraft, rocket, artillery, and mortar capabilities.

(15) Integrate counter-UAS and short range air defense into the existing theater defensive counter-air plan.

(16) Assure access to key/selective portions of the EMS during operations to enable counter-guided rocket, artillery, missile, and mortar capabilities to protect mission-critical/vulnerable areas.

(17) Integrate land and sea-based air and missile defense capabilities to protect mission-critical/vulnerable areas against air, ballistic missile, cruise missile, including maritime threats.

e. (Maneuver Support). **The capability to protect the force, populations, and resources from the adversary/enemy's systems by countering or mitigating those threats in order to retain combat power and defeat efforts to disrupt or reduce friendly capabilities and/or will.** Supporting actions include the ability to:

(1) Obscure selective parts of the EMS to deny its use to the adversary for detection, observation, communication, and/or engagement capabilities and improve force and partner survivability without inhibiting friendly freedom of action/maneuver.

(2) Conduct all hazards (chemical, biological, radiological, nuclear, explosive device) reconnaissance, assessment of the operating environment detection, protection/defense, and decontamination.

(3) Defend expeditionary advanced bases through active and passive means, including integrated air and missile defense and the use of low-signature and mobile assets.

(4) Defend forward marshaling and logistics capabilities afloat and ashore to enable continuous flow of capabilities and sustainment to tactical commanders.

(5) Conduct littoral mine detection, avoidance, and clearance utilizing manned-unmanned teaming to enable maneuver in and through the littorals.

(6) Simultaneously integrate signature control, defensive systems, and overwatch fires to establish temporary zones of protection for friendly forces to operate.

(7) Provide personnel protection by using autonomous or robotic systems to detect, identify, and penetrate high risk areas to increase capacity to conduct operations.

(8) Protect and, if necessary, reconstitute bases and other infrastructure required to project military force, to include points of origin, ports of embarkation and debarkation, and intermediate staging bases.

(9) Employ the full range of deception means and methods, to include the ability to employ decoys across all domains to increase resilience and open windows of advantage.

(10) Conduct expeditionary airborne early warning in support of land and maritime operations.

(11) Employ command posts with significantly reduced EMS signatures configured for rapid movement and emplacement that are survivable against an array of threats and have minimal sustainment demands.

(12) Manage physical and electronic signatures of mission command and sustainment nodes.

(13) Employ procedures for rapidly identifying, operating during, and recovering from significant cyberspace and electromagnetic attacks.

(14) Employ smart systems and networks to detect adversary probing and intrusion and automatically apply appropriate active and passive cyberspace responses.

(15) Train the force for proficiency in the employment and integration of robotics and autonomous systems across the warfighting functions and domains to increase personnel survivability and effectiveness.

(16) Conduct countermobility operations to shape terrain and enhance the effects of natural and manmade obstacles to deny adversary freedom of movement and maneuver and enable friendly freedom of action while avoiding fratricide and collateral damage.

(17) Conduct mobility operations to enable power projection and freedom of movement and maneuver of semi-independent, dispersed, mutually supporting formations while masking the approach and signatures of joint maneuver elements to enable those forces to penetrate sophisticated anti-access systems and close within striking range with acceptable risk.

f. (Sustainment). **The capability to deploy and sustain forces via a global network of fixed and mobile bases to enable sustained operations at the necessary tempo for the required duration.** Supporting actions include the ability to:

(1) Support rapid mobilization, deployment of combat configured forces, and entry operations from multiple locations into austere, complex environments while minimizing the need for reception, staging, onward movement, and integration to sustain operations.

(2) Rapidly establish mobile, clandestine expeditionary logistics bases to provide sustainment to afloat and expeditionary operating forces.

(3) Add and reconfigure prepositioned stocks (ashore and afloat) that are dispersed for survivability and combat configured in unit sets for rapid employment with alignment to early entry requirements.

(4) Conduct improved selective offload of forces, equipment, and all classes of supply from sea-based assets in support of task organized formations.

(5) Employ logistics at-sea forces to sustain forces in the contested littorals.

(6) Provide improved early air and sea port assessment and damage repair.

(7) Produce supplies at the point of need to extend operational reach, prolong endurance, and sustain Multi-Domain Battle.

(8) Conduct precision supply operations (including use of robotic systems) to extend operational reach and prolong endurance of Multi-Domain Battle.

(9) Conduct multimode distribution in all domains with manned and unmanned systems for delivery of supplies and personnel to all echelons to sustain operations.

(10) Sustain distributed forces with precision munitions and sufficient fuel in high intensity combat.

(11) Establish land- and sea-based expeditionary forward rearming and refueling points to support deep fires and support maneuver.

(12) Utilize auxiliary platforms to augment logistics sustainment capacity, spread sustainment risk, and enhance operational tempo.

(13) Execute air and ground medical casualty evacuation during windows of advantage in contested air environments with sufficient speed, range, power, patient-carrying capacity, survivability, and reliability to increase patient survivability and decrease morbidity from wounds suffered in the battlespace.

(14) Monitor and protect the integrity of sustainment information using cyberspace operations to provide reliable, redundant sustainment enterprise information with accurate

reporting and visibility for formations operating semi-independently in order to enable shared understanding and forecasting of sustainment activities from the tactical to strategic levels.

(15) Protect logistics capabilities and provide selective redundancy for critical requirements.

(16) Conduct convoy operations employing manned-unmanned teaming techniques with ground transport vehicles.

(17) Provide logistics forces the mobility, protection, and agility to support widely dispersed forces with diverse support requirements.

(18) Provide enhanced prolonged care capability at the point of injury with advanced trauma resuscitation and additional patient-holding capacity forward through all roles of care to increase personnel survivability during semi-independent operations.

(19) Capture, process, and disseminate real-time information from the point of injury through the roles of care to develop an integrated medical common operating picture across all joint, interorganizational, and multinational (JIM) partners to support interoperability, enable interdependencies across echelons, leverage JIM medical capabilities, improve visibility of patient status, expedite patient regulation, reduce demand, and enable composite force health protection during Multi-Domain Battle.

(20) Conduct expeditionary health service support to include early entry hospitalization and a rapidly employable resuscitation and surgical capability to increase personnel survivability during cross-domain and semi-independent operations.

(21) Diagnose and resolve equipment faults rapidly, perform recovery at the point of failure, and for materiel systems monitor and report conditions autonomously through integration with the sustainment common operating picture to achieve and maintain high operational readiness during operations, including semi-independent operations.

(22) Produce and manage operational energy through the use of power management technologies that are rapidly mobile, energy efficient/renewable, and intelligent in the context of expeditionary and base camp operations to prolong endurance and sustain operations.

(23) Conduct expeditionary maintenance and battle damage repair.

(24) Optimize sustainment and reliability, availability, and maintainability factors for materiel systems (especially during materiel development) to reduce demand (such as fuel and repair parts) and overall lifecycle sustainment requirements to extend endurance during operations.

(25) Maintain a viable and innovative industrial base that can produce materiel, supplies, and services with the capacity to surge when required to sustain operations.

(26) Conduct training events and exercises that prepare commanders and staffs to execute joint sustainment operations throughout the operating environment.

g. (Engagement) **The capability to employ physical, virtual, and cognitive actions to build partner relationships or influence actors' decision making (moral and mental).** Supporting actions include the ability to:

(1) Engage with partners on a sustained basis to address shared interests and enhance partners' security, governance, economic development, essential services, rule of law, and other critical functions to protect common security interests.

(2) Conduct security cooperation activities to assure partner states, build relationships, enhance interoperability and situational awareness, and set favorable conditions for inserting follow-on expeditionary forces.

(3) Develop relationships and partnership goals and share capabilities and capacities to ensure access and advance long-term regional stability.

(4) Secure basing, navigation, and overflight rights and support agreements from regional partners.

(5) Provide training, supplies, equipment, and other assistance to regional partners to improve their access capabilities.

(6) Establish and maintain relationships with non-military partners for both conventional force and SOF units.

(7) Maintain sufficient mission command and liaison capability to account for interagency and multinational interoperability and interface demands, including the exchange of liaison personnel, the sharing of mission command equipment and procedures, and the ability to readily exchange information.

(8) Assess, shape, deter, and influence the perceptions and behaviors of foreign audiences - people, governments, and militaries.

(9) Influence threat decision making while protecting friendly decision making capabilities.

(10) Generate situational understanding through continual regional engagement and intellectual and operational preparation of the environment to inform senior leaders and prepare forces for global missions.

(11) Demonstrate character, competence, and commitment in word and deed, to include adherence to the U.S. military profession and ethic, in order to secure the support of U.S., regional partner, and global populations.

Appendix C

Multi-Domain Battle supporting ideas

C-1. Maneuver in Multi-Domain Battle.

a. Maneuver is the combination of movement and fires to achieve positions of advantage that defeats the enemy.⁴⁸ Movement is the adjustment of the physical location of a capability to another more favorable location. In addition to the physical effect of repositioning, movement usually produces cognitive effects on the enemy, as well. All military capabilities originate from a physical location and undergo movement (of some form) when employed, even those capabilities intended to produce cognitive or virtual effects. Fires are the destructive or disruptive effects a formation or asset produce on an enemy. Fires can produce a combination of physical, virtual, and cognitive effects on the enemy. Fires, even if they are particles or waves, must also travel through a domain to reach their intended target, which is also a physical location, even if the target is a computer or a human mind.

⁴⁸ An enemy force is defeated when it has temporarily or permanently lost the physical means or the will to fight. To defeat the enemy, joint forces destroy, dislocate, disintegrate, and isolate enemy forces.

b. Multi-Domain Battle requires fires and maneuver to operate within and across domains. Cross-domain fires and cross-domain maneuver exploit an opportunity from one or more domains intended to achieve an advantage in another domain.

(1) *Cross-domain maneuver* is the employment of mutually supporting lethal and nonlethal capabilities of multiple domains to create conditions designed to generate overmatch, present multiple dilemmas to the enemy, and enable Joint Force freedom of movement and action.

(2) *Cross-domain fires* is the integration and delivery of lethal and nonlethal fires across all five domains (land, maritime, air, space and cyberspace), the electromagnetic spectrum, and the information environment.

c. Cross-domain maneuver and cross-domain fires are a realization that a commander must visualize and exploit the physical, virtual, and cognitive effects of maneuver and fires in multiple domains and environments over time. For example, a ground tactical formation must operate in (and potentially affect, if it contains appropriate cross-domain capabilities) the relevant air and maritime domains above or adjacent to its land-based area of operations, as well as understand cyberspace, electromagnetic spectrum, information environment, and space domain activities that can impact friendly operations. Based on this visualization, the commander must converge organic and available Joint Force capabilities in time and at the proper place to identify, create, and exploit windows of advantage.

C-2. Positions of Advantage. Positions of advantage are more than key terrain because they include ideas of time, capability, and purpose. Positions of advantage exist when formations and assets are at physical locations at appropriate times and in sufficient capacity with the will, readiness, and understanding of higher intent to decisively affect operations. *Positions of advantage also exist in the non-physical areas of information, cyberspace, and the cognitive dimension of warfare.*⁴⁹ Achieving positions of advantage requires understanding what directly threatens vulnerabilities in the enemy's system. Multi-Domain Battle uses windows of advantage to create conditions to maneuver or otherwise establish advantageous military positions to defeat, or being postured to defeat, enemy forces. Rapidly gaining positions of advantage in competition and armed conflict achieves friendly objectives by defeating enemy forces or deterring escalation of hostilities.

C-3. Information environment operations (IEO).⁵⁰

a. Information operations (IO) is the current terminology used by the Department of Defense (DoD) for operations in the information environment. To support Multi-Domain Battle, IO must evolve to IEO. IEO synchronizes information related capabilities (IRC), in concert with operations, to create effects in and through the information ecosystem.⁵¹ IRCs advance the

⁴⁹ Examples of this include human reconnaissance or resistance networks built, over time, in likely operating areas for key enemy assets; openings detected, but not yet exploited, in enemy networks; or a timely information narrative built on credible action.

⁵⁰ IEO is the integrated employment, during military operations, of information related capabilities (IRC) in concert with other lines of operations to influence, deceive, disrupt, corrupt, or usurp the decision making of enemies and adversaries while protecting our own; to influence enemy formations and populations to reduce their will to fight; and influence friendly and neutral populations to enable friendly operations.

⁵¹ For purposes of this concept, the information ecosystem refers to the complex system of interrelated and networked information flows amongst and between populations that a commander must understand and consider to gain and maintain freedom of action.

commander's intent and concept of operations; seize, retain, and exploit the initiative in the information ecosystem; and consolidate gains in the information environment, to achieve a decisive information advantage over enemies and adversaries. IEO can provide commanders additional ways and means to:

- Degrade, disrupt, or destroy threat capabilities that inform or influence decision making.
- Degrade, disrupt, or destroy threat capabilities that command and control maneuver, fires, intelligence, communications, and information warfare capabilities employed against friendly forces.
- Protect friendly information, technical networks, and decision-making capabilities from an exploitation by adversary/enemy information warfare assets.
- Influence enemy formations and populations to reduce their will to fight.
- Influence friendly and neutral populations to enable friendly operations.

b. In support of Multi-Domain Battle, IEO must be fully integrated into the planning and execution of the joint targeting process. When converged with other capabilities, IEO directly supports opening and exploiting windows of advantage during competition and armed conflict. The military capabilities that contribute to IEO which should be taken into consideration include: strategic communication, joint and interagency coordination, public affairs, civil-military operations, cyberspace operations, information assurance, space operations, military information support to operations, intelligence, military deception, operations security, electromagnetic spectrum operations, and military and civilian engagement.

c. Commanders must understand the information ecosystem and determine how enemies and adversaries operate in that environment. Understanding begins with analyzing the adversary/enemy's use of the information ecosystem and how it employs IRCs to gain an advantage. It continues with determining threat vulnerabilities that friendly forces can exploit and identifying areas which must be defended against adversary/enemy IRCs.

d. IEO provides commanders an implementation strategy and integrative framework for employing IRCs. An integrated IEO campaign may include the use of the cyberspace domain, the space domain, and the electromagnetic spectrum to deliver IEO products, observe enemy or adversary actions and reactions, or to deliver cyberspace, space, or EW effects. Integrating cyberspace, space, and EW capabilities generates synergistic information ecosystem effects. When employed as part of IEO that includes multiple IRCs; cyberspace, space, and EW operations can provide commanders an alternative solution to challenging operational problem sets.

C-4. Engagement.⁵²

a. Since war is fundamentally and primarily a human endeavor, the Joint Force working with its partners, must address the cognitive aspects of political, human, social, and cultural interactions to achieve operational and National objectives. Employing engagement, the Joint Force and its partners synchronize activities to understand, influence, and achieve human interactions which cross all domains to achieve a position of advantage during competition or armed conflict. Engagement enables U.S. forces to outmaneuver an adversary cognitively as well as to physically and virtually deter, counter, and deny the escalation of violence in competition, and defeat the enemy if armed conflict cannot be avoided. Additionally, through engagement, routine contact and interaction between the Joint Force and its partners build trust and confidence, share information, coordinate mutual activities, and maintain influence.

b. Employing the operational tenets of engagement presents multiple dilemmas to an enemy, converging multi-domain capabilities that will create windows of advantage for friendly forces.⁵³ In the best case, engagement activities can strengthen U.S. options and measures in competition, and avert or deter armed conflict. However, if armed conflict cannot be avoided, engagement provides a deeper and common understanding of the operating environment, and enables opening windows of advantage and turning denied spaces into contested spaces.

c. A cognitive window of advantage is created by degrading, disrupting, or otherwise manipulating a decision maker's understanding and decision cycle or influencing a formation's or population's will to establish favorable conditions. Achieving cognitive windows of advantage requires careful consideration of the following tenets:

- Understand human factors of the operating environment⁵⁴
- Incorporate human factors into campaign and operations planning, training, and exercises
- Build partner operational, institutional, governance, and expeditionary capabilities, and joint, interorganizational, and multinational partner networks
- Operate with and through joint, interorganizational, and multinational partners and indigenous populations to shape the operating environment and conduct security activities

Appendix D Assumptions

D-1. Baseline Assumptions. The assumptions from TRADOC Pamphlet 525-3-0, The U.S. Army Capstone Concept (ACC) and the TRADOC Pamphlet 525-3-1, *The Army Operating Concept: Win in a Complex World* (AOC) apply to this concept.

⁵² Engagement is the combination of physical, informational, and psychological actions taken to influence actors' decision making (moral and mental).

⁵³ Some examples of these dilemmas include: security cooperation activities can strengthen an ally's defensive capabilities and resolve; civil affairs operations can help influence a population positively toward U.S. presence and operations; military information support to operations can shape an enemy's will to fight; interactions with the host nation can develop valuable situational understanding.

⁵⁴ Human factors are the physical, cultural, psychological, and behavioral attributes of an individual or group that influence perceptions, understanding, and interaction.

D-2. Fundamental assumptions.

(1) Adversaries will challenge U.S. interests by means and with ways below the threshold of armed conflict and short of what the U.S. considers war.

(2) Adversaries can conduct armed conflict via regional campaigns with limited warning to seize limited strategic objectives and consolidate gains within days or weeks.

(3) The proliferation of precision-guided weapons, integrated air defenses, cyberspace weapons, counter-space weapons, and other technologies allows an increasing number of potential adversaries to contest and hold at risk, U.S. forces in all domains at the tactical, operational, and strategic levels.

(4) U.S. and partner political authorities will authorize and enable sufficient force posture and readiness levels to respond and defeat peer adversaries if deterrence fails.

(5) U.S. and partner governments will provide authorities for friendly forces to conduct operational preparation of the environment, as well as offensive electromagnetic spectrum, cyberspace, space, UW, and information environment operations to deter and defeat adversaries.

(6) U.S. and partner government agencies, headquarters, and fielded forces will develop and sustain sufficient interoperability between Services, government agencies, and allies to conduct combined operations that deter and defeat adversaries.

Appendix E

Linkage to other concepts

E-1. This concept has linkages to the following concepts: Capstone Concept for Joint Operations (CCJO), ACC, AOC, A Cooperative Strategy for 21st Century Seapower, MOC, Air Superiority 2030 Flight Plan, Air Force Future Operating Concept, Joint Concept for Integrated Campaigning (JCIC), Joint Operational Access Concept (JOAC), Joint Concept for Access and Maneuver in the Global Commons (JAM-GC), the Joint Concept for Entry Operations (JCEO), and the Joint Concept for Human Aspects of Military Operations (JC-HAMO).

E-2. The CCJO establishes globally integrated operations as the future joint operational concept designed to address the challenge of meeting unremitting strategic requirements with constrained military resources. This concept describes how the Joint Force, and particularly ground forces, will overcome current challenges for rapid aggregation of globally distributed forces to conduct globally integrated operations.

E-3. The ACC states that the Army provides decisive landpower through credible, robust capacity to win and the depth and resilience to support Combatant Commanders across a range of military operations. This concept shows how future Army forces can prevent conflict through

enhanced credible deterrence and shape the operating environment and win the Nation's wars conducting Multi-Domain Battle with resilient battle formations.

E-4. The AOC states for the Army as part of a joint, interorganizational, and multinational team provides multiple options the Nation's leadership, integrates multiple partners, and operates across multiple domains to present adversaries with multiple dilemmas and achieve sustainable outcomes. This paper describes how the Army performs actions listed in the AOC when conducting ground combat operations against a highly capable peer adversary.

E-5. A Cooperative Strategy for 21st Century Seapower states that naval forces perform these essential functions: all-domain access, deterrence, sea control, power projection, and maritime security. The Multi-Domain Battle concept proposes joint approaches that help address these essential functions.

E-6. The MOC focuses on five key drivers of change: complex terrain; technology proliferation; information as a weapon; battle of signatures; and increasingly contested maritime domain. The Multi-Domain Battle concept proposes joint approaches the help address these changes.

E-7. Air Superiority 2030 Flight Plan states that developing and delivering air superiority for the highly contested environment in 2030 requires a multi-domain focus on capabilities and capacity.

E-8. The Air Force Future Operating Concept states that flexibility in operational agility manifests as integrated multi-domain operations. It further asserts that operationally agile forces will defeat future enemy threats by fighting in a highly coordinated manner under the principle of mission command, and this approach must be developed within the framework of the joint and combined team.

E-9. The draft Joint Concept for Integrated Campaigning (JCIC) describes a complex operating environment in which the Joint Force continually campaigns within the competition continuum, which features some mixture of cooperation, competition below armed conflict, and armed conflict. Within this construct, the purpose of the Joint Force is to continually seek the maintenance and sustainment of strategic aims, while countering efforts of revisionist states to undermine U.S. interests. Multi-Domain Battle offers the means for the Joint Force to more effectively campaign across the competition continuum.

E-10. The Joint Operational Access Concept (JOAC) identifies the problem of projecting military force into an operational area and sustaining it in the face of armed opposition by increasingly capable enemies and within contested domains. The JOAC proposes employing cross-domain synergy – the complementary vice merely additive employment of capabilities in different domains such that each enhances the effectiveness and compensates for the vulnerabilities of the others – to establish superiority in some combination of domains that will provide the freedom of action required by the mission. This paper shows how ground forces will help to obtain cross-domain synergy in support of the joint campaign.

E-11. The Joint Concept for Access and Maneuver in the Global Commons (JAM-GC) states that the future force must be distributable, resilient, and tailorable, with sufficient scale and capable of operations of ample duration. The JAM-GC's solution includes advanced integration of operations across multiple domains, both inside and outside the contested environment. This is consistent with many of the ideas in this paper. This paper expands JAM-GC's premises from the global commons to operational maneuver by combined arms formations on land, integrated with those in the air, maritime, cyberspace, and space domains.

E-12. The Joint Concept for Entry Operations (JCEO) focuses on the integration of force capabilities across domains in order to secure freedom of maneuver on foreign territory within an operational area. This concept complements and helps set conditions for the operational ideas in the JCEO.

E-13. The Joint Concept for Human Aspects of Military Operations (JC-HAMO) supports the Multi-Domain Battle concept's need to understand relevant actors' motivations and the underpinnings of their will. JC-HAMO acknowledges the centrality of human will in war and provides a framework that integrates with the commander's decision cycle, enabling the Joint Force to influence a range of relevant actors. The goal of this concept is to improve understanding and effectiveness for cognitive activities during the conduct of operations.

Appendix F

Future study issues.

F-1. Introduction. This appendix identifies areas for further study to refine the Multi-Domain Battle concept. These questions are organized by competition, armed conflict, and a return to competition and friendly actions posed by the Multi-Domain Battle concept.

F-2. Competition.

a. How does the Joint Force, working with its partners, best contest adversary reconnaissance, IW, and UW operations?

- How does the Joint Force, working with its partners, contest (physically, virtually, and cognitively) enemy reconnaissance in competition?
- How does the Joint Force, working with its partners, contest (physically, virtually, and cognitively) enemy UW in competition?
- How does the Joint Force, working with its partners, contest (physically, virtually, and cognitively) enemy IW in competition?

b. How does the Joint Force, working with its partners, best deter armed conflict and employment of adversary conventional forces?

- What actions, posture, and capabilities does the force require to deter the adversary?

- Training requirements?
- Readiness requirements?
- Interoperability requirements?
- What does the optimal, rapidly deployable, Joint/Coalition/Allied Force consist of and how is that force regulated, controlled, and echeloned into theater?
- What level of exercise or demonstration are necessary for effective deterrence?
- What are the required command and control capabilities for the Joint Force and its partner organizations to actively compete and immediately respond to the escalation of violence?
- What are the required authorities and command responsibilities for the Joint Force and its partner organizations to respond immediately to an escalation of violence?
- What are the command roles and responsibilities for the Joint Force and its partner organizations to transition from competition to armed conflict?
- What (inter)national policy and law restrictions are there to Multi-Domain Battle? What (inter)national policy and law enhancements are needed to facilitate Multi-Domain Battle better? What (inter)national policy and law enhancements could deter/limit our adversary's possibilities to conduct operations under the threshold of war? ("lawfare").
- What attributions-capabilities ("forensic/investigation-type capabilities") are needed to link adversary operations under the threshold of war back to the perpetrator by providing valid proof according the International Court of Justice.

F-3. Armed conflict.

a. How does the Joint Force, working with its partners, best defeat the peer adversary's fait accompli campaign in armed conflict?

- How should the Joint/Coalition/Allied Force shape the environment for armed conflict (physical, virtual, cognitive)?
- How does the Joint/Coalition/Allied Force execute deep maneuver (air, maritime, and ground) in a degraded environment?
- How does the Joint/Coalition/Allied Force command and control operations in the Deep Maneuver Area?
- What long range precision fires are best suited for deep fires?
- What capabilities does the Joint/Coalition/Allied Force require to strike targets in the Deep Maneuver Area in heavily contested airspace? (ISR, targeting/ delivery/ assessment)
- What enemy systems are vulnerable to detection in the Deep Maneuver Area?
- What are the implications of deep maneuver to the Joint/Coalition/Allied Force with respect to:
 - Communications and PNT requirements?
 - Protection requirements?
 - Sustainment requirements?
 - Combat casualty care requirements?
- How do expeditionary advanced base operations support Joint Force land campaigns?

b. How does the Joint Force, working with its partners, best conduct deployment and echelonment (approach march)?

- How does the Joint/Coalition/Allied Force command and control the maneuver of forces from the U.S. to the Close or Deep Areas?
- How does the Joint/Coalition/Allied Force conduct strategic maneuver of forces from the U.S. into the Close or Deep Areas in a degraded environment?
- How does the Joint Force maintain situational understanding to determine that conditions have been set/temporary windows of domain superiority have been established to maneuver from the homeland to a theater?
- What capabilities does the Joint Force require to conduct strategic maneuver of forces from the U.S. into the Close or Deep Areas in a degraded environment?
- How does DoD and alliance organizations coordinate the effects between Combatant Commands (such as the U.S. Northern Command, U.S. Cyber Command, U.S. European Command, U.S. Pacific Command, U.S. Special Operations Command, U.S. Transportation Command, and U.S. Strategic Command), allied command operations, and allied command transformation to conduct strategic maneuver of forces from the U.S. into the Close or Deep Areas?
- What are the challenges of executing strategic and operational maneuver?
- What are the requirements for strategic and operational lift?
- With a significant portion of the strategic and operational lift reaching its shelf-life by 2030, should different system(s) approaches be pursued in replacing these assets? If so, how?
- What common consistent practices can enable rapid compositing of forces into a single organization under one commander?

c. How does the Joint Force, working with its partners, best contest the enemy's ISR-strike system?

(1) How does the Joint Force, working with its partners, best set the theater (including within the U.S. homeland) before hostilities?

- What actions need to be implemented to reduce infrastructure, pre-positioned equipment, and basing vulnerabilities to the enemy's ISR-strike capabilities (such as defensive cyber and adaptive basing)?
- What level of protection is sufficient for the risks?
- What improvements are needed to reduce vulnerabilities for support and logistics?
- How can the Army achieve distributed, maneuverable logistics to sustain the force?

(2) How does the Joint Force, working with its partners, best defeat enemy ISR?

- What actions need to be implemented to defeat enemy ISR?
- What is the optimal mix of capabilities such as EW, air defense, deception, etc.?

(3) How does the Joint Force, working with its partners, best defeat enemy strike systems?

- How can ground forces enable the Joint/Coalition/Allied Force to dislocate or disrupt the enemy fires systems?

d. How does the Joint Force, working with its partners, best defeat enemy IADS?

- How can ground forces enable the Joint/Coalition/Allied Force to dislocate or disrupt the enemy IADS systems?

e. How does the Joint Force, working with its partners, best defeat maritime forces.

- How can ground forces enable the Joint/Coalition/Allied Force to dislocate, disrupt, or defeat the enemy maritime forces in support of sea control, sea denial, and power projection?
- How does the Joint Force integrate ISR packages to produce a comprehensive and shared understanding of the littoral environment?

f. How does the Joint Force, working with its partners, best defeat ground maneuver formations of a peer adversary in the Close and Deep Maneuver Areas?

- Aside from improving survivability during echelonment to get to the Close Area, what unique capabilities or modernization efforts are needed to defeat enemy ground formations?
- Is semi-independent maneuver a viable option against a peer adversary? If so, what capabilities or procedures are needed for semi-independent maneuver to be effective against peer adversaries?
- How do Army forces conduct offensive electromagnetic spectrum, cyberspace, space, and information environment operations at all echelons to defeat adversaries? What authorities are needed?

g. How does the Joint Force, working with its partners, best deter use of nuclear weapons and other weapons of mass destruction/effect?

- Besides dispersion and passive defense measures, what other actions or capabilities are needed to deter enemy use of weapons of mass destruction/effect?

F-4. Return to competition.

a. How does the Joint Force, working with its partners, best contest the adversary's renewed subversion campaign?

- What actions unique from competition prior to armed conflict (if any) are needed to defeat a renewed enemy subversion campaign?
- b. How does the Joint Force, working with its partners, best deter a return to armed conflict?
- What actions unique from competition prior to armed conflict (if any) are needed to deter return to armed conflict?
- c. How does the Joint Force, working with its partners, best restore and strengthen partner capabilities?
- How does the Joint/Coalition/Allied Force coordinate actions across all partners to restore governance and military capabilities to re-establish security?

F-5. Overarching assessment.

- What are the capability/capacity gaps for executing Multi-Domain Battle?
- How should the Joint Force prioritize and mitigate these gaps?

Glossary

Terms and Acronyms

A2	anti-access
ACC	TP 525-3-0, The U.S. Army Capstone Concept
AD	area denial
ADP	Army doctrine publications
ADRP	Army doctrine reference publications
ARCIC	Army Capabilities Integration Center
ALOC	aerial lines of communications
AOC	TP 525-3-1, The U.S. Army Operating Concept: Win in a Complex World
APOD	aerial port of debarkation
C2	command and control
C4ISR	command, control, communications, computers, intelligence, surveillance, and reconnaissance
CCJO	Capstone Concept for Joint Operations
CD&I	Capabilities Development and Integration
DA	Department of the Army
DOT_LPF	doctrine, organization, training, leadership and education, personnel, and facilities
DOTMLPF	doctrine, organization, training, materiel, leadership and education, personnel, and facilities
DOTMLPF-P	doctrine, organization, training, materiel, leadership and education, personnel, facilities and policy

EAB	expeditionary advanced base
EMS	electromagnetic spectrum
EW	electronic warfare
FDO	flexible deterrent option
FM	field manual
IADS	integrated air defense system
IEO	information environment operations
IO	information operations
IRC	information-related capability
ISR	intelligence, surveillance, and reconnaissance
IW ⁵⁵	information warfare
JAM-GC	Joint Concept for Access and Maneuver in the Global Commons
JCEO	Joint Concept for Entry Operations
JCIC	Joint Concept for Integrated Campaigning
JOAC	Joint Operational Access Concept
JP	joint publication
MISO	military information support to operation
MOC	Marine Corps Operating Concept: How an Expeditionary Force Operates in the 21st Century
PNT	position, navigation, and timing
RDRO	rapid deterrence response options
RSOI	reception, staging, onward movement, and integration
S&T	science and technology
SLOC	sea line of communications
SOF	special operations forces
SPOD	sea port of debarkation
SSM	surface-to-surface missile
TRADOC	U.S. Army Training and Doctrine Command
TP	U.S. Army Training and Doctrine Command Pamphlet
UAS	unmanned aircraft system
U.S.	United States
WMD	weapons of mass destruction

adversary

a party acknowledged as potentially hostile to a friendly party and against which the use of force may be envisaged. (JP 3-0)

air domain

the atmosphere, beginning at the Earth's surface, extending to the altitude where its effects upon operations become negligible. (JP 3-30)

armed conflict

when the use of violence is the primary means by which an actor seeks to satisfy its interests. (JCIC)

⁵⁵ Use of IW as adversary/enemy information warfare is unique to this concept; not to be confused with irregular warfare in other documents.

battlespace

the area where military operations are conducted to achieve military goals consisting of all domains (air, land, maritime, space, and cyberspace), the information environment, the electromagnetic spectrum, and human dimension of warfare. It includes factors and conditions that must be understood to successfully apply combat power, protect the force, or complete the mission including enemy and friendly armed forces, infrastructure, weather, and terrain within the operational areas and areas of interest.

campaign

a series of related major operations aimed at achieving strategic and operational objectives within a given time and space. (JP 5-0)

Close Area*

where friendly and enemy formations, forces, and systems are in imminent physical contact and contest for control of physical space in support of campaign objectives.

competition

the condition when two or more actors in the international system have incompatible interests but neither seeks to escalate to open conflict in pursuit of those interests. While violence is not the adversary's primary instrument in competition, challenges may include a range of violent instruments including conventional forces with uncertain attribution to the state sponsor. (JCIC)

contested spaces*

those areas where U.S. and allied forces can challenge the adversary's denial measures, maintain some degree of friendly freedom of action, and potentially deny adversary freedom of action.

convergence*

the integration of capabilities across domains, environments, and functions in time and physical space to achieve a purpose. Capability convergence produces physical, virtual, and/or cognitive windows of advantage that provide the freedom of maneuver required for forces to defeat adversary systems and ultimately achieve friendly objectives. Achieving convergence requires a sophisticated understanding and mastery of the dynamic relationship between capabilities, time, spaces, and purpose.

counterinsurgency

comprehensive civilian and military efforts designed to simultaneously defeat and contain insurgency and address its root causes. (JP 3-34)

cross-domain*

having an effect from one domain into another.

cross-domain fires*

the integration and delivery of lethal and nonlethal fires across all five domains (land, maritime, air, space and cyberspace), the electromagnetic spectrum, and the information environment.

cross-domain maneuver*

the employment of mutually supporting lethal and nonlethal capabilities of multiple domains to create conditions designed to generate overmatch, present multiple dilemmas to the enemy, and enable Joint Force freedom of movement and action.

cross-domain synergy

the complementary vice merely additive employment of capabilities in different domains such that each enhances the effectiveness and compensates for the vulnerabilities of the others – to establish superiority in some combination of domains that will provide the freedom of action required by the mission.

cyberspace

a global domain within the information environment consisting of the interdependent networks of information technology infrastructures and resident data, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers. (JP 3-12)

cycle time*

the shortest overall time required to complete one full linkage of preparation, planning and execution, duration, and reset of a capability.

decisive operation

the operation that directly accomplishes the mission. (ADRP 3-0)

Deep Fires Areas*

the areas beyond the feasible range of movement for conventional forces but where joint fires, SOF, information, and virtual capabilities can be employed.

Deep Maneuver Area*

the area where maneuver forces can go (beyond the Close Area) but is so contested that maneuver still requires significant allocation and convergence of multi-domain capabilities.

destroy

tactical mission task that physically renders an enemy force combat ineffective until it is reconstituted. Alternatively, to destroy a combat system is to damage it so badly that it cannot perform any function or be restored to a usable condition without being entirely rebuilt. (FM 3-90-1)

denied spaces*

those areas where the adversary can severely constrain U.S. and allied forces' freedom of action through A2/AD and other measures.

disintegrate

disrupt the enemy's command and control system, degrading its ability to conduct operations while leading to a rapid collapse of the enemy's capabilities or will to fight. (ADRP 3-0)

dislocate*

render the enemy's strength irrelevant (and ill positioned) by achieving positional advantage through movement, removing the enemy from the decisive point, or achieving functional advantage through technology or tactics. (proposed change to existing doctrinal term)

domain*

an area of activity within the operating environment (land, air, maritime, space, and cyberspace) in which operations are organized and conducted. (modified joint definition)

duration time*

the time the capability or element is effective in to keep the window of advantage open. Duration time may be known, or variable based on an enemy's counteractions.

echeloning or echelonment*

maneuver of forces from the Strategic and Operational Support Areas into the Tactical Support Area and Close Area.

enemy

a party identified as hostile against which the use of force is authorized. (ADRP 3-0)

engagement*

the combination of physical, informational, and psychological actions taken to build relationships or influence actors' decision-making (moral and mental).

expeditionary maneuver

the rapid deployment of task organized combined arms forces able to transition quickly to conduct operations of sufficient scale and ample duration to achieve strategic objectives. (AOC)

force posture*

encompasses forward positioned forces; rapidly deployable formations and transport means; and integration of joint, interorganizational and multinational partner capabilities, as well as, the cross-section of relationships, activities, facilities, legal arrangements, and sustainment necessary for proper employment.

information ecosystem*

the complex system of interrelated and networked information flows amongst and between populations that a commander must understand and consider to gain and maintain freedom of action.

information environment

the aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information. (JP 3-13)

information environment operations*

integrated employment of information related capabilities (IRC) in concert with other lines of operation to influence, deceive, disrupt, corrupt, or usurp the decision making of enemies and adversaries while protecting our own; to influence enemy formations and populations to reduce their will to fight; and influence friendly and neutral populations to enable friendly operations.

information operations

integrated employment, during military operations, of information related capabilities (IRC) in concert with other lines of operation to influence, deceive, disrupt, corrupt, or usurp the decision making of enemies and adversaries while protecting our own. (JP 3-13)

insurgency

the organized use of subversion and violence to seize, nullify, or challenge potential control of a region. Insurgency can also refer to the group itself. (JP 3-24)

interoperability

the ability to operate in synergy in the execution of assigned tasks. (JP 3-0) 2. The condition achieved among communications-electronics systems or items of communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. (JP 6-0)

interorganizational*

elements of U.S. government agencies; state, territorial, local, and tribal agencies; foreign government agencies, intergovernmental, nongovernmental, and commercial organizations (does not include forces). (TP 525-3-1)

isolate

a tactical mission task that requires a unit to seal off—both physically and psychologically— an enemy from sources of support, deny the enemy freedom of movement, and prevent the isolated enemy force from having contact with other enemy forces. (FM 3-90-1)

land domain

the area of the Earth's surface ending at the high water mark and overlapping with the maritime domain in the landward segment of the littorals. (JP 3-31)

lawfare

a strategy of using—or misusing—law as a substitute for traditional military means to achieve an operational objective.⁵⁶

⁵⁶ Charles J. Dunlap, Jr., *Lawfare Today: A Perspective*, 3 YALE J. INT'L AFF. 146, 146 (2008).

littoral

the littoral comprises two segments of operational environment: 1. Seaward: the area from the open ocean to the shore, which must be controlled to support operations ashore. 2. Landward: the area inland from the shore that can be supported and defended directly from the sea. (JP 2-01.3)

maritime domain

the oceans, seas, bays, estuaries, islands, coastal areas, and the airspace above these, including the littorals. (JP 3-32)

multi-domain*

the ability to perform actions in multiple domains at the same time.

Multi-Domain Battle*

convergence of capabilities to create windows of advantage (often temporary) across multiple domains and contested areas throughout the depth of the battlespace to seize, retain, and exploit the initiative; defeat enemies; and achieve military objectives.

operational preparation of the environment

the conduct of activities in likely or potential areas of operations to prepare and shape the operational environment. (JP 3-05)

Operational Support Area*

the area of responsibility from which most of the air and maritime capabilities derive their source of power, control, and sustainment as well as where ground forces enter theater, organize, and prepare for rapid onward movement and integration.

overmatch

the application of capabilities or unique tactics either directly or indirectly, with the intent to prevent or mitigate opposing forces from using their current or projected equipment or tactics.

peer adversaries*

those nation states with the intent, capabilities, and capacity to contest U.S. interests globally in most or all domains and environments.

planning and execution time*

the time required to plan employment and then execute it to create an effect, to include create a window of advantage. Typically, planning and preparation occur simultaneously though depending on the situation and capability one or the other might be the limiting factor.

position of advantage

a *position of relative advantage* is a location or the establishment of a favorable condition within the area of operations that provides the commander with temporary freedom of action to enhance combat power over an enemy or influence the enemy to accept risk and move to a position of disadvantage. (ADRP 3-0)

preparation time*

the time required to organize and maneuver forces or capabilities (e.g. a cyber weapon) from its current location to the intended employment space or window of advantage.

reset

a set of actions to restore equipment to a desired level of combat capability commensurate with a unit's future mission. (JP 4-0)

reset time*

the time required to prepare forces or capabilities between employments.

resilient formations*

formations that are scalable and capable of operating and thriving in conditions of austerity while conducting semi-independent operations and cross-domain maneuver.

semi-autonomous

capable of some level of independent action but still requiring a degree of human control.

semi-independent operations*

operating dispersed for extended periods without continuous [or contiguous] support from higher echelons with the ability to concentrate combat power rapidly at decisive points, and in spaces (domains) to achieve operational objectives.

shaping operation

an operation that establishes conditions for the decisive operation through effects on the enemy, other actors, and the terrain. (ADRP 3-0)

snap drill*

rapid reaction military exercises to test combat readiness.

Strategic Support Area*

the area of cross-combatant command coordination, strategic sea and air lines of communication, and the homeland.

sustaining operation

an operation at any echelon that enables the decisive operation or shaping operations by generating and maintaining combat power. (ADRP 3-0)

Tactical Support Area*

the area that directly enables decisive tactical operations in the close and extension of capabilities into the deep maneuver and deep fires.

unconventional warfare

activities conducted to enable a resistance movement or insurgency to coerce, disrupt, or overthrow a government or occupying power by operating through or with an underground, auxiliary, and guerrilla force in a denied area. Also called UW. (JP 3-05.1)

window of advantage*

converging capabilities in time and space in selected domains and environments to enable commanders to gain localized control or physical, virtual, and/or cognitive influence over a specified area to prevent its use by an enemy or to create conditions necessary for successful friendly operations.

* Proposed definition.