

Major Combat Operations Joint Operating Concept



Version 2.0

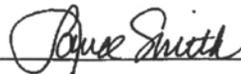
December 2006

APPROVAL

As the lead author, US Joint Forces Command matured this concept through the use of joint and Service operational lessons learned and experimentation including numerous co-sponsored joint wargames, seminars, workshops and other concept development venues. Throughout, this process was guided by direct input from the Joint Chiefs of Staff.

During the development of this concept each Service, combatant command, selected members of the Joint and OSD staffs, as well as multinational partners and selected non-DOD agencies made significant contributions. Also included throughout were a host of active and retired flag and junior officers, academics, and professional strategic thinkers.

US Joint Forces Command will continue to use experimentation and lessons learned to refine this concept. The next revision period leading to Version 3.0 is expected to commence in the June 2008 timeframe.



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EXECUTIVE SUMMARY

The Major Combat Operations (MCO) Joint Operating Concept (JOC) describes, at the operational level, how the future joint force intends to conduct combat operations in support of National military objectives, and helps guide future joint force development by identifying the operational-level objectives and essential capabilities required to successfully implement the concept. The conduct of such operations requires the simultaneous development of both incremental and transformational enhancements to combat capabilities. This concept envisions that future major combat operations will:

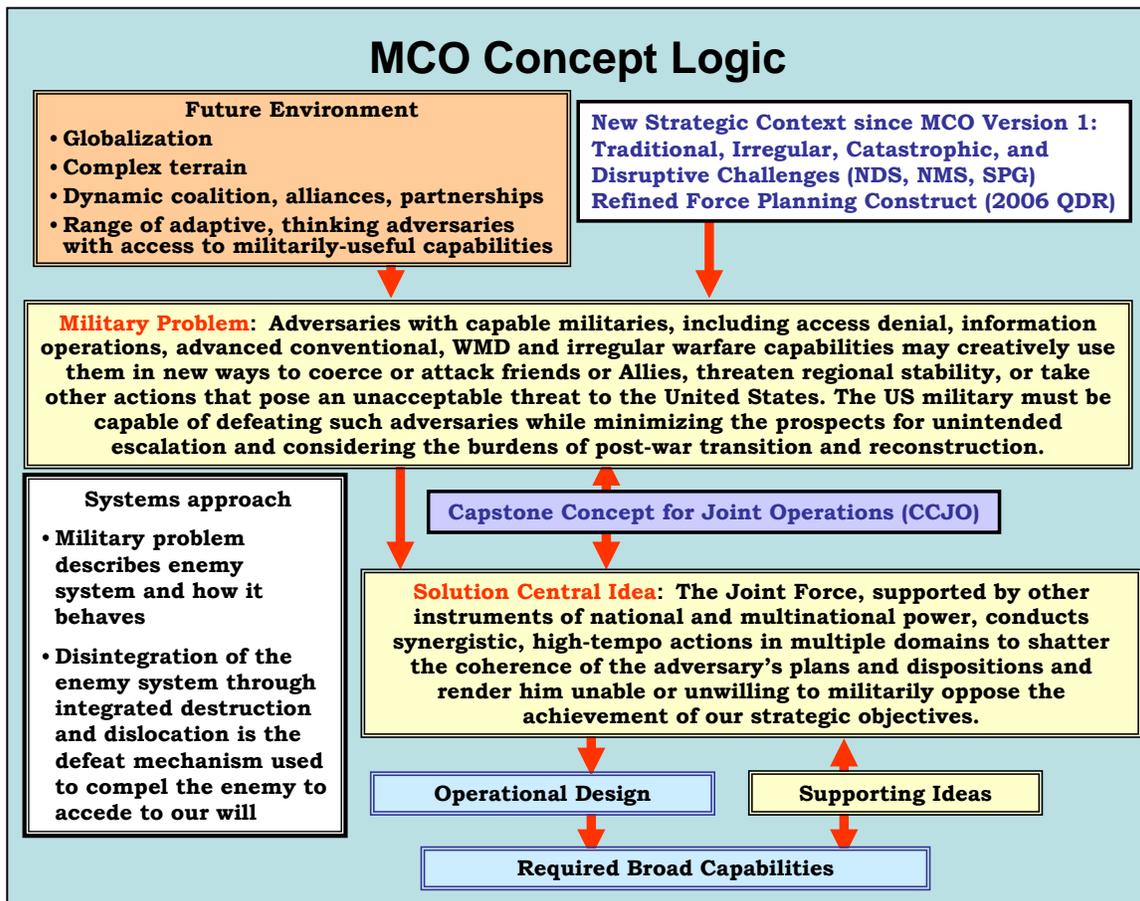
- Provide the combat contribution to the larger projection of all instruments of available National power in a tight, seamless, and organically integrated fashion to achieve political objectives;
- Emphasize disintegration as the principal mechanism used to defeat an adversary's military system;
- Engulf the adversary through "comprehensive engagement" in every domain and dimension;
- Be more distributed and interdependently joint;
- Derive strength from and contribute to continuous global shaping;
- Utilize both the informational and cognitive domains to create a sense of relentless pressure on and absolute dominance over an adversary;
- Create and exploit opportunities, many of which are fleeting, while simultaneously denying or spoiling opportunities for the adversary; and,
- Reduce, by synergistic joint operations, harmful seams, gaps, and vulnerabilities that heretofore limited rapid, interdependent, distributed, and decisive application of joint combat power.

This MCO JOC supports and refines the Capstone Concept for Joint Operations (CCJO) solution. The JOC will drive joint experimentation to evaluate elements of the concept's proposed solution. The JOC will also inform the various concepts within the Joint Operations Concepts (JOpsC) family as well as combatant command, Service and Defense agency concept development, research, technology exploration, and experimentation. Furthermore, the MCO and Military Support to Stabilization, Security, Transition and Reconstruction Operations (SSTRO) JOCs must be considered holistically as complementary concepts working together during crises with an end view of restoration of the rule of law and a sustainable peace under civil policing. Commanders and their interagency and multinational partners may use

this MCO JOC to assess potential integration requirements and opportunities.

This MCO JOC recognizes that the US military will fight an uncertain and unpredictable enemy or, even more demanding, multiple enemy forces simultaneously in widely dispersed joint operations areas (JOAs). In any case, the future enemy may present us with complex combinations of the traditional, irregular, disruptive and catastrophic challenges described in the 2004 National Military Strategy (NMS).

Visually displayed, the MCO concept logic follows:



Should the failure of peaceful preventive measures dictate the use of force, the US, preferably with multinational partners, but unilaterally if required, conducts major combat operations to overmatch and overwhelm the enemy, and deny the use of and contain enemy-held weapons of mass destruction (WMD). In this JOC, combat operations are those inherently military actions taken directly or indirectly to defeat an adversary's military. Under the long-standing principle of self defense, commanders may be required to conduct offensive operations against

those adversaries that cannot be deterred and pose an unmistakable threat of grave harm to National security interests. In any case, once the decision is made to respond with the use of force, the US military rapidly conducts joint offensive and defensive combat operations to defeat the enemy. Moreover, the joint force commander (JFC) must anticipate setting the conditions for stability in the crisis area. To do all of this, the joint force aims to see first, understand first, decide first, and act first in a cyclic process, and ultimately finish decisively.

Summarized, in terms of future MCO:

- The **military problem** is:

Adversaries with capable militaries, including access denial, information operations, advanced conventional, WMD and irregular warfare capabilities may creatively use them in new ways to coerce or attack friends or Allies, threaten regional stability, or take other actions that pose an unacceptable threat to the United States. The US military must be capable of defeating such adversaries while minimizing the prospects for unintended escalation and considering the burdens of post-war transition and reconstruction.

- The **central idea** is that:

The joint force, supported by other instruments of National and multinational power, conducts synergistic, high-tempo actions in multiple domains to shatter the coherence of the adversary's plans and dispositions and render him unable or unwilling to militarily oppose the achievement of our strategic objectives.

- The **defeat mechanism** is disintegration through integrated destruction and dislocation in order to:
 - Shatter the enemy's plans and dispositions;
 - Preclude the enemy from adapting, recovering, and reconstituting; and,
 - Break the enemy's will for organized resistance.

- The **MCO operational-level endstate** is:

An adversary that is rendered unable or unwilling to militarily oppose the achievement of our strategic objectives. These strategic objectives will generally involve the establishment of acceptable conditions for long-term stability.

- The **operational-level objectives** that support achieving the MCO endstate are:
 - Isolate the adversary,
 - Gain and maintain operational access,
 - Deny enemy battlespace awareness (BA),
 - Deny enemy freedom of action,
 - Disrupt enemy ability to command and control (C2) his forces,
 - Deny use of and contain WMD and other critical capabilities,
 - Disrupt enemy sustainment system, and
 - Selectively degrade enemy critical infrastructure and production capacity.

- The MCO **supporting ideas** are:
 - Coordinate, project, employ, and sustain global capabilities;
 - Employ interdependent joint capabilities;
 - Integrate multinational and interagency actions;
 - Gain and maintain dominance in the information environment;
 - Command and control distributed operations;
 - Control tempo of friendly action and enemy response; and
 - Act with speed, precision, discrimination, and lethality.

- Defeat of the enemy militarily by MCO sets the conditions for subsequent campaign activities critical to achieving strategic-level objectives, endstates, and viable peace.

CONCEPT

1. Purpose

This Major Combat Operations (MCO) JOC supports and refines the Capstone Concept for Joint Operations (CCJO) solution. The JOC describes, at the operational level, how the future joint force¹ intends to conduct combat operations in support of unified action, and helps guide future joint force development by identifying the operational-level objectives and essential capabilities required to successfully implement the concept. The JOC will drive joint experimentation to evaluate elements of the concept's proposed solution. The JOC will inform the other concepts within the Joint Operations Concepts (JOpsC) family as well as combatant command, Service and Defense agency concept development, research, technology exploration, and experimentation. Commanders and their interagency and multinational partners may use it to assess potential integration requirements and opportunities.

2. Scope

This concept is focused on combat operations that contribute to the larger unified action required to prevail against future adversaries worldwide. The time period of focus is 8 to 20 years in the future.

a. Capstone Concept for Joint Operations (CCJO) as Context

This MCO JOC is a pillar of the CCJO, supports each of the other JOCs and is a predominant influence in providing operational context for the Joint Functional and Joint Integrating Concepts. The concept expands upon the CCJO in describing the contribution of combat operations to unified action within the capstone concept's campaign framework.

The MCO and Military Support to Stabilization, Security, Transition and Reconstruction Operations (SSTRO) JOCs must be considered holistically as complementary concepts working together in support of campaign objectives.

To better understand the simultaneity of combat and stability operations and the scope of the two concepts, refer to the joint campaigning discussion found in Appendix D of the CCJO. The Figure 1 graphic below is adapted from the CCJO illustration of the integrated lines of effort, or activities in which the joint force commander (JFC) is

¹ For a description of the characteristics of the future joint force as well as, in broad terms, how it will operate, refer to the CCJO.

engaged during the execution of a campaign. The focus is on a specific time and place vice the year round, global security situation.²

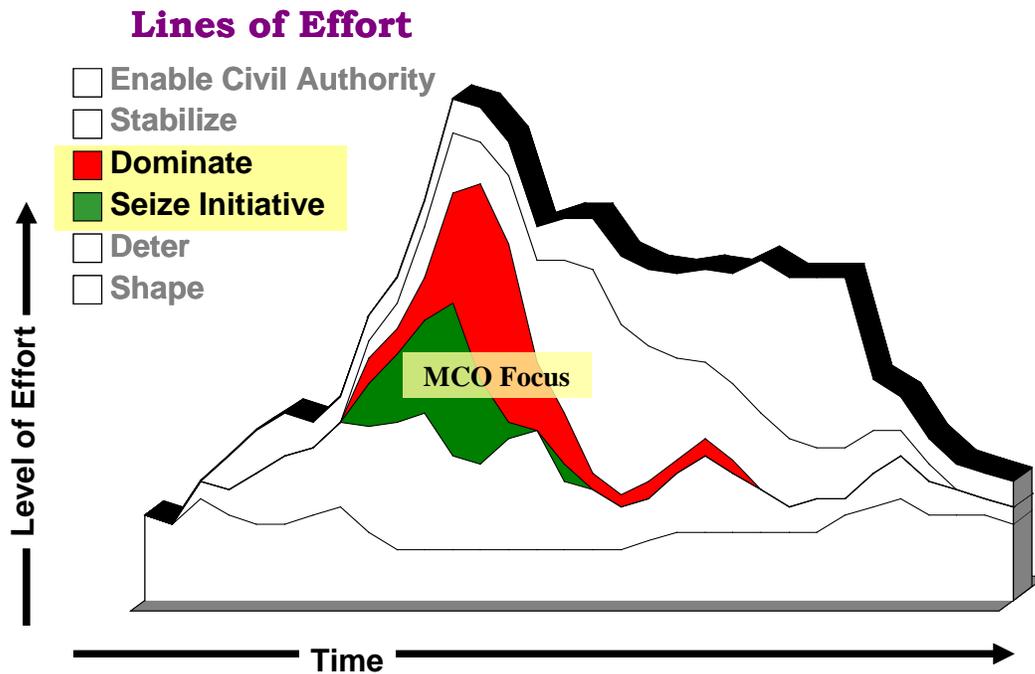


Figure 1 - Combat Operations Focus

As illustrated in Figure 1, this MCO concept focuses on seizing the initiative and dominating³ the adversary while recognizing that combat operations may occur concurrently with stability operations. In the context of this JOC, combat operations are those inherently military actions taken directly or indirectly to defeat an adversary's military and other hostile forces presenting any one or combination of the four challenges described in the National Military Strategy. The bottom line is a requirement for combat capabilities that can be applied against complex and adaptive adversaries.

Future campaigns can be expected to involve significant stability operations efforts before, during and in the aftermath of heavy combat, even when the strategic mission is not one involving removal of a hostile regime. Underlying causes of instability and fractured societies, including disparities in wealth and latent demographic and societal stressors such as youth bulges and failed education systems, may lead to conflicts in which combat intervention is a precursor to longer-term efforts to stabilize an area.

² The MCO JOC will not cover the day-to-day shaping functions exercised by the combatant commanders but will, where appropriate, identify conditions that should be set during shaping in order to support the conduct of combat operations.

³ Refer to the glossary for definitions of the seize initiative and dominate lines of effort.

b. Relationships to Other JOpsC Family Concepts

The solutions presented in the three other existing JOCs continue to require a global capability for offensive and defensive combat operations as described in this MCO JOC (see Figure 2 below).

Homeland Defense and Civil Support – A global-reaching expeditionary capability for integrated offensive and defensive combat operations is essential to this concept’s comprehensive and layered defense strategy

Deterrence Operations – A credible capability for combat operations is essential to influencing an adversary’s decisions through the threat of cost imposition and benefit denial. In any MCO, protecting the United States from attack will be the Joint Force Commander’s number one priority.

Military Support to Stabilization, Security, Transition, and Reconstruction Operations (SSTRO) – Combat operations and SSTRO are inextricably linked and must be planned and executed concurrently in support of campaign objectives. The MCO solution includes defeating an adversary while preserving, or setting conditions for, a level of stability consistent with campaign objectives.

Figure 2 – MCO Support to Other JOCs

The Homeland Defense and Civil Support JOC supports major combat operations by providing for a secure homeland, including security for the leadership, forces and infrastructure within the US that are critical to the command and control, projection and support of combat capability.

The Deterrence Operations JOC supports MCO by providing both interwar and intrawar deterrence strategies that integrate a full spectrum of deterrent ways (impose costs, deny benefits, and encourage adversary restraint). Such support is particularly important when engaged in combat with adversaries possessing or having potential influence over weapons of mass destruction (WMD).

c. Assumptions

Supplementing the critical assumptions of the CCJO, this JOC assumes the following:

- A greater proportion of the future US force structure will be continental United States (CONUS)-based.
- Current US-ratified treaties impacting military options will remain in force.
- Service competencies will remain the foundation of joint capabilities. The Services provide the cultural identities, domain expertise and core warfighting resources that are vital to implementing this concept.

An important assumption of the CCJO that bears repeating here is that fundamental objectives of current National strategy will remain applicable in 2012-2025. This implies a continued US Government expectation of a rapidly deployable military surge capability to:

“...wage two nearly simultaneous conventional campaigns (or one conventional campaign if already engaged in a large-scale long-duration irregular campaign) while selectively reinforcing deterrence against opportunistic acts of aggression. Be prepared in one of the two campaigns to remove a hostile regime, destroy its military capacity and set conditions for the transition to, or for the restoration of a civil society.”⁴

It also implies a continued intention to conduct operations with other partners when we can, often in the context of ad hoc coalitions.

3. Future Environment and Military Problem

This concept acknowledges the complexity, uncertainty and diversity of tomorrow’s combat operating environment ranging from densely populated urban areas to inhospitable regions, located in the littorals or in remote, austere locations. It also considers the adaptive nature of



potential adversaries who may present us with complicated combinations of the traditional, irregular, disruptive and catastrophic challenges described in US strategic guidance (National Defense Strategy, National Military Strategy, Strategic Planning Guidance) (see Figure 3).

Figure 3 - Strategic Challenges

⁴ Quadrennial Defense Review Report, 6 February 2006

a. Features of the Future Landscape

There are some fundamental aspects of the future global operating environment⁵ that will bear directly on America's ability to influence world affairs, honor its security commitments through unified action, and project and sustain combat power.

(1) Globalization and the Global Interconnected Battlespace

Globalization will influence how future governments evolve and interact and increase the importance of transnational and supranational organizations. The resolution of future confrontations may center on politico-economic influence. Economic interests will both drive and impede coalition-building. The application of economic pressure through sanctions alone may have less utility. Economic blocs with significant clout may challenge our security interests.

In an increasingly interconnected world, operational design will have to account for a broader battlespace extending well beyond the region of conflict.

Continually changing coalitions, alliances, partnerships, and new actors (both national and transnational) will constantly appear and disappear from the scene. Long-term alliances of the past, although critically important and preferred, will be less common while short-term coalitions based on politico-economic interests and other common goals will become more prominent. These interconnected, web-like relationships will continue to multiply, expand horizontally and vertically, and mature, making an already complex environment even more uncertain and challenging our leaders and their command, control and collaboration organizations, processes, authorities, and systems.

Rapidly expanding global and regional information architectures, systems, and organizations, both private and public, create a fruitful environment for all facets of operations in the information domain, as well as level the playing field in terms of information access.

As a strategic center of gravity, the US homeland will become increasingly targeted for direct and indirect attacks aimed at political and public will as well as the disruption of our information systems, knowledge centers, and critical elements of our force projection and

⁵ This concept's view of the future operational environment is shaped by the trends, implications and emerging adversary operational design as described in the "Joint Operational Environment - The World Through 2020 and Beyond" Living Draft, US Joint Forces Command, 5 August 2005

sustainment capabilities. A comprehensive view of operations in the increasingly challenging information environment is required due to their impact on US and international support. If the enemy has limited WMD assets, he may choose to employ them, using unconventional means, against the US homeland or critical deployment and sustainment nodes to influence national will or coalition cohesion. Now and in the future, defense of the US homeland remains top priority.

(2) Future Force Posture

The current National Defense Strategy is to contend with security challenges through an active, layered defense of the Nation and its interests. A critical element of deterrence is maintaining capable and rapidly deployable military forces and, when necessary, demonstrating the will to resolve conflicts decisively on favorable terms. This will require forces to operate in and from the global commons (space, international waters and airspace, and cyberspace) and effectively project and sustain forces in distant environments where adversaries may seek to deny us access.

A more CONUS-based force must be more expeditionary to support global employment in response to crises

This National Defense Strategy demands a balanced force that is configured and postured for rapid surge deployment and employment worldwide in response to crises. Given this, a more agile and expeditionary force is a must since it will no longer be overly concentrated in a few overseas locations. Several enablers will contribute to future force agility:

- Modularity of the force,
- Flexible and responsive command and control elements,
- Flexible basing capabilities and arrangements,
- Prepositioned equipment and stocks that are joint in nature and configured and positioned for global employment,
- Expanded use of reachback for certain functions,
- Dynamic global management of the force,
- Expanded mobility platforms and related capabilities that will enable operational movement and maneuver over intertheater and intratheater distances, and
- Interoperable equipment and systems that will allow faster and more effective integration of component forces.

(3) New and Maturing Command and Control (C2) Structures

Geographic combatant commanders will continue to be the primary⁶ points of contact for military matters in their respective areas of responsibility (AORs). However, functional combatant commanders will figure more prominently with leading roles in planning, synchronizing, and as directed, executing global operations in coordination with other combatant commanders and the Services. The types of missions involved include global operations such as operations against terrorist networks, space operations, integrated global strike by both kinetic and nonkinetic means, global missile warning, and intelligence, surveillance and reconnaissance (ISR) support.

Organizational structures that enable government agency support to unified action are expected to continue to mature. For example, the State Department's Office of the Coordinator for Reconstruction and Stabilization (S/CRS) will be integral to JFC planning and execution efforts.

Innovative organizational designs continue to evolve in pursuit of greater effectiveness in warfighting and unified action

b. Systems View of the Battlespace and Nature of the Future Adversary

In major combat, the military struggle is the primary campaign dynamic even as noncombat efforts and the application of other forms of power continue. The essential problem that must be solved by this concept is that of how to defeat in combat an enemy actively and adaptively engaged in trying to defeat us. Before a solution can be advanced, the vision of the future enemy system must be sufficiently understood, in terms of both its structure and behavior including its military strategy or approach to the fight.

This concept applies the systems framework used in the CCJO, viewing both the enemy and friendly forces as complex, adaptive systems with a pronounced human character. The JFC strives to better understand these systems and their relationships within the battlespace in order to identify key centers of gravity, vulnerabilities, and ways to influence key stakeholders. As difficult as it may be, gaining a more comprehensive understanding of the adaptive adversary's systems and

⁶ Current joint doctrine (Joint Publication 0-2) on COCOM (command authority) states that geographic combatant commanders are the *single* points of contact for military matters in their respective AORs. The Global War on Terrorism may have implications for future doctrinal relationships between functional and geographic commanders as well as the Unified Command Plan.

their relationships is essential for the JFC to maintain the level of decision superiority necessary to defeat him. This systems approach is neither purely scientific nor deterministic and recognizes that war remains a profoundly human contest of wills.

Figure 4 below is a simplified structural view of an enemy system, in which the military system is sustained by matter, energy and information from a larger national or state-like system. It should be noted that there may be more than one enemy system to be considered. Our own system may be viewed similarly.

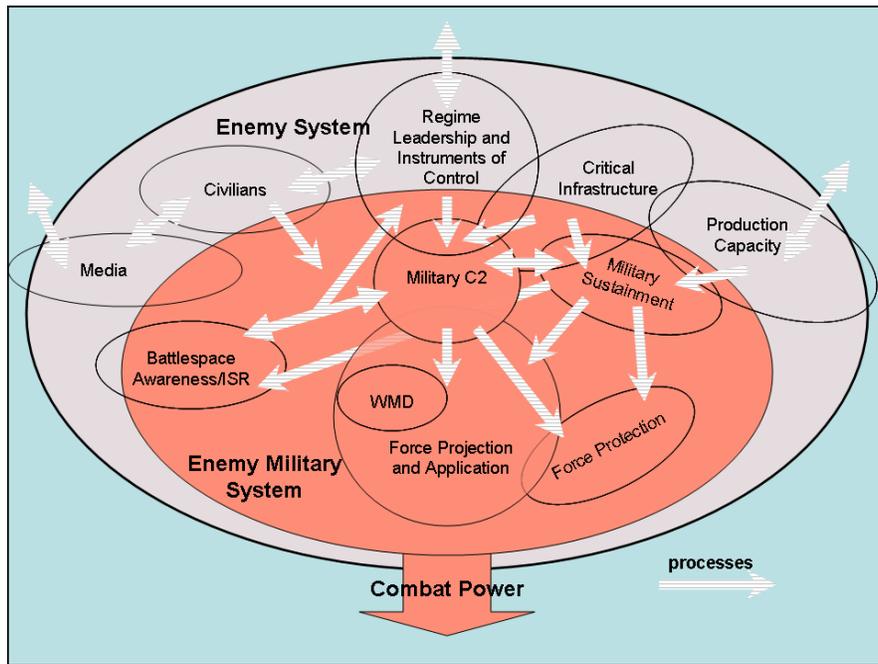


Figure 4 - Systems View of the Enemy

This nested view of the enemy system helps recognize the possibility of differing war aims. The aim may be to overthrow the entire enemy regime, in which case comprehensively defeating the military system is a necessary means to that end. Or the aim may be to resolve the political issue by defeating the enemy military while leaving the balance of the enemy system largely intact. In any case, the enemy's ability or willingness to resist militarily, or both, must be eliminated. This concept attempts to satisfy either of these scenarios. Even if the aim is merely one of military defeat, a joint force commander may choose to expand operations to attack other elements of the larger enemy system that directly or indirectly support the military system. Figure 4 also underscores the fact that the military is but one element of a larger, complex social system, and any attacks against the military (and its immediate supporting systems) will ripple outward to affect the larger

system, and even the larger international system of which the hostile power is an element.

The structure of the enemy military system may include conventional forces ranging from limited to highly capable combinations of air, land, naval, special operations and possibly space forces. The commercial availability of precision weapons, space resources, unmanned vehicles, sophisticated ISR sensors, advanced information systems and other militarily useful technologies places them at the disposal of any adversary with the financial means to purchase them. These conventional forces may be augmented by irregular forces, which may or may not be under the direct control of the regime. They may also be augmented by WMD, possibly in significant quantities. The presence of these weapons is fundamentally important because it underscores the need for military constraint to try to win the military conflict without triggering escalation. This enemy may have a considerable anti-access capability, as well as at least a regional force projection capability.

The future adversary will test our combat forces through the use of varying combinations of the aforementioned four strategic challenges, precluding us from optimizing for any single type of challenge. He will not operate using consistent and predictable patterns. He will tend to adapt continuously. He will disperse in complex terrains, cultures and information environments – dense urban areas, mountain areas, and remote areas distant from navigable waters, major ports, air fields and transportation networks. He will attempt to deny us the ability to project capability to within operational reach of him, through methods such as attacks on our basing and homeland, intimidation of our partners, the use of traditional, irregular, and even catastrophic anti-access means to block lines of communications, or simply by hiding from our view. Essentially, an adaptive enemy will likely wage a war of maneuver and evasion. He will mass his forces when it is to his advantage, but not allow his forces and capabilities to be destroyed en masse by the onslaught of US military capabilities in a single decisive battle or operation.

Innovation and adaptability in the organization, tools and tactics of future adversaries, many of whom operate unconstrained by the rule of law, challenge our traditional approaches to warfighting and combat capabilities of the joint force.

This concept describes the ways and means to solve the military problem posed by this future combat environment and stated in Figure 5 below.

Adversaries with capable militaries, including access denial, information operations, advanced conventional, WMD and irregular warfare capabilities may creatively use them in new ways to coerce or attack friends or Allies, threaten regional stability, or take other actions that pose an unacceptable threat to the United States. The US military must be capable of defeating such adversaries while minimizing the prospects for unintended escalation and considering the burdens of post-war transition and reconstruction.

Figure 5 - Military Problem

4. Solution

a. Description of How Operations May be Conducted

This portion of the MCO JOC is devoted to presenting a central idea, associated operational design and supporting ideas for solving the military problem stated in section three above. The solution applies and expands upon the CCJO solution in describing how the joint force will conduct combat operations in support of campaign objectives. More specifically, this section describes how the MCO military problem at the operational level is solved by embracing the MCO central idea, the preferred defeat mechanism of disintegration, and systemic overload of the enemy by multidimensional and multidomain distributed operations. With the application of operational art⁷ and adhering to the MCO supporting ideas, the JFC can better achieve operational-level objectives that lead directly or indirectly to the desired strategic endstate.

(1) MCO Central Idea

A statement of the central idea for solving the aforementioned military problem as well as a preview of the overall solution is contained in Figure 6 on the following page.

⁷ Refer to the glossary for a definition of operational art and to Joint Pub 3-0 for a thorough discussion.

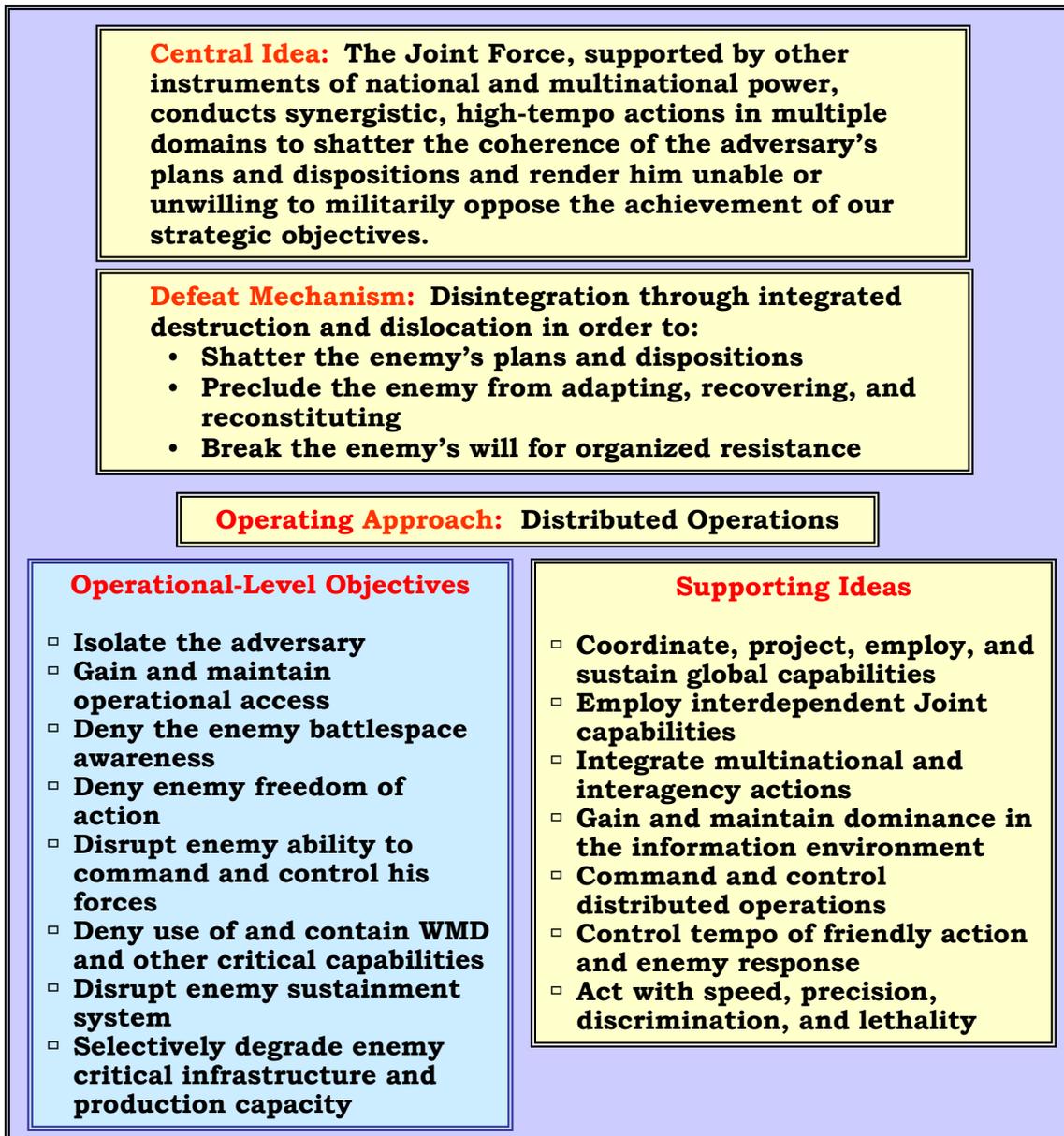


Figure 6 – Summary of the MCO Solution

Ultimately, the application of the MCO central idea to the defined military problem will result in achieving the one operational-level military endstate that is:

The adversary is rendered unable or unwilling to militarily oppose the achievement of our strategic objectives

Figure 7 - MCO Endstate

In order to better understand the MCO central idea, MCO endstate, and the approach to defeating adversaries, one must first understand the basic ways to bring about defeat of an adversary system.

Disintegration (see Figure 8) is the preferred defeat mechanism in future MCO for a number of reasons. Disintegration may be more effective than either destruction or dislocation alone in breaking the enemy's will for organized resistance, leading to a favorable conclusion sooner with less expenditure of resources and less overall damage.

Disintegration. Disintegration exploits the integration of dislocating and destructive effects to shatter the coherence of the enemy's plans and dispositions. It focuses on critical capabilities and decisive points that, if attacked effectively, will lead to more rapid collapse of the enemy's capability or will to continue to fight. In many cases, disintegration will emphasize the destruction of the enemy military "nervous system," that is, those capabilities that enable them to see, know, and effectively command and control. The greater the simultaneity, the stronger the disintegrative effects.

Figure 8 - Disintegration⁸

In most cases, the focus is primarily on disintegrating the adversary's military system, with less disruption to other national-level and societal-related systems. This helps mitigate the cost of stability and reconstruction operations if mandated. This approach may also minimize the likelihood of escalatory actions by the adversary (e.g., use of WMD) or a subsequent insurgency. Nevertheless, if the political situation worsens, the JFC may be forced to expand combat operations that include more highly destructive methods. A disintegrating takedown may also be required to preclude a nuclear-capable adversary from operationalizing that capability for self-preservation purposes.

(a) Defeat Through Disintegration

This approach is intended to fundamentally alter or influence the balance of an enemy's system in order to render him unable or unwilling to militarily oppose the achievement of our strategic objectives. Our adversary is confronted with multiple, integrated, and simultaneous combat actions focused on systemic overload of his critical system elements and processes (see Figure 9). With disintegration as our preferred defeat mechanism, the adversary's system could be crippled or

⁸ TRADOC Pamphlet 525-3-0, "The Army in Joint Operations: The Army Future Force Capstone Concept". This reference defines three defeat mechanisms - destruction, dislocation and disintegration.

paralyzed so that it cannot function as a cohesive whole, even if entire components of that system remain undamaged. He is unable to adapt in the face of relentless joint force actions, cannot recover to pose a significant threat to the joint force, and is precluded from reconstituting his military power. However, certain adversaries may be highly resistant to our efforts at disintegration, despite the amount of effort applied against them. This may give the JFC no choice but to defeat the adversary system cumulatively by wearing down each of its elements through greater application of destructive power. In addition, some aspects of the enemy system may not be easily defined, forcing the JFC to engage its known elements and processes while aggressively pursuing a more comprehensive understanding of the system.

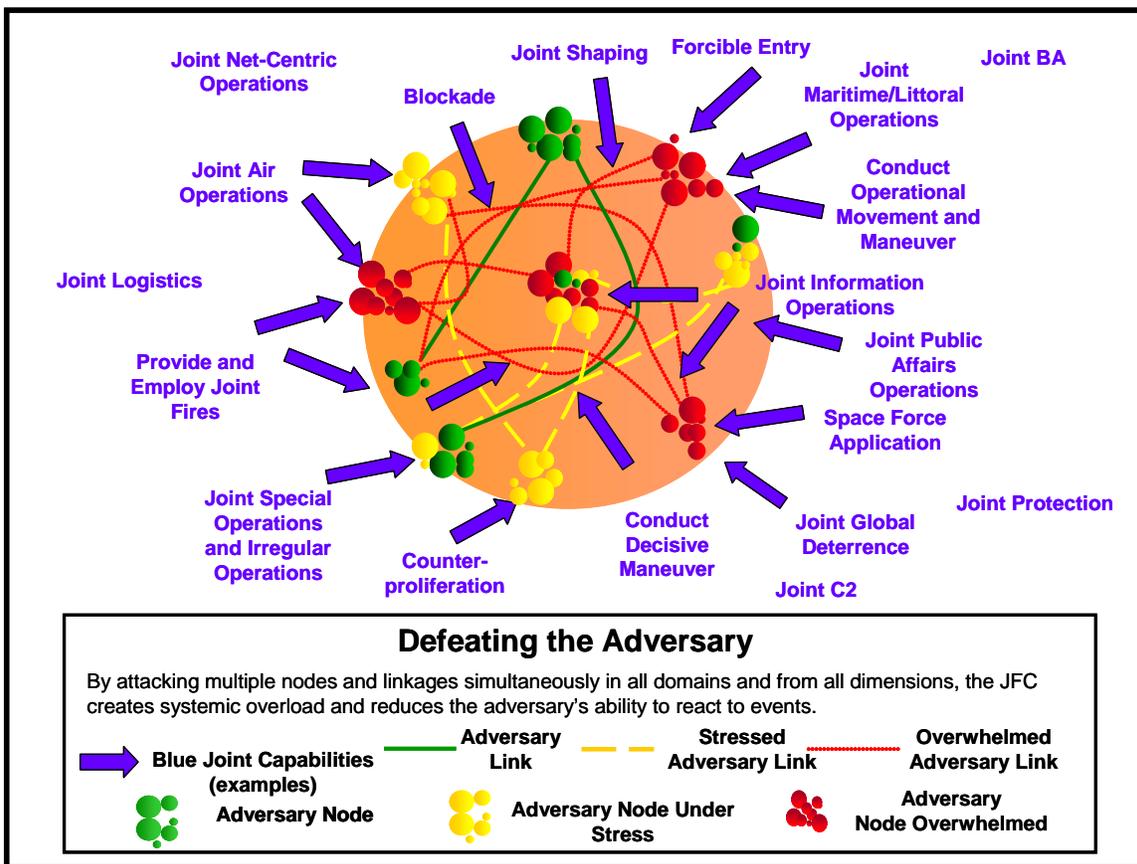


Figure 9 – Defeating the Adversary

The US military's primary contribution to unified action in MCO is applying unambiguous and overmatching joint power to defeat the enemy's military and other hostile entities through the aforementioned disintegration and systemic overload of their systems. Joint power in this context includes the integration and appropriate balance of expeditionary, traditional and irregular capabilities, plus nonmilitary

power derived from actions in the economic, diplomatic, and information areas of influence.

Major combat, now and in the future, remains a profoundly violent and human endeavor for those in harm's way. Future war and combat may range from high-tech kinetic and nonkinetic exchanges (including WMD) with combatants separated by thousands of miles, to dismounted close-in urban combat in a megalopolis. Regardless, the joint force's defeat mechanism continues to be disintegration of the enemy's military through the artful application of destructive and dislocating actions.

(b) Distributed Operations

Key to achieving military objectives is having the means for coordinated and integrated actions in all domains and dimensions by forces and capabilities distributed throughout the breadth and depth of the battlespace, ordered and connected within an operational design focused on a common aim. Accordingly, the JFC can and must be able to conduct distributed combat operations, simultaneously or sequentially, in the future to disintegrate the adversary system. This also hinders the enemy from adapting to ongoing and future joint force actions, recovering in the short-term from his accrued losses, and reconstituting his military power and critical infrastructure in an operationally significant timeframe.

The JFC can, through distributed operations, achieve his objectives when enabled with advanced capabilities in battlespace surveillance, strategic to tactical mobility, and comprehensive connectivity among key elements of the joint force. These capabilities enable the joint force with the means to attack directly at the enemy's centers of gravity (COGs) from multiple directions. Simultaneously, the joint force is able to see and protect against enemy attacks against the JFC's own COGs. Joint interdependence enables rapid mutual support and synchronization among joint force components, other supporting commands, other agencies and multinational partners. Because joint interdependent force packages allow trading of organic capability for agility, the Service components of the joint force are better able to conduct distributed operations and maintain a force structure adequate for extended operations.

Likewise, the JFC must distribute operations because complex adaptive enemies do not present themselves for destruction en masse. An intelligent enemy understands that to survive the onslaught of US military warfighting capabilities and avoid decisive defeat, he must disperse, hide, preserve his strength, keep his C2 apparatus elusive, and mask his vulnerabilities. An enemy using such methods is rarely

defeated in one decisive battle or operation, rather by many operations distributed across time and space, but with unity of purpose, against his critical nodes and linkages. Figure 10 below summarizes this concept's approach to defeating the adversary.

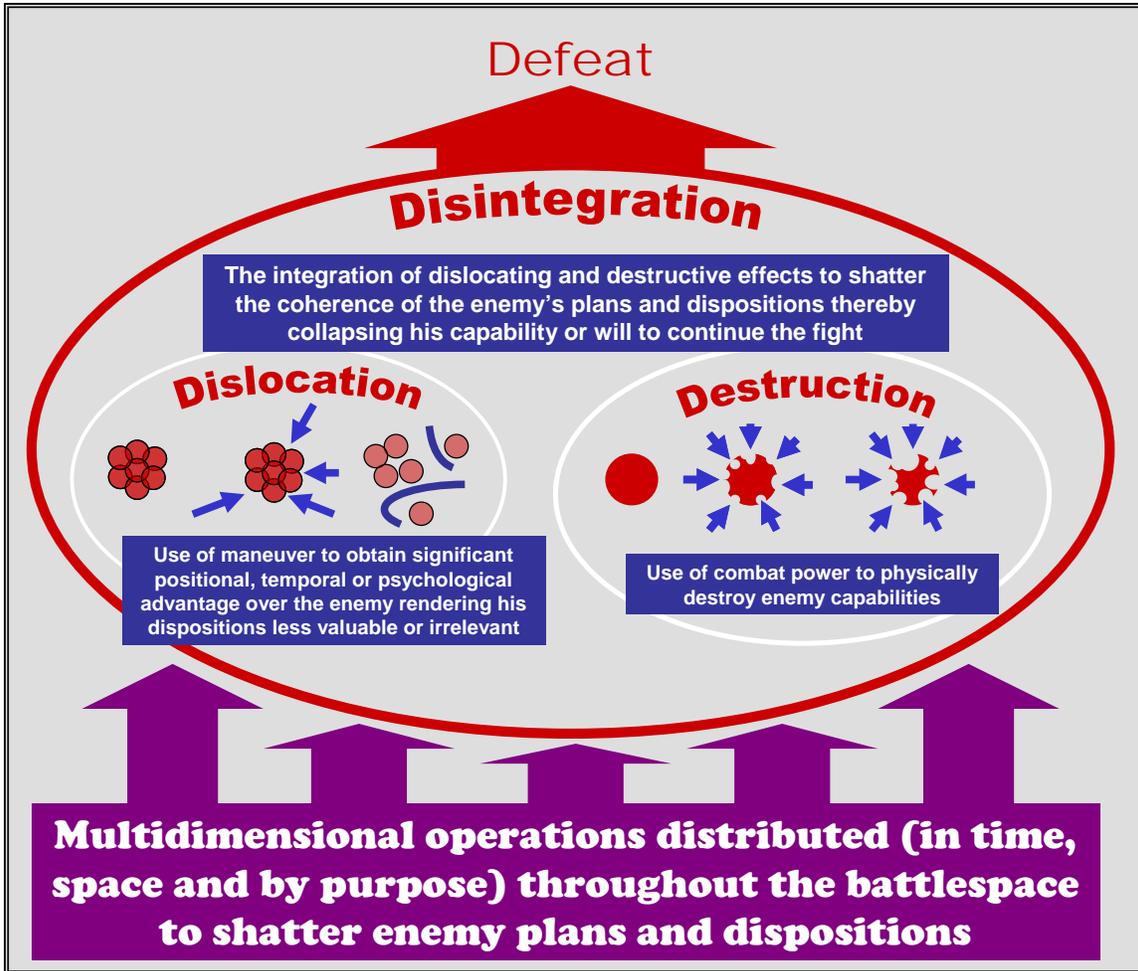


Figure 10 - Disintegration through Distributed Operations

Distributed operations describe an operational approach that creates an advantage over an adversary through the deliberate use of separate, coordinated and interdependent actions. Distributed operations are enabled by improved access to functional support, as well as by enhanced combat capabilities at tactical levels. Distributed operations are essentially a form of maneuver warfare in all domains and dimensions. The distribution of a highly capable and synchronized joint force across a large area of operations provides the spatial advantage commonly sought in maneuver warfare. Further, these same forces operate at a temporal advantage that allows for dramatic improvements in speed of command and decision making. These interdependent forces

are able to sense and understand an expanded battlespace, provide protection, project operationally to positions of advantage and swiftly defeat the enemy militarily. In order to cause disintegration of the enemy's military systems, the JFC uses multiple means, including close combat and fires, to defeat enemy anti-access capabilities and directly attack enemy COGs from multiple directions simultaneously. The joint force possesses the capability to sustain itself over an extended campaign. These forces also possess the capability to re-aggregate in order to exploit fleeting opportunities and to reinforce or support another force in need.

The US military and the JFC must understand fully the implications of distributed operations on future joint air and maritime operations. In joint maritime and littoral operations, sea basing allows for the immediate use of the sea as maneuver space, enabling broader reach across the battlespace to project operationally significant joint capabilities, provide practiced and coherent joint C2, and effectively sustain distributed forces. Projection of defensive capability by maritime assets affords protection of friendly forces distributed in littoral areas and enhances their expeditionary effectiveness. Flexible expeditionary air basing capabilities and arrangements will also contribute to the ability to operate distributed. Due to the noncontiguous nature of a distributed force, there will be increased reliance on air movement and maneuver of forces and their support. This reliance places a premium on air superiority across the distributed battlespace. Protection and survivability of air assets, to include air mobility platforms, must be addressed as there will be a routine requirement to fly over potentially hostile territory when conducting and sustaining distributed operations.

Enabled by decentralized decision making, agile command configurations, adaptive relationships, modularized and scalable force packages, and netted combat units, the JFC can engage the enemy with a larger percentage of the force at any one time. Given this, the JFC can generate effects on the enemy's system and create multiple dilemmas to which the adversary must respond—all aimed to create systemic overload. For example, the enemy loses significant combat power regardless of offensive or defensive postures. Simultaneously, the enemy loses key infrastructure through destruction or seizure. The enemy is forced to sub-optimize his finite capabilities, not allowing him to mass effects against the joint force. The enemy leadership is unable to discern truth from deception, causing incoherent use of his finite forces and capabilities. Additionally, the enemy is unable to transmit orders, coordinate actions, and execute plans reliably as well as influence friends or followers. By design, key aspects of the enemy system shatter and collapse.

The joint force employs its inherent ability to accomplish parallel and distributed operations at the operational and tactical levels of warfare to create desired effects through focused application of capabilities. A net-centric operational environment allows for continuous monitoring and direction to seize and maintain the initiative. Physically distributed joint forces are virtually contiguous through a net-centric battlespace. Facilitated by dynamic information transport media and enterprise services, decision-quality information will be available at the lowest practical level thus enabling decentralized decision making and self-synchronization. Precise, discriminate, and continuous application of military and nonmilitary capabilities occurs with the intent of disrupting and disintegrating the adversary's system. Self-synchronized and integrated simultaneous as well as sequential operations occur with unity of effort and purpose at all levels. Joint, interagency, and multinational integration from planning through execution occurs with all instruments of our National power to achieve desired endstates.

(2) Operational Design

The JFC must conduct combat operations to seize the initiative and dominate the enemy's military. Although sequential combat-related operations are certain to occur in future campaigns, the anticipated tempo of joint force combat operations is characterized by more simultaneity of distributed actions to *seize initiative* and *dominate*.⁹ From the enemy's perspective, there is no distinction between these lines of effort. All he observes are relentless combat operations directed at his ability to resist militarily. Further, the JFC plans and prepares for joint force actions that contribute to post-MCO stabilization of the destabilized region.

(a) Seizing Initiative and Dominating the Adversary

In combat, the joint force aims to see first, understand first, decide first, and act first in a cyclic process to finish decisively. To do this, the joint force executes offensive operations at the earliest possible time, forcing the adversary to offensive culmination and setting the conditions to dominate the adversary. Importantly, the ways and means employed by the JFC to seize the initiative are not necessarily the same ways and means required to achieve dominance over an adversary. For example, deception efforts in initial entry operations may receive more emphasis than during subsequent operations. The supported JFC seizes the initiative by rapidly projecting and employing joint power, preemptively if

⁹ The lines of effort mentioned in the JOC are not to be construed as traditional phases of a sequenced military campaign; here, they represent a flexible and integrated means to frame an approach to planning, executing, and assessing campaigns.

circumstances dictate, against critical target sets within the adversary's system (see Figure 11). The JFC focuses his resources to gain and maintain operational access in all domains and dimensions and for as long as necessary to achieve his objectives and endstates.

Initially, the JFC employs multidimensional, distributed kinetic and nonkinetic capabilities in the informational, physical, and cognitive domains to gain and maintain operational access, contributing to seizing the initiative. Carefully orchestrated information, deception, and combat operations enable the operational access necessary for the achievement of desired effects and designated military objectives. Some joint force actions occur at the speed of light, some at supersonic and hypersonic speeds, while other joint actions intentionally progress at a slower pace because one action cannot begin until another completed action precedes it in sequence or because operational or strategic conditions require a measured pace. Joint force actions provide for a continuous flow of combat power into the area of operations, achieving an operational momentum that allows the adversary little time to adjust plans, reconfigure forces, or reconstitute.

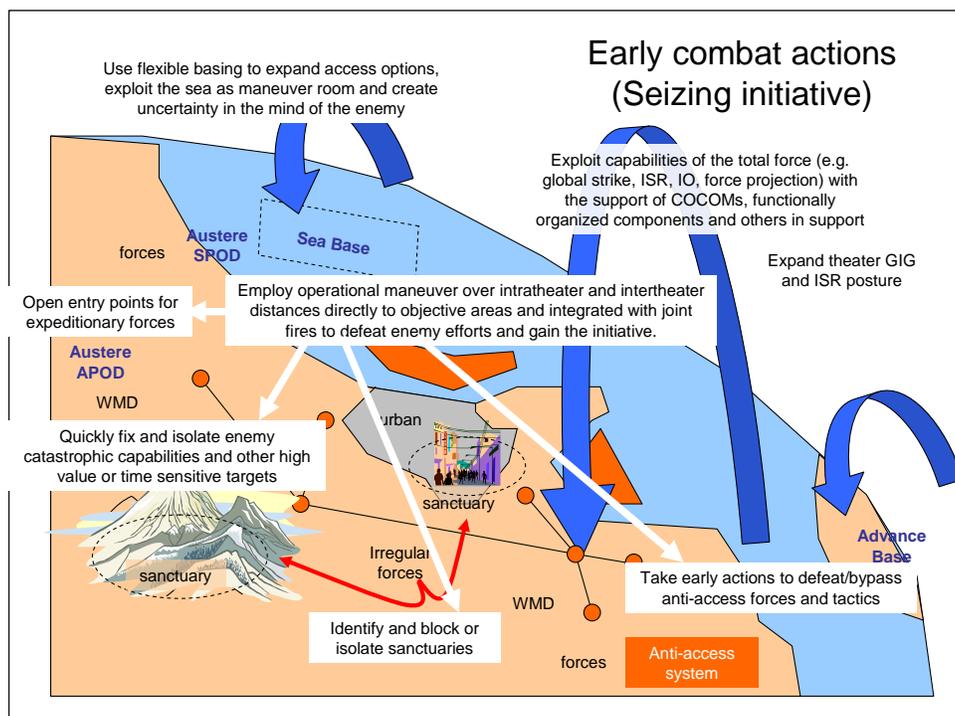


Figure 11 – Seizing the Initiative

Obviously, combat operations to gain operational access and to seize the initiative against an intelligent and adaptable enemy are complex, risk-laden, and necessary. There may be no distinct end to the *seize*

initiative line of effort in future MCO; this effort will likely need to be maintained throughout the campaign by the joint force. Seizing the initiative or advantage must render enemy anti-access efforts ineffective and allows more persistent application of air, ground, maritime, space, cyber, and special operations to occur as planned. As the JFC gains operational access and initiative, he aims to dominate the enemy in all domains and dimensions.

A key approach in the *dominate* line of effort is to employ a larger proportion of joint force capabilities against selected objectives to achieve overmatch at decisive points, generate systemic overload, and disintegrate the enemy’s military system in order to swiftly defeat the enemy and/or win decisively. Essentially, the JFC breaks the enemy’s will for organized resistance. Ideally, forces and capabilities are rapidly employable; most requiring little or no reception, staging, onward movement and integration (RSOI) support. By design, these forces are adaptive, modular, scalable, and highly mobile. Operational movement and maneuver from intertheater distances and from the sea, as well as intratheater maneuver occur in a distributed manner to create continuous pressure and multiple dilemmas that enemy leaders find hard to combat (see Figure 12).

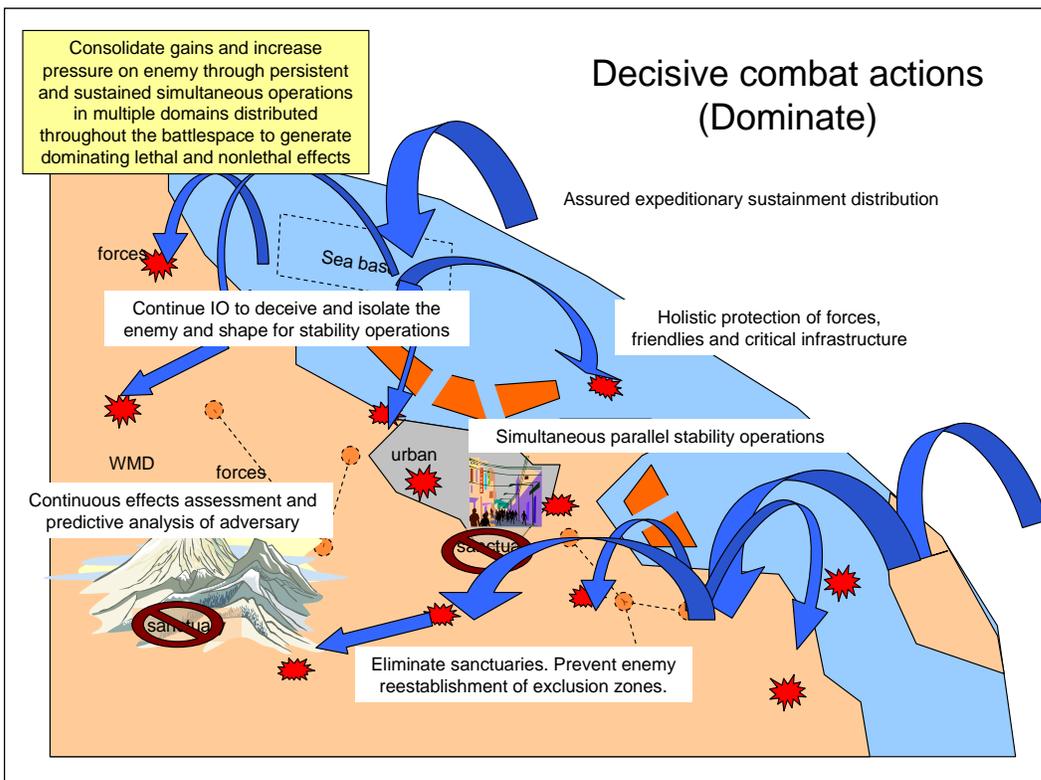


Figure 12 - Dominating Through Distributed Operations

The joint combat force maintains the initiative and dominates an enemy's military in order to achieve the desired MCO endstate stated earlier. Essentially, the enemy's means and motivation to resist are taken away. These actions directly and indirectly influence the state of affairs after major combat. Simply put, swift and decisive defeat of the enemy militarily sets the conditions for subsequent campaign activities critical to achieving strategic objectives and a viable peace. In carrying out dominating combat actions, the JFC considers the overall campaign objectives. Acknowledging the general incongruity between the disintegrating and destructive effects of combat and the aims of SSTRO, the commander uses sound judgment to shape the battle in ways that mitigate the stabilization and reconstruction problem without jeopardizing the successful prosecution of the fight.

The JFC anticipates new complex challenges that emerge when the intensity of combat operations within the *dominate* line of effort begins to subside. As the campaign progresses, the commander may modulate his operational emphasis to accommodate requirements for stabilizing in stride. For additional information on stability operations, refer to the Military Support to Stabilization, Security, Transition and Reconstruction Operations (SSTRO) JOC. The force flow introduces additional, often specialized, military as well as nonmilitary capabilities into the JOA for anticipated stability, security, transition, and reconstruction missions. The additional capabilities provide for sorely needed security, humanitarian relief, and other support to civil authorities to return the affected area to a functioning posture. The State Department, should it retain its current mission, will lead, coordinate and institutionalize US Government civilian capacity to prevent or prepare for post-conflict situations, and to help stabilize and reconstruct societies in transition from conflict or civil strife to a new normalcy. The JFC will play a significant supporting role. One measure of MCO effectiveness occurs when stabilization and reconstruction efforts, if mandated, can proceed in earnest without substantial combat between and among opposing forces. Key activities and considerations for setting the conditions for stability are listed below in Figure 13. Further elaboration occurs in the illustrative vignette provided later in this JOC.

War termination is a major consideration in MCO. Sometimes the enemy will be compelled to quit the fight and come to the negotiating table. At other times, political aims will demand that we force our adversary to unconditional surrender. Furthermore, it is possible for war termination conditions to fall somewhere between negotiation and unconditional surrender. Regardless, a viable peace is sought. Without a formal surrender or at least a viable negotiated peace, all warring parties, to include the affected noncombatant population, face an ambiguous and potentially chaotic future. There may be global perturbations resulting

from such uncertainty in resolving the crisis. Even with a formal surrender, the causes of the conflict may not be resolved. Conflict may continue using such means as terrorism, insurgency, economic disruptions, cyber war, political actions or a number of acts of civil disobedience. To mitigate the continuation of the struggle by such means, the JFC must strive to set conditions for conflict resolution during the conduct of MCO. Simply stated, war termination implications and consequences are of critical importance.

- Setting Conditions for Stability**
- Continue to pursue a holistic understanding of the adversary as well as the other parties with equity or influence in the conflict
 - Plan for shifts in missions, priorities, skills, and relationships
 - Introduce general purpose and specialized military and nonmilitary capabilities based on priorities set for stabilization, security, transition and reconstruction operations
 - Achieve and maintain unity of effort among military and nonmilitary forces
 - Formalize termination of MCO where permitted by nature of the adversary
 - Plan for protracted combat operations with determined enemy elements that employ irregular methods (continuing the focus on his legitimacy, cause and means to wage war)
 - Take actions to prevent reestablishment of enemy sanctuaries
 - Interact with the local population to gain their trust and cooperation
 - Support expansion in the roles of interagency, multinational, international and contractor players
 - Synchronize combat force redeployment

Figure 13 – Setting Conditions for Stability

(b) Method (Operational-Level Objectives) The JFC applies operational art and employs forces and their robust capabilities to achieve various operational-level objectives and associated effects that shatter the enemy's plans and dispositions and preclude his ability to

militarily adapt, recover and reconstitute. In future MCO, the following operational-level objectives are considered essential:

1. Isolate the adversary. The US-led coalition takes actions to isolate the adversary from external physical, informational, and moral sources of support. Actions to isolate the adversary from external support are planned and conducted in concert with actions to degrade or destroy the internal functioning of the adversary. Applied together, these actions reinforce each other in shattering the enemy's coherence and will. Actions to isolate the adversary must also prevent his export of violence and propaganda. The coalition disrupts, degrades, and denies enemy sources of external physical support through, for example, financial and banking system pressures and actions to restrict commercial and personal travel. Additional coalition actions may include counterproliferation efforts, enforcement of embargoes, and possibly even blockades. In the information environment, isolation occurs through comprehensive influence and strategic communication activities. Additionally, the coalition selectively engages the global media to expose the local, regional, and world communities to the adversary's true intentions, motives, corrupt activities, and abuses of power.

At the operational level, joint shaping, access and access denial, air, land, maritime and littoral, space, special and irregular warfare, and public affairs operations also contribute directly or indirectly to isolating the adversary from his sources of support. Here, actions such as building support for the coalition among local inhabitants, exploiting dissidents and informants, and organizing and training well-funded resistance groups contribute to internally isolating the adversary. Concurrently, the joint force takes actions to increase its connection to friendly sources of support within the battlespace. Collectively, these multidomain and multidimensional operations magnify the debilitating, often paralyzing, effects produced when the adversary's leadership and forces are separated from their accustomed or anticipated support arrangements.

2. Gain and maintain operational access. The aim of this objective is to enable initial and continuous access to the battlespace, regardless of dimension and domain. To achieve this objective, the joint force must see, understand, decide, and act first to finish decisively. As such, actions to blind the enemy (see the below-listed operational objective of denying the enemy battlespace awareness) are critical to gaining access. Identifying and exploiting basing and force projection options are essential. Exploiting expeditionary military and nonmilitary capabilities is critical. Reducing force closure gaps and times along with a logistics capability that can provide multiple sustainment options is also an enabler. Some adversaries employ robust anti-access strategies that will require preemptive multidimensional joint force

strikes, raids and other methods such as undersea warfare and offensive counterair operations to defeat the enemy's anti-access strategy. More permissive environments may allow early or immediate use of immediately employable forces that conduct distributed operations to set the conditions for rapid transition to follow-on decisive operations. Forces must have the reach to access remote and complex terrain and the sustainability to maintain that access for the duration of required operations. Importantly, a protection umbrella is established and begins to expand as planned. Furthermore, comprehensive efforts to deny enemy use of WMD occur. Necessary control is established of land, air, sea, space, and cyberspace. With the enemy's anti-access strategy degraded and disrupted, the joint force can better seize the initiative from the adversary as well as achieve positional and temporal advantages with distributed forces.

3. Deny enemy battlespace awareness (BA). The aim of this objective is to degrade and disrupt the enemy's abilities to observe, to sense, and to learn what is happening around him and to him. Basically, joint force actions aim to blind, confuse, and mislead the enemy. These actions will include attacking his ISR capabilities. Actions are taken to conceal operationally significant information from the enemy. Oftentimes, our speed of decision making, command, and action also deny accurate and actionable intelligence and information to the enemy. In certain circumstances, the JFC may intentionally allow the adversary to retain selected means to discern his deteriorating situation so that he has the option to capitulate and bring about a rapid conclusion to combat.

4. Deny enemy freedom of action. The aim of this objective is to remove the enemy's options to counter any joint force actions. To do this, the JFC executes kinetic and nonkinetic operations directed at decisive points, enemy vulnerabilities, centers of gravity, and other critical areas, organizations, and activities. The JFC uses rapidly employable forces with little or no RSOI support required to conduct distributed operations. The joint force can conduct operational maneuver from intratheater and intertheater distances, including from the sea, to respond to the changing situation more rapidly than the adversary and gain positional advantage. Control of the "commons"—international airspace and waters, space, and cyberspace—helps deny enemy freedom of action. Our efforts to influence neutral countries, local populations, and potential adversaries also help deny the enemy his freedom of action.

5. Disrupt enemy ability to command and control (C2) his forces. The aim of this objective is to degrade and disrupt the enemy's ability to decide, act coherently, and adapt to joint force actions. The JFC overwhelms the enemy through distributed, simultaneous and

sequential employment of rapid maneuver and precision engagement capabilities, imposing multiple dilemmas on the enemy, and creating a sense of futility. Information operations confuse and deceive enemy leadership and degrade its decision making. The joint force uses kinetic and nonkinetic means, including SOF, to destroy or disrupt enemy command, control, communications, and coordination nodes and linkages and C2 capabilities. Simply put, the JFC attacks the enemy's leadership and decision making system in all domains and dimensions.

6. Deny use of and contain WMD and other critical capabilities. The aim of this objective is to prevent the extreme escalation of violence along with the horrific, long-term implications and consequences of post-WMD use. The US along with international supporters can continue to warn the enemy against WMD use and the extreme consequences after use. However, if US and international pressures fail, the JFC may be authorized to neutralize enemy-held WMD and their delivery means. This important issue is discussed in more detail within the illustrative vignette in this JOC. Similar containment may be required in the case of an adversary possessing WMD-like capabilities (such as an electromagnetic pulse device) or breakthrough disruptive technology that may directly threaten the joint force and others in the battlespace or pose a significant proliferation threat to national security interests.

7. Disrupt enemy sustainment system. The aim of this objective is to prevent the enemy from generating and regenerating combat power at the tactical and operational levels. An indirect method of nullifying the enemy's military power is to attack his ability to regenerate combat power. To do this, the joint force attacks enemy depots, arsenals, forward supply points, logistics organizations, and his distribution system. The enemy's lines of communications can be attacked and severed as critical sustainment is flowing to his forces in need. Additionally, actions occur to halt replenishment actions from international suppliers. Noteworthy, especially in urban irregular operations, attacking the enemy's sustainment system may be complicated in that noncombatants may be employed, possibly through coercion, to operate much of the system. When use of force is contemplated in these situations, consideration should be given to methods, such as computer network attack or the employment of joint nonlethal weapons, which achieve the desired effect while minimizing the likelihood of civilian casualties. Adherence to applicable rules of engagement is critical.

8. Selectively degrade enemy critical infrastructure and production capacity. The aim of this objective is to prevent enemy regeneration of national-level power in support of his military. Adhering

to the law of war, the joint force may attack and neutralize critical infrastructure nodes and war-related production capacity to achieve key military objectives. Obviously, the enemy's ability to produce WMD receives great emphasis. Reliable and actionable intelligence coupled with accurate targeting is essential. The JFC must balance the utility of striking infrastructure with the consequences on the population and stabilization operations.

(3) Supporting Ideas

In achieving the central idea of this MCO concept, and to guide the US military and the supported JFC, seven supporting ideas (see Figure 14) emerge that contribute directly and indirectly to the achievement of the MCO central idea and operational-level objectives described above:

- ❑ **Coordinate, project, employ, and sustain global capabilities**
- ❑ **Employ interdependent joint capabilities**
- ❑ **Integrate multinational and interagency actions**
- ❑ **Gain and maintain dominance in the information environment**
- ❑ **Command and control distributed operations**
- ❑ **Control tempo of friendly action and enemy response**
- ❑ **Act with speed, precision, discrimination, and lethality**

Figure 14 – MCO Supporting Ideas

This concept is informed by the foundations and principles described in the original version of the MCO JOC and refined through subsequent research on irregular warfare. Those foundations and principles are summarized in Appendix E for reference.

Throughout this concept, **examples are given of projected enabling capabilities to help the reader visualize their potential applicability to joint warfighting.** These examples are necessarily futuristic, but are based on lines of research and development being undertaken by the Defense Agencies and Services. The implications of the capabilities for future concepts drive developers to new ways of thinking about the conduct of military operations with the understanding that technology is but one aspect of future capability. Discussing these enablers in an operational context also helps to focus national security S&T efforts and bridge the gap between fundamental discoveries and their military use.

(a) Coordinate, Project, Employ, and Sustain Global Capabilities

Every time the US ventures into foreign territory to protect or advance its interests—with or without broad international approval—the potential exists for a major shooting war and protracted irregular war. The US military must not count on a “grace” period while transitioning to war, a “time out” for the military to catch up, or any reprieve for lack of strategic, operational, and tactical preparedness. The US military must be able to focus its resources rapidly on any threat or challenge worldwide¹⁰, marshaling capabilities from wherever they are located, to quickly dominate the environment in all dimensions and domains, generate desired effects, and achieve desired military endstate(s). Given this unforgiving “compression of time,” extreme risk to National interests, and the potential for various forms of warfare—traditional to irregular—against intelligent and determined enemies, the US military and the JFC must coordinate, project, employ, and sustain global capabilities.

To do this, the US uses a robust and efficient Global Force Management system to make required resources rapidly available to the supported JFC. While MCOs are a critical factor in creating a global force posture, these requirements are balanced with our requirements to assure, dissuade and deter in order to meet our National objectives. The US routinely commits and tasks capabilities of the various Services, other combatant commands and other government agencies in support of the JFC.

To improve agility and speed of maneuver, the JFC links intertheater and intratheater force projection and sustainment¹¹ directly to his operational requirements and campaign objectives. Combatant commands with global responsibilities provide capabilities in such functional areas as space; global strike; integrated missile defense; intelligence, surveillance and reconnaissance; and information operations in support the JFC’s effort to rapidly gain access and continue operations throughout the campaign. Various joint basing options—continuously manned joint sea basing¹², CONUS joint base clusters and affiliations, forward basing, and austere but rapidly expandable joint

¹⁰ Per the 2006 QDR Report “U.S. forces must continue to operate in forward areas, but operational demands over the past four years demonstrate the need to operate around the globe and not only in and from the four regions called out in the 2001 QDR.”

¹¹ Refer to the Joint Logistics (Distribution) Joint Integrating Concept for a description of a future, end-to-end single Joint Deployment and Distribution Enterprise (JDDE) for exercising selective control of the entire distribution pipeline from strategic to theater.

¹² For detailed description of joint seabasing refer to the Seabasing Joint Integrating Concept, Version 1, dated 1 August, 2005.

operating bases around the world—compress US response time when the US seeks quick operational access to a target area. Continuous and routine sea-based and land-based rotations of military capability packages also enhance global shaping and facilitate seizing the initiative. These options lessen the time-sensitive challenge of having the proper force mix readily available for commitment, potentially reduce nation-to-nation political entanglements when negotiating basing and other rights, and reduce the problems associated with high-demand for low-density capabilities that often plague joint force commanders. Essentially, tailored military and nonmilitary force design, situational training, practiced C2, and rapid force projection and sustainment of modular capabilities get a much-needed head start.

The US military must provide the supported JFC with a survivable, responsive, and adaptable force projection and distribution-based sustainment system. This enables the building and delivery of combat power at the right times and locations as determined by the supported JFC. The system's capabilities must be immediately available to support joint combat operations. The system must remain effective even when lines of communication (LOCs) are threatened, with limited or no access to fixed seaports and airfields in or near objective areas during initial entry operations, and when supported forces disperse widely to conduct distributed operations. Mobility enhancements include technologically advanced inter- and intratheater lift platforms capable of utilizing less than improved air and seaport facilities. This joint system more closely conforms to the unfolding battlespace conditions while remaining intimately connected to commander's intent. The goal is to enable more fluid combat operations that contribute to seizing local opportunities as they emerge.

Coordinate, Project, Employ and Sustain Global Capabilities – Potential Enabling Capabilities

Future command and control systems will be integrated with joint deployment, employment and sustainment systems allowing for the rapid optimized assignment of missions to elements of the joint force. The creation and sharing of properly tagged data by Communities Of Interest (COI) will play a role in such integration. Commanders will be notified instantaneously whether a plan is supportable with available units and, in instances where multiple units of similar capabilities exist, allow the commander to select. If the JFC decides to launch operations from a sea base, for example, the system will select units best suited, from a readiness and capabilities standpoint, to conduct such operations. As operational planning continues, orders for logistics and all other types of support are autonomously generated. And, as operations are initiated, the planning module will autonomously synchronize and re-synchronize actions to ensure completion of commander's intent.

Implications:

- Decisions are made faster and coordination occurs simultaneously providing the JFC greater speed and agility.
- Sustainment is provided at the right place and time in the required quantities.
- Autonomous course of action development incorporates real-time lessons and those learned from previous operations and offers the commander a menu of optimized plans. Time between planning and execution is reduced to minutes and hours, versus days.
- Combatant command staffs are able to operate from home station. Commanders deploy with minimal staff, reducing logistics and security requirements.

The joint sustainment distribution subsystem must be capable of delivering all required supplies anywhere in the battlespace where supported forces are operating. This subsystem supports distributed operations in replenishing myriad small, widely dispersed units as well as vessels on a routine basis by unmanned and manned vertical takeoff and landing (VTOL), heavy-lift VTOL (HLVTOL), and short takeoff and landing (STOL) cargo-carrying platforms and improved air drop capability in a hostile environment and for as long as necessary. Innovative methods for replenishing widely distributed combat forces with critical fuel, water, and munitions receive emphasis including the development of alternative sources for bulky commodities. Autonomous robotic

systems will be used to resupply units, thus reducing the numbers of combatants exposed to threats en route and allowing accompanying humans to concentrate on other critical functions. This dedicated sustainment system improves the probability of delivery of required support to dispersed units and vessels within minutes and hours, not days or weeks. Joint in-transit and total asset visibility assists the joint force. Few supported units and vessels will ever outrun the ability to request and receive required sustainment support. Additionally, the frequency of sustainment pauses declines to just those that are command-directed. Overall, the system emerges where the sophistication of sustainment operations is commensurate with and fully supportive of complex, agile, and distributed combat operations.

(b) Employ Interdependent Joint Capabilities

Leveraging joint force interdependence, the future JFC plans, conducts, and sustains combat operations with higher confidence and competence by employing a cohesive and interoperable set of joint capabilities, irrespective of Service component affiliations. The resulting interdependence enables the JFC to access the full capabilities of the force to create the right effects at the right times and places with the right force application, enhances expeditionary capabilities, and creates the force structure necessary to maintain extended operations. The JFC realizes improvements in various forms and to varying degrees in the areas of battlespace awareness (BA), knowledge-sharing, battle command, net-centric operations, interagency coordination, information operations, and shaping operations. Also, improvements occur in force projection and sustainment, air and missile defense, maneuver, fires and effects, protection, support to civil authorities, air control, rapid adaptive training, and basing. Essentially, joint interdependence contributes directly and indirectly to achieving dominant effects.

The JFC must synchronize the interdependent employment of land, air, sea, space, cyberspace, and special operations capabilities to gain the widest range of options. Although each Service component contributes its own unique capabilities to the campaign, each dominating its own environment, the ability to work in harmony and interdependently significantly increases overall joint force effectiveness. Enabled by interdependence, the JFC can accelerate tempo and attack directly the enemy's key capabilities, crippling the enemy's ability to respond coherently.

Employ Interdependent Joint Capabilities – Potential Enabling Capabilities

The JFC will employ combinations of unmanned and manned, multidimensional (air, land, sea, space, and cyberspace) systems to conduct joint interdependent operations. Fires and maneuver capabilities will be employed from the “pool” of collective joint capabilities rather than only from those organic to individual units or Services. The fused intelligence provided by these platforms will create opportunities to attack critical enemy targets.

Implications:

- Renewed emphasis is placed on organizational design of joint headquarters in support of joint planning.
- Joint fires and maneuver are employed synergistically.
- The commander has greater access to the full capabilities of the joint force to create the right effects at the right times and places with the right force application.
- The desired joint force momentum and operational tempo are more easily achieved and maintained.
- The desired “kill chain” of sensor-to-shooter-impact/effects is compressed to seconds, or to a few minutes, depending on circumstances.

(c) Integrate Multinational and Interagency Actions

Multinational and interagency partners have special capabilities that contribute to achieving dominant effects in support of unified action, as well as achieving military and political objectives and endstates. As a matter of routine, the US integrates and executes multinational and interagency actions rapidly and coherently in support of the JFC.

The JFC integrates multinational capabilities and collaborates with interagency and international partner leaders during planning and throughout the campaign to achieve synergies, further isolate the enemy, and deny sanctuary to the enemy. The US military uses day-to-day interactions, frequent pre-conflict engagement venues, periodic joint C2 training exercises, an extensive and vigorous liaison program, and an expanded collaborative information environment to build favorable and practiced relationships with these partners. The US military fosters the development of interoperable and well-trained alliance and coalition capabilities that can readily plug into plans and operations. The US

military uses forward basing and security cooperation to build strong, mutually supporting relationships with these partners. Conceivably, more permanent US-led multinational force headquarters (MNF HQ) emerge at the operational level in the future when mutually beneficial to the US and other supportive governments. The JFC combines and exploits joint warfighting doctrine, organizations, training, technology, and leadership with special contributions from other partners to achieve desired operational-level objectives.

Integrate Multinational and Interagency Actions – Potential Enabling Capabilities

The JFC will use automated synchronization and coordination tools to align and coordinate military activities with diplomatic, informational and economic activities within the context of coalition planning and execution environments. Tools will automatically translate documents, develop feasible courses of action, and synchronize actions. Advancements in communications technology will improve the wherewithal to share classified information with multinational, interagency and nongovernmental partners. However, policies and procedural changes will afford the largest improvements in sharing classified information among the US military's various partners.

Implications:

- Technology will increasingly enable communications across the multinational force.
- Autonomous synchronization tools will provide traceability of allocated resources and shared responsibilities to effects generated. This will allow national governments, international organizations and certain nongovernmental organization partners to trace their contributions to achieving common strategic objectives as well as specific organizational objectives.
- When conflicting objectives arise between partners, the aforementioned tools provide for quick, visible and useful positions upon which to base cooperative negotiations.

(d) Gain and Maintain Dominance in the Information Environment

Strategic-level information and influence¹³ strategies are critical to addressing traditional, irregular, disruptive, and catastrophic challenges and extend beyond the purview of the military commander alone. Therefore, the JFC information and influence plans must contribute to and be consistent with the higher-level strategy. Accordingly, well-conceived, well-coordinated, and well-executed operational-level information and influence plans are critical prerequisites when dealing with future operational challenges. In order to decisively influence an adversary, it is critical that we understand their decision making process and their perceptions. The adversary presents a unique problem set that will not be overcome by a 'pickup' information campaign or influence strategies, especially when fanaticism is a primary motivator for an irregular adversary. With concise strategic-level guidance and interagency and multinational participation, a comprehensive information and influence campaign embraces strategic-level intent and supports achievement of both military and political objectives.

Commanders gain and maintain the advantage in the information environment by employing integrated nonkinetic and kinetic methods as necessary. In the early stages of conflict, the adversary is likely to possess the initiative in the information environment. To wrest the initiative from the adversary, a comprehensive set of offensive and defensive actions must occur. The innovative combination of electronic weapons platforms, networking systems, and strategic- and operational-level psychological operations, enabled by the net-centric operational environment, creates significant opportunities to seize the initiative and dominate an enemy. This combination contributes to a synergistic strategy-campaign objectives-tactics chain that, when synchronized effectively, paralyzes enemy decision making and reduces the overall effectiveness of the adversary's system. The solution set varies depending on, for example, whether the adversary employs traditional or irregular and asymmetric methods, and whether the center of gravity is a military entity or a noncombatant population. Essentially, each operation and campaign requires a customized approach within the strategic information strategy to gain and maintain the initiative in the information environment.

Communication of the threat to use kinetic and lethal force may be sufficient to influence and pressure an adversary or a "fence-sitting" actor to capitulate. If not, the actual metered use of kinetic and lethal

¹³ Reference herein to influence strategies and plans are associated with military efforts to engage and negotiate with potential partners, "fence sitters", and where possible, adversaries, to reach, 1) a common understanding, 2) agreement on common goals, 3) agreement on what the disputed points are, in a nonconfrontational manner. The goal at the strategic, operational, and tactical levels is to gain the trust and cooperation of the other party.

force is obviously a viable method to coerce an actor to accede to US will. In either case, the JFC attacks the adversary's information networks and message to limit the adversary's ability to counter JFC information operations and influence activities. The JFC understands that his options are situation dependent and a matter of his operational art.

How and what the media report can impact the political and public support necessary for the achievement of military objectives. Commanders must understand and work continuously with the media to gain and maintain an information environment advantage. Here, a civilian-military media operations center is the JFC's focal point. A comprehensive and coherent media plan is a must to influence populations and senior decision makers, all the while countering adversary propaganda efforts. In this regard, the JFC may be wise to implement a plan designed to expose affected populations to multinational force values, customs, beliefs, and intentions. This plan is critical for managing expectations, allaying fears and suspicions, explaining legitimacy, and generating support for the operation, thus minimizing public unrest and possible interference. To unhinge the adversary's information strategy, the JFC promotes a counter ideology as part of his influence and information operations strategies that is feasible, practical, and believable by the affected civilian populations. Implementing such strategies may involve the early provision of emergency local communications that demonstrate coalition support to the reestablishment of essential services.

The JFC assesses the effectiveness of ongoing information operations and influence activities continuously to ensure that these operations are supportive of the overall campaign plan. A trusted feedback mechanism must exist to measure the degree of success; otherwise, the JFC may subsequently make critical decisions that are exactly wrong. Here, the intelligence system, culturally adept "global scouts,"¹⁴ US interagency staff members, trusted foreign governments, and transnational corporations may provide valuable feedback and recommendations. Potentially, the adversary—traditional or irregular—or other target audiences may be totally unresponsive to ongoing JFC information operations and influence activities. Simultaneously, an intelligent and shrewd adversary may be attempting to exploit the information environment to his advantage. Here, the adversary attempts to nullify, or at least degrade, US efforts in the information environment. The commander must understand how his own as well as his adversary's information operations and influence activities are actually proceeding—

¹⁴ A more thorough discussion of global scouts is found in Major General Robert H. Scales, Jr., U.S. Army (Retired), "Culture-Centric Warfare", USNI Proceedings, September, 2004.

sensing and understanding ground truth in a timely manner are invaluable.

Gain and Maintain Dominance in the Information Environment through Improved Understanding of Culture – Potential Enabling Capabilities

Improved cultural awareness will better prepare the Joint Force to operate in the human domain. Leader training and education emphasize an understanding that culture is an important part of the information environment.

- Institutionally, the US military immerses its individuals in cultural awareness and language training.
- DOD develops and exploits “global scouts” who are culturally-adept military officers and possess in-depth knowledge of a particular country or region, language, and dialects.
- The Global Information Grid and collaborative information environment are exploited by US military users to engage multinational and other non-DOD partners routinely.

Implication:

Enhances the ability of the Joint Force to plan and operate in an expeditionary manner in any region of the world and under varying operating conditions.

The JFC remains vigilant in overseeing his information operations and influence activities. He expects to adapt his information operations and influence activities as the strategic, operational, and tactical situations and conditions shift. The strategy may change often depending on, for example, whether the threat is conventional or irregular, whether the focus is on a military organization or on a civilian population, whether the target audience is insurgents or a neutral state, or whether the enemy is still determined to fight or has accepted inevitable defeat.

(e) Command and Control Distributed Operations

Distributed operations demand that the JFC employ a more dynamic approach to commanding, controlling, and decision making. The logic is compelling in that intelligent and determined adversaries can, at ever-increasing frequency, operate inside the current US military decision making cycle, providing the JFC with only narrow windows of opportunity to act. Also, the JFC must operate in battlespace domains other than the physical, that are largely invisible and intangible, and

where the enemy may have the upper hand, at least initially. Basically, the JFC must apply a collaborative effects-based approach enabled by an anticipatory understanding¹⁵ of the operating environment and improved decision making methodologies. This approach must allow the JFC to rapidly assess and understand the current situation, modify plans, focus effects, and take actions—all to seize and retain the advantage against a complex, adaptive, and uncertain adversary.

Command and Control Distributed Operations – Potential Enabling Capabilities

Distributed operations are enabled by situational awareness of friendly forces, the environment, and the enemy as well as the ability to coordinate with all other friendly entities, regardless of location. Persistent ISR is enhanced using high-altitude long-loiter platforms carrying sensors and communications payloads. Hovering for weeks or months at a time above the jet stream, air traffic, and most threat systems, such payloads would be able to provide coverage greater than 250 miles in all directions. Net-Centric capabilities will virtually interconnect all battlespace elements as well as provide the interfaces necessary for all aspects of interagency and multinational participation. Personal communications systems will provide wide area coverage of thousands of square miles.

Implications:

- We can better choose the place and time of attack followed by rapid assessment of physical results.
- Forces will have over-the-horizon, on-the-move connectivity and services to all echelons, to include the individual level.
- Commanders will be able to review observations and previously obtained reports prior to events such as IED detonations and sabotage to learn who planted the devices, where they were manufactured and perhaps, from where the munitions originated.
- Advanced surface-to-air, airborne, and cyber threats to Persistent ISR must be defeated by operational access operations.

In future MCO, anticipatory understanding rises in importance and is therefore sought by the joint force. The achievement of anticipatory

¹⁵ Anticipatory understanding means that the commander has sufficient knowledge of the environment which, when coupled with his intuition and judgment, allows him to determine, with a high degree of confidence, required actions in advance of situational developments including enemy opposing actions.

understanding can be especially challenging to the JFC. Situational awareness alone is inadequate. Early understanding provides the joint force with valuable but fleeting opportunities, which may be lost if not exploited in anticipation of adversary moves. Early understanding of the adversary, his likely intentions and anticipated actions gives the JFC time, albeit limited, to take either preventive or preemptive actions to nullify the enemy's desired effects. Consequently, the JFC must have a comprehensive knowledge of his own forces and capabilities, the adversary's military system and the larger context within which it operates to include cultural nuances, the operational battlespace, neutrals, and all other parties with equities in the conflict that can influence his operational planning, preparations, and mission execution. The challenges of achieving, maintaining, and sharing anticipatory understanding drive the requirements for innovative technological, organizational, training, and process solution sets.

The JFC embraces and contributes to an effects-based approach to crisis resolution. This approach enables the JFC to outthink the enemy and to apply a dynamic combination of analytic, intuitive, and collaborative decision making methods. The JFC is able to identify, create, exploit, and assess effects continuously, and adapt as necessary. As a result, there is high confidence that combat-related actions will be planned, prioritized, combined, sequenced, and taken to achieve the desired effects and endstates. Ultimately, this approach contributes to rapid, enduring, asymmetric, and dominant advantages over the enemy. At the same time, adaptive planning is critical. The JFC must guard against statically adhering to a plan that, as events unfold, is found to be based on faulty intelligence or other planning factors, or in cases in which significant changes occur.

Distributed operations also mandate that the JFC delineate clear and appropriate responsibilities, authorities, and accountabilities that contribute to unity of effort within the joint force. This delineation occurs with the understanding that these relationships must be flexible to change as a matter of routine in distributed operations. More so than today, mission orders, standard joint processes and procedures, and well-conceived policies provide overall C2 discipline, fix responsibilities at appropriate levels, and remain essential without hindering leader initiative in distributed operations.

When conducting distributed operations, analysis and fusion of available information gathered from myriad sensors and other sources are crucial to informed decision making within the joint C2 construct. Like today, the JFC will never have complete understanding to make timely decisions with absolute certainty of outcomes. Principally, the JFC invests his time and other finite resources to rapidly determine enemy

COGs, intentions, capabilities, vulnerabilities, and associated decisive points through robust ISR coupled with information fusion and information exploitation. Advanced modeling, simulations, and other decision support tools assist. These same capabilities promote a clearer understanding of each friendly COG as well as friendly vulnerabilities that require protection. Essentially, the ability to conduct distributed operations and to command, control, and sustain these operations effectively is central to the JFC's efforts to create dominant effects in the battlespace.

Training for Distributed Operations – Potential Enabling Capabilities

Training improvements in the future will allow the Joint Force to conduct distributed operations more effectively. Increased emphasis is placed on realistic live, virtual, and constructive training tools and venues for leaders and staffs along with a rapid feedback mechanism that focus on:

- Understanding and operating within the commander's intent;
- Operating netted forces in widely-dispersed locations;
- Operating with skill and confidence in the virtual domain;
- Decentralizing decision making and operational execution in chaotic situations;
- Exercising leaders and staffs frequently with complex, stressful challenges that build confidence, competence, trust, and intuition;
- Expanding fundamental warfighting skills that can be readily applied to a variety of situations while operating in a distributed manner;
- Accessing mission support such as intelligence, joint fires, and logistics.

Implication:

Enhances the Joint Force's ability to deal with uncertainty at every level, adds depth to the battlespace, and expands operational reach.

(f) Control Tempo of Friendly Action and Enemy Response

To rapidly conduct combat operations aimed at achieving dominant effects, the JFC must also control the tempo of friendly action and enemy response by altering initial conditions and dominating battlespace

activity. To do this, the joint force must plan and conduct operations to defeat the enemy's anti-access capabilities and strategy in order to gain and maintain operational access; establish robust air and missile defenses and security forces; and achieve multidimensional and multidomain dominance. The JFC introduces the most agile capabilities initially (some multipurpose, some specialized), followed rapidly by persistent ground, air, and maritime combat capabilities selected with a balanced consideration of requirements for force application, protection, and support. Importantly, the JFC anticipates and takes actions against the enemy to ensure that hasty recovery efforts fail. By design, the joint force adapts rapidly, when advantageous to do so, in order to maintain the tempo and achieve desired effects.

In terms of tempo, the JFC understands that combat operations against an enemy that employs irregular methods, say in an insurgency, take additional time to conduct, and are manpower intensive. Also, effects are very difficult to measure and assess in irregular operations. Consequently, the JFC manages force requirements intensively within his battlespace, provides JOA-specific training, determines indicators of progress, and selects and tracks measures of effectiveness.

Control Tempo of Friendly Action and Enemy Response – Potential Enabling Capabilities

Focused artificial intelligence and autonomous decision support tools enable future joint force commanders to know with greater assurance the disposition of enemy forces and potential enemy courses of action. With a comprehensive understanding of the environment, coupled with more persistent ISR provided by high-altitude long-loiter capability, commanders have better tools needed to seize the initiative and set the pace of operations.

Implications:

- The JFC can strike at the time and place of his choosing, not just when a passing sensor observes the enemy.
- Autonomous development and assessment of friendly courses of action reduced to minutes.
- Improved understanding of the effects required to seize and retain the initiative and defeat the enemy.

Importantly, joint actions also aim to prevent the enemy from exporting combatant forces and capabilities globally to do harm. These joint containment actions require strategic- and combatant command-level assistance to disrupt and attack enemy and opposition forces

(including terrorist cells if they exist) and adversary networks. To control enemy responses, the US must deny enemy use of the “commons”—space, international waters and airspace, and cyberspace—to prevent export of violence and propaganda. To do this, the JFC coordinates support with Department of Defense (DOD) and other National-level agencies, other combatant commands, multinational partners, supporting JFCCs, and his subordinate component commands to ensure that enemy activity in the commons does not impede joint force combat operations. The implementation of this coordination often depends upon interoperability and coordination with external resources at tactical echelons.

(g) Act with Speed, Precision, Discrimination, and Lethality

Advances in speed, precision, discrimination, and lethality all contribute to achieving dominant effects. Future military operations demand that the joint force exploit these advances when projecting combat forces and capabilities, simultaneously or sequentially employing distributed forces, and sustaining widely dispersed forces.

The future enemy develops extensive knowledge of US capabilities, strengths, and vulnerabilities. Armed with this knowledge, the enemy seeks asymmetric advantages over the US. In so doing, the future enemy attempts to exploit his own strengths, potentially including motivation, time, niche technologies, and knowledge of both the local population and terrain, to thwart US combat-related actions.

Given this, the joint force must control operational momentum by acting and maneuvering with greater speed than the enemy, engaging the enemy immediately with great precision and discrimination, and varying the degree of lethality as dictated by circumstances. Combining autonomously-deciphered sensory data, rapid data and information dissemination, artificial intelligence and precise multipurpose munitions allows time-sensitive sensor-to-shooter-to-impact (effect) engagements to occur routinely from standoff distances¹⁶ within a few minutes (perhaps within seconds) of positive target confirmation. Decentralized execution is essential for these types of engagements to occur. Simply stated, discovery of a hostile target by whatever means renders that target subject to immediate attack, if that is the intent.

¹⁶ Standoff distance - Distance beyond the effective engagement capability of those hostile systems of threat to the particular friendly system delivering fires or otherwise operating in the battlespace.

Act with Speed, Precision, Discrimination and Lethality – Potential Enabling Capabilities

Current research and development programs will soon (2012 - 2015) deliver prototype lasers that will be a significant addition to the commander's toolbox.

Implications:

- Targets will be unable to evade laser beams that travel at the speed of light. Since lasers are inaudible and invisible to the naked eye, the enemy may not be able to ascertain the direction of attack.
- The commander will have more options available to generate effects as a result of laser development and employment. Attacks can be more proportionate, scalable, discriminate and selective, allowing for a reduction in undesired collateral effects in engaging targets which may be in close proximity of friendlies, noncombatants and valuable infrastructure.
- The joint force will have greater freedom of movement due to the enhanced defense against enemy aircraft, missiles, rockets, artillery and mortars afforded by directed energy weapons.
- Coupled with persistent ISR, the speed, precision, discrimination and lethality of directed energy weapons will help deny sanctuary to adversaries operating in an urban environment.

The JFC builds the joint force from a robust menu of capabilities that combine, integrate, and act both simultaneously and sequentially, creating multiple complex dilemmas for and overwhelming the enemy leadership. From the enemy's perspective, the joint force engages rapidly with unequalled, asynchronous¹⁷ and overwhelming complexity. The joint force seeks, combines, and exploits advantages in speed of command, speed of action, low observability, precision, lethality, and discrimination to exhaust the adversary. Always alert, the joint force rapidly exploits fleeting operational and tactical opportunities. Understanding the JFC's operational intent and operating in a net-centric environment, subordinate commanders at operational and tactical echelons have the ability and the obligation to directly coordinate with joint force peers to seize or maintain the initiative by rapidly responding to threats or to emerging opportunities.

¹⁷ Asynchronous, in this context, refers to our desire to create an indiscernible pattern in time and space in the mind of our enemy. Our operations, however, must retain unity of purpose and coherency of action.

Commanders obviously strive for precision to expand options and minimize unintended collateral effects and consequences, especially noncombatant suffering to preclude population discontent that often advantages the enemy. Collateral damage can be physical, political, moral, religious, psychological, economic, or a combination thereof. In addition to today's ability to precisely hit an intended target, future commanders may employ kinetic or nonkinetic weapons that will also provide precise and scaleable effects. As a result, commanders can loosen certain rules of engagement (ROE) without fear of undesired collateral damage. However, cultural and religious-influenced ROE may grow in importance. Essentially, advancements in speed, precision, discrimination, and scalable effects, including varying degrees of lethality, all contribute to meeting operational necessity while adhering to the law of war.

Even with advancements in speed, precision, discrimination, and lethality, commanders must continuously assess actions to determine the impact on either achieving desired effects or demonstrating potential to do so. Commanders have access to robust and persistent ISR, myriad platform sensors, and the supporting net-centric operational environment to assist in this assessment, including the broader implications associated with the contributions IO make in achieving dominant effects. Regardless of the domain, where directed actions no longer appear to achieve the desired effects, subordinate commanders use initiative to change tasks or to assign new tasks. Execution in a collaborative information environment allows decentralized decisions and actions and facilitates unity of purpose and coherency of action.

Similarly, the JFC must assess whether political aims and the supporting military endstate(s) remain valid. The JFC ensures subordinate commanders are using related capabilities such as Public Affairs, Civil Military Operations, and Defense Support to Public Diplomacy to provide valuable support consistent with and supportive of military and political objectives. If and when the military endstate changes, modification of desired operational-level objectives and effects occurs.

(h) Summary of MCO Supporting Ideas. The seven aforementioned MCO supporting ideas inform and guide the JFC when planning, preparing for, and executing combat operations. These supporting ideas contribute to the JFC's application of operational art. As a result, the JFC can better understand the battlespace environment, seize the initiative, dominate the adversary, and generate effects leading to achievement of military endstates.

b. Illustrative Vignette

The following is an illustrative vignette that shows “how” the future JFC, using his operational art, might conduct combat operations against a thinking and adaptive enemy. Furthermore, this portion of the JOC highlights the linkages among the military problem, MCO central idea, supporting ideas, desired endstate, operational-level objectives and effects, and anticipated critical capabilities. Briefly but importantly, this vignette highlights the contest of wills between opposing sides as well as the intricacies of coalition warfare. Like today, the enemy has a critical vote in terms of methods of fighting, duration of the conflict, escalatory actions, and degree of risk to be accepted.

The run-up to MCO may be preceded by a decade or more of attempted diplomacy, force posturing and episodic military operations to stabilize the region and deter an adversary that poses an extant or emerging threat to the US and our National interests. This particular nation may also have ties to non-state actors that pose threats to the US and its interests. Before initiating MCO, the US simultaneously continues deterrence operations, pursues diplomatic conflict resolution, plans for military intervention, and begins positioning forces and capabilities for potential employment. To the extent practical, campaign planning involves government agencies outside of DOD and includes not just MCO but also stability operations planning. US Government leaders and military planners attempt to make sense of conflicting information and analyses concerning adversary capabilities, intent, and environment. Concurrent with all these activities, the US President is building sufficient internal political support for military intervention.

Based on the supported JFC’s priorities, designated forward-stationed, forward-deployed, and CONUS-based combat-ready forces and capabilities (to include a family of sensors) are alerted to move and posture themselves within operational reach of the adversary nation. This in itself may require substantial diplomatic effort to secure political access. The success or failure of these efforts has substantial impact on operational plans. Quiet diplomacy occurs to build a coalition in the event that diplomacy fails. The US pursues a United Nations Security Council (UNSC) resolution that contributes to coalition warfare. Although the US Government reserves the right to act unilaterally, a US-led coalition may increase the perceived legitimacy of military intervention. Additionally, other partners provide expertise and capabilities that complement those organic to the US forces and Government.

The US Government and the supported JFC attempt to set the following conditions before initiating hostilities:

- Tailored deterrence operations are implemented in order to both deter the crisis (interwar), and shape the adversary's decision making process such that they do not take particular actions during the war (such as WMD use);
- Reasonable diplomatic efforts occur to resolve the conflict without military intervention;
- Sufficient US political support (Congress and US population) exists for military intervention;
- The US is joined by other governments and military forces in a unified coalition that further establishes legitimacy, both within the US and abroad;
- Political access necessary for operational requirements has been secured;
- Sufficient military forces and capabilities (to include SOF and a family of sensors that support intelligence preparation of the battlespace) are in place, and adequate lift capacity exists to allow the JFC to control the tempo of friendly actions and enemy response; and,
- The JFC has sufficient understanding of the adversary and environment to be able to seize the initiative, with some opportunity for surprise available to the JFC.

Prior to and during combat operations, the combatant commander and JFC conduct theater shaping critical to seizing and maintaining the initiative. Tailored deterrence operations continue throughout the conflict to both deter the crisis (interwar), and shape the adversary's decision making process such that they do not take particular actions during the war (such as WMD use). In particular, the JFC implements information and influence strategies. Multinational partners can assist also. Various deterrence operations are also available to the combatant commander and JFC. Deterrence can manifest itself in the physical, informational, and cognitive domains. Additionally, shaping and deterrence efforts also aim to bolster legal justification and legitimacy that help garner and maintain domestic and international support for US actions.

Major combat operations begin when the US, preferably with multinational partners, but unilaterally if required, launches ferocious strikes that aim to overmatch and overwhelm enemy capabilities, and to deny enemy use of WMD. The US military rapidly conducts joint offensive and defensive combat operations to disintegrate the enemy system.

Unified Action through a Comprehensive Approach to Design – Potential Enabling Capabilities

Emerging improvements in campaign design that fully incorporate all instruments of unified action will contribute to defeating our future adversaries. Campaign design and planning are different but interrelated activities; both are essential for solving complex operational problems.

- A comprehensive campaign design process is commander-led and guides both planning and execution. Design elements may include discourse, systems thinking, model making, intuitive decision making, continuous assessment, and structured learning.
- The capability to design a future campaign that achieves desired objectives and endstates demands collaborative, cooperative, and practiced interface vertically and horizontally among military leaders, other government agency partners, and their multinational equivalents. This is enabled by appropriate policies, the GIG, and periodic training. Ultimately, a clear relationship emerges between campaign design and campaign planning.

Implications:

- Better design will provide the basis from which an anticipatory understanding of the enemy is developed.
- More synergistic options for unified action may naturally emerge from the campaign design process.
- Initial campaign design may be time-consuming and resource intensive, however, the overall campaign objectives may ultimately be achieved at lower cost in lives and resources.

The JFC has an expeditionary C2 apparatus that is deployment-ready, modular, net-centric, trained, cohesive and expandable. Also, the joint net-centric C2 systems that the JFC operates contribute to satisfying time-sensitive surge requirements through “reach” when and where necessary. This net-centric capability also allows joint force C2 while on the move.

Joint Force C2 – Potential Enabling Capabilities

High capacity (by today's standards) net-centric connectivity will be available to all users in the battlespace. Almost all platforms, equipment, and individuals in the joint force will be able to share sensor data. Information from all sources, including that from autonomous robotic systems, will be processed and fused with the current operating picture in near real time. Million of pieces of information will be autonomously analyzed and used to update visualization and decision support tools.

Implications:

- Tactical commanders will have shared awareness and the ability to obtain information of any required resolution, from unit to individual level, decreasing decision making times and contributing to force agility
- Commanders will use visualization tools to rapidly assess relationships in the battlespace and adapt to unfolding situations
- Decision support tools will:
 - Dynamically develop (and recommend) courses of action
 - Continuously forecast likely outcomes of ongoing operations in order to develop and update branches and sequels
 - Redirect logistic support to where it is needed
 - Recommend placement of ISR assets to fill knowledge gaps

A primary set of C2-related tasks for the joint force is to acquire, refine, and share knowledge. To do this, the joint force fights continuously for pervasive knowledge¹⁸ and information superiority. This fight is successful when users are free to operate in the net-centric environment, giving them access to sensors and information systems, enabled by network and enterprise services. Essentially, an expanded form of combat - sensor warfare - occurs between both sides, with the understanding that the joint force has the most to gain and lose.

The joint force exploits the net-centric operational environment and its supported services. The Global Information Grid (GIG) will extend to the lowest tactical level and will facilitate a collaborative information environment (CIE)¹⁹. This environment brings information access to virtually every joint warrior in the force. All-source intelligence collection,

¹⁸ Refer to the glossary definition of pervasive knowledge.

¹⁹ Refer to the glossary definition of collaborative information environment.

including human intelligence (HUMINT) remains critical. Operating within a capable ISR management system, the joint force tasks or has access to all relevant strategic- to tactical-level ISR networks and collection (sensor) systems, regardless of domain and dimension. The joint force fully exploits unmanned and manned ISR systems, some operating from space and near-space, to achieve greater certainty in terms of enemy locations, intentions, capabilities, and vulnerabilities. Additionally, the future JFC has access to and leverages a select pool of “global scouts” who are culturally-adept US military personnel with an intimate knowledge of a particular target country or region and of local languages/dialects, and assigned to particular countries for most of their careers. These global scouts, a hybrid version of today’s foreign area officers, provide valuable assistance to commanders and planners.

The joint force generates and maintains a common operating picture (COP) with drill-down inquiry capabilities for advanced situational awareness. To achieve this high level of situational awareness, the joint force exploits myriad technical sensors, artificial intelligence (AI), high-altitude long-loiter (HALL) technologies, and other intelligence collection assets combined with increased computer power to assist leaders in a collaborative “intelligence” environment. These resources feed data into the COP. For instance, tactical aircraft radars and video systems see a lot more use than just providing pilots with necessary information for defense and weapons control. Information from these radar and video systems helps shape the overall battlespace operational picture. Machine-to-machine interfaces between systems are common. En route, on-the-move, and semi-fixed net-centric capabilities, consisting of secure voice, data, and video, must be available at all times. Also, embedded diagnostic and prognostic sensors alert decision makers of current and future performance status of organizations and key weapons systems, to include individual warriors.

The US Government and the JFC fully understand that the joint force must gain and maintain dominance in the information environment. Strategic-level information and influence strategies are critical. To dominate in the information environment, comprehensive information and influence plans consistent with strategic intent are produced and executed. The information environment initiative is seized by employing integrated nonkinetic and kinetic methods, when necessary. Effectiveness of information operations and influence activities is assessed continuously. When strategic- to tactical-level changes dictate, corresponding adaptation occurs. In particular, the joint force makes a concerted effort to engage the US and global media effectively to inform specific key audiences and to counter information asymmetries sought by the adversary and other opposition factions. The intent is to neutralize negative propaganda from the enemy or from other sources of opposition.

Information Operations support the joint force deception; counter enemy propaganda; disrupt or destroy enemy networks including the supporting terrorist networks if any; and influence or degrade enemy decision making. Essentially, success in the information environment positively affects joint force actions against the enemy in the cognitive and physical domains.

Operational access, forcible entry, and follow-on combat operations begin from multiple locations: CONUS, supporting countries' homelands, forward-based, sea-based, from within the enemy's own boundaries itself if a state, and from multiple dimensions. The force projection, employment, and sustainment system projects immediately employable and sustainable forces directly to one or more joint operations areas (JOA) to gain positional and temporal advantages. Global strikes and raids occur from CONUS and various forward locations against critical enemy targets, e.g., key vulnerabilities, decisive points and centers of gravity, in order to gain operational access, reduce enemy will and capabilities, and set the conditions to dominate the enemy (see Figure 15).

Critically important, the enemy possesses WMD and associated delivery means, thus presenting special challenges to the US Government and to the supported joint force. The use or threat of use of WMD can cause large-scale shifts in strategic and operational objectives and courses of action. Multinational operations become more complicated with the threat of employment against other alliance or coalition members, especially those with little or no defense against these weapons. The enemy may employ these weapons to fracture or disintegrate an alliance or coalition.

Since the adversary possesses WMD, the consequences of taking action, or failing to do so, are grave. The JFC understands the risks and grave dangers of miscommunication and misunderstanding that can shape the crisis and drive it in directions that neither party desires. The JFC must understand the enemy's capability to employ WMD and under what conditions that opponent is most likely to do so. The JFC must assess the enemy's willingness and intent to use these weapons. Furthermore, the JFC is prudent to plan and rehearse WMD elimination operations²⁰ using specially trained and equipped forces.

²⁰ Refer to the glossary for definition.

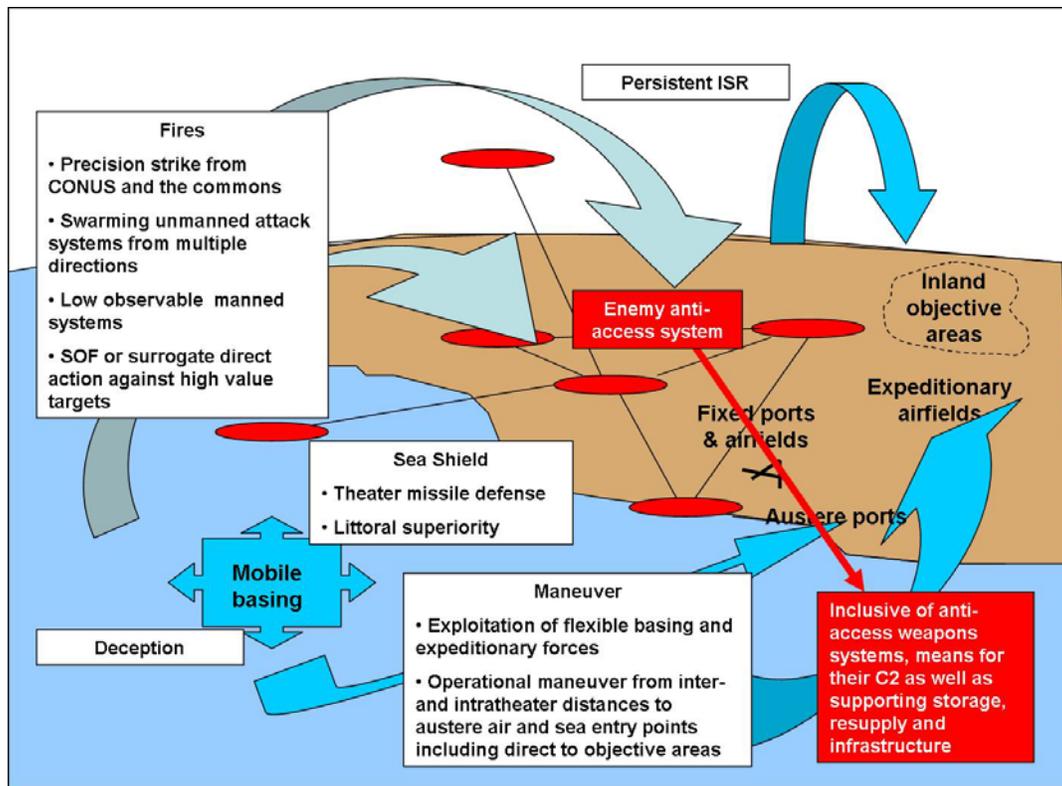


Figure 15 - Overcoming Access Challenges

The likelihood of adversary attempts to disperse and employ such capability dictates that long-term SOF and other agency activities focus on locating, tagging, and tracking individual WMD devices at standoff distances, and knowing likely dispersal and mating locations as well as the enemy’s release authority process. The JFC may have certain pre-delegated authorities that are absolutely essential to his plan. A pre-delegated authority could grant the JFC the power to execute direct action missions by SOF if the enemy begins to disperse WMD systems from underground storage sites. Also, the JFC could authorize multidimensional strikes or raids to neutralize the WMD threat. The JFC keeps his force ready to defend against WMD attacks, in order to deny the enemy the benefits of employing WMD. Barring the granting of pre-delegated authority, direct connectivity between the JFC and National-level decision makers is essential. Even with the best possible speed of decision, combat operations to secure and remove enemy nuclear weapons and material are high stakes, complex, dangerous and difficult since the adversary may regard this conflict with a powerful US-led coalition as a fight for survival. Therefore, the joint force must prepare to defend itself from the effects of WMD, and to continue relentless combat operations.

With an agile expeditionary posture, the supported JFC attacks and penetrates enemy anti-access exclusion zone(s) when and where necessary to enable follow-on operations. The desired operational-level objective is to gain and maintain operational access to the battlespace. The JFC uses joint early-response capabilities, some rotated periodically while others have been prepositioned in the region. Sufficient strategic and theater airlift and sealift assets are accessible to and support the JFC. This includes conventional military lift platforms, commercial platforms, and families of VTOL, HLVTOL, STOL, and shallow-draft high-speed sealift platforms. The joint force also uses rapidly constructed expeditionary airfields as temporary launching pads and support bases in support of deception and actual operations. Airlift and sealift assets are available to go where and when the joint force wants to go, and where the enemy does not suspect the joint force to go.

Operational Access – Potential Enabling Capabilities

Unmanned systems will be able to conduct focused operations for especially high-risk missions or other missions for which they are best suited. Unmanned systems will be able to operate without many of the limitations of manned systems. Elimination of life support systems will decrease size and weight. System performance (such as acceleration) will not be limited by human tolerances. Unmanned systems are capable of much greater endurance because remotely located human operators can swap out control without stopping the vehicle's mission. Linking these systems in the net-centric operational environment will facilitate collaboration and cooperation in fulfilling commander's intent.

Implications:

- Robots are well suited for forcible entry operations, where they can attack anti-access systems and provide situational awareness prior to the entry of human combatants.
- Robots are able to autonomously perform many missions now performed by man-machine teams. For example, autonomous behaviors enable the development of a main battle tank-like capability, but because the robot may not have to be heavily armored or have spaces for humans, its size and weight may be reduced so that it is easily deployable using intratheater lift.
- Expendable robots may be well suited for such things as blocking or pinning down an enemy, autonomous logistics delivery, suppression of enemy air defenses, deception, security and other uses.

Operational access efforts and forcible entry operations - some robust and extensive, some temporal and localized - precede the delivery of potent and fully integrated military capabilities from strategic and operational distances and from the sea direct to objectives. The timing of forcible entry operations, their extent, and their duration all depend upon the specific situation, the “thickness” of the enemy’s exclusion zones, and the effects the JFC wants to have on the enemy.

Essential nodes and lodgments as well as air, sea, ground, and information lines of communication (LOCs) emerge, expand, and contract according to plan. This entails identifying and establishing multiple expeditionary aerial and maritime points of entry, gaining use of the electromagnetic spectrum rapidly to support combat operations, and using permanent airports, seaports, and supporting infrastructure when needed and available in the JOA. All of these actions contribute to compressing deployment and sustainment response times.

As operations are conducted to seize the initiative and to dominate the battlespace, the joint force protection scheme flexes and expands, i.e., from space-based platforms to strategic and theater bases and LOCs to individual combatants to local civilian informants (see Figure 16). Operations to gain and maintain air superiority and defend against ballistic and cruise missile attacks are essential for future combat operations. These operations must reach over the horizon and deep inland, extend from ground level to the exo-atmosphere, and deny the use of enemy sensor platforms.

A joint missile defense grid employs a combination of sensors and interceptors in a multilayered defense architecture. Key combinational capabilities that are integrated at the operational level include: detecting, identifying, and tracking attacking missiles; commanding and controlling a coherent missile defense against all levels of threats; and determining the defensive weapons to engage the missile threat.

Even though the enemy attempts with some success to disperse its real and decoy WMD and delivery means early in the crisis, the joint force, in association with special operations forces (SOF) and other sources, identifies WMD storage and dispersal locations. SOF, other agencies, and surrogate teams conduct coordinated missions against these WMD activities and associated high value targets (HVT) to prevent enemy use. Specialized forces assist in the assessment and exploitation of WMD-sensitive sites. If a WMD missile launch had actually occurred, the air defense system was postured to engage the weapon system in the boost, midcourse/cruise, or terminal phase of flight. Striking enemy WMD whether in storage, transit, or after launch, while preferable to

allowing enemy use of WMD, can cause unconventional collateral damage (e.g., hazardous downwind plumes or electromagnetic pulse) and chemical, biological, radiological and nuclear (CBRN) contamination creating complex risk assessments for a JFC. Consequence management preparations require a combination of military and civilian capabilities.

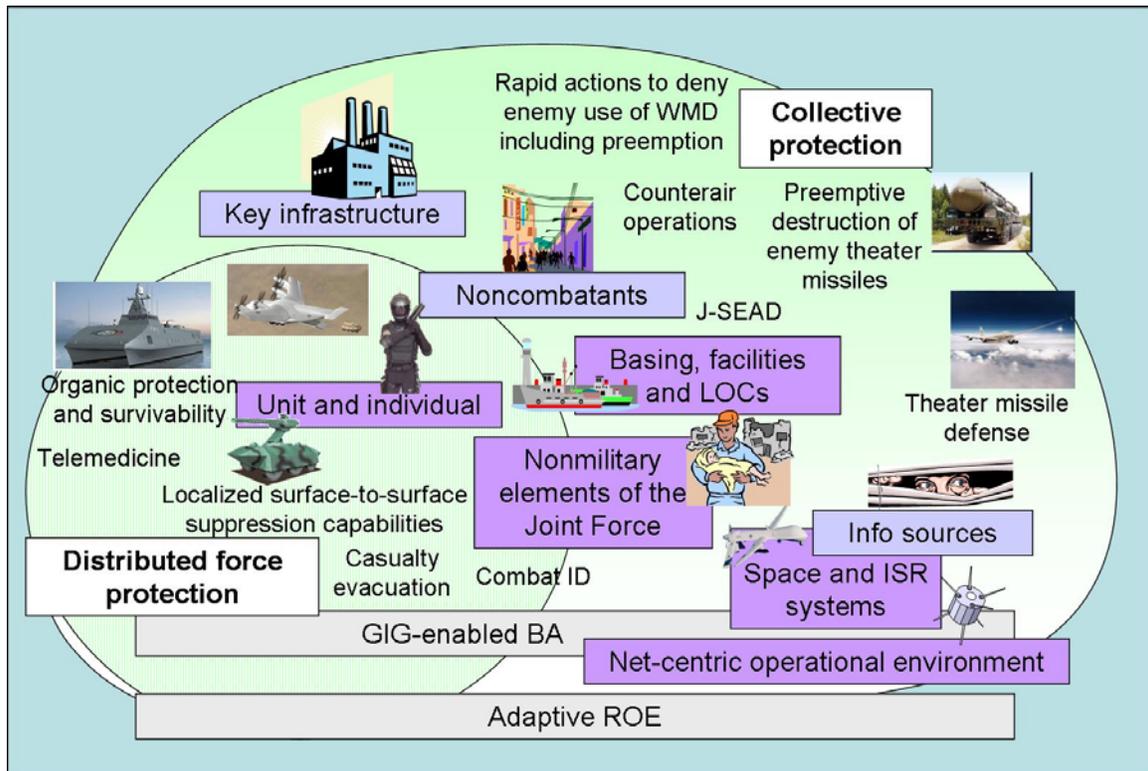


Figure 16 - Comprehensive Force Protection

Furthermore, this protection scheme addresses myriad traditional and irregular threats to US and multinational forces. By design, the JFC's deception efforts afford the entire joint force a higher level of protection by creating in the enemy's mind both multidimensional and multidomain engagements that pose multiple dilemmas, diluting his ability to respond coherently.

The joint force protects itself from conventional threats, such as enemy aircraft, multidimensional sensors, missiles, rockets, mortars, rocket-propelled grenades, mines, and improvised explosive devices as well as catastrophic and disruptive threats, such as directed energy weapons, and CBRN attacks. The force acts deliberately to suppress or counter enemy air defense systems, to include anti-helicopter aerial mines and man-portable air defense systems. Future IO capabilities render the adversary blind to our intent, capabilities and maneuvers, enhancing force protection while simultaneously enabling and

supporting combat operations. Combat platforms have improved survivability features, e.g., speed, low observable and low signature stealth, protective construction, blast mitigation, reactive armor, and hardening against CBRN agents and effects. A combination of collective and individual protection is required in future combat, especially in irregular warfare situations, given the likelihood of hostile incidents with reduced engagement geometry, compressed response times, and varying angles of attack.

Joint Force Protection – Potential Enabling Capabilities

The JFC will not only employ directed energy weapons, to include high powered lasers, but will also have to defend against enemy use.

Implications:

- Lasers provide an unprecedented degree of protection against air threats as well as missiles, rockets, artillery and mortars. The speed of engagement is rapid and largely done autonomously or semi-autonomously – taking slow reacting humans out of the loop.
- While individual shoulder-fired laser weapons are not yet available, the force will have laser-equipped vehicles. Using laser target designators, warriors will be able to designate targets for the laser-equipped vehicle, essentially giving each soldier an individual laser. With greater precision, commanders will be able to operate with less restrictive rules of engagement resulting in greater freedom of action.
- Potential adversaries will also have lasers and other directed energy weapons. We require methods to detect and defeat enemy lasers to preserve our freedom.

Critically important, the joint force health posture must be preserved through advancements in, for example, preventive medicine, emergency treatment within the “golden hour,” telemedicine, robotics, and casualty evacuation.

The joint force also protects sophisticated knowledge management systems, associated processes and the supporting net-centric environment. The joint force protects data, information and knowledge from exploitation through, for example, multilevel security policies and procedures, operational security (OPSEC), computer network defense, system hardening, and deception.

Throughout the seize the initiative and dominate lines of effort, the enemy encounters unrelenting and distributed operations by myriad small autonomous action groups, employed simultaneously or sequentially, maneuvering in patterns unpredictable by the enemy, to attack all critical points the joint force chooses. Some action groups are multinational in composition while others are US-only joint packages, or even single Service packages. While most action groups are general-purpose or multifunctional, some perform single functions such as mine clearing.

A decisive operational-level outcome in MCO may involve either a major urban operation or a series of urban fights. Given the prevalence and significance of urban areas, the JFC anticipates large-scale, distributed, offensive and defensive combat operations in multiple hostile urban areas simultaneously. In urban combat operations, the US-led combat force achieves its desired endstate by understanding, controlling, and exploiting the unique elements of urban environments (e.g., terrain, infrastructure, population, culture and information); sensing, locating, and isolating the adversary; and applying power rapidly, precisely, and discriminately.

The JFC understands that urban areas are complicated and dynamic concentrations of physical, social, informational, political, economic, religious, and criminal activities. These activities are constantly interacting and collectively produce unique urban cultures. When exposed to major combat, these urban cultures go into a form of “shock and paralysis.” The US-led force tends to these urban crises by returning the cities to functioning postures as soon as practical.

Urban problems, in the end, tend to require very human solutions. As warriors conduct missions, especially in urban areas, they have information on the citizenry and the potential for enemy action. They use this information to work with friendly local citizens, if any, who may help them in the fight. And, the urban warriors are able to introduce information into the network to aid in the never-ending fight to influence events and perceptions in the battlespace.

Much more so than today, each joint warrior operating in an urban environment is an intelligence sensor platform as well as intelligence beneficiary. With each urban warrior equipped with a powerful personal electronic device, that warrior becomes a network node. Not only are the warrior’s sensors able to feed the network, the warrior also serves as a processor or analyst by assessing information through his or her own eyes and ears. To accomplish the mission, a warrior has immediate access to relevant, time-sensitive information from various echelons of command. Potentially, the urban warrior can distinguish between

combatants in civilian clothes and noncombatants in the vicinity. Potentially, the warrior knows if an approaching vehicle is laden with explosives or simply crops headed to market. Potentially, the warrior knows how the enemy is communicating, what the enemy is discussing by way of automatic voice translation, with whom, and the precise locations of the parties in communication. Said differently, the warrior can watch and track individual entities of concern with an “unblinking eye”²¹ and “listen in” as if standing next to those communicating.

As essential operational-level objectives are achieved and maintained over time, the enemy’s ability to respond effectively plummets. Essentially, the operational-level endstate ensues: The adversary is rendered unable or unwilling to militarily oppose the achievement of our strategic objectives.

As the enemy recognizes that it has lost and crumbles, a new normalcy begins to take shape. At this point, the joint force’s central effort may shift to rebuilding and reestablishing the target country’s social, economic, and infrastructure systems as well as transitioning to civil authority.

The US Government and its multinational partners seek a formal enemy surrender. With a signed declaration of surrender, all warring parties, the international community, and the affected population are more likely to recognize the overall legitimacy of the war and major combat, and the formal end of hostilities. The surrender signals enemy military forces to stand down and may also cause some terrorist and other irregular factions to halt hostile activities. Without a formal surrender or at least a viable negotiated peace, all warring parties to include the affected noncombatant populations face an ambiguous and potentially chaotic future.

With irregular enemies, there may be no authority in charge, or at least one who is identifiable to the joint force, to execute what one considers a formal surrender, or to formally negotiate a peace. Certainly, some enemy elements (regime loyalists, terrorists, gangs, and insurgents) are unlikely to accept surrender even if the enemy leadership agrees to the surrender. The joint force, an interim civil government, or both must deal appropriately with these elements that refuse to lay down arms. Cessation of hostile activities has post-conflict legal implications relative to termination of the captivity of qualified prisoners of war. In this

²¹ “Unblinking eye” refers to a constant, reliable, ubiquitous, and overwhelmingly dominant sphere of information as described by Major General Robert H Scales, Jr. in *Yellow Smoke, The Future of Land Warfare for America’s Military*.

instance, surrender or a negotiated peace is important so that repatriation of prisoners of war can occur.

Joint force planners anticipate continued, protracted resistance in the form of irregular warfare to occur by some enemy elements. These die-hard elements threaten efforts to transition to a new normalcy as major combat operations begin to subside. The JFC prepares for this eventuality by designing adaptive force capability packages to counter the irregular challenge which may be manifested in the form of an insurgency. Throughout the operation, the JFC understands fully the criticality of taking actions that gain population trust and cooperation.

A comprehensive solution set is executed and may include: a dynamic mix of conventional and unconventional forces and capabilities to combat irregular forces; specific JOA-oriented training proficiencies such as those required in urban guerrilla warfare; a refocused intelligence system; refocused information operations; and efforts to co-opt, coerce, or negotiate with elements of resistance to halt opposition. Additionally, the solution will include more interagency involvement, an increase in multinational partners and international involvement, increased industry and contractor involvement, expanded international and nongovernmental organization efforts, and improving security and the standard of living for local populations. Protection may be required for institutions and facilities associated with the legal, law enforcement and judicial systems essential to rule of law and a functioning society. Similarly, other critical infrastructure important to civil governance such as government buildings and public works facilities must be preserved, if possible, enabling stabilization operations. These efforts are situation dependent. Upon achievement of acceptable endstate conditions and when specific joint force combat capabilities are no longer required in support of unified action, the joint force begins synchronized reconstitution and redeployment operations.

In the future when the US decides to fight or is forced to fight in order to advance or protect its National interests, the intent is to rapidly defeat the enemy militarily so that he cannot threaten or oppose the achievement of strategic objectives. The US military, supported by interagency and multinational partners, ferociously attacks the enemy's capabilities and his will to resist. But ultimately, the US aims to establish a new normalcy and a viable peace. Obviously, each future scenario will be situation dependent.

Summarized, this illustrative vignette underscores the complexity and magnitude of future MCO as part of a larger campaign, conducted to either advance or protect US National interests. Critical capabilities and how they combine to create synergies also emerge.

c. Essential Capabilities

Capabilities and their relationship to the Joint Capability Areas (JCAs) are presented in detail in Appendix C.

5. Risks and Mitigation

Risks are hypothetical events that could render this concept invalid. They help frame the context in which this JOC applies.

Risk: A new generation of warfare could emerge that employs concepts and technologies that have not been envisioned—and whose consequences have not been considered. Developments could occur that compromise or negate today’s critical force structure investments and thereby offset or eliminate projected US advantages in such areas as low observability (stealth), precision targeting and information operations. Conceivably, we could witness the convergence of information technologies, biological sciences, and advanced manufacturing techniques with significant military implications. There is potential that advances in energy-based weapons, immersive technologies, biology-based or psychotronic weapons, and other capabilities designed to alter the ability of the human body to process stimuli may have a profound effect on warfare in the information age.

Risk Mitigation: Risk posed by the uncertainties inherent in future science and technology advances can be mitigated by the continued investment in National and cooperative science and technology programs. Adequate funding will enable continued development of maturing technology and development of methods to counter its exploitation by the competition.

Risk: Accurate characterization of the security environment out to 2026 is difficult other than to acknowledge that armed conflict will likely remain a primary option for many, including those who do not feel they can maintain their cultural and other interests intact through peaceful competition. There is a risk of making investment decisions to meet the needs of today that are so shortsighted that they result in a future force with capabilities so narrow in range or limited in quantity that they cannot be used to effectively and acceptably counter a broad range of possible future security threats.

Risk Mitigation: There is a requirement to balance the demands of the ongoing global war against violent extremism with sound investments and changes that will permit us to meet the military challenges of the more distant future. Forces must be developed, organized, arranged and

prepared to provide a broad range of military capabilities that provide the Nation the agility and flexibility to hedge against a range of alternative futures.

6. Implications

The MCO JOC uses a logical, top down approach to concept development that includes defining the future operating environment, developing broad problem and solution statements, identifying supporting ideas and broad operational capabilities. This problem-solution-capability based approach has implications for operations and force development as well as concept development and experimentation. Broad military capabilities required to support this concept are presented in Appendix C.

a. Operational and Force Development

(1) Future operational commanders will require a fully trained, equipped and integrated joint force that is combat-ready and available for projection and sustainment upon demand.

(2) While the MCO JOC focuses on the military contribution to unified action, implicit is the need to continue the progress made in fully integrating interagency and multinational capabilities into planning and executing future major combat operations.

(3) Success of this concept is contingent upon improvements in the way we command and control distributed operations at the operational level. In order to operate as proposed, the US must develop a flexible approach for forming Joint headquarters capable of commanding and controlling joint operations within days, if not hours. The Joint headquarters of the future must have full-time, rapidly deployable and employable capabilities including:

- A full set of enhanced planning capabilities – skilled people, improved processes, and useful equipment
- A comprehensive understanding of the nature of the battlespace, adversaries of concern, and the capabilities of notional mission partners for the command's high priority missions. Common standards, processes, and tools will need to be established and routinely exercised for working with other government agencies and habitual multinational partners.

b. Concept Development and Experimentation

(1) Key challenges, capabilities and proposed solution sets of this concept should be tested through focused experimentation. Several of the more difficult combat-related challenges deserving of experimental focus are identified in Appendix D.

(2) MCO JOC should serve as a primary contextual lens through which Service Title 10 Wargames and other focused experimentation venues examine the ideas and specific solutions proposed in related or subordinate concepts and determine capability gaps.

(3) MCO JOC serves as a catalyst for more specific joint concepts that require detailed solutions and capabilities, such as Irregular Warfare, Urban Operations, Sustaining Distributed Operations, and Combating Weapons of Mass Destruction.

(4) MCO JOC deliberately does not detail pre-crisis shaping activities that are critical to setting the conditions for successful major combat operations. A joint operating concept for shaping should be developed.

(5) Focused experimentation on the key challenges of major combat operations will help to identify capability gaps that can, in turn, drive future science and technology programs.

(6) A realistic experimentation infrastructure should be created that effectively replicates the future operating environment to adequately examine the ideas of the MCO JOC and other related peer and subordinate joint concepts. This infrastructure should include current and future force capabilities, integrate cultural and cognitive issues, provide for operational level decision tools, and model reachback and organizational structures.

APPENDIX A - REFERENCE DOCUMENTS

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APPENDIX B - GLOSSARY

PART I -- ACRONYMS

CASCOM	Combined Arms Support Command (US Army)
CBRN	Chemical, Biological, Radiological, and Nuclear
CBRNE	Chemical, Biological, Radiological, Nuclear and High-Yield Explosives
CCJO	Capstone Concept for Joint Operations
CIE	Collaborative Information Environments
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CNA	Computer Network Attack
CND	Computer Network Defense
CNO	Computer Network Operations
COCOM	Combatant Command (Command Authority)
COG	Center of Gravity
CONUS	Continental United States
CROP	Common Relevant Operating Picture
DOTMLPF	Doctrine, Organization, Training, Materiel, Leadership and Education, People and Facilities
EMP	Electromagnetic Pulse
GIG	Global Information Grid
GNC	Global NetOps Center
HSV	High Speed Vessel
IO	Information Operations
ISR	Intelligence, Surveillance and Reconnaissance
JCA	Joint Capability Area
JFC	Joint Force Commander
JFCC	Joint Functional Component Command
JIC	Joint Integrating Concept
JOA	Joint Operations Area
JOC	Joint Operating Concept
JOE	Joint Operational Environment
JOpsC	Joint Operations Concepts
JTF-GNO	Joint Task Force – Global Network Operations
MCO	Major Combat Operations
NCOE	Net-Centric Operational Environment

NDS	National Defense Strategy
NGO	Nongovernmental Organization
NMS	National Military Strategy
NSS	National Security Strategy
ROE	Rules of Engagement
RSOI	Reception, Staging, Onward Movement and Integration
S/CRS	Office of the Coordinator for Reconstruction and Stabilization
STOL	Short Takeoff and Landing
SSTRO	Military Support to Stabilization, Security, Transition and Reconstruction Operations
TRADOC	Training and Doctrine Command (US Army)
USTRANSCOM	United States Transportation Command
VTOL	Vertical Takeoff and Landing
WMD	Weapons of Mass Destruction

APPENDIX B – GLOSSARY

PART II – DEFINITIONS

Artificial Intelligence (AI). The branch of computer science that studies computational requirements for tasks such as perception, reasoning, and learning, and develops systems to perform those tasks. Typical applications of AI include:

- Pattern recognition,
- Natural language processing,
- Nonlinear control and robotics,
- Computer vision and image processing, and
- Gaming.

(*Van Nostrand Scientific Encyclopedia* and other sources)

Austere Environment. An operational environment with the following characteristics: little or no host-nation support; limited pre-existing infrastructure and facilities; immature ports of debarkation; inadequate transportation and communications networks; unsophisticated medical, supply and other services. It is a particularly difficult environment for conducting operations of expeditionary joint forces. (Seabasing JIC)

Autonomous. (As used in the context of self-directed military systems) Operating without external control. Autonomous operation can range from unsupervised execution of a pre-programmed, often repetitive, strictly-defined mission profile in a structured well-known environment to a more sophisticated mission execution using artificial intelligence to sense and respond to the operating environment. Autonomy may occur at three levels: subsystem, system or system of systems (SoS).

Capability. The ability to achieve a desired effect under specified standards and conditions through combinations of means and ways to perform a set of tasks. It is defined by an operational user and expressed in broad operational terms in the format of a joint or initial capabilities document or a joint doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) change recommendation. In the case of materiel proposals, the definition will progressively evolve to DOTMLPF performance attributes identified in the capability development document and the capability production document. (CJCSI 3170.01E)

Catastrophic Challenges. Challenges threatening US interests that involve the acquisition, possession, and use of WMD or methods producing WMD-like effects. (National Defense Strategy)

Cognitive Domain. Where perceptions, awareness, beliefs, and values reside and where, as a result of sense-making, decisions are made. (*Power to the Edge*)

Collaboration. Joint problem solving for the purpose of achieving shared understanding, making a decision, or creating a product across the Joint Force and mission partners. (Net-Centric Environment Joint Functional Concept)

Collaborative Information Environment. A virtual aggregation of individuals, organizations, systems, infrastructure, and processes to create and share the data, information, and knowledge needed to plan, execute, and assess joint force operations and to enable a commander to make decisions better and faster than the adversary. (JFCOM CIE Concept Primer)

Culture. Culture is a system of shared beliefs, values, customs, behaviors, and artifacts that the members of society use to cope with their world and with one another. It is often the friction resulting from the interaction between different cultures that creates the potential for conflict. Understanding a culture requires examining several elements, including core values, traditions, history, myths, legends, education and literacy, religion, language, law, economic systems, kinship and social interactions, behavioral norms, and basic manners and courtesies. (Derived from the "The Joint Operational Environment – The World Through 2020 and Beyond")

Decisive. Decisive refers to an undeniable endstate condition in conflict and confrontation where one side loses and, more importantly, never regains the initiative. (MCO JOC proposed definition)

Destruction. Destruction applies combat power to physically destroy enemy capabilities. Historically, a higher rate of destructive effects does not always lead to rapid decision, since well-disciplined and well-defended forces are often able to endure high levels of destruction before being compelled to capitulate. Precision improves the impact of destruction. Destruction remains a key element of defeat for future conflict, but is more effective in combination with disintegration and dislocation. (TRADOC Pamphlet 525-3-0)

Disintegration. Disintegration exploits the integration of dislocating and destructive effects to shatter the coherence of the enemy's plans and dispositions. It focuses on critical capabilities and decisive points that, if attacked effectively, will lead to more rapid collapse of the enemy's capability or will to continue to fight. In many cases, disintegration will emphasize the destruction of the enemy military "nervous system," that

is, those capabilities that enable them to see, know, and effectively command and control. The greater the simultaneity, the stronger the disintegrative effects. (TRADOC Pamphlet 525-3-0)

Dislocation. Defeat by dislocation emphasizes the use of maneuver of combined arms forces to obtain significant positional, temporal or psychological advantage over the enemy, in a manner that renders the enemy's dispositions less valuable, perhaps even irrelevant. In effect, dislocation forces the enemy to choose to accept the neutralization of part of their forces or to accept higher risk of destruction in efforts to reposition forces for more effective employment. Dislocation is key in stability operations, where the latent destructive potential of well-positioned land forces can deter aggressors and reassure neutral populations. (Adapted from TRADOC Pamphlet 525-3-0)

Disruptive Challenges. Challenges threatening US interests that come from adversaries who develop and use breakthrough technologies to negate current US advantages in key operational domains. (National Defense Strategy)

Distributed Operations. Operations conducted from dispersed locations across time and space to achieve the effects desired. (An Evolving Joint Perspective: US Joint Warfare and Crisis Response in the 21st Century)

Dominate. A line of effort that focuses on breaking the enemy's will for organized resistance or, in noncombat situations, control of the operational environment. Success depends upon overmatching joint force capability at the critical time and place. This line of effort includes full employment of joint force capabilities and continues the appropriate sequencing of forces into the operational area as quickly as possible. In combat situations, the joint force drives the enemy to culmination through offensive and defensive operations and achieving military strategic and/or operational objectives. Dominate activities seek early achievement of military objectives, setting the conditions for the continuance of efforts aimed at the restoration of stability and a sustainable peace. (Derived from CCJO and draft Joint Pubs 3-0 and 5-0)

Effect. A change in a condition, behavior, or degree of freedom. (Commander's Handbook for an Effects-Based Approach to Joint Operations and CJCSI 3010.02B)

Elimination Operations. Operations (conducted) systematically to locate, characterize, secure, disable, and/or destroy a State or non-State actor's WMD programs and related capabilities. (National Military Strategy to Combat WMD)

Endstate. 1. The set of conditions, behaviors, and freedoms that defines achievement of the commander's mission. (CJCSI 3010.02B) 2. The set of conditions that defines achievement of the commander's objectives. (Joint Pub 1-02)

Forcible Entry. The ability to conduct a military operation in the face of expected armed opposition to gain entry of ground forces into an operational area in order to establish a lodgment to enable the conduct of follow-on operations. (Modified JFEO CBA)

Forward Operating Base. A base usually located in friendly territory or afloat that is established to extend command and control or communications or to provide support for training and tactical operations. Facilities may be established for temporary or longer duration operations and may include an airfield or an unimproved airstrip, an anchorage, or a pier. (Seabasing JIC. Modified from Joint Pub 1-02 to capture air and maritime aspects of a forward operating base)

Full Spectrum Dominance. The ability to control any situation or defeat any adversary across the full range of military operations (ROMO). (National Military Strategy)

Global Force Management. The ability to align force apportionment, assignment, and allocation methodologies in support of the National Defense Strategy and joint force availability requirements; present comprehensive visibility of the global availability and operational readiness of U.S. conventional military forces; globally source joint force requirements; and provide senior decision makers a vehicle to quickly and accurately assess the impact and risk of proposed allocation, assignment and apportionment changes. ("Global Force Management Guidance FY 2005")

Global Information Grid. The globally interconnected, end-to-end set of information capabilities, associated processes, and personnel for collecting, processing, storing, disseminating, and managing information on demand to warfighter, policy makers, and support personnel. The GIG includes all owned and leased communications and computing systems and services, software (including applications), data security services, and other associated services necessary to achieve Information Superiority. The GIG supports all Department of Defense, National Security, and related Intelligence Community missions and functions (strategic, operational, tactical, and business), in war and peace. The GIG provides capabilities from all operating locations. The GIG provides interfaces to coalition, allied, and non-DOD users and systems. (DOD Directive 8100.1)

Global Strike. Responsive joint operations that strike enemy high value/payoff targets (HVTs/HPTs), as an integral part of joint force operations conducted to gain and maintain battlespace access, achieve other desired effects and set conditions for follow-on decisive operations to achieve strategic and operational objectives. (Global Strike JIC)

Information Assurance. Measures that protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and nonrepudiation. This includes providing for restoration of information systems by incorporating protection, detection, and reaction capabilities. (Joint Pub 3-13)

Information Domain. Where information is created, manipulated, and stored. (*Power to the Edge*)

Information Environment. The aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information. (Joint Pub 3-13)

Information Operations. The integrated employment of the core capabilities of electronic warfare (EW), computer network operations (CNO), psychological operations (PSYOP), military deception (MILDEC), and operations security (OPSEC), in concert with specified supporting and related capabilities, to influence, disrupt, corrupt or usurp adversarial human and automated decision making while protecting our own. (Joint Pub 3-13)

Information Superiority. The capability to collect, process and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same. (Joint Vision 2020)

Initiative. The power to impose will by establishing the terms and conditions of the action, and by forcing the adversary (if present) to react to them. (Derived from *An Evolving Joint Perspective: US Joint Warfare and Crisis Response in the 21st Century*)

Interagency Coordination. The coordination that occurs between agencies of the US Government, including the Department of Defense, for the purpose of accomplishing an objective. (Joint Pub 3-08)

Irregular Challenges. Challenges threatening US interests that come from those employing "unconventional" methods to counter the *traditional* advantages of stronger opponents. (National Defense Strategy)

Joint Capability Areas. Tier 1 Joint Capability Areas are collections of similar capabilities grouped at a high level in order to support decision

making, capability delegation, and analysis. Tier 2 Joint Capability Areas are functional or operational capabilities with sufficient detail to support CJTF-level operations/missions, or joint force generation/management activities. Tier 2 JCAs scope, bound, clarify, and better define the intended mission set of their Tier 1 JCAs. They prevent duplication between Tier 1 JCAs, and are not Service or platform specific.

Joint Decisive Operations. The synergistic orchestration of joint force capabilities to achieve Full Spectrum Dominance. It is the US military component of unified action. (An Evolving Joint Perspective: US Joint Warfare and Crisis Response in the 21st Century)

Joint Force. A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments operating under a single joint force commander. (Joint Pub 1-02)

Joint Interdependence. Interdependence is a Service's purposeful reliance on another Service's capabilities to maximize complementary and reinforcing effects, while minimizing relative vulnerabilities in order to achieve the mission requirements of the JFC. (CCJO)

Link. An element of a system that represents a behavioral, physical or functional relationship between nodes. (Commander's Handbook for an Effects-Based Approach to Joint Operations)

Net-Centric Environment. A framework for full human and technical connectivity and interoperability that allows all DOD users and mission partners to share the information they need, when they need it, in a form they can understand and act on with confidence; and protects information from those who should not have it. (Net-Centric Environment Joint Functional Concept)

Node. An element of a system that represents a person, place or physical thing. (Commander's Handbook for an Effects-Based Approach to Joint Operations)

Operational Art. The application of creative imagination by commanders and staffs — supported by their skill, knowledge, and experience — to design strategies, campaigns, and major operations and organize and employ military forces. Operational art integrates ends, ways, and means across the levels of war. (Joint Pub 3-0 Revision Final Coordination Draft dated 23 December 2005)

Operational Movement and Maneuver. The ability to dispose joint forces to impact the conduct of operations by either securing positional advantages or a mobility differential before battle is joined, or exploiting

tactical success to achieve operational or strategic results. Operational mobility includes land force movement, operational maneuver from strategic distances and intratheater operational maneuver. (Revised from UJTL, CJCSM 3500.04C)

Operational Reach. The distance and duration across which a unit can successfully employ military capabilities. (Joint Pub 3-0)

Pervasive Knowledge. Describes a friendly knowledge sharing environment wherein users are able to acquire information and knowledge of the battlespace at any place and any time for any context. (MCO proposed definition)

Raid. An operation, usually small scale, involving a swift penetration of hostile territory to secure information, confuse the enemy, or to destroy installations. It ends with a planned withdrawal upon completion of the assigned mission. (Joint Pub 1-02)

Reachback. The process of obtaining products, services, and applications, or forces, or equipment, or material from organizations that are not forward deployed. (Joint Pub 3-30)

Robotics. The field of computer science and engineering concerned with creating robots, devices that can move and react to sensory input.

Sea Base. The sea base of the future will be an inherently maneuverable, scalable aggregation of distributed, networked platforms that enable the global power projection of offensive and defensive forces from the sea, and includes the ability to assemble, equip, project, support, and sustain those forces without reliance on land bases within the Joint Operations Area. (Seabasing JIC)

Seabasing. The rapid deployment, assembly, command, projection, reconstitution, and re-employment of joint combat power from the sea, while providing continuous support, sustainment, and force protection to select expeditionary joint forces without reliance on land bases within the JOA. These capabilities expand operational maneuver options, and facilitate assured access and entry from the sea. (Seabasing JIC)

Seize Initiative. A line of effort that involves executing offensive operations at the earliest possible time, forcing the adversary to offensive culmination and setting the conditions for decisive operations. Rapid application of joint combat power may be required to delay, impede, or halt the adversary's initial aggression and to deny the initial objectives. If an adversary has achieved its initial objectives, the early and rapid application of offensive combat power can dislodge adversary forces from

their position, creating conditions for the exploitation, pursuit, and ultimate destruction of both those forces and their will to fight (see Dominate). Operations to gain access to theater infrastructure and to expand friendly freedom of action continue while the JFC seeks to degrade adversary capabilities with the intent of resolving the crisis at the earliest opportunity. (Derived from CCJO and draft Joint Pubs 3-0 and 5-0) See also Initiative.

Self-Synchronization. The ability of low-level forces to operate near autonomously and retask themselves through the exploitation of a highly trained professional force, shared awareness and the commander's intent. Self-synchronization increases the value of subordinate initiative in allowing forces to rapidly adapt when important developments occur in the battlespace. (Adapted from "The Implementation of Network-Centric Warfare" and the 2003 Transformation Planning Guidance)

Shared Understanding. A shared appreciation of the situation supported by common information to enable rapid collaborative joint engagement, maneuver, and support. (C2 and Net-Centric Environment Joint Functional Concepts)

Strategic Communication. Focused United States Government (USG) efforts to understand and engage key audiences in order to create, strengthen or preserve conditions favorable for the advancement of USG interests, policies, and objectives through the use of coordinated programs, plans, themes, messages, and products synchronized with the actions of all elements of national power. (Joint Pub 3-13)

Strike. An attack that is intended to inflict damage on, seize, or destroy an objective. (Joint Pub 1-02)

Traditional Challenges. Challenges threatening US interests that are posed by states employing recognized military capabilities and forces in well-understood forms of military competition and conflict. (National Defense Strategy)

Unified Action. Unified action is the synergistic application of all instruments of national power and multinational power and includes the action of nonmilitary organizations as well as the military forces (Joint Pub 3-0).

Weapons of Mass Destruction. Weapons that are capable of a high order of destruction and/or of being used in such a manner as to destroy large numbers of people. Weapons of mass destruction can be nuclear, biological, chemical, and radiological weapons, but exclude means of

delivery of weapons where such means is a separable and divisible part of the weapon. (National Military Strategy to Combat WMD)

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APPENDIX C - CAPABILITIES

PART I - TABLE OF CRITICAL OPERATIONAL OBJECTIVES AND ASSOCIATED BROAD CAPABILITIES

This part of the appendix lists broad military capabilities necessary to achieve the operational-level objectives described in section 4.b of the concept. Table C-1 maps capabilities to the associated objectives. This method of presentation is used in lieu of that in the CJCSI 3010.02B template in the interest of brevity since many MCO capabilities map to a number of objectives. Furthermore, capabilities are mapped to a more common set of operational-level objectives rather than to effects which are more situation-dependent.

Table C-1 JOC Objective/Capability Table²²

MCO Broad Capability (MCO 2.0-xxxC)		Operational-Level Objective (MCO 2.0-xxxE)							
		001 - Isolate the Adversary	002 - Gain and maintain operational access	003 - Deny enemy EA	004 - Deny enemy EA	005 - Deny enemy freedom of action	006 - Disrupt enemy ability to C2 his forces WMD & other crit capabilities	007 - Disrupt enemy sustainment system	008 - Degrade enemy critical infra and production
001	Clearly express a compelling and nested intent for military, interagency and multinational partners.	x	x	x	x	x	x	x	x
002	Define desired effects to focus planning, communicate desired end-states and effects to the lowest required level.	x	x	x	x	x	x	x	x
003	Clearly express commander's intent that will achieve strategic purpose.	x	x	x	x	x	x	x	x
004	Facilitate centralized and decentralized decision-making.	x	x	x	x	x	x	x	x
005	Provide effective leadership in a combined, adaptive, collaborative environment.	x	x	x	x	x	x	x	x
006	Establish a secure, broadly accessible, tailorable, and user-friendly common relevant operational picture (CROP).		x		x		x	x	x
007	Field and employ coherently joint, trained, and practiced headquarters elements.	x	x	x	x	x	x	x	x
008	Conduct comprehensive planning in a collaborative environment that is flexible, robust, supported by decision tools.	x	x	x	x	x	x	x	x
009	Link and visually display all strategic-level information and influence objectives to the overall campaign plan.	x	x	x	x	x	x	x	x
010	Tailor the communications and information operations strategies through a holistic understanding of the adversary's system.	x		x	x	x	x	x	x
011	Achieve anticipatory and shared understanding among joint, interagency, and multinational partners in order to know the full dimensions of the operational environment, our adversaries, others, and ourselves.	x	x	x	x	x	x	x	x
012	Deploy, employ and sustain a persistent, long-endurance, appropriately stealthy, and dynamically tailored ISR system.	x	x	x	x	x	x	x	x
013	Perform effects-assessment in the physical, information, and cognitive domains to include second and higher order effects.	x	x	x	x	x	x	x	x
014	Gain and maintain a holistic understanding and visualization of all parties with equity or influence in the conflict.	x	x	x	x	x	x	x	x

²² The statement of each capability in the table is prefaced by "The ability to..."

Operational-Level Objective (MCO 2.0-xxxxE)		MCO Broad Capability (MCO 2.0-xxxxC)							
		001 - Isolate the adversary	002 - Gain and maintain operational access	003 - Deny enemy access	004 - Deny enemy EA	005 - Disrupt enemy freedom of action	006 - Deny enemy ability to WMD & other crit capabilities	007 - Disrupt enemy sustainment system	008 - Degrade enemy critical infra and production
015	Develop processes, procedures, and automated support systems to fully integrate fires and maneuver, using enhanced kinetic and nonkinetic weapons, to generate lethal and nonlethal effects while limiting collateral damage or consequences.	x	x	x	x	x	x	x	x
016	Provide offensive capability to penetrate and counter enemy anti-access systems:		x						
016a	Rapidly detecting, neutralizing or destroying mines and enemy sensors at standoff ranges and in-stride.		x						
016b	Using fixed and deployable detection and tracking sensors at strategic port approaches and chokepoints to complement persistent anti-submarine warfare.		x						
016c	Rapidly defeating improved enemy air defense systems, to include anti-helicopter and man-portable air defense systems.		x						
016d	Countering enemy theater and tactical missiles with highly deployable systems that provide warning, intent, location, launch, and destruction.		x						
017	Rapidly project force directly to the objective in a position of advantage from intertheater and intratheater distances, within acceptable risk levels.	x	x		x		x	x	x
018	Rapidly employ, and sustain adaptive, modular, mission capability forces and packages throughout the battlespace, without creating predictable patterns.	x	x	x	x	x	x		
019	Fully integrate joint, interagency, and multinational capabilities	x	x	x	x	x	x		
020	Conduct rehearsed flexible and responsive operations at every useful level, to include Information Operations (IO) and maneuver and precision engagement operations that are supported by enhanced integrated combined fires and compressed sensor-to-shooter-to-impact engagement capabilities.	x	x	x	x	x	x	x	x
021	Conduct scalable simultaneous and distributed, multidimensional combat operations (including unconventional and forcible-entry operations) regardless of existing target area infrastructure and environmental conditions; isolate the battlespace from unwanted influences; engage with great discrimination; move with great speed; and identify and eliminate or neutralize an opponent's asymmetric advantages, while securing and strengthening friendly asymmetric advantages.	x	x	x	x	x	x	x	x
022	Integrate force projection, employment and sustainment in order to eliminate unnecessary redundancies, reduce friction, stimulate synergy, and enhance the effectiveness, efficiency, and economy of operations.	x	x	x	x	x	x	x	x
023	Provide multidimensional kinetic and nonkinetic precision engagement	x	x	x	x	x	x	x	x
024	Disrupt and attack irregular forces and their networks through conventional, unconventional, military and nonmilitary, and kinetic and nonkinetic methods.	x	x	x	x	x	x	x	x
025	Conduct proactive communication activities and information operations to counter adversary propaganda, disrupt or destroy their information networks, and influence, degrade, or control adversary decision making.	x	x	x	x	x	x	x	x
026	Streamline deployment processes to satisfy Combatant Command needs, positioning friendly forces within operational reach of critical targets, while denying adversary forces access to key friendly targets.		x	x	x	x	x	x	x
027	Provide flexible sustainment support for concurrent combat operations (regular and irregular) and security, reconstruction and transition operations.		x	x	x	x	x		
028	Establish and operate an adaptive, timely distribution based sustainment system.		x	x	x	x	x		

Operational Level Objective (MCO 2.0-xxxE)		MCO Broad Capability (MCO 2.0-xxxC)							
		001 - Isolate the adversary	002 - Gain and maintain operational access	003 - Deny enemy access	004 - Deny enemy EA	005 - Deny enemy freedom of action	006 - Deny enemy ability to use WMD & other crit capabilities	007 - Disrupt enemy sustainment system	008 - Degrade enemy critical infra and production
029	Establish a joint sustainment force that is rapidly deployable, immediately employable, flexible, highly mobile, modular, tailored, networked, survivable, and responsive to supported forces.		x	x	x	x	x		
030	Maintain persistent force projection, employment, and sustainment situational awareness, and achieve shared understanding at multiple echelons.	x	x	x	x	x	x		
031	Project and sustain forces when the adversary is competent and determined, lines of communication (LOCs) are threatened, with limited or no access to fixed seaports and airfields in or near objective areas during initial entry operations, and when supported forces disperse widely to conduct distributed operations.	x	x	x	x	x	x	x	x
032	Reduce the need for sustainment pauses, enabled by improved commonality, reliability, maintainability, sustainability, and survivability in order to conduct relentless operations.	x	x	x	x	x	x	x	x
033	Minimize friendly forces exposure to danger while conducting sustainment operations.	x	x	x	x	x	x	x	x
034	Optimize logistics interoperability and joint interdependence with multinational partners.	x	x	x	x	x	x	x	x
035	Protect the force against regular and irregular anti-access and area denial capabilities.	x	x	x	x	x	x	x	x
036	Provide security for our forces, systems and processes (to include critical infrastructure, information and space capabilities) from origin to positions within the Joint Operations Area.	x	x	x	x	x	x	x	x
037	Rapidly sense, detect, identify from standoff range, defend against, and recover the force from chemical, biological, radiological, nuclear, and high yield explosives attack.						x		
038	Optimize organic, automated survivability features for vessels, aircraft, combat vehicles and support vehicles.	x	x	x	x	x	x	x	x
039	Protect noncombatants, valuable sources of information, and critical infrastructure and services in the operational area.	x	x	x	x	x	x	x	x
040	Provide collective and individual protection in irregular warfare situations involving reduced engagement geometry, compressed response times, and varying angles of attack.	x	x	x	x	x	x	x	x
041	Counter enemy employment of WMD which includes locating, tracking, interdicting, destroying or rendering safe, and defending against WMD (includes their delivery means) at a distance.						x		
042	Maintain a robust, joint network that (1) avoids single points of failure, (2) enables graceful degradation, (3) is based on uniform standards at the data and information level to allow warfighters throughout the force to use applications without compromising interoperability, and (4) promotes the ability of commanders at all levels to decide and act with greater assurance and speed.	x	x	x	x	x	x	x	x
043	Extend the strategic to tactical collaborative environment, including interagency and multinational partners, to enable persistent situational awareness and shared understanding.	x	x	x	x	x	x	x	x
044	Employ units with a balance of general purpose and specialized capabilities to conduct a wide variety of traditional and irregular combat and noncombat operations (e.g. civil affairs, security and peacekeeping).	x	x	x	x	x	x	x	x
045	Develop a process that facilitates identification of requisite military, government and civilian skills and occupations and integrate, mobilize and deploy government, nongovernment and civilian capabilities in support military and civil operations.				x				

Operational Level Objective (MCO 2.0-xxxE)		Operational Level Objective (MCO 2.0-xxxE)							
		001 - Isolate the adversary	002 - Gain and maintain operational access	003 - Deny enemy BA	004 - Deny enemy EA	005 - Disrupt enemy freedom of action to C2 his forces	006 - Deny enemy ability WMD & other crit. capabilities	007 - Disrupt enemy sustainment system	008 - Degrade enemy critical infra and production
MCO Broad Capability (MCO 2.0-xxxC)									
046	Optimize appropriate reserve component/active component mix for irregular warfare.	x		x	x	x			
047	Establish a Joint Task Force or a Combined Joint Task Force routinely during Joint National Training Capability exercises as a forcing function for: - Leader Development; - Joint at the point of action; - Collaborative deciding and acting methodologies; - Tactics, Techniques, and Procedures (TTP) development; - Materiel interoperability.	x			x				
048	Create a common distributed exercise program connecting all Service advanced military studies schools to a joint, distributive, virtual learning environment with interagency participation.	x		x	x	x			
049	Create Joint Professional Military Education modules that teach the competencies required for rapid team development, deciding and acting collaboratively, military and nonmilitary cooperation (interagency, NGO, multinational, and contractor), and acting w within commander's intent. - Incorporate interagency functions, processes, and capabilities into education and training to develop military leaders - Develop professional education courses for interagency organizations	x	x	x	x	x	x	x	x
050	Educate current and future commanders in complex and rapidly changing environments to hone their decision-making skills and improve their knowledge of: friendly and potential adversary capabilities, interdependence, setting conditions for enduring peace, and the effects-based approach to operations.	x	x	x	x	x	x	x	x
051	Develop and test tools, processes, and knowledge federations to holistically understand and visualize all parties with equity or influence in the conflict (adversaries, neutrals, and multinational).	x	x	x	x	x	x	x	x
052	Use simulators and simulations to train warriors in a seamless synthetic environment to include maturing of live-virtual-constructive (LVC) integration environments and embedded mission rehearsal capability.	x	x		x	x	x	x	x

APPENDIX C – CAPABILITIES
PART II – RELATIONSHIP TO JOINT CAPABILITY AREAS
(JCA)

This Part II of the appendix (see Table C-2 beginning on the next page) cross-references the broad MCO capabilities from Part I to the extant Tier 1 and 2 JCAs as described in the *Refined Joint Capability Areas Tier 1 and Supporting Tier 2 Lexicon* dated 24 August 2005. Part II describes, where applicable, how the MCO capabilities expand upon or deviate from the existing JCAs.

Table C-2 JOC Capability/JCA Comparison

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
001	Clearly express a compelling and nested intent for military, interagency and multinational partners.	Joint Command and Control (C2)	Communicate Commander's Intent and Guidance; Plan Collaboratively	JCAs do not state a requirement for future C2 systems to permit subordinate leaders to observe or participate in the creation of commander's intent; allowing subordinate commanders to better fulfill operational objectives.
002	Define desired effects to focus planning, communicate desired endstates and effects to the lowest required level.	Joint C2	Plan Collaboratively; Synchronize Execution Across All Domains; Knowledge Sharing	JCAs do not adequately describe the speed in which operations can be conducted if courses of action are developed autonomously and are continually resynchronized by machines.
003	Clearly express commander's intent that will achieve strategic purpose.	Joint C2	Communicate Cdr's Intent and Guidance; Incorporate Strategic Mission & Guidance into Commander's Intent	These JCAs adequately cover the requirements.
004	Facilitate centralized and decentralized decision-making.	Joint C2	Direct Action Through Mission-type Orders	The JCAs fail to mention the requirement that information be shared simultaneous to reduce lags in shared SA or SU.
005	Provide effective leadership in a combined, adaptive, collaborative environment.	Joint C2	Exercise Command Leadership; Cultivate Relationships with Mission Partners; Monitor Execution, Assess Effects, and Adapt Operations; Establish/Identify Collaboration Mechanism; Coordinate with Mission Partners to Gain Actionable Commitment; Develop and Maintain SA & SU; and Display Tailored, Relevant SA Information	These JCAs adequately cover the requirements.
		Joint Net-Centric Operations	Enterprise Services	
006	Establish a secure, broadly accessible, tailorable, and user-friendly common relevant operational picture (CROP).	Joint C2	Establish/Adapt Command Structures and Enable both Global and Regional Collaboration	JCAs fail to mention the requirement to reach back in time to conduct trend analysis to better understand enemy intent. Future C2 systems will require the ability to playback past actions.
		Joint Net-Centric Operations	Information Assurance	
		Joint Protection	Protection from Exploitation	
007	Field and employ coherently joint, trained, and practiced headquarters elements.	Joint C2	Plan Collaboratively; Synchronize Execution Across All Domains; Knowledge Sharing	May include permanent US-led multinational HQs when mutually beneficial to the U.S and supporting countries.
		Joint Force Generation	Develop Skills	
008	Conduct comprehensive planning	Joint Battlespace	Planning & Direction	These JCAs adequately cover the requirements.

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
	in a collaborative environment that is flexible, robust, supported by decision tools.	Awareness (BA)		
		Joint C2	Display Tailored, Relevant SA Information	
		Joint Net-Centric Operations	Knowledge Sharing	
009	Link and visually display all strategic-level information and influence objectives to the overall campaign plan.	Joint C2	Incorporate Strategic Mission & Guidance into Commander's Intent	While C2 systems might display information at a strategic level, they should also provide the ability to drill down to the tactical level in order to improve situational understanding.
		Joint Net-Centric Operations	Information Transport; Applications	These JCAs adequately cover the requirements.
		Joint Shaping	Military Diplomacy; Defense Support to Public Diplomacy; Strategic Information & Engagement Coordination; Security Cooperation; Presence; Military Deception; Inducements	
010	Tailor the communications and information operations strategies through a holistic understanding of the adversary's system.	Joint Information Operations (IO)	Electronic Warfare, Computer Network Operations, Military Deception, Psychological Operations	These JCAs adequately cover the requirements.
		Joint BA	All Tier 2 JCAs	
		Joint C2	Develop and Maintain Shared Situational Awareness & Understanding	
		Joint Public Affairs Operations (PAO)	Public Affairs Operational Planning	
011	Achieve anticipatory and shared understanding among joint, interagency, and multinational partners in order to know the full dimensions of the operational environment, our adversaries, others, and ourselves.	Joint BA	Dissemination & Integration; Analysis & Production	The BA JCA is focused on red actions. The ability to synchronize forces will require exquisite knowledge of all elements, red, blue, gray and white.
		Joint C2	Access/Share Information on Adversary/Neutral/Noncombatants; Develop & Maintain Shared SA & SU	These JCAs adequately cover the requirements.
		Joint Interagency/IGO/NGO Coordination	All Tier 2 JCAs	
		Joint Net-Centric Operations	Knowledge Sharing	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
012	Deploy, employ and sustain a persistent, long-endurance, appropriately stealthy, and dynamically tailored ISR system.	Joint BA	Observation & Collection; Processing & Exploitation	The BA JCA fails to emphasize the need for persistent ISR. To attack the enemy at the time and place of our choosing we must understand what the enemy is doing at all times.
		Joint C2	Monitor Execution, Assess Effects, and Adapt Operations	These JCAs adequately cover the requirements.
		Joint Net-Centric Operations	Information Transport; Applications	
		Joint Logistics	Joint Deployment/Rapid Distribution; Agile Sustainment; Logistics Information Fusion	These JCAs do not adequately reflect the future ISR system's projection and sustainment requirements
013	Perform effects-assessment in the physical, information, and cognitive domains to include second and higher order effects.	Joint C2	Develop and Maintain Shared Situational Awareness & Understanding; Display Tailored, Relevant SA Information	C2 systems must have the ability to monitor and assess all data generated from both human and non human sensors. The tremendous volume of data available will require autonomous analysis for much of the data produced. Assessing effects in the non-physical domains is critical.
		Joint Net-Centric Operations	Information Assurance	This JCA adequately covers the requirement.
		Joint Shaping	Analytic Support and Assessment	This JCA adequately covers the requirement.
014	Gain and maintain a holistic understanding and visualization of all parties with equity or influence in the conflict.	Joint C2	Leverage Mission Partners	These JCAs adequately cover the requirements.
		Joint BA	Dissemination & Integration	
		Joint Net-Centric Operations	Knowledge Sharing	
015	Develop processes, procedures, and automated support systems to fully integrate fires and maneuver, using enhanced kinetic and nonkinetic weapons, to generate lethal and nonlethal effects while limiting collateral damage or consequences.	Joint C2	Communicate Cdr's Intent and Guidance; Synchronize Execution Across All Domains; Monitor Execution, Assess Effects & Adapt Operations	These JCAs adequately cover the requirements.
		Joint Net-Centric Operations	Applications	
		Joint Land Operations	Conduct Operational Movement & Maneuver; Provide and Employ Joint Fires; Conduct Decisive Maneuver	
		Joint Maritime/Littoral Operations	Maritime/Littoral Expeditionary Operations; Maritime/Littoral Fires	
		Joint Air Operations	Strategic Attack; Air Interdiction; Tactical Air Support	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
016	Provide offensive capability to penetrate and counter enemy anti-access systems:	Joint Access & Access Denial Operations	Forcible Entry	These JCAs adequately cover the requirements.
		Joint Special Operations & Irregular Operations	Special Recon; Joint Irregular Warfare; Military Deception; Psychological Operations	
		Joint Space Operations	Space Force Application	
		Joint Air Operations	Strategic Attack; Tactical Air Support; Theater Air & Missile Defense; Offensive Counterair Operations	
		Joint Land Operations	Conduct Operational Movement and Maneuver	
		Joint Maritime/Littoral Operations	All Tier 2 JCAs	
		Joint Protection	WMD Threat	
		Joint IO	Computer Network Attack; Electronic Warfare	
		Joint Global Deterrence	Global Strike	
016 a	Rapidly detecting, neutralizing or destroying mines and enemy sensors at standoff ranges and in-stride.	Joint BA	Observation & Collection: Analysis & Production	The ability to detect and track sensors and mines requires persistence, in order to track and destroy redeployed sensors and mines
		Joint Protection	Platform Protection	These JCAs adequately cover the requirements.
		Joint Maritime/Littoral Operations	Mine countermeasures	
016 b	Using fixed and deployable detection and tracking sensors at strategic port approaches and chokepoints to complement persistent anti-submarine warfare.	Joint Access & Access Denial Operations	Freedom of Navigation; LOC Protection; Blockade; Sea Basing	The JCAs fail to require persistence in our sensors.
		Joint Maritime/Littoral Operations	All Tier 2 JCAs	
		Joint Protection	Platform Protection	
016 c	Rapidly defeating improved enemy air defense systems, to include anti-helicopter and man-portable air defense systems.	Joint Access & Access Denial Operations	Forcible Entry; LOC Protection	These JCAs adequately cover the requirements.
		Joint Protection	Platform Protection	
		Joint Air Operations	Offensive Counterair Operations	
		Joint Land Operations	Provide & Employ Joint Fires	
016 d	Countering enemy theater and tactical missiles with highly deployable systems that provide	Joint Air Operations;	Suppression of Enemy Air Defenses; Theater Air & Missile Defense	These JCAs adequately cover the requirements.
		Joint C2	Battlefield Deconfliction (Airspace Control)	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
	warning, intent, location, launch, and destruction.	Joint Global Deterrence	Global Missile Defense Operations	
017	Rapidly project force directly to the objective in a position of advantage from intratheater and intertheater distances, within acceptable risk levels	Joint Global Deterrence	Global Strike; Force Projection	These JCAs adequately cover the requirements.
		Joint Force Management	Global Posture; Global Force Management	
		Joint Logistics	Joint Deployment/Rapid Distribution; Joint Theater Logistics; Logistics Information Fusion	
		Joint Access & Access Denial Operations	Contingency Basing; Sea Basing	
018	Rapidly employ and sustain adaptive, modular, mission capability forces and packages throughout the battlespace, without creating predictable patterns.	Joint Force Generation	Organize; Develop Skills	The pace of future conflict can be expected to be so rapid that commanders will depend on autonomous re-synchronization of operations as the fight unfolds. This autonomous re-synchronization will help create unpredictable patterns.
		Joint Force Management	Future Capability Identification	
		Joint C2	Direct Action Through Mission-type Orders	
		Joint Net-Centric Operations	Knowledge Sharing	
		Joint Logistics	All Joint Logistics JCAs	
019	Fully integrate joint, interagency, and multinational capabilities	Joint Force Generation	Interagency, Intergovernmental, and Multinational Exercises	The Joint C2 JCA fails to adequately address collaboration and synchronization with multinational partners. The JCA mentions coordination with mission partners, but success may require full synchronization of activity and sharing of information. Strategic-level policy review and possibly policy change are required that deal with multinational partner multi-level security issues.
		Joint Force Management	Planning	
		Joint Interagency / IGO / NGO Coordination	All Tier 2 JCAs	
		Joint C2	Exercise Command Leadership; Cultivate Relationships with Mission Partners; Develop Joint/Coalition Campaign Plan; Synchronize Operations with Mission Partners; Coordinate with Mission Partners to Gain Actionable Commitment	
		Joint Net-Centric Operations	Knowledge Sharing	
		Joint Logistics	Multinational Logistics	
		Joint Shaping	Security Cooperation	
		Joint Stability Operations	Security	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
020	Conduct rehearsed flexible and responsive operations at every useful level, to include IO and maneuver and precision engagement operations that are supported by enhanced integrated combined fires and compressed sensor-to-shooter-to-impact engagement capabilities.	Joint Force Generation	Train; Exercise; Mission Rehearsal Exercise; Provide and Employ Joint Fires; Conduct Operational Movement and Maneuver; Conduct Decisive Maneuver; Building Military Partner Capacity	The sensor-to-shooter-to-impact (effect) engagement cycle is reduced to a few minutes (possibly seconds). Effect assessment needs to be performed immediately afterwards. Kinetic or nonkinetic means may be employed to achieve lethal or nonlethal effects. Kinetic or nonkinetic means may be employed to achieve lethal or nonlethal effects.
		Joint Force Management	Planning	
		Joint BA	All Tier 2 JCAs	
		Joint C2	Validate Targets; Monitor Execution, Assess Effects, and Adapt Operations	
		Joint Net-Centric Operations	All Tier 2 JCAs	
		Joint Land Operations	All Tier 2 JCAs	
		Joint Air Operations	All Tier 2 JCAs	
		Joint Maritime/Littoral Operations	All Tier 2 JCAs	
		Joint Space Operations	All Tier 2 JCAs	
		Joint Special Operations & Irregular Operations	All Tier 2 JCAs	
		Joint IO	All Tier 2 JCAs	
021	Conduct scalable simultaneous and distributed, multidimensional combat operations (including unconventional and forcible-entry operations) regardless of existing target area infrastructure and environmental conditions; isolate the battlespace from unwanted influences; engage with great discrimination; move with great speed; and identify and eliminate or neutralize an opponent's asymmetric advantages, while securing and strengthening friendly asymmetric advantages.	Joint Force Generation	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint Force Management	All Tier 2 JCAs	
		Joint Interagency/IGO/NGO Coordination	All Tier 2 JCAs	
		Joint BA	All Tier 2 JCAs	
		Joint C2	All Tier 2 JCAs	
		Joint Net-Centric Operations	All Tier 2 JCAs	
		Joint Protection	All Tier 2 JCAs	
		Joint Logistics	All Tier 2 JCAs	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
		Joint Land Operations	All Tier 2 JCAs	
		Joint Maritime/Littoral Operations	All Tier 2 JCAs	
		Joint Air Operations	All Tier 2 JCAs	
		Joint Special & Irregular Operations	All Tier 2 JCAs	
		Joint Space Operations	All Tier 2 JCAs	
		Joint Access & Access Denial Operations	All Tier 2 JCAs	
		Joint IO	All Tier 2 JCAs	
		Joint PAO	All Tier 2 JCAs	
		Joint Global Deterrence	All Tier 2 JCAs	
		Joint Shaping	Security Cooperation	
022	Integrate force projection, employment and sustainment in order to eliminate unnecessary redundancies, reduce friction, stimulate synergy, and enhance the effectiveness, efficiency, and economy of operations.	Joint Logistics	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint Force Generation	All Tier 2 JCAs	
		Joint Force Management	All Tier 2 JCAs	
		Joint BA	All Tier 2 JCAs	
		Joint C2	All Tier 2 JCAs	
		Joint Net-Centric Operations	All Tier 2 JCAs	
		Joint Protection	All Tier 2 JCAs	
023	Provide multidimensional kinetic and nonkinetic precision engagement.	Joint BA	All Tier 2 JCAs	JCAs fail to account for the precision and scalability that directed energy weapons will provide. They will provide JFC commanders with greater discrimination over how targets will be executed. Destruction will not be the only option.
		Joint C2	Validate Targets; Assess Achievement of Planned Effects; Adapt Operations to Changing Situations	
		Net-Centric Operations	All Tier 2 JCAs	
		Joint Land Operations	All Tier 2 JCAs	
		Joint Maritime/Littoral Operations	All Tier 2 JCAs	
		Joint Special & Irregular Operations	All Tier 2 JCAs	
		Joint Air Operations	All Tier 2 JCAs	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
		Joint Space Operations	All Tier 2 JCAs	
		Joint Access & Access Denial Operations	All Tier 2 JCAs	
		Joint IO	Electronic Warfare; Computer Network Attack	
		Joint Global Deterrence	Global Strike; Force Projection	
024	Disrupt and attack irregular forces and their networks through conventional, unconventional, military and nonmilitary, and kinetic and nonkinetic methods.	Joint Special Operations & Irregular Operations	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint IA/IGO/NGO Coordination	All Tier 2 JCAs	
		Joint Land Operations	All Tier 2 JCAs	
		Joint Maritime/Littoral Operations	Maritime Interdiction; Maritime/Littoral Fires	
		Joint Air Operations	Strategic Attack	
025	Conduct proactive communication activities and information operations to counter adversary propaganda, disrupt or destroy their information networks, and influence, degrade, or control adversary decision making.	Joint IO	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint Special Operations & Irregular Operations	Psychological Operations	
		Joint Public Affairs Operations	Public Information	
026	Streamline deployment processes to satisfy Combatant Command needs, positioning friendly forces within operational reach of critical targets, while denying adversary forces access to key friendly targets.	Joint Logistics	Joint Deployment/Rapid Distribution; Agile Sustainment; Joint Theater Logistics; Logistics Information Fusion; Multinational Logistics	These JCAs adequately cover the requirements.
		Joint C2	Develop & Maintain Shared Situational Awareness	
		Joint Net-Centric Operations	Enterprise Services	
		Joint Protection	Conventional Weapons Threat; Terrorist Threat; WMD Threat	
		Joint Access & Access Denial Operations	Forcible Entry	
		Joint Land Operations	Conduct Operational Movement and Maneuver	
		Joint Maritime/Littoral Operations	Sea Basing	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
027	Provide flexible sustainment support for concurrent combat operations (regular and irregular) and security, reconstruction and transition operations.	Joint Logistics	All Tier 2 JCAs	The joint logistics JCA needs to add the ability to autonomously plan and synchronize logistics, thus ensuring on time delivery and efficient handling of required logistics. This will also provide for autonomous re-synchronization of logistics as follow-on orders are issued.
		Joint Stability Operations	Humanitarian Assistance; Reconstruction; Security	This JCA adequately covers the requirement.
028	Establish and operate an adaptive, timely distribution-based sustainment system.	Joint Logistics	All Tier 2 JCAs	Joint Logistics JCA does not specify that agile sustainment operations must be commensurate with and fully supportive of complex, agile, and distributed combat operations. (Based on discussion with the Joint Staff J-4, this is expected to be incorporated in a forthcoming revision to the JCA lexicon)
		Joint Protection	Platform Protection	
		Joint Net-Centric Operations	All Tier 2 JCAs	
		Joint C2	Exercise Command Leadership; Establish/Adapt Command Structures and Enable both Global and Regional Collaboration	
029	Establish a joint sustainment force that is rapidly deployable, immediately employable, flexible, highly mobile, modular, tailored, networked, survivable, and responsive to supported forces.	Joint Logistics	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint Force Generation	All Tier 2 JCAs	
		Joint Force Management	Future Capability Identification; Refine JTF Component Organizations & Integrate Capabilities	
		Joint C2	All Tier 2 JCAs	
		Joint Net-Centric Operations	All Tier 2 JCAs	
		Joint Protection	Platform Protection; Protection from Exploitation	
030	Maintain persistent force projection, employment, and sustainment situational awareness, and achieve shared understanding at multiple echelons.	Joint BA	All Tier 2 JCAs	JCAs fail to require the persistent ISR required for true situational awareness.
		Joint C2	Develop & Maintain Shared SA and Understanding	
		Joint Logistics	Logistics Information Fusion	
		Joint Net-Centric Operations	All Tier 2 JCAs	
		Joint IO	Computer Network Defense	
031	Project and sustain forces when the adversary is competent and	Joint Protection	All Tier 2 JCAs	The forcible entry JCA should include the use of autonomous machines to pave the way for
		Joint BA	All Tier 2 JCAs	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
	determined, strategic and theater lines of communication are not secure, access through fixed seaports and airfields in the battlespace is denied, and supported forces are widely dispersed in the battlespace.	Joint C2	Develop & Maintain Shared SA and Understanding	humans. These machines can also gather intelligence on enemy forces, allowing a commander to decide whether to proceed with the operation.
		Joint Net-Centric Operations	Knowledge Sharing; Information Assurance	
		Joint Logistics	All Tier 2 JCAs	
		Joint Land Operations	Conduct Operational Movement and Maneuver	
		Joint IO	Computer Network Defense	
		Joint Air Operations	Theater Air & Missile Defense	
		Joint Access & Access Denial Operations	Forcible Entry; LOC Protection	
		Joint Maritime/Littoral Operations	Maritime Interdiction	
032	Reduce the need for sustainment pauses, enabled by improved commonality, reliability, maintainability, sustainability, and survivability in order to conduct relentless operations.	Joint Logistics	All Tier 2 JCAs	The capability can be significantly enhanced with autonomous command and control systems which resynchronize forces on the ground and link the resynchronized plans to logistics requirements. Such systems will ensure that plans which are not supportable logistically are recognized before issuance.
		Joint Force Generation	Mission Rehearsal Exercise	
		Joint BA	Observation and Collection; Science and Technology; Modeling and Simulation; Predictive Analysis; Indications and Warning; Planning and Direction	
033	Minimize friendly forces exposure to danger while conducting sustainment operations.	Joint Protection	All Tier 2 JCAs	JC2 JCA should include synchronization with multinational partners.
		Joint BA	All Tier 2 JCAs	
		Joint Net-Centric Operations	Knowledge Sharing	
034	Optimize logistics interoperability and joint interdependence with multinational partners.	Joint Logistics	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint Force Generation	Exercise; Interagency, Intergovernmental, and Multinational Exercises	
		Joint C2	Synchronize Operations with Mission Partners and Other Agencies	
035	Protect the force against regular and irregular anti-access and area denial capabilities.	Joint Protection	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint BA	All Tier 2 JCAs	
		Joint Net-Centric Operations	Information Assurance	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
		Joint Access and Access Denial Operations	Forcible Entry; LOC Protection; Sea Basing; Freedom of Navigation	
036	Provide security for our forces, systems and processes (to include critical infrastructure, information and space capabilities) from origin to positions within the Joint Operations Area.	Joint Protection	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint BA	All Tier 2 JCAs	
		Joint C2	Set Priorities, Guidance, and Standards; Operations Security	
		Joint Net-Centric Operations	Information Assurance	
		Joint Land Operations	Control Territory, Populations, and Resources; Conduct Detainee Operations; Conduct Refugee Operations; Manage Indigenous Displaced Persons; Manage Enemy POWs	
		Joint Stability Operations	Security	
		Joint Special Operations and Irregular Operations	Foreign Internal Defense; Joint Irregular Warfare; Counter-terrorism; Psychological Operations	
		Joint IO	Military Deception; Computer Network Defense	
037	Rapidly sense, detect, identify from standoff range, defend against, and recover the force from chemical, biological, radiological, nuclear, and high yield explosives attack.	Joint BA	All Tier 2 JCAs	Many of the requirements in this capability will be enhanced through persistent ISR, which is not addressed by this JCA.
		Joint Force Generation	Develop Skills; Train; Exercise	These JCAs adequately cover the requirements.
		Joint C2	Manage Risk; Conduct Mission Analysis	
		Joint Net-Centric Operations	All Tier 2 JCAs	
		Joint Special Operations and Irregular Operations	Special Recon; Direct Action	
		Joint Air Operations	Joint Air and Missile Defense	
Joint Protection	WMD Threat; Personnel Recovery			
038	Optimize organic, automated survivability features for vessels,	Joint Protection	All Tier 2 JCAs	
		Joint Force Generation	Equip; Develop Skills; Train	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
	aircraft, combat vehicles and support vehicles.	Joint Force Management	Future Capability Identification	
		Joint BA	Observation and Collection	
		Joint C2	Establish/Promulgate ROEs	
039	Protect noncombatants, valuable sources of information, and critical infrastructure and services in the operational area.	Joint Protection	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint Stability Operations	Security	
		Joint C2	Establish/Promulgate ROEs; Manage Risk; Validate Targets	
		Joint Land Operations	Control Territory, Populations, and Resources	
040	Provide collective and individual protection in irregular warfare situations involving reduced engagement geometry, compressed response times, and varying angles of attack.	Joint Protection	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint BA	All Tier 2 JCAs	
		Joint Force Generation	Equip; Develop Skills; Train	
		Joint Force Management	Future Capability Identification	
		Joint Special Operations and Irregular Operations	Direct Action	
		Joint Stability Operations	Security	
		Joint IO	Electronic Attack	
		Joint C2	Establish/Promulgate ROEs; Develop and Maintain Shared SA and SU	
		Joint Net-Centric Operations	Information Transport; Knowledge Sharing	
		Joint Air Operations	Tactical Air Support; Assault Support	
041	Counter enemy employment of WMD which includes locating, tracking, interdicting, destroying or rendering safe, and defending against WMD (includes their delivery means) at a distance.	Joint BA	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint Force Management	Future Capability Identification	
		Joint C2	Develop and Maintain Shared SA and SU	
		Joint Net-Centric Operations	Knowledge Sharing	

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
		Joint Special Operations & Irregular Operations	Special Recon; Direct Action	
		Joint Space Operations	Space Force Application	
		Joint Air Operations	Theater Air and Missile Defense	
		Joint Protection	WMD Threat; Consequence Management; Counter proliferation	
		Joint Global Deterrence	Global Strike; Global Missile Defense Operations	
042	Maintain a robust, joint network that (1) avoids single points of failure, (2) enables graceful degradation, (3) is based on uniform standards at the data and information level to allow warfighters throughout the force to use applications without compromising interoperability, and (4) promotes the ability of all commanders to decide and act with greater assurance and speed.	Joint Net-Centric Operations	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint C2	All Tier 2 JCAs	
043	Extend the strategic to tactical collaborative environment, including interagency and multinational partners, to enable persistent situational awareness and shared understanding.	Joint C2	Establish/Identify Collaboration Mechanisms; Develop and Maintain Shared SA and SU	The JC2 JCA does not call for the seamless sharing of information with coalition partners.
		Joint Net-Centric Operations	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint Force Management	Planning	
		Joint Interagency/IGO/NGO Coordination	USG Interagency Integration	
		Joint Space Operations	Space Control	
		Joint BA	All Tier 2 JCAs	
044	Employ units with a balance of general purpose and specialized capabilities to conduct a wide variety of traditional and irregular combat and noncombatant operations (e.g. civil affairs, security	Joint Force Management	Future Capability Identification	The JCA should include the ability to autonomously develop unit lists based on required capability and ability to perform mission. The ability would be graded by the unit's logistics, training and manpower status. This is part of the Global Force Management tier 2 JCA.

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
	and peacekeeping).	Joint C2	Refine JTF Component Organizations and Integrate Capabilities	These JCAs adequately cover the requirements.
		Joint Force Generation	All Tier 2 JCAs	
045	Develop a process that facilitates identification of requisite military, government and civilian skills and occupations and integrate, mobilize and deploy government, nongovernmental and civilian capabilities in support military and civil operations.	Joint Force Management	All Tier 2 JCAs	The JCA should include the ability to autonomously develop unit lists based on required capability and ability to perform mission. The ability would be graded by the unit's logistics, training and manpower status. This is part of the Global Force Management tier two JCA.
		Joint Interagency/IGO/NGO Coordination	All Tier 2 JCAs	These JCAs adequately cover the requirements.
		Joint Force Generation	All Tier 2 JCAs	
		Joint Logistics	Joint Deployment/Rapid Distribution	
046	Optimize appropriate reserve component/active component mix for irregular warfare.	Joint Force Generation	All Tier 2 JCAs	These JCAs adequately cover the requirements.
047	Establish a Joint Task Force or a Combined Joint Task Force routinely during Joint National Training Capability exercises as a forcing function for: <ul style="list-style-type: none"> - Leader Development; - Joint at the point of action; - Collaborative deciding and acting methodologies; - Tactics, Techniques, and Procedures (TTP) development; - Materiel interoperability. 	Joint Force Generation	All Tier 2 JCAs	These JCAs adequately cover the requirements.
048	Create a common distributed exercise program connecting all Service advanced military studies schools to a joint, distributive, virtual learning environment with interagency participation.	Joint Force Generation	Develop Skills; Educate; Train; Exercise	These JCAs adequately cover the requirements.
		Joint Net-Centric Operations	All Tier 2 JCAs	The JNO JCAs do not explicitly mention the requirement for supporting the described distributed exercise program involving the Service advanced military studies schools.

MCO Broad Capability (MCO 2.0-xxxC)		Most Relevant JCA(s)		Comparison Results and Implications
		Tier 1	Tier 2	
049	Create Joint Professional Military Education modules that teach the competencies required for rapid team development, deciding and acting collaboratively, military and nonmilitary cooperation (interagency, NGO, multinational, and contractor), and acting within commander's intent. - Incorporate interagency functions, processes, and capabilities into education and training to develop military leaders - Develop professional education courses for interagency organizations	Joint Force Generation	Develop Skills; Educate; Train; Exercise; Interagency, Intergovernmental, and Multinational Exercises	These JCAs adequately cover the requirements.
050	Educate current and future commanders in complex and rapidly changing environments to hone their decision making skills and improve their knowledge of: friendly and potential adversary capabilities, interdependence, setting conditions for enduring peace, and the effects-based approach to operations.	Joint Force Generation	Develop Skills ; Doctrine; Educate; Train; Exercise	These JCAs adequately cover the requirements.
		Joint C2	Conduct Mission Analysis; Direct Action Through Mission-Type Orders; Monitor Execution, Assess Effects, and Adapt Operations	
051	Develop and test tools, processes, and knowledge federations to holistically understand and visualize all parties with equity or influence in the conflict (adversaries, neutrals, and multinational).	Joint Force Generation	Equip; Train; Exercise; Interagency, Intergovernmental, and Multinational Exercises	These JCAs adequately cover the requirements.
052	Use simulators and simulations to train warriors in a seamless synthetic environment to include maturing of live-virtual-constructive integration environments and embedded mission rehearsal capability.	Joint Force Generation	Equip; Train; Mission Rehearsal Exercise; Interagency, Intergovernmental, and Multinational Exercises	These JCAs adequately cover the requirements.
		Joint Net-Centric Operations	All Tier 2 JCAs	

APPENDIX D - PLAN FOR ASSESSMENT

1. Results of Assessment During the Revision Effort

Several events conducted during 2004 and 2005 provided insights that confirmed many of the ideas and principles expressed in the original version of the MCO JOC and helped shape this revision of that document. Additionally, these events were forums for discussions by senior military and civilian mentors (or Senior Concept Developers) and provided key insights that helped shape this version of the MCO JOC. Among the events that influenced this revision of the MCO JOC are:

- **Unified Engagement 04** highlighted the need to implement an effects-based approach to planning, the importance of clear and concise commander's intent, our deficiencies in understanding non-western cultures and motivations, and our deficiencies in locating, tracking and containing weapons of mass destruction. A key UE04 insight was the potential for strategic misunderstanding and miscalculation when dealing with a WMD-equipped adversary
- **Sea Viking 04** provided insights to help refine the ideas in several MCO execution principles to include an effects-based approach, gaining and maintaining operational access, and the deployment/distribution/sustainment of combat forces. Additionally, the wargame explored the relative merits and limitations of the Seabasing concept for force projection and sustainment, and those insights helped inform the revision of the JOC.
- **Unified Quest 05** focused on major combat operations planning, shaping and entry operations, urban operations planning, the Joint Information Warfighting Element (JxI), and the Joint Experimental Deployment and Support (JxDS) organization structures. Joint interdependence and adaptive, dynamic organizational options were highlighted. Deficiencies in locating, tracking and containing weapons of mass destruction and the potential for strategic miscalculation regarding WMD use were again noted (see UE04). Additionally, a key UQ05 insight was the potential coalition-fracturing nature of the enemy WMD threat.
- **OEF and OIF published lessons learned** shed light on the value of conducting distributed operations but the difficulties of sustaining forces able to rapidly maneuver across vast expanses. Also highlighted were the issues associated with the shift in level

of effort from major combat operations to stability operations. OEF and OIF lessons learned also identified deficiencies in deny the adversary sanctuary. Other deficiencies in tactical intelligence, logistics, force packaging, active/reserve force mix, and reserve mobilization influenced this revision.

- **Selected forums** helped shape this revision of the MCO JOC in helping develop approaches to warfighting involving the irregular challenge of the National Military Strategy and issues pertaining to transition between MCO and SO:
 - Task Force Irregular Challenges,
 - The USMC Irregular Warfare Conference series,
 - The June 05 MCCDC Counterinsurgency workshop,
 - The Royal United Services Institute Conference series on Operations on the Cusp,
 - Allied Command Transformation/National Defense University/Old Dominion University Conference on Post-Conflict Cooperation, and
 - Army Strategic Studies Institute Conference on Irregular Enemies.

- **Joint Urban Warrior 05** highlighted the importance of interagency coordination and cooperation in conducting simultaneous combat and stability operations in an urban environment, deficiencies in moving essential classified information to the tactical level, the importance of cultural understanding, deficiencies in isolating irregular forces from the population, understanding that the population is the center of gravity in an insurgency, and the implications thereof.

- **Unified Quest 06** examined the challenge of CBRNE capability in the hands of irregular adversaries. A conclusion was that irregular adversaries may desire influence over catastrophic means but not necessarily actual ownership. The CBRNE value to the adversary appeared to be predominately that of political leverage as opposed to military power. A recommendation was made to explore nonmilitary approaches, such as the use of political or monetary means, to prevent or limit such adversary influence over CBRNE capability.

UQ06 also looked at new approaches to understanding complex operational environments, especially those involving multiple rivals. The Systemic Operational Design approach in which the commander uses iterative discourse to understand strategic and

operational contexts was examined as one visualization approach deemed worthy of further exploration.

2. Recommendations for Further Assessment

This Joint Operating Concept identifies a high-level overarching problem and solution for conducting future major combat operations. However, responding to an adaptive future adversary with the potential for posing any one or combination of the four strategic challenges creates, in fact, a number of problems for which we must find more specific and detailed solutions. These solutions may be found in operational-level capability gaps identified through realistic, focused experimentation and wargaming event, leveraging of technological advances in the public and private sectors, and through careful examination of lessons learned in recent and future “battlefield laboratories.”

Identifying solution sets for the problems associated with major combat operations is a continuous, ongoing process. The collaborative Joint Concept Development and Experimentation community has identified five key MCO challenges below as initial candidates for assessment over the next few years in focused experimentation venues. These experimentation venues must replicate the future operational environment and facilitate a competition of ideas from which solutions may be derived. Those **key MCO challenges are:**

a. Gaining and maintaining battlespace awareness against a complex, adaptive adversary

Challenge: The joint force is deficient in developing and maintaining the requisite understanding of an adaptive adversary and his links-nodes-decisive points to know where and what effects to generate to achieve our military objectives and endstates.

Potential Experimentation Methodology:

- Use Global Cell to determine and refine procedures and processes needed to provide the joint force commander with timely battlespace analysis of the adversary and his capabilities in order to determine how, where, and what effects are required to achieve military objectives and endstates.
- Analysis of the adversary will include examining behaviors and trends and using pattern analysis to assess and evaluate political, economic, military, social, infrastructure, and information issues.

- Determine accuracy of analysis on adversary and assess capability of Global Cell to provide the joint force commander with timely, decision-quality information.

b. Marshalling global capabilities at the point of action

Challenge: Given the ability to achieve understanding of an adversary's links-nodes-decisive points, capability gaps exist in the joint force ability to rapidly project and sustain capabilities directly to objective from operational and strategic distances to achieve campaign objectives and desired effects.

Potential Experimentation Methodology:

- Develop scenarios in coordination with Services for inclusion in their Title 10 War Games. Conduct focused Limited Objective Experiments in the Joint Command – Futures (JC-F) laboratory to compete specific solution ideas. Scenarios must address selection of the right war fighting capabilities to be employed that will create the desired effect.
- To get at projection issues, scenario must be crafted so that timely response is necessary to test deployment capabilities of getting there quickly enough to make a difference.
- To test future movement capabilities as well as flexible basing and movement options, scenarios must describe objective areas that are difficult to access allowing experimentation with technologically advanced movement capabilities. Scenarios should also facilitate further testing of the Seabasing concept.
- Asset allocation, types and capabilities of future lift assets, quantities of current and future movement resources, fixed versus austere ports, and desired arrival in the objective are analysis areas that need to be replicated and stressed.

c. Operations against an adversary with weapons of mass destruction

Challenge: Future adversaries will pursue nuclear WMD to offset their inability to respond to the overmatching conventional military capability of the United States and its partners. Those future adversaries that are successful in developing a nuclear WMD capability will have a significant deterrent to US military engagement when our National interests are threatened. Furthermore, the US must consider preemptive and other actions (e.g., ISR) that may serve as triggers to use or disperse nuclear weapons and other WMD. Finally, the US must consider response courses of action in the event the adversary uses WMD and must consider second- and third-order effects of WMD use. National policy and guidance are undefined on how to deal with an irrational or rogue actor with limited WMD capability. This has operational

implications in regard to preemption, shaping, and response. Operationally, the US and its potential coalition partners lack sufficient capability to locate, identify, track, and contain nuclear weapons and other WMD. Operational approaches to destroy, neutralize, observe or capture WMD hinge upon US ability to find and track them in hardened, deeply buried locations. Failing this, US and multinational forces must be prepared to project force and protect forces in a CBRN environment. A US and perhaps allied policy of preemption in light of potential triggering must be considered.

Potential Experimentation Methodology:

- Craft a focused, controlled experimentation environment that promotes scenarios that challenges our ability to locate, identify, track and contain WMD and that can simulate potential capability solutions.
- The scenario(s) must describe an environment that will allow for analysis of the adversary's WMD capabilities, adversary's will to use WMD, possible target areas in US homeland and multinational partner nations, and US/allied responses and deterrent policies needed to respond to actions taken by the adversary.
- Because of its critical nature and high priority, a series of events dealing with combating WMD and solving WMD-related issues should culminate in a focused event and a senior leader review.

d. Conducting and sustaining distributed operations

Challenge: Given the expectation of the US/multinational population and leaders for short duration and rapidly concluded future major conflicts, US and multinational forces must be able to rapidly generate effects in the battlespace. It is postulated that conducting simultaneous, distributed operations throughout the battlespace achieve more decisive effects more rapidly than contiguous operations by creating multiple dilemmas for the adversary. Operational-level challenges in C2, force projection, sustainment, and protection in different environments arise in conducting distributed operations and beg the question, "How much distribution of forces is needed and how much of the force must be capable of conducting distributed operations?" Distributed operations are dependent on responsively conducting employment operations at multiple locations simultaneously in order to reduce the options the adversary has available to react. Successfully accomplishing distributed operations is presently hampered by our inability to determine "how much is enough," deploy forces rapidly and to multiple entry points simultaneously, protect forces while deploying and at critical entry points, responsively sustain forces once employed, and

establish C2 with employed units and effectively coordinate war fighting capabilities with each Service component.

Potential Experimentation Methodology:

- Coordinate closely with Army TRADOC, Army CASCOM, and USTRANSCOM to develop a suitable scenario that will create the conditions to replicate the challenges associated with conducting and sustaining distributed operations.
- Create scenarios that drive the need for multiple entry, simultaneous distributed operations and that challenge the supported combatant commander and supporting commands with providing required deployment, protection, sustainment, and C2 support.
- Scenario must allow for experimentation with alternative future movement assets such as the Austere Access High Speed Ship (AAHSS), High Speed Vessel (HSV), Heavy Lift-Vertical Takeoff and Landing (HLVTOL) aircraft, and the Advanced Mobility Capability Concept (AMC-X) aircraft.
- Scenario should be large enough to force competition for movement resources among the components of the supported combatant commander.
- Deployment and employment of theater missile defense forces and protection of lines of communication should be played.
- Scenarios should allow for experimentation with seabasing.

e. Maintaining force agility when shifting between major combat and stability operations

Challenge: Maintaining initiative, command relationships, and force adaptability issues arise when shifting between MCO and military support to stability operations. The intensity, level of effort, as well as technology intensive versus manpower intensive operations change when shifting from primarily MCO to primarily SO. To date the same force capabilities called upon to conduct major combat operations are often called upon to conduct both simultaneous and follow-on stability operations. Identifying and deploying SO forces with the right capabilities, while still deploying and employing MCO forces has overly stressed deployment capability. Shifting level of effort between MCO and SO requires close interaction and coordination with organizations representing the Interagency and State Department to ensure required organizations are on scene when needed. Finally, many units with capabilities particularly applicable to stability operations reside in the Guard and Reserve which impact the combatant commander's ability to provide the proper unit at the proper time. The complications resulting from CBRN contamination during an MCO against a WMD-equipped

adversary will be a major, unprecedented challenge for both simultaneous and follow-on Stability Operations.

Potential Experimentation Methodology:

- Create scenarios for the Services' Title 10 War Games that allow stakeholders to examine all of the issues inherent in the transition from MCO to SO.
- Conduct focused limited objective experiments in a controlled environment (e.g., JC-F) that replicate the MCO to SO operating environment and that can accommodate competition of ideas on alternative solutions.
- Coordinate closely with the Interagency and NGO representatives and Army TRADOC to identify organizations and units required to accomplish SO, and then examine force mix options.
- Ensure command relationships among combatant commands, US government agencies, Services, and Non-governmental organizations are established and analyzed.
- Analyze effects from MCO to ensure they do not adversely or needlessly impact follow-on SO. Dealing with the impact of WMD use or CBRN contamination resulting from MCO may require separate, focused events.
- Develop and assess a deployment force flow to allow deployment of required SO units when they are needed.

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APPENDIX E - HISTORICAL MCO JOC CONTENT

The original version of the MCO JOC (refined through subsequent research on irregular warfare) described seven core building blocks that form the foundations for US success in future major combat operations as well as twelve execution principles intended to help guide the conduct of major combat operations. They were developed prior to the publication of the CCJO and are provided here as a historical reference of previous conceptual work. These foundations and execution principles and their sub-tasks were:

➤ Foundations for Major Combat Operations

1. Fight with a warrior's ethos.
 - Focus on fighting on a day-to-day basis.
 - Create unit cohesion. Technology does not fight, people do.
 - Instill in the individual a desire to: win, overcome obstacles, and solve problems.
 - Reward aggressive action.
 - Inspire everyone to believe they are warriors and that every team is a team of warriors.

2. Use a coherent joint force that decides and acts based upon pervasive knowledge.
 - Develop joint interdependence among Service capabilities and associated force structures.
 - Employ a network-centric method to collect, fuse, analyze then provide access to information supporting leader decision requirements.
 - Employ a joint military/interagency decision making process that uses a collaborative information environment and functions with multinational partners.
 - Translate pervasive knowledge and predictive analysis into anticipatory decisions and precise actions to achieve desired effects in a military, interagency, and multinational environment.

3. Develop resourceful leaders.
 - Use training as a leader development venue.
 - Develop operational art explicitly.

- Enable and empower leaders to operate effectively in all situations, in all operating environments, and when facing traditional and irregular challenges.
 - Identify future joint and Service leader competencies and design appropriate training and education programs.
4. Train under the right conditions.
- Replicate operational-level conditions in joint and Service exercises.
 - Prepare for operational tasks that accompany both traditional and irregular challenges.
 - Joint Task Force Headquarters AND subordinate elements—joint organize, train, and equip.
 - Include Interagency and Multinational elements.
5. Field capabilities to maintain adaptive force dominance.
- Create proper active component reserve component force mix.
 - Identify necessary standing joint organizations.
 - Determine proper methods for routine “dynamic tasking.”
 - Maintain Service collective, unit competencies.
6. Uphold the values of democracy and the laws of armed conflict.
- Value human dignity and the pursuit of freedom and democracy.
 - Use force with proportionality and discrimination.
7. Conduct routine operations to gain and maintain operational access.
- Establish a set of basing options (permanent and situational).
 - Leverage interagency, multinational, and international partnerships to guarantee basing and isolate the adversary.
 - Identify proper mix of CONUS-based, forward deployed, prepositioned equipment, and rotational capabilities.
 - Plan to counter the adversary’s irregular methods of denying access.
 - Develop joint assured access capabilities to include expeditionary forcible entry.
 - Develop lift capabilities that facilitate maneuver from strategic (intertheater) and operational (intratheater) distances.

➤ **How the Joint Force Fights (execution principles)**

1. Start with the strategic purpose in mind.
 - Derive intent from assigned strategic aims.
 - Convey intent with clarity and simplicity to achieve unity of purpose and coherency of action.
 - Harmonize military operations with other instruments of government action, e.g., diplomatic, informational, and economic.
2. Achieve decisive outcomes and conclusions.
 - Achieve strategic aims: Win at the tactical level to set conditions for winning at the operational level.
 - Consider fully the consequences of combat operations in the context of the larger campaign.
 - As appropriate, destroy, dislocate, or disintegrate the enemy fighting capabilities and will.
 - Use decisive defeat of enemy combat forces, both regular and irregular, as a means to achieve decisive conclusion to war.
3. Gain and maintain information domain dominance.
 - Develop a comprehensive information and influence plan consistent with the strategic intent.
 - Seize the information domain initiative by employing nonkinetic methods supported by kinetic methods when necessary.
 - Continuously assess the effectiveness of information and influence operations.
 - Adapt information and influence operations, as necessary, to changes in the strategic, operational, and tactical environments.
4. Employ a knowledge-enhanced, effects-based approach.
 - Strive for pervasive knowledge that translates into increased precision and decisiveness of action.
 - Gain a holistic understanding of the adversary.
 - Link friendly tactical actions to operational and strategic aims.
 - Focus on effects relative to enemy centers of gravity, decisive points, and other critical areas, organizations, and activities.
 - Adapt: Change tasks when needed to achieve desired effects.

5. Employ a joint, interagency, and multinational force with collaborative processes.
 - Include interagency and multinational partners in collaborative planning and execution processes.
 - Create an appropriate information-sharing environment with all partners.

6. Use mission orders throughout the chain of command.
 - Focus mission orders on effects to be achieved.
 - Nest orders, disseminate them vertically and horizontally, and facilitate collaboration and decentralization.
 - Achieve and maintain unity of effort among military and nonmilitary forces.

7. Gain and maintain operational access.
 - Establish necessary control of air, sea, space, and cyberspace required to gain and maintain operational access.
 - Use forcible entry operations when required.
 - Use speed to thwart enemy efforts to establish operational exclusion zones.
 - Overwhelm the enemy through simultaneous and sequential employment of rapid maneuver and precision engagement capabilities.
 - Swiftly introduce fully capable and immediately employable forces to set the conditions for rapid transition to follow-on operations.
 - Directly deliver tailored mission capability packages through a combination of strategic (intertheater) and intratheater lift, and self-deployment.
 - Understand the access challenges of irregular warfare and apply appropriate military, diplomatic, or economic effort to overcome them.

8. Engage the adversary comprehensively.
 - Apply force along multiple axes simultaneously or sequentially, as appropriate, and decisively against critical objectives, e.g., enemy forces, Command and Control, Communications and Computer networks, as well as ISR assets.
 - Focus offensive actions on the irregular adversary's legitimacy, his cause, and his means to wage war.
 - Present asynchronous picture to the enemy without losing unity of purpose and coherency of action.

9. Generate relentless pressure by deciding and acting distributively.
 - Present adversary with multiple dilemmas and create a sense of futility.
 - Go for the jugular and don't let up.
 - Apply strength to create and exploit enemy weaknesses.
 - Act distributively.

10. Achieve coherent action.
 - Prepare for, act on, and adapt to shifts of emphasis between regular and irregular warfare.
 - Generate complementary and reinforcing kinetic and nonkinetic actions taken by military and nonmilitary organizations to achieve the desired lethal and nonlethal effects.
 - Exploit extensive connectivity and collaboration among all partners.
 - Take the broadest view of engagement.
 - Achieve "true" economy of power—every action contributes.

11. Align force projection, employment, and sustainment activities.
 - Use a coherent mobilization and force projection sustainment system.
 - Reduce force closure times to achieve strategic velocity.
 - Strategically deploy capabilities, not commodities.
 - Reduce and, when required, eliminate RSO&I support requirements.
 - Avoid strategic or operational pause, except to achieve effect.

12. Protect people, facilities, and equipment throughout the battlespace.
 - Preserve our combat power.
 - Protect the force comprehensively from homeland to points of employment.
 - Extend the protection umbrella, as required, to cover noncombatants, valuable sources of information, and key infrastructure in the area of operations.
 - Prevent interruption of space and information systems.



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