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U. S. Joint Forces Command



A Concept For Rapid Decisive Operations



J9 Joint Futures Lab

RDO Whitepaper Version 2.0





PREFACE

On September 11, 2001, America found itself at war. The President has outlined three categories within this war on terrorism. The first of these is to support of the defense of our homeland. The second is the campaign against terrorists themselves. The third is the potential for operations against the nations that support or harbor terrorists. In addition to those tasks, the 2001 annual Defense Planning Guidance (DPG) tasked CINC US Joint Forces Command (USJFCOM) to “develop new joint operational concepts that support transformation and which “exploit US asymmetric military advantages and exploit joint force synergies.”

In response to these requirements, the Rapid Decisive Operation White Paper provides a concept for using new and emerging capabilities of the joint force acting in an interagency context to strike a terrorist entity directly or to influence or coerce a regional power, or, if necessary, to defeat or replace a regime that fails to conform to our expectations. This concept synthesizes the results of a broad set of analytical efforts within DOD, academia, and among other partners to describe a future warfighting concept for experimentation to meet these aims. It provides a framework to guide further experimental efforts, an opportunity for intellectual exchange, and a way to focus DOD transformation activities. The RDO concept is not intended to present a new comprehensive doctrine, but rather to serve as a vehicle for the development of doctrine, organization, training, materiel, leadership development, people, and facilities recommendations.

The RDO concept presents a way that a joint force commander, acting in conjunction with other instruments of national power, can determine and employ the right force in a focused, non-linear campaign to achieve desired political/military outcomes. Our initial experimentation efforts have focused on a smaller-scale contingency. However, it is clear that the principles of RDO may be applied across the range of military operations.

I challenge you to examine and apply the RDO concept while keeping in mind that we are deciding how America’s sons and daughters will fight in the future. It is important that we apply our best effort, regardless of military service or warfighting discipline to create the transformation of our nation’s military that they deserve.

Points of Contact

Questions or comments related to the RDO concept development effort should be directed to LTC Kevin M. Woods, Chief, RDO Integrated Product Team (IPT); 757-836-2873, DSN: 836-2873; woodskm@je.jfcom.mil/ J9331@hq.jfcom.smil.mil; and Mr. Bob Fawcett, RDO IPT; 757-836-2252; fawcett@je.jfcom.mil/J9C529@hq.jfcom.smil.mil.

// SIGNED //
DEAN W. CASH
Major General, U. S. Army
Director, Joint Experimentation

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Executive Summary

Guidance. On September 11, 2001, the United States came under vicious, bloody attack. Americans died in their places of work. They died on American soil. America is at war. The President and the Secretary of Defense have outlined three categories within this war on terrorism. The first of these is operations in support of the defense of our homeland. The second is the campaign against terrorists themselves. The third is the potential for operations against the nations that support or harbor terrorists. In addition to those tasks, the 2001 annual Defense Planning Guidance (DPG) tasked CINC US Joint Forces Command (USJFCOM) to “develop new joint operational concepts that focus in particular on the transformation goals” and which “exploit US asymmetric military advantages and exploit joint force synergies.”¹

In response to these requirements, the Rapid Decisive Operation White Paper provides a new joint operational concept for using emerging capabilities of the joint force acting in an interagency context to strike terrorism directly or to influence or coerce a regional power, or if necessary, to defeat or replace a regime that fails to conform to our expectations.

Rapid Decisive Operations (RDO) is an evolving concept for conducting these challenging missions in the next decade. It is the USJFCOM experimentation vehicle for transforming jointness. It provides a joint context for Service experimentation efforts and integrates other USJFCOM functional concepts and emerging ideas. While initial experimentation efforts have been oriented at the operational level of war in a high end, smaller-scale contingency the RDO concept has strategic and tactical implications as well, and the principles of RDO may be applied across the range of military operations. It describes the application of the military instrument of national power broadly in terms of the balanced and integrated application of dominant maneuver, precision engagement, and information operations. This paper does not provide the details of “how to fight.” These details are still under development and will be refined in future experimentation efforts.

The Strategic Requirement

The United States now faces a world in which adversaries have the ability to threaten our interests or attack us or our allies with little or no warning. Our ability to deploy major forces to a theater in crisis will be constrained by politics, geography, adversary anti-access capabilities, and weapons of mass effects. Legacy warfighting concepts, and to some extent the forces created to support them, are ill-suited to deal with this new security environment. We can no longer plan on months or even weeks to deploy massive theater forces into a region rich in unthreatened infrastructure, while delaying offensive action until favorable force ratios have been achieved. Instead, we must plan to engage in the first hours of a crisis with those capabilities that can be brought to bear quickly, informed by intimate knowledge of the adversary and focused on those objectives most likely to produce the desired effects. This new

¹ Defense Planning Guidance 2003-2007, dated August 30, 2001, Page 9. This expands on the 1999 and 2000 Defense Planning Guidance, which tasked USJFCOM to develop “...new joint warfighting concepts and capabilities that will improve the ability of future joint force commander's (JFC) to rapidly and decisively conduct particularly challenging and important operational missions, such as...coercing an adversary to undertake certain actions or deny the adversary the ability to coerce or attack its neighbors...”

American way of war, especially when enabled by forces optimized to its requirements, will enhance our national security in the 21st century.

The strategic requirement is to be ready to transition from a relatively peaceful environment to intense combat operations rapidly and decisively to achieve the strategic objectives. Our challenge, in conjunction with other instruments of national power, is to build the military capability to respond quickly and bring regional contingencies to a rapid and decisive close. We must do this while retaining our ability to prevail in the event of a major regional contingency.

Operational Environment. The emergence of a number of regional powers and other entities able to develop military capability by accessing sophisticated military and commercial technology available in the global marketplace presents a likely and dangerous future threat to US interests. Potential adversaries are adaptive and may have a numerically superior combined arms force, as well as a regional "home field" advantage, with an area-denial capability. Future adversaries will employ asymmetrical approaches, and may be willing to inflict and sustain significant military and civilian casualties.

We cannot predict with confidence what nation, combination of nations, or non-state actor will pose threats to vital US interests. We can, however, anticipate the capabilities that an adversary might employ to coerce its neighbors or to deter the U. S. from acting in defense of its allies and friends. "Those capabilities are likely to include terrorism, cyber warfare, advanced surface-to-air missile defense systems, anti space weapons, and weapons of mass destruction, among others. They could be employed selectively or in combination. But in all cases their use is likely to have as its aim delaying, disrupting, damaging, or destroying the military capabilities of the U. S., its allies, and friends." These threats and the lack of a specified adversary require us to shift the basis for defense planning from the "threat based model used in recent years to a capabilities based model...one that focuses more on how an adversary might fight than who the adversary might be and where a war might occur."²

Characteristics of US Future Joint Operations.

The United States military will stress four key characteristics applicable across the spectrum of future joint operations. Operations will be knowledge-centric. Creating and leveraging superior knowledge in the battlespace will enable decision superiority, reduce operational risk, and increase the pace, coherence, and effectiveness of operations. Operations will be effects-based. Our assessments, planning, and execution, will focus on understanding and creating the desired effect against the adversary's complex and adaptive national war-making capability. Operations will be coherently joint. Our future force capabilities must be born joint, while at the same time our legacy systems must be made interoperable. We will fight as a networked force, which allows us to plan, decide, and act collaboratively and concurrently to accomplish many tasks simultaneously.

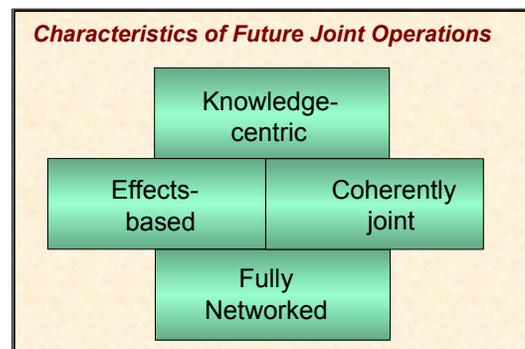


Figure 1. Characteristics of Future Joint Operations

² Defense Planning Guidance 2003-2007, dated August 30, 2001, Page viii.

Concept Definition

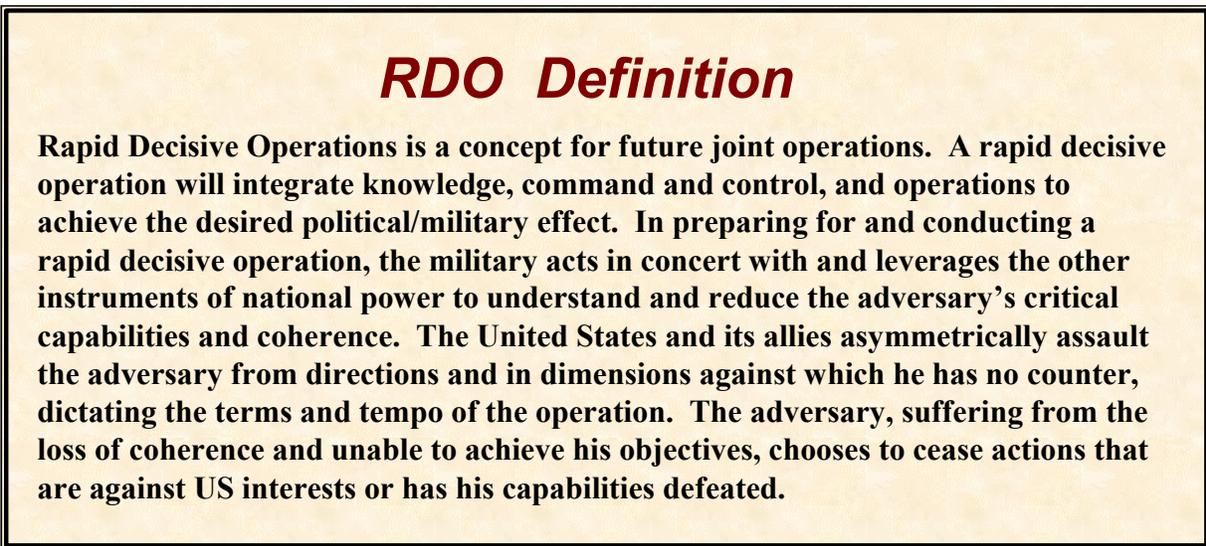


Figure 2. RDO Definition

The preparation for RDO is deliberate and continuous, focusing on actions to influence and deter an adversary. It requires detailed pre-crisis development of knowledge about the adversary and contingency planning for combat operations. If deterrence fails, RDO provide the capability to rapidly and decisively coerce, compel, or defeat the enemy in order to accomplish our strategic objectives without a lengthy campaign or an extensive buildup of forces. One of the fundamental characteristics of RDO is the focus on rapid resolution. RDO are not designed for long-term commitment or to resolve long-standing problems. A rapid decisive operation creates the desired outcome itself or it establishes the conditions to transition to a higher (e. g., major regional contingency) or lower (e. g., security and stability operation) level of commitment.

The Elements of Rapid Decisive Operations

The concepts and capabilities to achieve RDO can be broadly categorized under **knowledge**, **command and control**, and **operations**. Although concept elements are discussed in one category, all are linked closely to concepts and ideas in other categories.

Knowledge. The creation and sharing of superior knowledge are critical to RDO. The more we know about the enemy, the operational environment, and ourselves, the more precisely we can focus our capabilities to produce desired effects. Key knowledge concepts are Operational Net Assessment, Common Relevant Operational Picture, and Joint Intelligence, Surveillance, and Reconnaissance.

Command and Control. Greater coherence of command and control and more rapid and effective execution is enabled by a standing jointcommand and control element in each geographic CINC's headquarters. The Adaptive Joint Command and Control, Joint Interactive

Planning, Interagency Collaboration, and Multinational Operations concepts provide improvements that enable this new standing joint command and control element to set the conditions for decision superiority.

Operations. The application of military power at the operational level employs the integrated application and mutual exploitation of Dominant Maneuver, Precision Engagement, and Information Operations. Operations are enabled by Assured Access, Rapid Force Deployment, Agile Sustainment Operations, and Full Dimensional Protection.

The Way Ahead

In order to lead transformation of America military, and achieve the optimal future force capability, Joint Experimentation will create and deliver recommendations for doctrine, organization, training, materiel, leader development, people, and facilities (DOTMLPF) changes. These recommendations will be derived from continuous analysis of both internal and external experimentation results. The majority of recommendations will be timed to align with Quadrennial Defense Reviews. Recommendations that provide an immediate capability to the United States will be released as soon as possible.

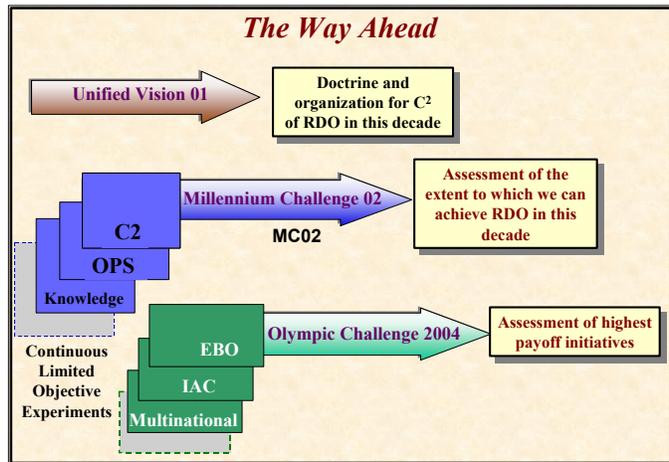


Figure 3. The Way Ahead

Recommendations will be developed through a process that examines objectives, issues, and questions and matches them with a set of experiments. Two major joint integrating experiments are planned. Millennium Challenge 2002 (MC-02), will focus on our ability to conduct RDO in this decade. Olympic Challenge 2004 (OC-04) will demonstrate the ability to conduct an RDO in the next decade. Additional workshops, seminars, limited objective experiments (LOE) and other experimentation events, such as the Olympic series, will further refine functional concept elements and associated DOTPLMF change recommendation packages.

CHAPTER ONE

INTRODUCTION

This chapter identifies the Defense Planning Guidance tasking to develop a concept for rapid decisive operations (RDO). It provides the background and purpose of the concept and describes the organization of the document.

1.1 Tasking

On September 11, 2001, the United States came under vicious, bloody attack. Americans died in their places of work. They died on American soil...we cannot and will not know precisely where and when America's interests will be threatened, when America will come under attack...we can be clear about trends but uncertain about events...Adapting to surprise – adapting quickly and decisively must therefore be a condition of planning.³ America is at war with terrorism. The President and the Secretary of Defense have outlined three categories within this war on terrorism. The first of these is operations in support of the defense of our homeland. The second is the campaign against terrorists themselves. The third is the potential for operations against the nations that support or harbor terrorists. The 2001 annual Defense Planning Guidance (DPG) tasked CINC US Joint Forces Command (USJFCOM) to “develop new joint operational concepts that focus in particular on the transformation goals” and which “exploit US asymmetric military advantages and exploit joint force synergies.”⁴

In response to these requirements, the Rapid Decisive Operation White Paper provides a new joint operational concept for using emerging capabilities of the joint force acting in an interagency context to strike terrorist directly or to influence or coerce a regional power, or if necessary, to defeat or replace a regime that fails to conform to our expectations.

This paper describes an evolving construct for such RDO in the future. Initial experimentation efforts have focused on a high-end, smaller-scale contingency (SSC) as our scenario. Smaller-scale contingency operations encompass the full range of military operations short of major theater warfare, including humanitarian assistance, peace operations, enforcing embargoes and no-fly zones, evacuating US citizens, and reinforcing key allies.⁵ For the purpose of the RDO concept, a *high-end SSC* requires the swift intervention of military forces in combat operations to contain, resolve, or mitigate the consequences of a conflict that could otherwise become far more costly and deadly.⁶ Nonetheless, RDO principles and capabilities can apply to a variety of missions that span the range of military operations. It describes the application of the military

³ Quadrennial Defense Review Report, dated 30 September 2001, page iii.

⁴ Defense Planning Guidance 2003-2007, dated August 30, 2001, Page 9. This expands on the 1999 and 2000 Defense Planning Guidance, which tasked USJFCOM to develop “...new joint warfighting concepts and capabilities that will improve the ability of future joint force commander's (JFC) to rapidly and decisively conduct particularly challenging and important operational missions, such as...coercing an adversary to undertake certain actions or deny the adversary the ability to coerce or attack its neighbors...”

⁵ National Security Strategy: A National Security Strategy for a New Century. December 1999. Page 18.

⁶ Quadrennial Defense Review Report, May 1997, section III.

instrument of national power broadly in terms of the balanced and integrated application of dominant maneuver, precision engagement, and information operations. This paper does not provide the details of “how to fight.” These details are still under development and will be refined in future experimentation efforts.

1.2. Background

The RDO concept is the USJFCOM experimentation vehicle for transformation⁷ and achieving *Joint Vision 2020* (JV2020). This concept provides a construct for future joint operations and a framework for USJFCOM experimentation to develop recommendations for doctrine, organization, training, materiel, leader development, people, and facilities (DOTMLPF), as well as policy implications. It provides joint context for Service experimentation. It is based on the JV2020 operational capabilities, dominant maneuver (DM), precision engagement (PE), focused logistics (FL), full-dimensional protection (FDP), and the key enabler, information superiority (IS). It draws on the previous USJFCOM RDO concept framework paper and incorporates elements that demonstrated the greatest promise during FY-00 concept exploration and the analysis and insights gained from the USJFCOM RDO Analytic Wargame 2000 series and Unified Vision 2001. Ideas extracted from the works by Institute for Defense Analysis, Defense Group, Inc., Service concepts for future operations, and other sources also contribute to the development of the RDO concept.

As an integrating concept, the RDO concept provides context for and incorporates appropriate elements from a number of co-evolving USJFCOM functional concepts including: Adaptive Joint Command and Control (AJC2), Common Relevant Operational Picture (CROP), Joint Interactive Planning (JIP), and Focused Logistics: Enabling Early Decisive Operations (FLEEDO). The RDO concept also includes emerging ideas such as Effects-based Operations (EBO), Operational Net Assessment (ONA), Interagency Operations, Multinational Operations (MNO), Dominant Maneuver (DM), Precision Engagement (PE), Information Operations (IO), Assured Access (AA), Joint Intelligence, Surveillance, and Reconnaissance, (JISR), Full Dimensional Protection, (FDP), Rapid Force Deployment, and Agile Sustainment Operations. The last two are based on elements of the FLEEDO Concept. The RDO related concepts will be further developed in supporting concept papers, concepts of operations, and tactics, techniques, and procedures (TTP) as necessary to support experimentation and to develop DOTMLPF and policy recommendations further.⁸

1.3. Organization of This Document

This chapter provides tasking and background, and describes the organization of the document. Chapter 2 provides context for the RDO concept. It describes the strategic requirement, the operational conditions, and the envisioned characteristics of future US operations. Chapter 3

⁷ Joint Publication 1. Joint Warfare of the Armed Forces, 14 November 2000, Page VIII-4. “...transformation must simultaneously enhance the current forces, facilitate evolution of the projected next force, and creatively invent the force after next.

⁸ Supporting concept papers, concepts of operations, and tactics, techniques, and procedures (TTP) can be found on USJFCOM J9 Quickplace interactive web site (<https://home.je.jfcom.mil/j9workspaces.htm>) under the Concept Development Section.

defines and describes the operational concept. Chapter 4 provides a further description of the RDO concept elements organized under the categories of knowledge, command and control, and operations. Chapter 5 summarizes the concept experimentation strategy and other complementary experimentation efforts as they relate to RDO. It also discusses desired operational capabilities and their DOTMLPF implications, and provides a description of a Concept Vulnerability Assessment (CVA).

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CHAPTER TWO

THE JOINT OPERATIONAL CONTEXT

This chapter provides the context for this paper. It describes the future environment and the potential adversaries that may challenge US interests. It also describes the proposed solution in terms of envisioned characteristics of future operations.

2.1. The Emerging Security Environment: The Strategic Requirement

The United States now faces a world in which adversaries will attack with little or no warning. Our ability to deploy major forces to a theater in crisis will be constrained by politics, geography and adversary employment of anti-access capabilities--ballistic and land-attack cruise missiles, terrorism, diesel submarines, antiship cruise missiles, sea mines, and weapons of mass effects (WME). Legacy warfighting concepts, and to some extent the forces created to support them, are in many ways ill suited to deal with this new security environment. We can no longer plan on months or even weeks to deploy massive theater forces into a region rich in unthreatened infrastructure, while delaying offensive action until favorable force ratios have been achieved. Instead, we must plan to engage in the first hours of a crisis with those capabilities that can be brought to bear quickly, informed by intimate knowledge of the adversary and focused on those objectives most likely to produce the desired effects. This new American way of war, especially when enabled by forces optimized to its requirements, will enhance our national security in the 21st century.

Since the end of the Cold War, the United States has encountered a dramatic change in the nature of the security environment. Throughout most of the 20th century, the coordinated application of the instruments of national power (diplomatic, information, military, and economic) remained at the level of national strategic planners and decision makers. At the operational level, there were clear distinctions between the instruments of national power and the application of those elements in support of our national interests. During the 1990s, the distinctions between the strategic and operational levels began to blur while domestic and international expectations about the application of national power changed as seen in operations in portions of the Gulf War (1990-91), Haiti (1994), and Kosovo (1999). In response to the shifting conditions, the US military has changed in such ways as formalizing Theater Engagement Plans (TEP),⁹ increased emphasis on non-traditional missions and relationships, expanding contacts with the wider Interagency Community, and developing robust concepts in the area of information operations, for example.

The new range of threats our nation faces extends beyond the traditional rivalries of nation-states. New entities that include non-state, transnational, and other ill-defined adversaries have gained the capability to present significant threats to our interests. Demographic developments,

⁹ The Theater Engagement Plan (TEP) is primarily a strategic planning document intended to link the CINC-planned regional engagement activities with the national strategic objectives...The TEP identifies the synchronization of these activities on a regional basis and illustrates the efficiencies gained from regional CINC engagement activities that support national strategic objectives. CJCSM 3113.01A, 31 May 2000, Page A-1.

global terrorism, and growing disparities in global wealth and resource distribution will create additional pressures. International drug trafficking will remain a source of instability, as will ethnic, religious, and cultural divisions. Even among traditional state actors, the difference between hostility and non-hostility has blurred, as new capabilities such as computer network attack make it difficult to recognize when the line into hostility has been crossed. The proliferation of advanced weapons systems, terrorism, and technologies, such as theater missiles, has eliminated the traditional time between warning and attack that framed many of our operation plans.

Dramatic technological developments in the information, biological, and space sciences offer significant opportunities for the advancement of military science. The emergence of new threats, enabled by these technologies, are difficult for our legacy forces and technologies to address. We are entering an era in which there may be no clear lines between hostile and nonhostile or political and military action. Actions by an adversary will extend beyond hostile military action and include terrorist attacks and cyber warfare. The perpetrators of these actions may be harder to identify and even when identified they may conceal themselves among the innocent, making it harder for us to strike them. We will operate in a continuum of activity in a political-military-economic-social-infrastructure-informational environment in which the objectives and the intensity of our relationships with potential adversaries may change rapidly.

Our current joint force, with its overwhelming capabilities for conventional conflict with a military peer competitor, might not provide the tools we need to dominate this new environment. Since the fall of the Soviet Union, we have re-sized the Cold War force into a smaller version of itself. Most of our Cold War doctrine, principles of operations, force design, and programming and acquisition processes remain unchanged. We have infused our smaller legacy force with the emerging advantages of the “Revolution in Military Affairs” and in many ways have improved the efficiency of elements of the force but not necessarily the overall effectiveness of the force.

Legacy forces are limited by reduced forward based forces and limited bases, fewer forces to meet increasing requirements, insufficient strategic lift to rapidly deploy our powerful but ponderous legacy forces, insufficient numbers of long range attack platforms, and dependence on low density/high demand intelligence, surveillance and reconnaissance (ISR) platforms. We have an unmatched ability to gather information on the environment, the adversary, and ourselves but lack the collaborative planning and C2 systems to analyze and fuse this information and use it to enable decision superiority. We have precision weapons that can hit an aim point with great accuracy, but we lack the ability to produce consistent desired operational effects. The US military brings great capabilities to each warfighting domain, but continuing interoperability problems, insufficient joint training, and the lack of a fully coherent joint C2 system limit their ability to perform routinely and effectively in integrated joint action.

We also face an emerging international environment characterized by pervasive knowledge, and an increased expectation of rapid results at minimal cost. In addition, pressure increases to limit damage to an adversary’s national infrastructure and carnage on the civilian population. These geo-strategic changes and the proliferation of advanced technologies have reshaped the 21st century battlespace.

The strategic military requirement is to be ready to transition from a relatively peaceful environment to intense combat operations rapidly and to achieve decisive strategic objectives. Our challenge, in conjunction with other instruments of national power, is to build the capability to respond quickly and bring regional contingencies to a rapid and decisive close. We must do this while retaining our ability to prevail in the event of a major regional contingency.

2.2. Adaptive Adversaries: The Operational Conditions

We cannot predict with confidence what nation, combination of nations, or non-state actors will pose threats to vital US interests. We can, however, anticipate the capabilities that an adversary might employ to coerce its neighbors, to strike the United States or to deter the U. S. from acting in defense of its allies and friends. Recent terrorist attacks against the U. S. homeland demonstrate that terrorist groups possess both the motivations and the capability to attack U. S. territory, citizens, and infrastructure without restraint. This lack of restraint and the availability of new and more lethal technologies offers an adversary enormous potential for unpredictability and destruction. “Those capabilities are likely to include terrorism, cyber warfare, advanced surface-to-air missile defense systems, anti space weapons, and weapons of mass destruction, among others. They could be employed selectively or in combination. But in all cases their use is likely to have as its aim delaying, disrupting, damaging, or destroying the military capabilities of the U. S., its allies, and friends.”¹⁰ These threats and the lack of a specified adversary require us “to shift the basis for defense planning from the ‘threat based’ model used in recent years to a capabilities based model...one that focuses more on how an adversary might fight than who the adversary might be and where a war might occur.”¹¹

In spite of our significant technological, economic, and military edge, a number of regional powers and transnational coalitions have the potential to place our national interests at risk. Such adversaries could achieve, within an acceptable cost and in a very near timeframe, a level of military capacity that could give them the ability to exploit the current limitations of our legacy force.

Potential adversaries have learned from our recent operations and adapted to now pose increasingly dangerous threats that may include a numerically superior combined arms force. They may not be constrained by time and, using the "home field" advantage, will have the ability to demonstrate a threatening posture or act of defiance and then back away at will. Adversaries will seek opportunities to achieve their objectives before the United States can respond and present us with a *fait accompli*. If we choose to engage, our adversaries will adapt and innovate to overcome our capabilities. Most will not attempt to defeat our forces in symmetric confrontation, but rather will attempt to defeat our will by using asymmetric attacks, denying us access, and, if necessary, drawing us into a prolonged, slow, and indecisive operation.

Asymmetric attacks may employ long-range missiles with WME or terrorist attacks against our intermediate bases, deployment infrastructure, allies, and even targets in continental United States (CONUS). Adversaries may target our increased dependence on commercial assets while capitalizing on our hesitancy to target-third nation commercial assets that an adversary might

¹⁰ Defense Planning Guidance 2003-2007, dated August 30, 2001, Page viii.

¹¹ Ibid, page viii.

use. They will attempt to deny us access to the theater of operations by using widely available modern anti-access systems and emerging commercially available technologies. These might include theater missiles, integrated and mobile air defenses, WME, mines, submarines, and sophisticated forms of coastal defense. Failing to deny us access, they will draw us into costly attrition operations, where they can manage to win by not losing. Their objective will be to inflict major casualties on our forces to cause us to doubt our ability to win at an acceptable cost. They may also be willing to accept significant numbers of military and civilian casualties. They will attempt to counter our high technology capabilities by camouflage, cover, deception, and dispersion. They will employ sophisticated IO to attack our national, allied, and or coalition's will to fight.

Our operations in Serbia and Kosovo, while successful, presented challenges we may see more of in the future: ethnic cleansing, dispersed operations by small units, sophisticated antiair defenses, and extensive use of cover, camouflage, and concealment. We were constrained to less than optimal methods of attack in an effort to minimize friendly casualties. IO were targeted against our will and the coherence of the coalition. We denied ourselves the synergy inherent in the full Joint Force when ground forces were removed from the list of possible options. Had we the ability to rapidly deploy and employ the full range of joint capabilities and present Serbia with a multi-dimensional threat, we may have been able to bring operations to a more rapid and decisive conclusion.

2.3. Future Joint Operations: The Solution

To respond to the environment and threats of the future, we must transform the way in which we conduct joint operations. We must learn to conduct our operations in conjunction with the other instruments of national power. There are four conceptual characteristics that, if achieved, describe the fundamental differences between “future” joint operations, and today’s joint operations. Some of the characteristics of future joint operations are, to a degree, in place now, others are being developed, and still others are becoming well understood but require time to evolve from concept to doctrine. As a minimum, future operations will embody the mutually supporting characteristics of: knowledge-centric, effects-based, coherently joint, and fully networked. This document focuses on the application of these characteristics to RDO in a high-end smaller-scale contingency, but they have application across the range of operations.

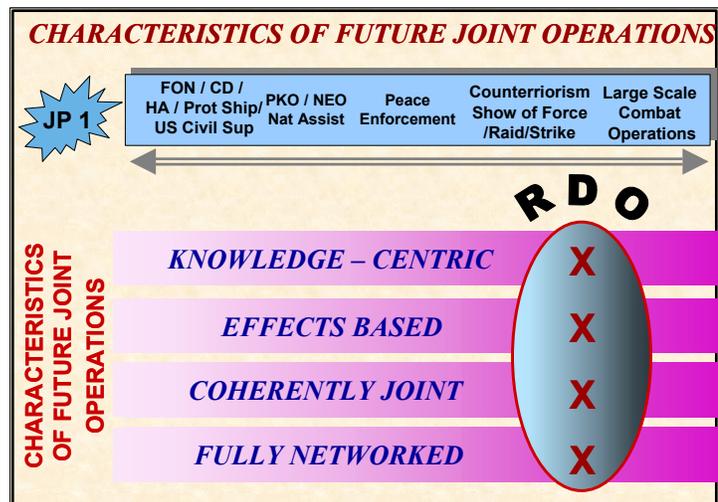


Figure 4. Characteristics of future Joint Operations

2.3.1. Knowledge-centric

Possession of superior knowledge will enable us to change future joint operations. The power of sophisticated future information systems will provide the opportunity for unprecedented creation and sharing of knowledge and understanding of the enemy, our own capabilities, the environment, and the battlespace. Enhanced situational understanding will enable decision superiority (better decisions quicker), reduced operational risk, and dramatically increased pace, coherence, and effectiveness of operations. The more we know about the enemy, the operational environment, and ourselves, the more precisely we can focus our capabilities to produce desired effects with the right amount of force. This may enable us to balance effectiveness and efficiency better than we have in the past. The results would be an increase in both the rapidity of our operation and the degree of decisiveness we can obtain.

2.3.2. Effects-based

The effects-based philosophy focuses on obtaining a desired strategic outcome or “effect” on the enemy, through the application of the full range of military and non-military capabilities at the tactical, operational, and strategic levels. An “effect” is the physical, functional, or psychological outcome, event, or consequence that results from specific military or non-military actions.

The effects based approach requires planners and commanders to examine the causal linkages and effects through which actions lead to objectives. It is the relevance of the causal linkages with respect to the current situation that determines whether the action taken will achieve the desired effect. From a planner’s perspective, causal linkages help to understand why a proposed action could be expected to produce a desired effect given the current circumstances. This approach provides the basis for planners and commanders to consider all of the consequences of potential actions including, but not limited to, secondary or follow-on effects and unexpected effects. An effects-based approach also leads to addressing those effects that are counterproductive to attaining the objective, in an effort to minimize or eliminate their impact.

The effects-based philosophy envisions using our more comprehensive insight into the adversary, the environment, and our own capabilities to facilitate the determination of desired effects and to apply the full spectrum of military and non-military capabilities. Continuous, comprehensive assessment of the resultant outcomes enables rapid adaptation by the joint force to quickly and efficiently achieve the commander’s desired outcome.

2.3.3. Coherently Joint

At the operational level our force and its capabilities must be born joint, allowing us to invest up front in true joint capabilities rather than fixing DOTMLPF interoperability problems after the fact. For the foreseeable future, significant portions of the legacy force will require retrofit of necessary interoperability capabilities. Successful joint action will rely on fully integrated joint C2 systems, interoperable combat systems, and a coherence of thought and action enabled by commonly understood doctrine and increased joint training and leader development. For full coherence in the strategic, operational, and tactical domains, greater coordination and

collaboration must also extend to interagency and multinational operations. Coherently joint operations will require further expansion of the “joint space” that exists today at the combatant command level down to operational level execution (Joint Task Force (JTF) and/or component force headquarters). See Figure 5.

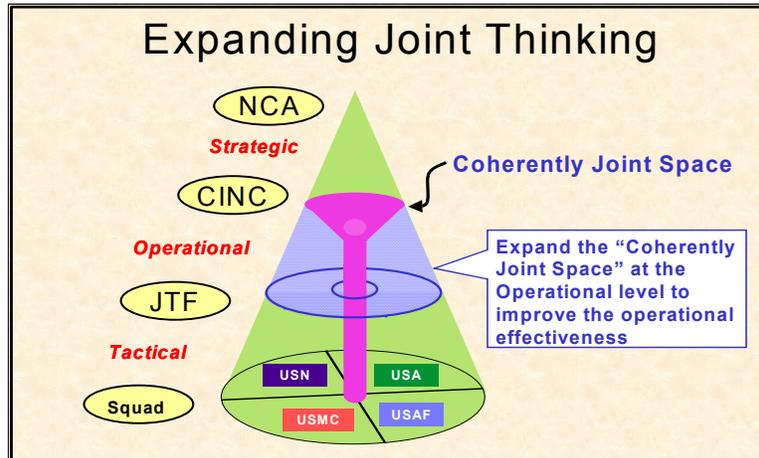


Figure 5. Expanding Joint Thinking

2.3.4. Fully Networked

Fully networked forces enable us to create and share knowledge, plan, decide, and act collaboratively and concurrently to accomplish many tasks simultaneously. Networked forces allow us to compress and change the nature of the sequential, echeloned way we plan and conduct operations today. They leverage shared situational knowledge among all elements of the joint force, which increases the speed and precision in planning and application of power. Habitual relationships, based on standing joint and component operational staffs, identification of specific organizations against specific contingencies, collaborative planning, frequent exercises and other opportunities to work together, serve to further increase the speed and effectiveness of planning and execution. Fully networked forces eliminate “stovepiped” processes, enhance the effectiveness of current joint capabilities, and expand the definition of what is a joint capability. They allow streamlined joint dynamic processes for ISR management, logistics, fire control, and maneuver processes and tactics. Our fully networked team must include interagency and multinational partners as well.

CHAPTER THREE

THE CONCEPT OF RAPID DECISIVE OPERATIONS

This chapter provides the definition of RDO and describes the elements of the RDO concept in three interrelated categories: knowledge, C2, and operations. It also describes the application of the RDO concept in an operational setting and introduces the Service concepts for future operations.

3.1. Concept Definition

Rapid Decisive Operations is a concept for future joint operations. A rapid decisive operation will integrate knowledge, command and control, and operations to achieve the desired political/military effect. In preparing for and conducting a rapid decisive operation, the military acts in concert with and leverages the other instruments of national power to understand and reduce the adversary's critical capabilities and coherence. The United States and its allies asymmetrically assault the adversary from directions and in dimensions against which he has no counter, dictating the terms and tempo of the operation. The adversary, suffering from loss of coherence, operational capabilities, and unable to achieve his objectives, ceases actions that are against US interests or has his capabilities defeated.

3.2. Concept Description

The RDO concept presents a paradigm for combat operations in which we, not our adversaries, dictate the terms by which we will fight. Our intent is to asymmetrically assault the enemy with all the instruments of national power, from dimensions and directions against which he has no counter. Precluding his options, RDO seize the operational and strategic initiatives, deny the adversary the opportunity to achieve his objectives, and generate in the enemy a sense of inevitable failure and defeat.

The preparation for RDO is deliberate and continuous, and includes detailed contingency planning and development of knowledge about the adversary. At the national and theater strategic level, the United States will attempt to **influence and deter** an adversary by using diplomatic, economic, and IO, supported by relevant military flexible deterrent options. If deterrence fails, RDO provide the capability to rapidly and decisively **coerce, compel, or defeat** the enemy to accomplish our strategic objectives without a lengthy campaign or an extensive buildup of forces. RDO will also set the conditions for **transition** to either post-conflict operations or extended combat operations if necessary.¹²

To be successful we must create a capability to be both rapid and decisive. Our forces have demonstrated the capability to be decisive, given sufficient time to build overwhelming combat

¹² This "influence, deter, coerce, compel, defeat, transition" structure is different from and starts earlier than the current operational phasing described in Joint Publication 3-0, page III-18 which refers to, "deter/engage, seize initiative, decisive operations, and transition."

power in an operational area. And we have forces that are rapidly deployable, but which may lack sufficient combat power to deter or defeat an adversary’s hostile intentions. RDO include several elements that will allow us to be both rapid and decisive. Figures 6 and 7 identify characteristics that will enhance rapidity and decisiveness. By better integrating the most responsive elements of the joint force, using the characteristics of future joint operations, we can initiate combat operations and rapidly produce effects while completing deployment of the remaining elements of the joint force.

Rapidity is both absolute and relative. Rapidity of movement may be absolute in that the NCA, the geographic combatant commander (hereafter referred to as CINC) or the commander of a JTF may require the ability to create a credible US military presence in a crisis or contingency in a matter of hours or days. In the case of operational mobility, rapidity may be relative in that the joint force commander wants the joint force to be capable of creating or reacting to situations faster than the adversary. Rapid resolution is accomplished by intense, unrelenting combat operations or the threat thereof.

Rapid

Rapid = Accomplishing the objectives of the campaign with speed and timing that is superior, absolutely and relatively, to the speed of the adversary.

To be rapid we need:

- Knowledge: Detailed understanding of enemy and ourselves
- Established joint headquarters element with a ready, responsive joint C2 system
- Early start to planning, timely decisions
- A compressed decision process
- Forward presence and rapid movement
- Tailored forces and sustainment
- Intense high tempo of operations

Figure 6. Rapid Operations

Decisive = Imposing our will on the enemy by breaking his coherence and defeating his will and ability to fight

To be decisive we need:

- Knowledge: Identify and affect what is most valuable to enemy
- An effects based planning and execution process
- Info superiority, dominant maneuver, and precision engagement to apply synchronized precision effects to generate overwhelming shock
- Responsive C2 systems and shortened response cycle
- Relentlessness

Figure 7. Decisive Operations

Decisiveness is enabled by knowledge capabilities that precisely identify adversary centers of gravity, critical vulnerabilities, and key links and nodes. Future C2 systems will enable the ability to leverage our national capabilities to destroy the coherence of the adversary’s will and ability to fight by striking his critical functions from dimensions and directions against which he has no counter. RDO coerce or compel the adversary not to use military force by disrupting the coherence of his efforts in such a way that he becomes convinced that he

cannot achieve his objectives and that he will ultimately lose what he values most. To that end, we will clearly display the intent and capability to deploy and employ additional joint forces if required. Also, RDO can, if necessary, simultaneously defeat his ability to conduct effective operations by destroying the forces are the source of the adversary’s power. While achieving effects is our primary method of influencing the enemy, in some cases the attrition of his forces may in fact be a primary means of producing the desired effect.

The basic elements of the RDO concept are a series of functional concepts and ideas that are grouped into three broad categories: **knowledge, C2, and operations** (figure 8). These concepts

embody the characteristics of future operations—knowledge-centric, coherently joint, fully networked, and effects-based.

3.2.1. Knowledge

The more we know about the enemy, the operational environment, and ourselves, and the interrelationship of each, the more precisely we can focus our capabilities to produce the desired effect. This will enable us to accomplish the mission with smaller deploying forces which can be employed more rapidly than in the past. The **Operational Net Assessment** is a process that promotes

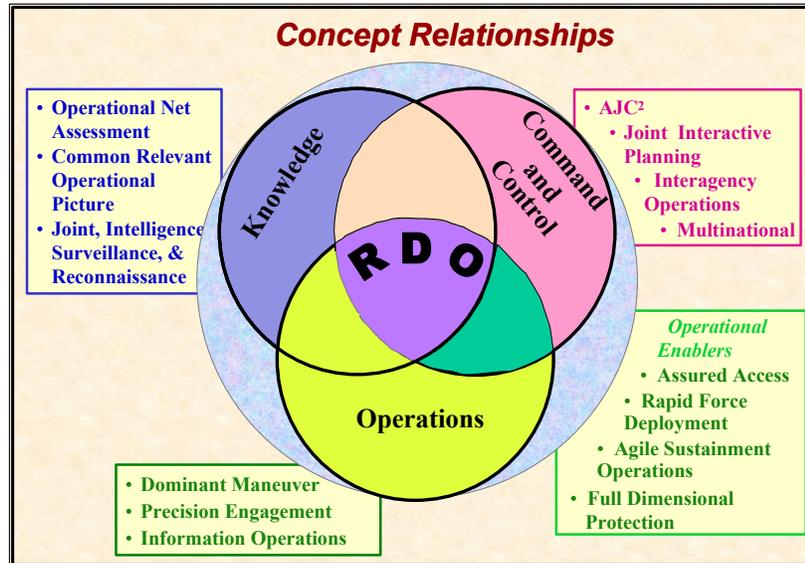


Figure 8. Functional / Emerging Concept Relationships

understanding of the adversary and friendly capabilities. It informs decision-makers from strategic to tactical levels regarding the complementary effects and supporting missions/tasks to be considered. It produces an operational support tool that provides the JFC visibility of effects to task linkages based on a system of systems analysis of a potential adversary’s political, military, economic, social, infrastructure, and information (PMESI²) instruments of national power. It informs decision makers from strategic to tactical levels.

The **Common Relevant Operational Picture** is a presentation of timely, fused, accurate, assured, and relevant information, which supports the development of knowledge and situational understanding. The CROP can be tailored to meet the requirements of individual users in the joint force and is common to every organization and individual involved in a joint operation. It is a “virtual warehouse” of required data/information for the joint force. The CROP, in concert with a robust collaborative planning environment, enables the joint force to achieve the high level of situational understanding necessary to RDO.

Joint Intelligence, Surveillance, and Reconnaissance for RDO uses a network approach to the management of ISR assets to integrate data from multiple sources into a fused information picture to support the quick-paced demands of effects-based operations. System of systems architecture enables the ISR community to be fully integrated into the operational plan, and will allow dynamic control of sensors and platforms. Planners and operators will share information in a collaborative environment.

3.2.2. Command and Control

RDO C2 leverages the significant investment and ongoing improvements in information technology, such as the Global Information Grid. Practiced collaboration, habitual relationships, and shared situational understanding will enable greater coherence of C2 and more rapid and effective execution. The foundation for improved C2 will be a joint C2 element (SJC2E) in each CINC headquarters as described in the **Adaptive Joint Command and Control** concept. Much more capable than a traditional “joint augmentation cell,”¹³ it will have the equipment, training, and authority to become a core around which the staff of a JTF, when established, will operate. Rapidly deployable, an augmented C2 element will be capable of operating alone for a small JTF contingency or operating with another larger headquarters or the CINC’s staff, depending on nature of the command relationships. This C2 element uses the ONA it has helped to develop plans for a prioritized set of selected missions.

Joint Interactive Planning enables a transition from hierarchical serial planning to more simultaneous parallel collaborative planning that reduces decision cycle times and increases tempo. **Interagency operations** envision a refined interagency collaboration process, which allows partners to “inform and be informed by” the others, enables the coordinated application of national power. Reducing or eliminating the ad hoc nature of the Interagency Community involvement in political/military coordination will be a key element in successful RDO. Future operations will be **multinational operations**. Understanding this, we will work with our multinational partners to employ the key assets, legitimacy, and political support they provide RDO. Peacetime engagement, training, and shared tools for planning will mitigate the challenges of policy, dissimilar training, equipment, technology, doctrine, culture, and language.

3.2.3. Operations

Military Power. The application of the military instrument of national power at the operational level to produce desired effects requires the integrated application of dominant maneuver, precision engagement, and information operations. **Dominant maneuver** is maneuver of joint forces in relentless, distributed, noncontiguous operations throughout the depth and breadth of the battlespace to create the desired effect. **Precision engagement** is joint force engagement of the right target, at the right time, with the right means to produce the desired effect.

Information Operations influence the perception of adversary decision makers and support the creation of the desired effect.

Operational Enablers. An interrelated set of operational enablers contributes to RDO. This set includes concepts and processes for assured access, rapid force deployment, agile sustainment operations, and full dimensional protection. **Assured access** is the ability to set and sustain for the time necessary the battlespace conditions necessary to bring the joint force within operational reach of the critical vulnerabilities affecting an adversary’s centers of gravity. **Rapid force deployment** includes both strategic deployment and operational movement within the theater. Rapid force deployment uses the knowledge and C2 capabilities described above to select, sequence, and deploy the right combination of joint force capability to accomplish the assigned

¹³ Joint Publication 5.00-2, Joint Task Force Planning Guidance and Procedures, page IX-7, discusses general characteristics of a Deployable Joint Task Force Augmentation Cell (DJTFAC)

mission. Rapid force deployment relies on both improved deployment processes and enhanced transportation capabilities to deploy and employ a tailored force. The focus is not just on rapidly deploying forces, but rather how to project sufficient combat power rapidly to execute the joint concept of operations. This must allow for a deliberate flow of forces designed to match JFC timelines for operations. **Agile sustainment operations** envision distributed basing, both afloat and ashore, with the capability to sustain the forces with mission-configured loads delivered directly to distributed forces in the battlespace. **Full dimensional protection** relies on knowledge and C2 capabilities to see the battlespace and quickly disseminate threat information to preempt or counter enemy action.

3.3. Applying Rapid Decisive Operations

The **capability** to execute RDO must be viewed in the context of the CINC's range of actions to influence, deter, coerce, compel, and defeat an adversary. The CINC focuses on the application of military power, but other elements of national power and allied and coalition capabilities augment and support this range of actions. The characteristics of future joint operations and the increased capability afforded a CINC by a RDO-capable force will change the nature of CINC's theater engagement. A greater emphasis on creating effects in the influence-and-deter phase increases the rapidity and decisiveness of joint combat operations.

The **preparation** to execute an RDO begins well before current-day crisis-action planning. A theater CINC prioritizes areas and issues of concern within the theater. These priorities focus the efforts of the SJC2E to focus and refine the theater ONA. This pre-crisis focus and ONA refinement may require changes to the TEP, JISR prioritization, or other activities intended to increase SJC2E's current knowledge base on the area or adversary in question. The knowledge provided by the SJC2E and the ONA permit the CINC to provide informed recommendations to the NCA. Early NCA decision and a clear articulation of the desired strategic end state greatly improve the capability to successfully execute RDO. Earlier decisions afford greater opportunities to take preemptive action. Even without an early NCA decision, the prior preparation, in the form of ONA and contingency planning, also increase the CINC's ability to respond rapidly to a range of operations, not just RDO.

A robust, networked joint C2 system is key to establishing the conditions for RDO. This joint C2 capability shifts from theater strategic to an operational warfighting focus while informing and being informed by the diplomatic, information, military, and economic (DIME) national capabilities.¹⁴ Establishing the conditions for creating decisive effects includes the establishment of a robust JISR constellation of sensors and platforms, responsive to the needs of the commander, that integrates national, theater, and tactical capabilities. It also includes tailoring and supervising the execution of ongoing IO, further modifications to the TEP, activating the infrastructure for the rapid deployment and sustainment of a military force, and providing an enhanced situational understanding to the larger interagency community.

¹⁴ Joint Publication 1, Pages I-5 to I-7. Describes the instruments of national power.

Figure 9 portrays set piece, deliberate legacy operations. Figure 10 depicts some characteristics of future operations. Viewed from the perspective of the United States and its allies, the **execution** of an RDO is a series of rapid, relentless, and vigorous distributed actions, raids, and strikes. The flow of the operations does not follow the traditional sequential pattern of prehostilities, lodgment, decisive combat, stabilization, follow through,

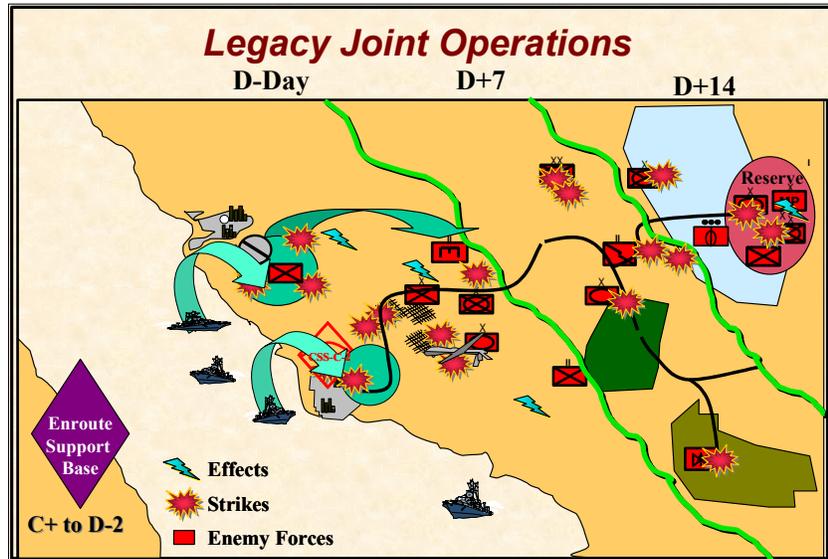


Figure 9. Legacy Joint Operations

post hostilities, and redeployment. Rather, it is a continuous cycle of operations from long-range precision strikes, to distributed seizure or destruction of key surface objectives, to the sophisticated application of IO. The purpose of these actions, raids, and strikes is to create desired operational and strategic effects. The need to be both rapid and decisive demands that every action be linked to the strategic objective. Operations will focus on achieving what is required, when it is required, where it is required, and how long it is required to produce the desired effect. In some cases missions and tasks will support requirements to gain information superiority, achieve access, enable sustainment, or conduct FDP, but in all cases the intended result of the action is to produce the desired effect.

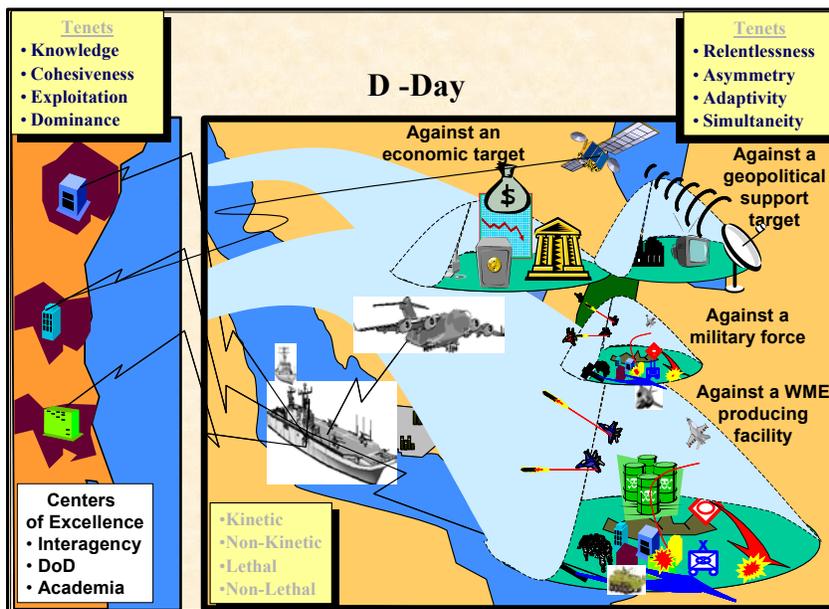


Figure 10. Future Joint Operations

Viewed from the perspective of the **adversary**, an RDO is continuous, unrelenting, and begins under conditions determined by the United States and its coalition partners. The nature of the distributed, multi-dimensional military attacks, when combined with the acute and chronic results of coordinated diplomatic, information, and economic effects, will rapidly erode an adversary's operational coherence and capability to fight. The rapid unfolding of operations and the actual

and perceived loss of coherent capability will combine to break the will of the adversary.

One of the fundamental characteristics of RDO is the focus on rapid resolution. RDO are not designed for long-term commitment or to resolve long-standing problems. A rapid decisive operation creates the desired outcome itself or it establishes the conditions to transition to a higher (e. g., major regional contingency) or lower (e. g., security and stability operation) level of commitment.

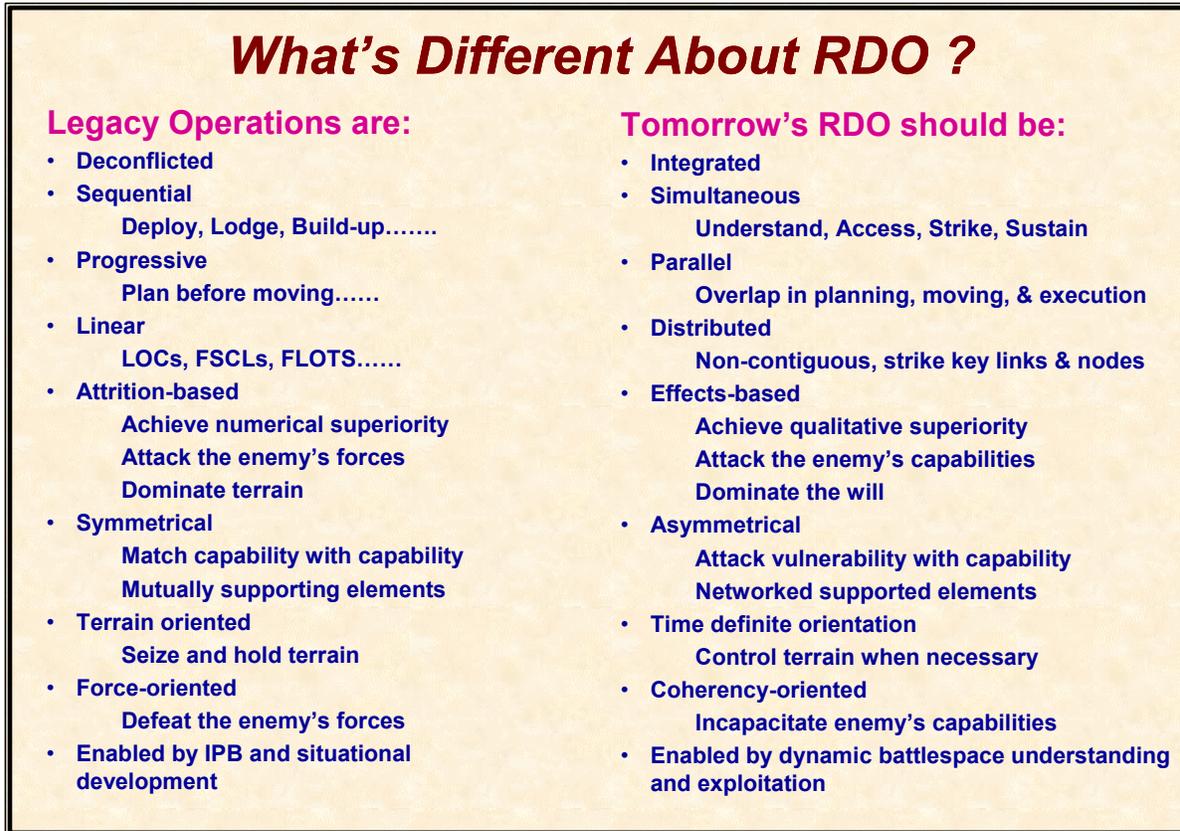


Figure 11. Legacy Tomorrow

Figure 11 summarizes some of the differences between legacy operations and future operations.

3.4. Service Concepts for Future Operations

The Services, in partnership with US Joint Forces Command, are developing advanced concepts for the rapidly deployable, knowledge-based, precision forces necessary to meet the future operational challenges. These include the Army Objective Force, Air Force Aerospace Expeditionary Operations, Navy Network Centric Operations, Expeditionary Maneuver Warfare, and the *SOF 2020 Vision*. Recent experiments have demonstrated that key elements of Service future concepts, organizations, and equipment support RDO and contribute to realizing JV2020. These efforts must be developed in a manner that will ensure fully interoperable technology and operations. Appendix B describes key RDO-related elements of future Service concepts, organizations, and technologies.

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CHAPTER FOUR

ELEMENTS OF THE RDO CONCEPT

This chapter discusses key elements of the basic RDO concept (figure 12). These elements constitute a broad array of functional concepts. Although some concepts may apply to more than one category, for ease of discussion, separate concepts are presented here under the broad categories of knowledge, C2, or operations.

Current joint and Service doctrine, organizations, and systems provide a solid foundation for successful joint operations. Fundamentals, such as principles of war and elements of the operational art, will likely change little in the next 20 years. Many of our present and emerging capabilities will be relevant to the requirements of RDO in the next decade with only incremental technology improvements. However, new technologies and conceptual development offer the potential for transformational changes in how we employ our forces and use our capabilities. Significant changes will be necessary to realize the full potential of RDO as envisioned by this concept. Experimentation and study will illuminate these changes and provide the understanding and justification to undertake enabling DOTMLPF initiatives.

4.1. Knowledge

Knowledge-centric operations postulate that the more knowledge we can create and share about the adversary, the operational environment, and ourselves, the more we can focus our capabilities to produce desired effects with less risk of unintended consequences and more efficient expenditure of national resources. Knowledge becomes a hedge against uncertainty, allowing deployment of more precisely tailored capabilities and enabling increased speed and degree of decisiveness of action. The **Operational Net Assessment** and the power of sophisticated future information systems, such as the **Common Relevant Operational Picture**, will improve our ability to create and share knowledge of the enemy, our own forces, and the environment. Advancements in **Joint Intelligence, Surveillance, and Reconnaissance** capabilities, tactics, techniques, and procedures will improve the quality of information. This enhanced situational understanding will speed information to the warfighter, improve quality of analysis and assessment, reduce operational risk, improve decision-making, and dramatically increase the pace, coherence, and effectiveness of operations.

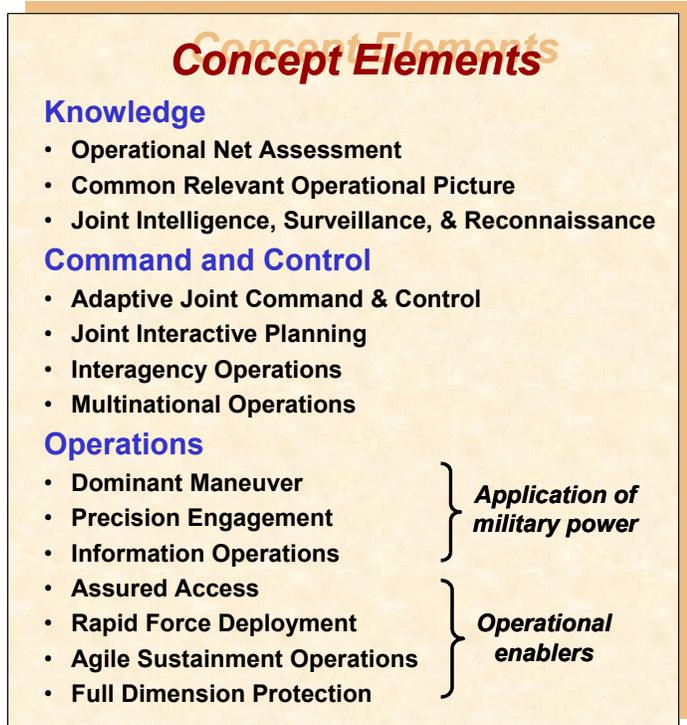


Figure 12. RDO Concept Elements

Knowledge is the key to decision superiority. Processed and fused data become information. Decision makers, enabled by study, judgment, and experience, convert information into knowledge and situational understanding, which is the key to *decision superiority* – the ability to make better decisions faster than the adversary.

Decision superiority requires more than a relative advantage in information. History provides many examples of an opponent with a significant advantage in information being beaten by a less well-informed opponent who made better decisions. The decision aids, Joint Interactive Planning, information sharing, and more effective planning and executing processes as envisioned in the various concepts will enable the JFC to make better decisions.

4.1.1. Operational Net Assessment

The ONA is a critical enabler for achieving RDO. It is a process that uses a coherent knowledge base to link national objectives and power to apply integrated diplomatic, information, military, and economic options that influence and adversary’s perceptions decision making, and elements of national will. The ONA promotes understanding of the adversary and friendly capabilities. It produces an operational support tool that provides the JFC visibility of effects-to-task linkages based on a

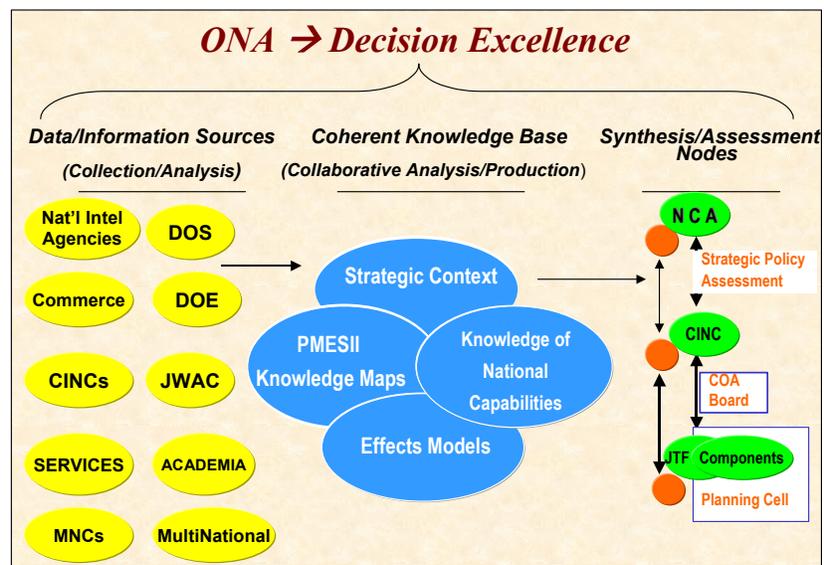


Figure 13. Operational Net Assessment Leads to Decision Excellence

system-of-systems analysis of a potential adversary’s political, military, economic, social, infrastructure, and information elements of national power. As depicted in figure 13, the ONA draws from multiple sources in and informs decision-makers from strategic to tactical levels regarding the complementary effects and supporting missions and tasks to be considered. All echelons are informed of the full range of Diplomatic, Information, Military, and Economic (DIME) actions available to achieve specific effects on an adversary’s will and capability in support of national objective.

By analyzing the adversary’s PMESI² systems and their interrelations, we can make decisions on a range of potential friendly actions. Analysis includes key links and nodes within systems and proposes methods that will influence, neutralize, or destroy them to achieve a desired effect. By analyzing our own national capabilities to implement and support potential courses of action we can eliminate, early in the planning process, those activities or actions that will not provide the intended effects and focus only on those actions that are possible given the assumed situation and circumstances.

The ONA is prepared pre-crisis and is continually updated during crisis response. It is an integrated, collaborative product of DOD and other appropriate government and non-governmental organizations. It leverages and compliments existing products and processes, including Joint Intelligence Preparation of the Battlespace, precision engagement, and time-sensitive-targeting.

Joint Intelligence Preparation of the Battlespace (JIPB) focuses on the adversary's military capability and identifies potential adversary courses of action. It is an analytical methodology employed to reduce uncertainties concerning the adversary, environment, and terrain for all types of operations. JIPB builds an extensive database for each potential operational area as part of the ONA. The information is then analyzed in detail to determine the impact of the adversary, environment, and terrain on operations. By comparison, ONA requires early (pre-crisis) analysis of a broader scope of adversary PMESI² capabilities and provides an operational product (friendly desired effects and a range of options to produce that effect) used to develop friendly courses of action and the effects tasking order.

ONA Components. The ONA development process consists of four components: framework, a knowledge map, effects models, and a collaboration process.

- **Framework.** Our own national foreign policy goals and objectives provide the context for the ONA. The political/military plans produced by the Interagency Policy Coordinating Committees provide the strategic context based on the National Security Strategy. The CINC's TEP, the Department of State (DOS) Mission Performance Plans, and the CINC's campaign plan provide the operational context. Just as important, the ONA includes the context of the adversary's objectives and security concerns as a means to understand what is important to the adversary, the degree of importance, and why.
- **Knowledge Map.** The ONA provides knowledge maps of the adversary based on the PMESI² systems analyses. It displays critical nodes and vulnerabilities in each subsystem and the recommended means and logistics to achieve desired effects. Other detailed data, such as individual target packages, or other supporting databases can link to the ONA knowledge map to provide increased depth of understanding.
- **Effects Model.** Modeling and simulation tools refine the ONA systems analyses. They also help decision-makers select and prioritize means, courses of action, and predict second- and third-order effects.
- **Collaboration.** The ONA integrates the capabilities of numerous individuals, organizations, and agencies. It captures the collective knowledge and analytical capabilities of interagency, intelligence, nongovernmental, and academic experts in a collaborative environment. These participants create the knowledge which operations planners and logisticians use to determine effective means and logistics options.

Information providers collaborate with strategic and operational customers to form a common knowledge base. The ONA contains potential strategic and operational objectives, a PMESI²

systems analysis, and has access to an effects modeling capability. The process coordinates policy formulation, campaign planning, and tactical implementation. The SJC2E uses the ONA to identify the adversary's critical nodes and vulnerabilities and the national means and logistics required to achieve desired effects. The result is an integrated intelligence, operations and logistic planning, and execution process.

Applying the ONA Process.

The ONA development process depicted in figure 14 evaluates the adversary's critical vulnerabilities, capabilities, and limitations in relation to National/CINC objectives, regional goals, and security concerns. This includes an evaluation of doctrine and tactics employed by the adversary within the constraints of the environment and the potential situation being examined. Models and simulations predict a range of

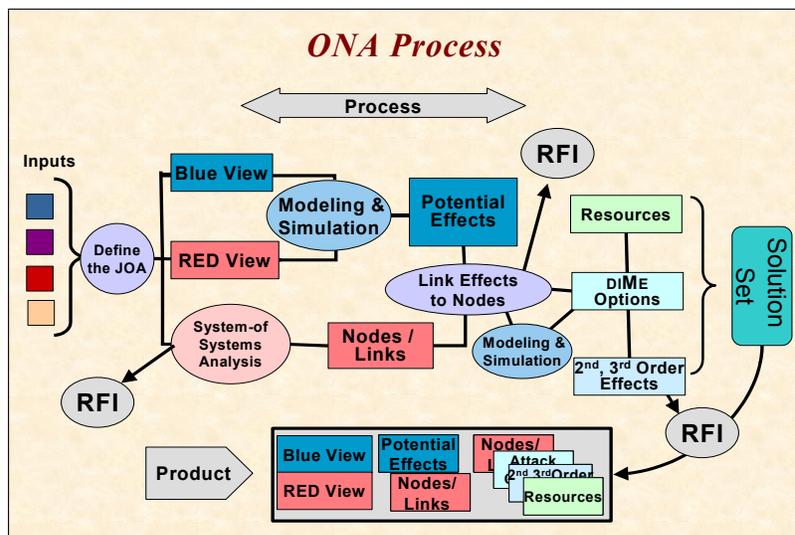


Figure 14. ONA Process

possible outcomes if the adversary's critical nodes or vulnerabilities are neutralized. Models and simulations aid the assessment of our means to implement potential courses of action through evaluation of the time and resource costs associated with executing these actions. Modeling process also helps predict second and third order effects, unintended outcomes, and the effectiveness of simultaneous application of multiple means. The CINC's and subordinate commanders use this information to coordinate with the interagency community on actions that may be brought to bear on the adversary. Multinational partners may also be engaged.

The ONA development process is continuous and provides a high level of situational understanding in advance of military action. As a result, the ONA supports crisis action planning and production of the JIPB. Analysis down to the target level supports a wide range of possible candidate actions. Some targets may not be appropriate to military means and require other national actions (e.g., space and information weapons, diplomatic actions).

The ONA systems analysis provides an understanding of each battlespace dimension. Analysis of these characteristics determines their effects on both friendly and adversary capabilities and possible COAs. The ONA may include products such as the effects of geography and weather; network diagrams of the communications, transportation, and power distribution infrastructures; link-analysis diagrams of political leadership, financial institutions, key industrial sectors; cyberspace vulnerability charts; and psychological profiles on key military, political, economic and social personalities.

The ONA synthesizes our knowledge of the adversary's critical nodes and vulnerabilities and pair the appropriate means with the logistics required to exploit them. The result is an integrated operations-intelligence-logistic database that supports rapid decisive actions.

4.1.2. Common Relevant Operational Picture (CROP)

Access to the right information, at the right place, at the right time, in the right format compresses the warfighter’s decision-to-action operations tempo. The CROP presents timely, fused, accurate, assured, and relevant information that can be tailored to meet the requirements of the joint force. The information is common to every organization and individual involved in a joint operation. The CROP, operating within a robust collaborative information environment, enables the joint force to achieve the high level of knowledge necessary to support RDO. As depicted in figure 15, information available in the CROP amplifies the ONA and supports development of JIPB. Each of these products, built largely from knowledge derived from the CROP, become products themselves in the CROP. JIP processes and tools allow for collaborative planning and a shared awareness. The AJC2 concept allow for synchronized application of force. JIP and AJC2 are discussed in section 4.2.

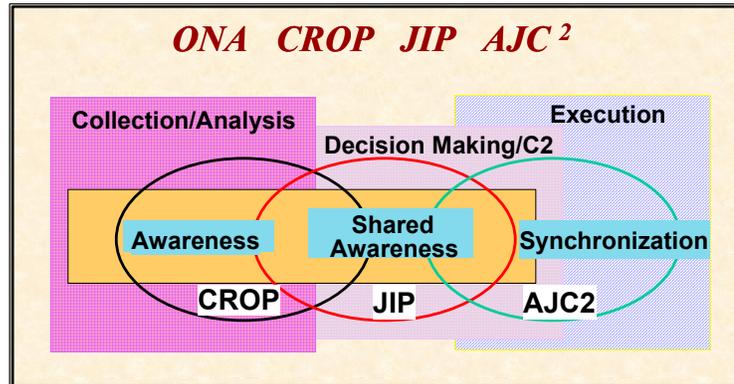


Figure 15. Relationships between ONA, CROP, JIP & AJC²

The Global Information Grid (GIG) is a framework that defines information flow for DOD and as such is a key enabler for the CROP. The GIG is a globally interconnected, end-to-end set of information capabilities, associated processes, and personnel. It collects, processes, stores, manages, and provides information on demand to policy makers, warfighters, and support personnel. The GIG provides the “superset” of capabilities required to ensure that the necessary information is continually available to the joint force.

Access to the CROP permits the dynamic, flexible sharing of requirements for warfighter information both vertically (across echelons) and horizontally (across functions). The CROP will use web-based technologies, artificial intelligence, and sophisticated information management and dissemination tools to enable near real-time access to both raw (if desired) and fused, actionable information.

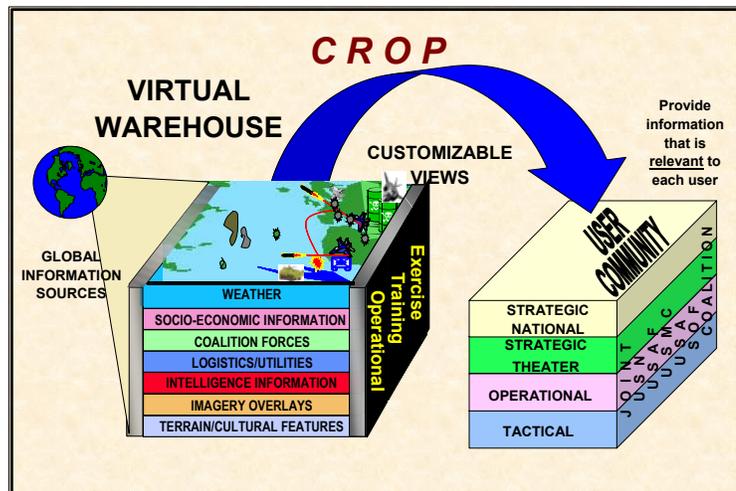


Figure 16. Common Relevant Operational Picture

Central to the CROP is the construct of a virtual warehouse of information (figure 16) – tracks, friendly and enemy aerospace, land, and sea force dispositions; intelligence, maps, and imagery; environment, logistics, and planning

data; weather, socio-economic, and cultural information. Users access the virtual warehouse to extract the set of timely, fused, assured, and relevant information they need to accomplish their mission. Access to the CROP when combined with collaboration enables commanders and staffs to achieve a high degree of battlespace awareness.

The CROP will support multi-level security partitioning to enable the participation of allied and coalition forces in accordance with policy and information-sharing agreements. Advanced human-systems technologies (both input and presentation) support user interaction with the CROP. These include conversational speech recognition, virtual reality and three-dimensional graphics, integration of personal handheld input-output devices with other workstations, and new interaction techniques that facilitate collaborative work on shared displays.

A range of ISR resources, operational resources, and other DOD-assured resources populate the databases that comprise the virtual warehouse from which is the CROP presentations are drawn. Figure 16 depicts the typical assured sources of information provided by the CROP. The figure also illustrates the fact that the user community spans the strategic to tactical levels and includes the Services, the joint community, and non-DOD organizations. Open-source data (e.g., from the internet, other non-DOD government agencies, and centers of excellence) and non-assured coalition-source information augment these data as shown in Figure 17. The information

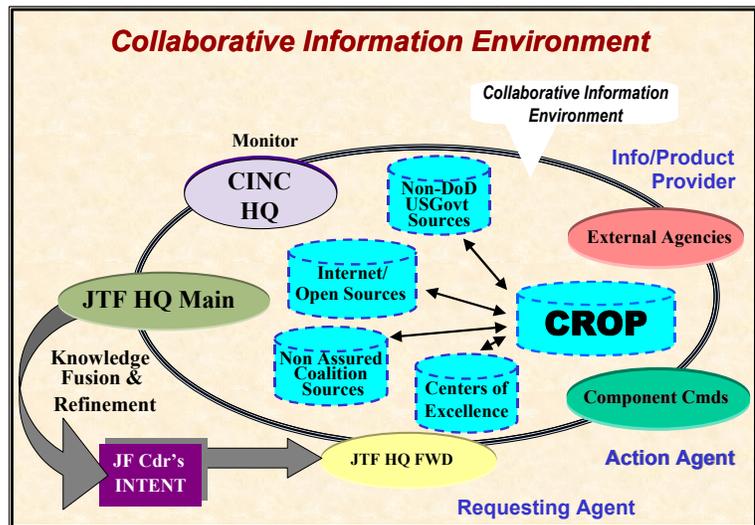


Figure 17. Collaborative Information Environment

from which the enhanced knowledge necessary to enable RDO is derived, comes primarily from the supporting collaborative information environment in which the Joint Force operates. This environment, enabled by high-speed bandwidth connectivity and electronic collaborative tools, facilitates the exchange of information among members of the Joint Force and those organizations supporting or being supported by the Joint Force. While the goal of the CROP is to provide the full set of information that might be required by all members of the collaborative information environment, the reality is that some information requirements will fall outside the CROP's bounds. Satisfaction of these information requirements will be achieved within the collaborative information environment.

The CROP provides for comparison of information from disparate sources and resolves inconsistencies and ambiguities before the information is passed to users. The CROP relies on a sophisticated and effective combination of information "push" and "pull." Information is pushed to the user in accordance with user-defined information profiles (pulled) and the CINC's published information policy. Access to the right information, at the right place, at the right time, over the right communications means and in the right presentation format are essential to compression of the warfighter's decision-to-action operations tempo. The supporting networks

must be capable of automatically choosing the best route to deliver high priority information in a timely manner. The CROP must disseminate both planning and time-sensitive information to the appropriate users in as close to real-time as technically possible to meet the needs of the operational situation.

By operating within the collaborative information environment shown in Figure 17, commanders and staffs are able to accelerate the decision to action tempo by significantly improving and sharing their situational awareness.

4.1.3. Joint Intelligence, Surveillance, and Reconnaissance

JISR for RDO uses a network approach to the management of ISR assets to support the quick-paced demands of RDO. A system-of-systems architecture enables the ISR community to control sensors and platforms dynamically and to integrate data from multiple sources into a fused information picture. JISR provides critical input to the CROP and emphasizes collaboration between intelligence producers and users. Planners and operators will share information in the collaborative environment. The following themes describe JISR management:

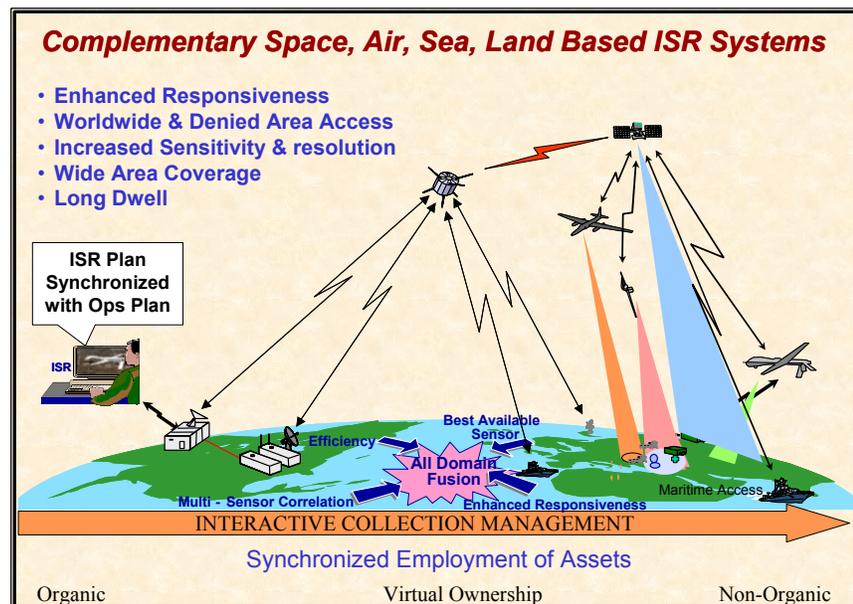


Figure 18. Joint Intelligence, Surveillance, and Reconnaissance

- Information Infrastructure. The CROP, JIP, and the collaborative information environment provide the necessary information infrastructure to enable ISR support within an integrated information processing and distribution environment.
- Operations/ISR Integration. Overall ISR support is enhanced by integrating it into operational processes that include the development of military strategy, operation planning, execution, and combat assessment.
- Cross-Domain Integration. Unites ISR requirements management, collection tasking, processing and exploitation, and product delivery to provide a capability that outperforms separately operating spaceborne, airborne, maritime, and terrestrial systems.
- I-S-R Integration. Brings available ISR information and application methods together to clarify target status, target movement, and enemy intent in a CROP.
- Interactive Collection Management. Provides predictive, dynamic, and responsive ISR across intelligence disciplines through battlespace and asset visualization, integration

with real-time operations, and sharing of operations/intelligence information.

- Collectors and New Capabilities. Responds to collection challenges with sound investment strategies and migration plans to achieve a balanced, integrated, cost-effective force mix of spaceborne, airborne, maritime, and terrestrial sensors and platforms coupled with a robust and adaptive human intelligence capability.
- Multi-Intelligence Collaboration. Provides near real-time, collaborative tasking, processing, exploitation, and dissemination in national, theater, and tactical facilities regardless of geographic location.

Rapid response to future crises will require new ISR capabilities and interactive, collaborative management methods. Future adversaries will devise new methods of C2, and maneuver designed to stymie traditional ISR collection capabilities. Consequently, a robust, capable, and integrated JISR architecture must be created to respond to these challenges. New sensor developments and refinement of others, and the incorporation of dynamic tactics, techniques, and procedures will provide the environment necessary to fulfill the routine and non-traditional assessment requirements demanded by RDO. JISR is the front-end component of the ONA and serves as a prime input for the CROP and JIP processes. The JISR architecture must be flexible enough to handle both the immediate, time sensitive requirements associated with tactical actions and the effects assessment that occurs over time. Like most other functions within the SJC2E, JISR will have a built-in, responsive reachback and reach out capability. During execution, dynamic JISR battle management is critical to ensure that the ISR coverage is available and executed as planned.

JISR planning and execution are critical to the success of RDO. It is employed to gain information on adversary critical vulnerabilities and pinpoint potential causal links for ONA analysis. JISR collaborative planning aligns ISR sensor coverage with specific, desired effects. This synchronization is critical to achieving and maintaining decision superiority. It promotes the optimum employment of available assets and reveals cooperative collection opportunities for target refinement. JISR collaborative planning aligns ISR sensor coverage with desired effects. This synchronization is critical to achieving and maintaining decision superiority. It becomes a part of the effects tasking order. JISR battle management is also critical to ensure that the ISR coverage initially assigned is available and executed as planned; hence maintaining critical inputs to the CROP, JIP, and collaborative environment.

4.2. Command and Control (C2)

The JFC synchronizes activities in time space, and purpose--taking actions that lead to desired effects to support his objectives. Expanding that process to include interagency, and multinational C2 and collaboration involves changes to both planning and execution. **Adaptive Joint Command and Control** takes advantage of information technologies and the capabilities provided by the CROP. **Joint Interactive Planning** enables a transition from hierarchical serial planning to parallel collaborative planning to reduced decision cycle times and increase tempo. A refined collaboration process with the **Interagency** Community will enable the coordinated application of all instruments of national power. **Multinational Operations** presents special challenges and benefits to RDO. Our multinational partners provide key assets, legitimacy, and political support that enable RDO.

4.2.1. Adaptive Joint Command and Control

RDO require more advanced and responsive planning and quicker use of capabilities than can be accomplished by an ad hoc JTF headquarters or ad hoc augmentation of a Service headquarters.

Currently, the crisis often has already involved combat operations or overt hostile action by the adversary before a Joint Task Force (JTF) is established. There is a danger that the coherency of plans and in-process actions may be lost as crisis management passes from the CINC to a JTF Commander. During this critical time, the JTF commander must establish situational awareness, organize a staff, and establish processes that the new team may not have practiced. During the time when small actions can make large differences in the outcome, C2 may be the most dysfunctional.

Adaptive Joint Command and Control addresses these issues. It postulates a SJC2E of 50 or more people under the daily control of a dedicated flag or general officer. This group is assigned to the theater CINC and is embedded in the CINC's staff. When a contingency requires the establishment of a JTF, the SJC2E becomes the core of the joint force command structure. The SJC2E flag or general officer could be designated the commander of a small JTF or be assigned as deputy

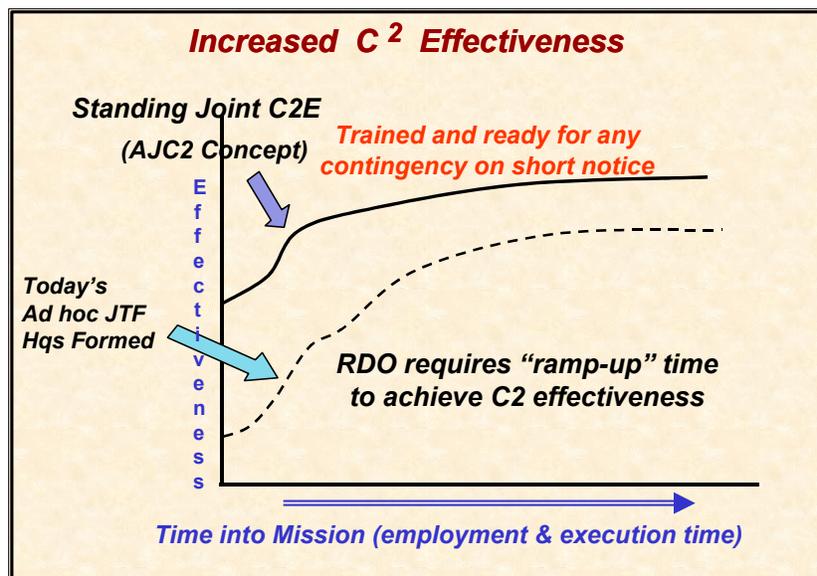


Figure 19. Increased C² Effectiveness

commander, chief of staff, or other key position for a JTF commanded by a more senior officer. The SJC2E will practice processes critical to crisis management, JTF stand-up, and execution. It will be prepared to respond on short notice with full situational awareness, practiced teamwork, and embedded collaborative processes and tools. Figure 19 shows a projected comparison of C2 effectiveness of an ad hoc JTF headquarters and one based on the SJC2E.

The SJC2E design provides key advantages that contribute to the increased C2 effectiveness.

- Possesses pre-crisis knowledge and understanding (as part of the ONA).
- Is a high performance, well-trained team that understands the C2 processes and tools of joint force command. The SJC2E would have its own deployable capability to access the CROP, conduct collaborative analysis, and employ decision support tools to enable rapid decision making.
- Takes advantage of habitual relationships formed with the CINC staff, subordinate commanders, and interagency participants. The SJC2E will maintain important “reach-back” links to US planning and intelligence organizations, non-DOD agencies, and allies relevant to potential RDO contingencies.

- Activates (deploying if necessary) within hours of alert with a package that can sustain operations for a period of days or weeks.
- Links seamlessly to higher, lower, and adjacent headquarters within hours of alert
- Conducts distributed C2 through collaborative networks that are enabled by the assured, reliable connectivity envisioned by the GIG.

A robust GIG and the capabilities provided by the CROP and JIP concepts permits the SJC2E commander to locate anywhere. This allows the commander to position himself at the location where he can best command the joint force.

4.2.1.1. SJC2E Organization

Rather than organizing along traditional lines (such as personnel, intelligence, and operations), the SJC2E element organizes functionally to support coherent and integrated joint force operations. Figure 20 depicts the organizational option under consideration.

The SJC2E uses multi-functional collaborative teams, currently thought to be plans, operations, information management, and information superiority, to develop pre-crisis contingency plans. These teams work in an information/knowledge environment that reinforces the concept that no barriers exist that limit full cross-team functionality. Part of the SJC2E will be an effects-assessment cell that will determine if the desired effects were achieved, what unintended and unexpected effects occurred, and their overall impact on the joint effort.

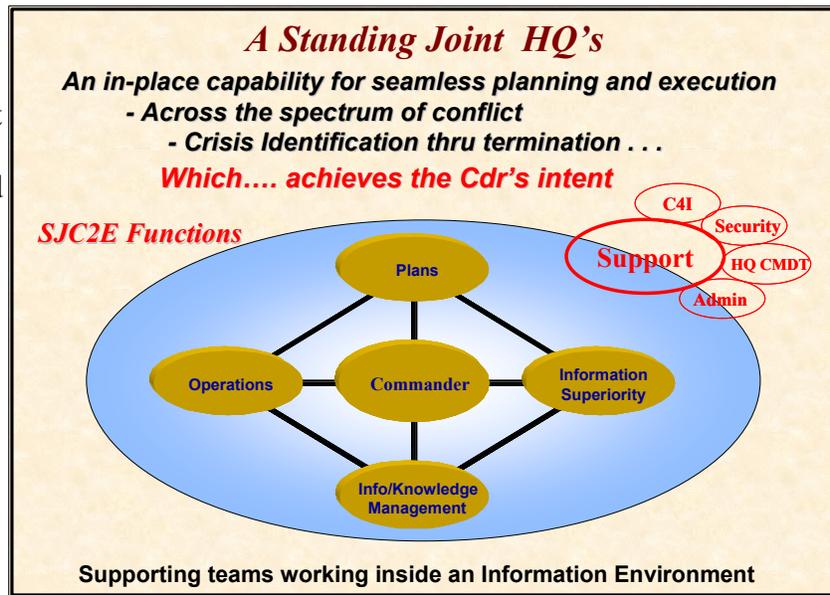


Figure 20. Standing Joint Headquarters

4.2.1.2. Alternative Command Arrangements for the SJC2E

The AJC2 concept is adaptive in its composition and in the ways the SJC2E could transition from a peacetime posture to operations. Figure 21 illustrates three alternative command arrangements considered by the AJC2 concept.

- Case 1 – The SJC2E is designated as the JTF HQ and is augmented with additional capabilities as required by the contingency.
- Case 2 - The CINC designates a Service component headquarters as the JTF HQ. This staff organizes as a JTF command staff around the capability provided by the SJC2E.

- Case 3 – The CINC is the JFC and the headquarters serves as the joint force HQ. The SJC2E may remain part of the CINC’s HQ or may serve as the forward element of the CINC’s HQ.

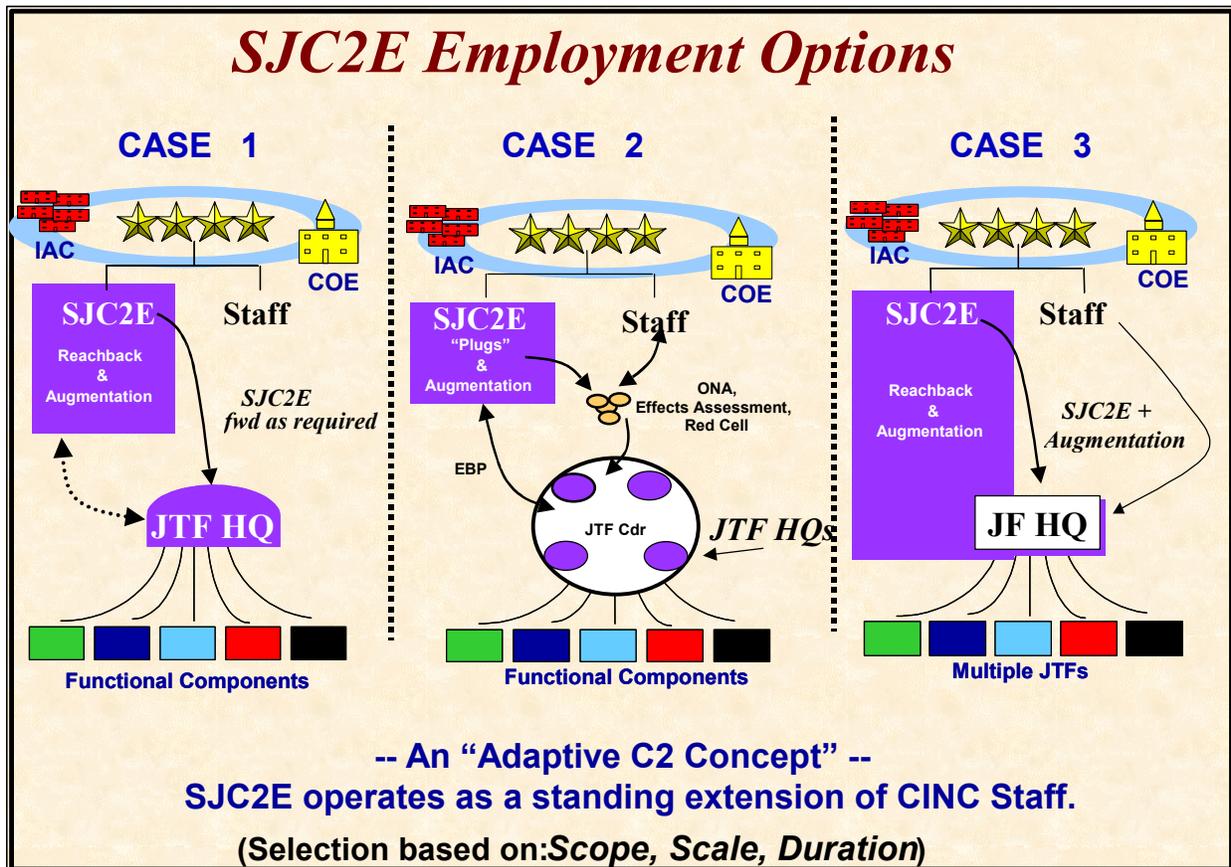


Figure 21. SJC2E Design Options

When the CINC identifies a specific contingency for ONA development, the likely command structure (case 1, 2, or 3 above) to include required Service force capabilities elements needed for the joint force also would be identified. Early identification of the JFC would allow that commander to monitor the ONA development and contingency planning, even before formal establishment of a JTF. This will enable the building of the necessary habitual relationships and situational understanding to enable rapid standup of a joint force headquarters. In each case extensive reachback and reach out to the CINC staff and other supporting agencies will support the SJC2E. Reach-back is capability and support provided by the CINC staff located at home station or a rear area. Reach-out is capability and support provided by other supporting agencies not located on site. Designated, dedicated, trained, and exercised “plugs” will augment the SJC2E as necessary, based on the duration or complexity of the operation and the expertise required. Such plugs would include teams of personnel with appropriate expertise assigned by name, or “battle rostered,” and would be habitually associated with and trained in conjunction with the SJC2E. Typical augmentation plugs might provide offensive IO, JISR battle management, joint fires, time-sensitive targeting, rear area protection, red cell, public affairs, deployment, civil-military affairs, medical, and technical targeting expertise.

4.2.1.3. Task Organizing the Joint Force. As the SJC2E develops the ONA and CONPLANS for specific contingencies, it also weighs the relative merits of force package options. The ability to rapidly form, deploy, and employ the joint force early in a contingency is critical as the NCA attempts to influence or deter an adversary before combat operations begin. Habitual relationships, including peacetime training, between the SJC2E and designated components and agencies will facilitate efficient planning and rapid execution. Contingency plans will typically designate Service and functional organizations as core elements of the joint force. The actual contingency could require additional capabilities from forward presence and transiting forces, other rapidly deployable elements, and long-range strike forces from the CONUS and other AORs. In place, continuous C4I capabilities will facilitate quick modifications to the task organization to meet emerging requirements even as the joint force deploys. This would be a common core C2 system that can be tailored to unique theater requirements, but with standardized hardware and software so that SJC2E staff members and others with experience in one theater do not have to be completely retrained when they transfer to another.

4.2.1.4. Integration of Joint Action.

Integrated C2 systems, interoperable combat systems, and a coherence of action enabled by increased joint training will provide forces from each component the capability to routinely collaborate and task organize to generate desired effects to a much greater degree than is the norm today. The objective of such **joint tactical action** is to achieve desired effects by using the best mix of capabilities across the disciplines of DM, PE, and IO. This approach will be more effective than today's joint by deconfliction solution.

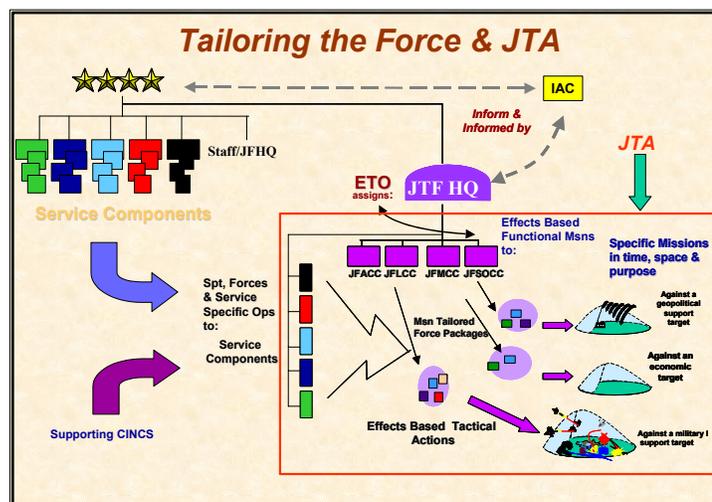


Figure 22. Tailoring the Force and Joint Tactical Actions

Component commanders, through collaboration and the CROP, will plan, organize, and employ dispersed joint tactical forces to create desired effects anywhere in the joint operations area (JOA). Their ability to rapidly form, deploy, employ, and redeploy the integrated joint teams in response to rapidly developing situations will be critical. Joint tactical action will be enabled by greater access to information, which will support decision-making at lower levels.

Distributed operations will provide RDO an essential flexibility for fighting an adversary who will disperse, employ guerilla tactics, and exploit our rules of engagement. To counter this, joint forces, guided by effects-based planning, will be able to adapt its actions to continue to achieve the desired effect.

4.2.2. Joint Interactive Planning (JIP)

The JIP concept addresses the transition from the traditional hierarchical serial planning and execution processes to a parallel concurrent collaborative planning process. Figure 23 shows this transition in terms of observe-orient-decide-act (OODA) loops. The figure illustrates the major benefit of the transition – reduced decision cycle times and increased tempo of information to actions. This will allow the RDO forces to operate inside the adversary’s decision cycle. This is the essence of JV2020’s extension of the notion of information superiority to decision superiority.

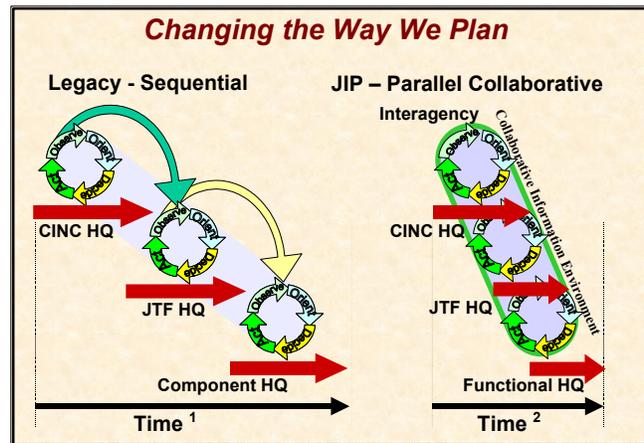


Figure 23. Changing the Way We Plan

Collaborative Planning. JIP makes generous use of distributive collaborative planning tools to allow supporting staffs and other resources, separated by geography, time and organizational boundaries, to interact and to coordinate concurrently in the development of plans and operations. Virtual collaboration capability will allow a smaller C2 “footprint” in forward areas. It will also allow the simultaneous involvement of CINC headquarters, SJC2E, components, and other organizations in planning activities. This will result in quicker and more precise understanding of the commander’s intent and better unity of effort.

Decision Support. The JIP leverages new information technologies, decision support systems, and processes to accomplish dynamic joint planning and execution for the joint forces. The JIP concept envisions that software intelligent agents (automated C2 tools) will search databases (provided by the CROP) to find the information needed to support planning and execution and will extract, fuse, and translate the data to make it useful for decision makers. The software agents will alert decision makers when new information is available that is relevant to the commander’s critical information requirements.

These automated C2 decision support tools will allow planners to analyze many alternatives rapidly. Modeling and simulation tools will allow decision makers to analyze these alternatives by simulating mission execution, indicating not only main effects, but also second or higher-order effects, faster than real time. The C2 systems will automatically extract the scenario and databases required to support the simulations.

Dynamic Planning. The responsive, accurate application of overwhelming effects requires that constantly updated mission information be provided to the core planning team and extended partners in other commands. In peacetime, this will allow planners to refine and amplify the ONA and to produce up-to-date contingency plans including joint force structure and deployment planning. Information systems “push” planning information electronically to higher, lower, adjacent, and supporting organizations so that the corresponding plans update automatically. This will facilitate a common shared awareness among the elements of the joint

force and supporting organizations. The automated analysis capabilities will allow dynamic, continuous plan modification, and mission rehearsals prior to and during execution.

Effects Tasking Order (ETO). The JTF collaborative planning product will be an ETO which delineates for the components and other involved agencies, as mission-type orders, the specific missions and effects that must be accomplished to achieve the results desired by the JTF commander. Whenever possible, these orders are expressed in terms of effects or outcomes to be achieved. Although the ETO will primarily task military actions and specify supported/supporting relationships, it will also identify on-going effects producing actions being undertaken by other US interagency organizations and agencies.

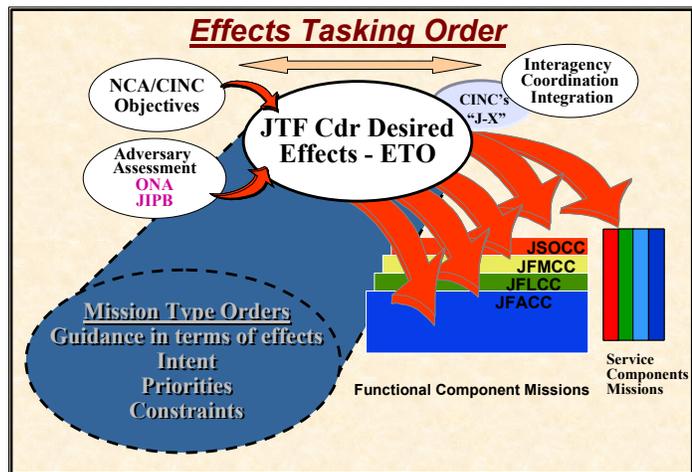


Figure 24. Effects Tasking Order

This will ensure awareness by both the military and other agencies of ongoing plans/operations. The ETO is developed within a pre-established, cross-functional collaborative framework optimized for planning and operations. The effects specified in the ETO are most often expressed in terms of what is desired, leaving the details of execution to the component or subordinate who is best able to determine appropriate actions. This expression of the desired effects is analogous in today's terms to mission-type orders (Figure 24). On occasion, however, the ETO will provide specific actions that must be accomplished by the component. When required, these actions will be coordinated with components prior to being tasked.

4.2.3. Interagency Operations: Leveraging All Instruments of National Power

RDO require cohesive, rational, timely, and synergistic collaboration of the US interagency community to apply instruments of national power to achieve national objectives. JFCs conducting RDO in the next decade must be able to call upon certain information and capabilities resident in the US interagency community, non-military agencies, and other organizations to assist in ONA of potential adversaries and crisis-action and deliberate planning. These same organizations may be involved in prehostility operations, warfighting, and transitioning to post-hostility activities. Productive interagency coordinating mechanisms and planning tools will help ensure unity of effort among US government agencies and international organizations participating in RDO.

The National Security Act of 1947 (as amended), provides the following definition of interagency operations:

The integration of domestic, foreign, and military policies relating to the national security so as to enable the military services and the other departments and agencies of the government to cooperate more effectively in matters involving the national security.

A series of conceptual and physical mechanisms enable this integration to provide a focus and method for collaboration and action.

Interagency Enablers. Successful RDO will result from the integration of DIME objectives and their subsequent translation into actions. Productive interagency coordinating mechanisms and planning tools, or interagency enablers, will also help ensure unity of effort among US government agencies and international organizations participating in RDO. The following are required to accomplish this.

- A **coherent interagency planning mechanism** under the oversight of the National Security Council. Supported by appropriate agencies, this planning process will produce a broad range of options to apply DIME instruments of national power.
- A **secure and fluid collaborative information environment** that integrates the strategic and regional / operational levels for planning, execution, and transition operations. Regional and functional CINC’s will participate in the development of political-military plans for crisis response. Information will flow from the operational level as readily as it flows to it. This process must be supported by appropriate collaborative planning tools.
- A **comprehensive, operational net assessment for selected adversaries.** With these ONAs, we will generate a wide range of feasible and innovative, ways and means to resolve a crisis.
- A **virtual or actual interagency staff element** to collaborate with agencies at the strategic and regional / operational levels assigned to each regional CINC. Non-military agencies will collaborate with the warfighter to develop plans to produce desired effects.

Interagency Operational Support Directorate (“J-X”). RDO depends, in part, upon a geographic CINC or subordinate JFC having information resident in governmental, international, and nongovernmental organizations. An interagency operational support element, notionally titled the “J-X” directorate, and a political-military planner will support the CINC. The “J-X” Directorate will inform the CINC of actions and decisions of the interagency community. Figure 25 shows RDO links to interagency operations

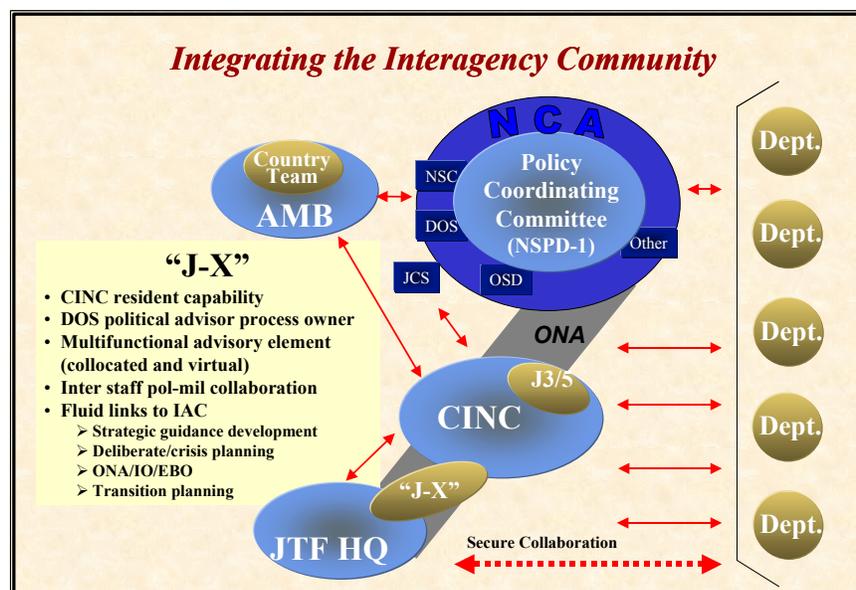


Figure 25. Integrating the Interagency Community

enabled by the collaborative information environment. It shows how a geographic CINC supported by a J-X staff element, would share information and situational understanding collaboratively with the US interagency community. A subordinate JFC or SJC2E element will have an interagency operational support staff officer assigned and would be prepared to accept appropriate interagency augmentation, plugs, or reachback support as required by a specific contingency.

The CINC's J-X staff will conduct political-military coordination within the CINC staff. It will establish habitual operational links to develop strategic guidance and political-military plans focused on future operations and the effects-based philosophy. It will integrate these plans with current operations and will serve as staff proponent for the theater engagement plan.

4.2.4. Multinational Operations

Multinational operations occur within the structure of an alliance or coalition and will be a key strategic feature of future operations. This presents special challenges and benefits to RDO. Our partners may provide key assets, legitimacy, and political support that enable RDO. However, dissimilar training, equipment, technology, doctrine, culture, and language will challenge multinational efforts. Peacetime engagement and the CINC's theater engagement plans should facilitate multinational participation in RDO by including potential partners in the ONA process where possible, proposing security assistance efforts to increase key capabilities, and conducting relevant multinational training.

The desired end state is that a multinational force commander will be able to conduct RDO in the next decade. Potential multinational partners will be fully integrated and able to support the functional concepts and activities that support RDO. Political agreements and the requirement for consensus will impact operational speed and flexibility, but multinational involvement will be a prerequisite to achieving the desired effect.

There are several s needed to set the conditions for successful multinational RDO.

- An integrated interagency process.
- Access to and sharing of information and collaboration tools by the SJC2E with a multinational coordination element. Multinational partners could also be provided liaison elements equipped with the advanced technology necessary to facilitate collaboration and interoperability. Liaison elements are not last minute "pick up teams," rather they are identified, trained, and habitually associated with the SJC2E and the multinational partner they would be supporting.
- Robust multi-level security procedures. These are critical to integrating multinational forces into an RDO.
- Supporting doctrine.

4.3. Operations

The application of the military instrument of national power at the operational level requires the integrated application of DM, PE, and IO. Military operations are also supported by an interrelated set of operational enablers that includes concepts and processes for assured access, rapid force deployment, agile sustainment operations, and full dimensional protection.

4.3.1. Application of Military Power

Based on a more comprehensive knowledge and understanding of a situation provided by the ONA, CROP and JIP, commanders and their staffs will be better able to identify the effects required to create the change in adversary behavior that meets the US national interests. This will be enabled by those knowledge capabilities that will help determine adversary centers of gravity, critical vulnerabilities, and causal links. Centers of gravity are those characteristics, capabilities, or localities from which a military force derives its freedom of action, physical strength, or will to fight. Critical vulnerabilities support the center of gravity. They link to the center of gravity via causal links, such that destroying, degrading, or denying a critical vulnerability will cause a substantial degradation of the adversary's center of gravity. Similarly, there is a causal link between the application of means and producing a desired effect. An increased understanding of these causal links will enable a commander to express his intent and the desired effects with a significantly increased level of clarity. Subordinate commanders will share the same information base and have the same view of the causal links. This will allow them to better execute actions that rapidly and effectively produce desired effects while avoiding undesired outcomes.

The application of the military instrument of national power in coordination with the full range of other national capabilities -- Diplomatic, Information, and Economic -- will be most effective in achieving desired effects. The application of national power in coordinated and synergistic operations will be aimed at putting what the adversary values most at risk of being threatened, rendered unusable or destroyed altogether. A continuous assessment process will measure and assess if the desired effects were achieved, what unintended effects were produced, their overall impact on the joint effort, and why tactical actions either contributed or failed to contribute to achieving the desired outcome.

This assessment will facilitate decisions on how the commander can adapt and adjust his current course of action to more efficiently and rapidly reach his desired endstate.

Application of Military Power

At the operational level, the United States will combine and balance its military capabilities of DM, PE, and IO in conjunction with other instruments of national power to produce the desired effects to

achieve CINC and NCA objectives (Figure 26). Each capability will be integrated with the others to create opportunities and reinforce the impact on adversary critical vulnerabilities. It is by applying this comprehensive arsenal of capabilities in an integrated fashion against critical vulnerabilities that operations will be decisive more rapidly than before.

Operations will be multi-dimensional, non-contiguous, precise, and simultaneous. In addition to dealing with the classical parameters of depth, width, height (to include space), and time, the JFC will fight in the electromagnetic spectrum as well. While retaining the ability to operate in a classical linear/contiguous manner, joint forces will be able to operate routinely in a *non-linear/non-contiguous* distributed manner. US capabilities for devastating, long-range precision strike will induce the adversary to disperse and seek protection, making them vulnerable to lethal, agile, and survivable maneuver forces able to operate throughout the depth and breadth of the area of operations. Decentralized but orchestrated operations (enabled by the C2 capabilities discussed previously) will benefit from local initiative, encourage freedom of action, and facilitate the application of combat power to realize the commander's intent. Distributed operations executed with strategic attacks, and integrated tailored interdiction and maneuver, will allow the commander to set the conditions for and exploit the actions of each element of the joint force. Access to accurate, real-time information offers the possibility of unprecedented levels of two interrelated forms of precision:

- Physical precision—hitting the right target and maneuvering the right mix of forces to the right locations to produce desired effects; and
- Psychological precision—changing perceptions and intentions among combatants, non-combatants, and—most importantly—an opponent's leadership and power base

Increased knowledge coupled with advances in *lethal* and *non-lethal* capabilities, will enable the commander much greater flexibility to apply DM, PE, and IO capabilities at the precise time and place to achieve desired effects. Viewed in this manner, precision enables the production of mass effects without having to mass forces. While operating non-contiguously, the joint force will also be able to exploit its ability to conduct multiple, coordinated, simultaneous operations by providing the commander the option of choosing from a comprehensive suite of capabilities. When directed against decisive points and sustained over time, distributed operations, focused and sustained, as well as coordinated in purpose and timing, lead to an *accelerated battle tempo* that denies initiative to the adversary, frustrates his plans, and accelerates the disintegration of his military capability and strategy.

4.3.1.1. Dominant Maneuver

Operational maneuver distributed across the entire theater and executed by tailored tactical elements will characterize future operations. These joint forces will move without boundaries throughout the depth and breadth of the JOA in distributed non-contiguous operations. Greater situational awareness will replace uncertainty-based operations with operations keyed to exploiting the enemy's known critical vulnerabilities. Today, we mitigate uncertainty through tightly structured, formation-based, and boundary-controlled forces. Knowledge will change this paradigm. The new construct of DM will be the capability to move anywhere in the battlespace guided by the operational net assessment, operational planning, and robust joint intelligence surveillance and reconnaissance. Maneuver will achieve desired effects, and create opportunities

to apply PE.

Forces will use speed, surprise, and violence of action to seize the initiative, control the tempo of operations, and overwhelm the adversary at the most advantageous time and place. Tactical, operational, and strategic deception will be integrated to enable engagements under conditions most favorable to the joint force. These characteristics will create engagements with ambush-like qualities to catch the enemy off-guard and cause him to fight without preparation. This style of maneuver will emphasize the necessity of not presenting an obvious pattern to the adversary, denying him an easily discernable blueprint to which he can adapt.

Distributed maneuver increases the joint combined arms potential by engaging the enemy's critical vulnerabilities, from all domains with overwhelming force. This advantage will render the adversary's strength irrelevant by virtue of such factors as poor positioning, incorrect orientation, or bad terrain. With increased decision superiority, this advantage will also accrue from such factors as timing, function, and morale—all of which seek to attack the enemy when and where he is least prepared.

4.3.1.2. Precision Engagement

PE destroys, degrades, or renders the adversary's capabilities unusable to create effects or enable maneuver. Its success depends on the same knowledge capabilities, ONA, operational planning, and robust JISR that are key to DM.

The concept of PE extends beyond precisely striking a target with explosive ordnance. In RDO, PE refers to the joint force's ability to engage targets anywhere in the battlespace to create desired effects. Information provided in the ONA and developed in operational planning, guides target selection. These targets may be engaged within minutes or hours of decision, depending on the JFC's guidance and intent. Aerospace, ground, or seaborne capabilities could be the choice to attack the target. Alternatively, a special operations team could attack the target, or psychological operations could be the method of engagement. The commander may also employ information means when the targets are key enemy leaders, troop formations, or the opinion of an adversary population. Regardless of its application, the capability to engage precisely in a timely manner allows the commander to shape the situation or battlespace to achieve the desired effects while minimizing risk to friendly forces and effectively using resources.

Confronting an adversary who employs asymmetric means will require an expanded array of non-lethal systems. Non-lethal technologies offer great potential for PE. They can incapacitate personnel or render materiel useless while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment. Nonlethal systems have the potential to provide the joint force commander a greater capacity to work within restricted rules of engagement (ROE), attack enemy weapons containing high-risk contaminants, and deliver effects that are time-definite. Non-lethal systems will be complementary to other fires in that they will afford forces freedom of action or maneuver when confronted by some asymmetric threats.

4.3.1.3. Information Operations (IO)

IO are the information equivalent of maneuver and fires. IO can be effective when used in its domain, or it can support PE and DM. IO support joint operations by applying capabilities that produce six categories of information effects on adversary decision makers. They are electronic, lethal, non-lethal, influence, cerebral, and decision-apparatus effects. Electronic, lethal, and non-lethal effects are aimed at the links and nodes—the “machine”—of an adversary’s decision-making support system. Electronic actions use the electromagnetic spectrum to affect decision-making and decision support systems. Lethal information actions are those actions that destroy data, information, knowledge, and the networks that support decision-making. Non-lethal information actions are those actions that modify, change, or degrade data, information, knowledge, and the networks that support decision-making. Influence, cerebral, and decision-apparatus effects are aimed at the “man”—the adversary decision maker himself. Influence actions seek to manipulate a decision maker to affect the decisions he makes. Cerebral actions target the biology (the brain) of decision makers through tools and techniques still in development or have the potential to be developed. Decision-apparatus actions seek to effect parts of decision maker’s functional decision process. The functional decision process includes a decision maker, his support staff, and their interactions with each other and their decision support capabilities.

IO possesses unique characteristics for a commander in an effects-based campaign. These includes low collateral damage, little or no deployment requirements, little or no in-theater presence, relatively rapid response to tasking, low risk to personnel, potentially large effect for a small effort, and target specificity (means of precise engagement). Its success depends on the same knowledge capabilities, operational net assessment, operational planning, and robust joint intelligence, surveillance, and reconnaissance that are key to DM and PE.

4.3.2. Operational Enablers.

An interrelated set of concepts and supporting ideas for assured access, rapid force deployment, agile sustainment operations, and FDP enable RDO.

4.3.2.1. Assured Access

For RDO Assured Access is the ability to set battlespace conditions necessary to bring the joint force within operational reach of the critical vulnerabilities leading to an adversary’s center(s) of gravity. The CINC sets the objectives of these “shaping efforts” to seize and exploit the initiative, posture the right mix of forces, establish the nature of the fight on our terms, and set the conditions for decisive operations. Land, sea, aerospace, and information superiority are essential to the JFC’s ability to set the conditions for decisive operations, maintain access, and move, sustain, and protect the forces. The joint force requires dimensional superiority only for the duration and at locations required to support mission accomplishment. The joint force and supporting organizations conduct a variety of concurrent shaping operations. These operations include: building strong alliances to isolate the adversary, gaining and maintaining access, and achieving “temporal” dimensional superiority.

Build Strong Alliances and Isolate the Enemy. Interagency collaboration will provide the diplomatic, informational, and economic engagement alternatives early in the crisis to persuade, deter, or coerce the adversary's allies to remain clear of the conflict. Coherent involvement of the interagency and multinational communities, nongovernmental organizations, private volunteer organizations, and other participating organizations can build strong alliances and coalitions. Forward basing and support agreements, exercises, and other combined engagement activities, build regional trust, gain logistic support, and security.

It is important to deny the adversary outside sources of support and access to friendly decisive points and centers of gravity. It can be particularly difficult to limit outside support if rules of engagement preclude the JFC from conventional attack against countries that support the adversary with forces, supplies, or sanctuary. An integrated application of all elements of national power that leverages the interagency process may be required to convince an adversary's potential allies to remain neutral. The diplomatic, informational, and economic elements can provide engagement alternatives early in the crisis to persuade, deter, or coerce the adversary's allies to remain clear of the conflict. Close coordination between the CINC, JFC, agencies, and our allies will be necessary to integrate strategic, operational, and tactical efforts to isolate the adversary. IO also offer great potential to inhibit outside sources of support by means that entail no apparent destructive effects.

Gaining Access. Future adversaries are expected to employ anti-access or area-denial capabilities such as long-range surface missiles, undersea minefields and salvoes of anti-ship missiles; robust, widely distributed surveillance and targeting against air and sea forces; unconventional forces; integrated air defense systems; long-range strike aircraft; and WME. Area-denial capabilities also include information warfare and degradation of space-based platforms. Access to the battlespace from all dimensions, including space and electromagnetic/information, by US forces and allies contributes to the JFC's freedom of action essential to RDO. The JFC requires sufficient air and sea lines of communication for movement of tailored forces and sustainment packages protected from interdiction. Dimensional superiority—may be localized in time and space (temporal)—is a necessary condition for maintaining friendly access. The JFC must have at his disposal the right mix of joint capabilities to neutralize anti-access obstacles, at the time required to provide RDO forces freedom to obtain positional advantage through maneuver and fire.

Access through Dimensional Superiority. Land, sea, aerospace, and information superiority are essential to the JFC's ability to set the conditions for decisive operations, maintain access, and move, sustain, and protect our forces within operational reach of enemy centers of gravity. Greater knowledge and mobility will enable noncontiguous operations by separate elements of the joint force throughout the battlespace. Once access is gained, the JFC has increased options to neutralize or destroy the enemy's most valued and critical forces and nodes. Options enabled by dimensional superiority include defeating the adversary's capability to establish his operations tempo. As necessary, RDO will exploit access and dimensional superiority to threaten force or to apply force selectively at the right time and place to achieve the desired effect. Mission-tailored forces must gain and maintain access to the AOR rapidly; they must also be capable of immediate and relentless action to dominate the selected points for the period of time required to produce desired effects. Dimensional superiority is supported by multi-layered

sensors (space-based and airborne) and command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) that provide the JFC battlespace awareness throughout the networked force. With this knowledge RDO forces will have the ability to fight asymmetrically, to initially go where the enemy isn't, and employ PE to neutralize or destroy enemy forces. Friendly dimensional superiority also limits the adversary's flexibility and freedom of action, denies outside sources of support, and greatly increases risk. The combination of access and dimensional superiority provides the JFC with robust employment options at an acceptable level of risk for the joint force.

4.3.2.2. Rapid Force Deployment

Rapid force deployment is the basis for rapid military power projection. The focus is not just on rapidly deploying forces, but rather how to rapidly project sufficient combat power to support the JFC's concept of operations. While we have the capability for rapid power projection in the form of long range strike aircraft and forward deployed and forward based forces, we require a rapid force deployment capability in order to be able to rapidly deploy and employ other elements of the joint force that may be required to provide a full multidimensional capability to execute RDO.

Rapid force deployment begins with the ONA, which is the operational information to select, sequence, and deploy the proper combination of joint force capabilities to produce desired effects. While we generally desire to accomplish our strategic objectives without a lengthy campaign or an extensive force buildup. Most forces must deploy to support the JFC's operational concept and begin to produce effects even before completion of deployment. This may require that forces deploy rapidly to establish entry points and set the conditions for follow-on operations. Alternatively, it may allow for a more deliberate flow of forces designed to the conditions under which forces can be introduced into the area of operations with an acceptable degree of risk. The following elements will enhance the rapid force deployment of future forces.

Reengineering the Joint Deployment Process. Joint deployment process improvements must focus on reengineering joint deployment planning and execution, guided by concepts such as CROP, JIP, and AJC2 to improve the overall flexibility, efficiency, and responsiveness of the process to meet the operational requirements envisioned for RDO. Fundamentally, the joint deployment process will continue to use the strategic mobility "triad" (airlift, sealift, and prepositioning) to move the joint force over the links and nodes of the global distribution system through lines of communications established to support the concept of operations. Process improvement hinges on collapsing time required to execute the sequence of activities and decisions associated with the joint planning and execution. Improvements in decision support systems and processes results in:

- Greater precision, speed, and flexibility in joint deployment process planning and execution;
- Concurrent collaboration and improved parallel planning during joint deployment planning;

- Less dependence on fixed infrastructure in the operational area to support joint deployment operations;
- Improved effectiveness, efficiency, and speed of the transportation capabilities and enablers in supporting joint deployment operations.

Joint Deployment Planning and Execution. The RDO concept implies a prioritized stream of joint force capabilities packaged to perform combat and combat support missions based on the supported JFC's operational concept. Our current warfighting concept involves building forces in the theater until favorable force ratios are achieved prior to executing decisive operations. RDO envisions using those capabilities that can be brought to bear quickly, whether from home station or from deployed locations, to reduce adversary capabilities and produce desired effects while creating the conditions to effectively deploy the rest of the joint force if required.

To meet the deployment timelines envisioned for RDO, joint force planners must understand the deployment constraints involved in employing selected joint force capabilities and have immediate access to the required deployment planning information and logistics data. The future joint operation planning and execution system (JOPES) must provide joint force planners the capability to access current force readiness and deployment data, package that information for use during deployment planning and execution, track the movement of relative combat power, and manage change during mission execution.

The improved JOPES must enable joint force planners to provide the JFC with operational risk assessments and trade-off analyses to overcome deployment constraints and improve the speed, efficiency, and effectiveness of employment to meet the JFC's priorities. In addition, this system must provide JFCs the capability to "tailor" the tactical footprint of the joint force through reduction of duplicative movement requirements to optimize the deployment flow to meet the mission timeline for a given operation. Optimization will be a function of the deployment concept to support the employment of forces, throughput provided by the lines of communication, the lift assets available, and the time available to position the force. Planners will need to collaborate concurrently to synchronize employment and deployment concepts and plans to ensure that the available strategic and theater lift will accommodate the operational requirements of the JFC.

In the future, execution of the joint deployment process in support of RDO will be less linear. Joint deployment concepts supporting RDO must enable the introduction of joint forces directly into the area of operations ready for combat without delay. For instance, the joint reception, staging, onward movement, and integration (JRSOI) phase of the joint deployment process may occur at the ports of embarkation (POE) prior to strategic movement or at an intermediate staging base (ISB) enroute to the objective area. Based on the concept of operations, there may be a requirement to tactically configure and combat-load elements of the joint force for immediate employment upon insertion into the objective area ("ready off the ramp"). Because of the flexibility of the reengineered joint deployment process, deployment concepts can be crafted and rapidly modified to accommodate any RDO operational requirements.

Joint operation planners will rely on concurrent collaborative planning procedures to work closely with US Transportation Command (USTRANSCOM) to expeditiously match available lift capacity, port throughput capacity, and tailored RDO force capability to achieve the effects desired by the JFC. JIP capabilities, such as the Joint Force Capabilities Register, and improved JOPES will provide the tools to “right size” the required joint force capability. They will also allow the JFC to assess the “lift cost” of deploying that joint force capability, and rapidly time-phase and sequence the arrival of joint force capability in the JOA to meet mission requirements.

Transportation Capabilities and Enablers. Development of infrastructure-independent transportation will support the effort to speed joint deployment process planning and execution. Future deployment platforms supporting RDO must be capable of landing fully combat-ready early-entry forces over the shore or on austere airfields or other unimproved locations to defeat enemy anti-access strategies and speed employment of the joint force. In such circumstances the use of potential future systems such as the shallow draft, high speed surface effect ships (SDHSS) and super short take off and landing (SSTOL) aircraft to transport units and initial sustainment into the objective area in a “ready-off-the-ramp” configuration may increase the speed of force closure. In this circumstance, more conventional lift would be used to deploy joint forces to an intermediate staging and support base (ISSB) in or near the JOA. These efforts would be supported by new vertical lift and intra-theater sealift, such as the Army’s Theater Support Vessel (TSV), the Navy’s High Speed Vessel (HSV), or ultra large airships (ULA), to rapidly reposition prepositioned equipment, expedite the build-up of forces and sustainment, and the onward movement of forces within the theater from the ISB to the objective area.

Forward presence. A key tenet of our National Security Strategy to ensure access to the world’s regions has been the forward presence of Army, Air Force, Naval, and Special Operations forces through overseas basing and routine global deployments. This policy of forward presence has protected our national interests abroad and has projected our influence, often preventing crises. When prevention fails, forward presence provides US forces rapid access into a region. Forward presence is today’s principal enabler for the rapid projection of military capability and the buildup of combat power. Although we will have fewer forward deployed forces and fewer forward operating locations, some degree of forward presence will remain a cornerstone of our future force projection capability, enhanced by the daily activities of the TEPs of the unified commands.

Prepositioning. Prepositioned equipment and supplies outside the continental United States (OCONUS), combined with forward presence, will continue to enable rapid force deployment and enhance the potential combat power and rapid lift available to the JFC. Improved airlift and sealift capabilities will speed the rapid deployment of light and medium weight forces. There may be a favorable economic trade-off between the development and the use of high-speed sealift compared to the cost of prepositioning and maintaining unit sets of equipment. However, this does not negate the advantage of prepositioning, either ashore or afloat, airlift intensive supplies, such as munitions, petroleum (POL), or legacy equipment for heavy forces.

Tailored Forces and Logistics. Reduction of the size and number of things to be deployed will contribute to rapid deployment. The ONA and effects-based planning will help identify the capabilities required to produce the effects necessary for operational success. Increased lethality,

mobility, and networked C4ISR integration of weapons systems will allow us to provide much greater combat power with fewer systems. Additionally, by 2020 many systems will be engineered to consume less fuel and munitions and require less supply, repair parts, and maintenance support than legacy systems.

The lighter, more deployable forces under development by the Services will further increase our capability for rapid deployment. Forces that have greater lethality per pound will provide combat capability equal to or greater than today's forces at significantly reduced deployment costs.

Finally, greater visibility of Service assets and greater direction and mission definition by the JFC will identify and reduce unnecessary redundancy within the joint force. This may require greater reliance by the Service components on jointly managed nonorganic support to meet their warfighting requirements.

4.3.2.3. Agile Sustainment Operations

Sustainment Support. Operational sustainment of RDO forces hinges on the ability to provide support to forces executing operations in noncontiguous operating areas. Operations will be effectively and efficiently sustained through distributed, transportation-based, globally networked, and reachback-supported logistic capabilities. The theater sustainment concept envisions a combination of "direct from CONUS" and theater-centric support structures. Surface or fixed/rotary-wing lift aircraft will deliver materiel and service support in mission-configured loads directly to forces in the objective area. Supply systems must be interoperable to facilitate the strategic-national and theater LOC segments supporting global distribution thereby reducing unnecessary duplication. Because local shore logistic facilities may well be threatened or denied, temporary operating bases and sea-based logistics will be used.

Joint total asset visibility systems will permit greater precision and efficiency in sustainment operations. Sustainment information will be included in the CROP. Host nation or multinational support may relieve some portion of the logistic burden; however, support agreements must be in-place before execution of RDO. In-place agreements will be a priority effort by CINC staffs and country teams.

Distributed Basing. Increased anti-access threat and potentially austere infrastructure may preclude rapid direct insertion of forces into the objective area using strategic lift. The greater capability to use standoff weapons, rather than forces, to produce effects will decrease in-theater infrastructure requirements. The ability to sea-base many joint fire support, sensor, C2, full dimensional protection capabilities, and information and logistic capabilities also reduces infrastructures requirements. Occupation of territory, in the classical sense, may not be the norm, significantly decreasing the number and size of local logistic bases and allow us the use of different basing philosophies. Intermediate staging and support bases could be used as necessary to support the generation of desired effects. These ISBs would exist only as long as required to support a particular joint action.. Whether land-based or sea-based, the ISB provides the opportunity to stage and integrate units in a relatively safe location and still have the ability to insert and support the units using mobility assets. The CROP will enable the ability to provide and manipulate material and delivery assets.

After attaining the requisite force protection capability within the JOA, mission-designed ships, both naval and commercial, and vertical lift aircraft provide an alternative to fixed ISBs. This will enable the JFC to form sea bases for force insertion and sustainment.

Positioning of sustainment at sea will reduce vulnerability while providing mobility and flexibility. Highly mobile temporary delivery points, similar to forward operating bases and forward arming and refueling points may become commonplace. Time-sensitive delivery, enabled by the CROP and decision support tools and the use of surface or fixed/or rotary-wing lift, can be achieved.

Asset Visibility and Logistic Information. Agile sustainment Operations require a high degree of situational awareness and asset visibility. Commanders will pinpoint the location of their materiel needs and track movement to destinations through joint total asset visibility (JTAV) and in-transit visibility (ITV) portions of JIP and CROP. Knowledge of the location and quantities of assets and the ability of decision-support tools to synchronize their delivery to units in the objective area will enable the delivery of sustainment from CONUS and theater support mechanisms. In addition, information systems will track unit consumption and compute re-supply tailored to usage and upcoming operations.

Joint Theater Logistics Management. Joint Theater Logistics Management (JTLM) enables the theater CINC to streamline logistics resources and processes to optimize support to the joint force. As the regional commander the CINC is in a better position than a JTF commander to prepare and focus theater assets to support the JTF mission. The coordination and prioritization of resources relating to inter- and intra-theater transportation, in-theater contracting, host nation support, and critical supply items (e.g. precision munitions) are the most critical areas that require centralized management. Using the information resources of the CROP and JIP, the CINC, working closely with the JTF commander, will be able to coordinate lift and supply actions with TRANSCOM and DLA as well as to exert necessary control of those logistics resources most critical to the success of RDO.

Force Health Protection. Force Health Protection (FHP) support to RDO represents a significant change over past health service support concepts. The operational challenges FHP mirror those presented to the deployment, sustainment, and basing functions; that is how to move the right medical capabilities into the JOA and how to provide necessary medical support to service members in units operating non-contiguously in the JOA. Technology serves as an enabler for opportunities such as enroute care; global monitoring to improve awareness of medical threats and conditions; and support services that are transformed by technology to become more responsive, lighter, more mobile and less costly. FHP uses CROP and JIP to identify improved preventive measures, speed evacuation, and reduce the battlefield footprint of the medical force. It uses key deployment and sustainment concepts to provide the speed and agility required for RDO forces.

4.3.2.4. Full Dimensional Protection

Full dimension protection exists when the joint force can achieve a decisive outcome with an acceptable degree of risk. FDP incorporates a complete array of combat and noncombat actions in offensive and defensive operations, including IO enabled by information superiority. CROP

and JIP will enhance our ability to see the battlespace, to anticipate enemy action, quickly disseminate threat information to all forces, and counter enemy actions by calling on the tailored selection and application of multi-layered active and passive measures, within the domains of air, land, sea, space, and information. This does not relieve the tactical commander of the traditional responsibility for force protection in the command's immediate environment. Tactical force protection will also be enhanced by CROP and JIP.

Considerations for protecting the force must extend beyond the immediate battlespace. Our military forces must be able to conduct decisive operations despite our adversaries' use of a wide range of weapons, conduct of IO or terrorist attacks, or the presence of asymmetric threats during any phase of these operations. DM operations in non-contiguous areas by elements of the joint force, including operations within the enemy's battlespace, will present special challenges to force protection. Dispersed units must receive high-fidelity tactical information from multiple sensors, not necessarily under their direct control. PE and maneuver, in conjunction with defensive counter-measures, will provide tactical commanders the ability to disrupt the enemy's ability to attack the joint or multinational forces throughout the campaign. IO support this effort by protecting our information systems and processes while denying these capabilities to the adversary.

Joint requirements for a deployable missile defense provided by deployable joint theater air and missile defense, suppression of enemy air defense, and mine countermeasures align with tactical and individual protection measures. Provisions for rear area security and anti-terrorist measures are required, no matter how far from the employment area. This also includes the protection of civilian and commercial infrastructure. The final aspect of force protection considers the growing cyber threat and defense of computer networks upon which our information-based operations depend.

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CAPTER FIVE

THE WAY AHEAD

This chapter describes the USJFCOM experimentation strategy and identifies complementary experimentation efforts. It also describes Joint Staff-developed desired operational capabilities and discusses how they help shape the RDO concept. It also describes a “red team” assessment of adversary capabilities that could challenge the RDO concept.

5.1. RDO Concept Experimentation Strategy

5.1.1. Background

Joint Vision 2020, the conceptual template of the Chairman of the Joint Chiefs of Staff, identifies the concepts of Dominant Maneuver, Precision Engagement, Full Dimensional Protection, and Focused Logistics, and the key enabler, Information Superiority. The Joint Futures Lab (JFL) of the US Joint Forces Command supports the implementation of JV 2020 as one of its tasks. The *Joint Concept Development and Experimentation Strategy: Road to RDO Next Decade* dated 21 June 2001, published by the JFL, presents the four-year experimentation strategy (Fiscal Year 01 through 04). This strategy outlines the end-to-end joint experimentation effort highlighted in Figure 27.

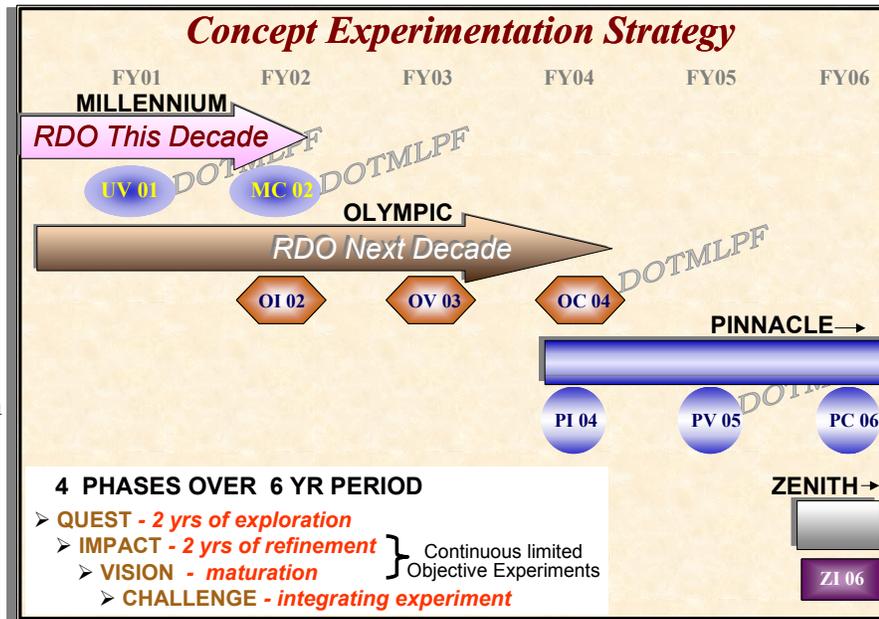


Figure 27. Concept Experimentation Strategy

5.1.2. Strategy

In order to lead transformation of America’s military, and achieve the optimal future force capability, Joint Experimentation will create and deliver recommendations for DOTMLPF changes. These recommendations will be derived from continuous analysis of both internal and external experimentation results. The majority of recommendations will be timed to align with Quadrennial Defense Reviews. Recommendations that provide an immediate capability to the United States will be released as soon as possible.

Recommendations will be developed through a process that examines objectives, issues, and

questions and matches them with a set of experiments. Two major joint integrating experiments are planned. Millennium Challenge 2002 (MC-02), to be conducted in July-August 2002, will focus on our ability to conduct RDO in this decade. Olympic Challenge 2004 (OC-04) will occur in May-June 2004 to demonstrate the ability to conduct an RDO in the next decade. Additional workshops, seminars, limited objective experiments (LOE) and other experimentation events, such as the Olympic Vision (OV) series, will further refine functional concept elements and associated DOTPLMF change recommendation packages.

5.2. Complementary Efforts

USJFCOM will continue to collaborate and partner with CINC, Service, and independent experimentation efforts related to RDO including Advanced Concept Technology Demonstrations (ACTD), Joint Warfighting Integrating Demonstrations (JWID), and others. These efforts will include shared and integrated events and an effort to evolve and refine the joint operational context and environment in which emerging capabilities will be assessed and employed.

In addition to Service experimentation efforts that support RDO, there are two additional parallel efforts associated with attaining RDO from a joint construct. One is the Joint Mission Force (JMF) being developed by US Pacific Command, and another is Joint Strike Force (JSF) being developed by the Institute for Defense Analyses' Joint Advanced Warfighting Program. In addition, US Central Command is supporting an Advance Concept Technology Demonstration (ACTD) involving a deployable JTF HQ and the Joint Staff is developing a concept for DM and other functional concepts in support of JV 2020. These efforts differ somewhat in mission, scope, and targeted timeframe from USJFCOM's FY02 concept exploration effort. All will provide valuable insights into organizational, collaborative, and future warfighting issues.

5.3. Desired Operational Capabilities.

Joint operations in the 2010 - 2020 timeframe will depend on a wide range of capabilities to enable DM and PE. The original 21st Century Challenges identified in the *Joint Vision Master Plan* contained 21 challenges, of which eleven pose relevant challenges for RDO. They serve as compelling rationale for investigating the initial set of desired operational capabilities (DOC) discussed in the following paragraphs. As USJFCOM continues joint experimentation subsequent versions of this concept paper refine this list. The following initiatives are among the most important to RDO:

Provide Real-time Battlespace Awareness. This provides real-time or near real-time battlespace awareness to the JFC, subordinate commanders, and staffs at all levels. It includes DOCs necessary to achieve the CROP and those associated with defensive IO.

Achieve Unity of Effort. The JFC will regulate forces and functions to focus, integrate, and synchronize actions throughout the battlespace. It includes DOCs related to organizing the joint force headquarters and task organizing the joint force.

Achieve and Preserve Battlespace Control. This is required to ensure freedom of friendly action. It includes DOCs that relate to achieving air, land, sea, space, and electromagnetic

superiority.

Generate Overmatching Lethal and Non-lethal Effects. This provides decisive advantages in range, probabilities of hit and kill, efficiency of effects, and relative combat power. It includes DOCs associated with PE, combat identification, and offensive IO.

Synchronize Employment of Forces to Achieve Desired Effects. This describes the capability to synchronize joint operations of widely dispersed forces against multiple centers of gravity.

Conduct Short-notice Global Maneuver and Attack. This describes the capability to deploy, maneuver, and attack with forces sufficient to accomplish the mission. It includes FL DOCs that relate to strategic deployment as well as inter- and intratheater mobility.

Protect Forces, Facilities, and Capabilities. This is a relatively broad category that includes full-dimensional protection DOCs related to early detection and engagement of those threats that are most dangerous to mission accomplishment (such as WME-capable air and missile threats). It also includes DOCs related to PE, defensive IO, and combat identification.

Affect Adversary Ability to Observe the Battlespace. This increases the information differential in the JFC's favor, thus contributing to information superiority and creating confusion for the adversary.

Affect Adversary Ability to Command and Control Forces. This disrupts, destroys, or otherwise affects an adversary's C2 systems, to weaken his planning and execution processes.

5.4. Concept Vulnerability Assessment

The classified CVA for RDO, and its' unclassified Threat Abstract (Appendix C), is an intelligence analysis leading to a more comprehensive risk assessment of adversary capabilities that could challenge the RDO concept. The CVA is an interim assessment that provides concept and experiment developers preliminary information regarding those adversary capabilities that have the potential to counter the concept objective. The CVA is among the many sources of information that will support the development of the ONA.

5.5 Conclusion

Dramatic technological developments in the information, biological, and space sciences offer significant opportunities to advance military science and, equally significant, pose dangers to our security. Together, this geo-strategic change and the proliferation of advanced technologies have reshaped the 21st century battlespace.

Although focused on a smaller-scale contingency, the RDO concept is a smart way to think about joint warfare regardless of the threat we face or the strategic environment in which we operate. The concept described in this paper is an evolving construct for conducting RDO in the next decade. It is the USJFCOM experimentation vehicle for transforming jointness and provides a joint context for Service experimentation efforts. The RDO Concept is the USJFCOM vehicle

for realizing the JV 2020 vision. The ideas identified in this document span doctrine, organization, training, materiel, leadership, personnel, and facilities. Concepts and doctrine drive organization, which should, in turn, drive the development and acquisition of combat, support, and lift systems and platforms. Our experimentation strategy will refine the concepts and develop the DOTMLPF Change Recommendation packages that support RDO in the next decade and to help focus experimentation efforts into a strategy to achieve concept objectives.

The development of an effective RDO capability is a journey rather than a discrete objective. There is currently a limited capability to conduct RDO and improvements in doctrine, training, and organizations will further improve the speed and effectiveness of RDO and expand the scenario sets in which it can be achieved. The establishment of an experimental standing joint command and control element under USJFCOM to test RDO issues is an early initiative. Development of collaborative planning tools and a functional CROP, as well as enhanced ISR and a truly integrated and accessible intelligence system, will significantly enhance decision superiority. Strategic mobility concepts such as “ready off the ramp” and new deployment means can enhance rapid force deployment. Other joint and Service technologies and forces will enhance RDO as they come on line.

The objective is to accomplish the strategic requirement is to be ready to transition from a relatively peaceful process to intense combat operations to rapidly and decisively achieve strategic objectives. Our challenge, in conjunction with other instruments of national power, is to build the capability to respond quickly and bring regional contingencies to a rapid and decisive close. We must do this while not losing our ability to prevail in the event of a major regional contingency.

APPENDIX A

Glossary and Acronyms

Definitions:

adaptive joint command and control: The ability to adjust to a given situation and exercise authority and direction by a properly designated commander over assigned and attached joint forces in the accomplishment of the mission.

asymmetric warfare: The waging of unbalanced or un-proportioned armed or unarmed war against an enemy.

commander's intent: The stated purpose or desired end state of a commander in the accomplishment of the assigned mission.

common operational picture: The integrated capability to receive, correlate, and display a Common Tactical Picture including planning applications and theater generated overlays/projections (i.e., Meteorological and Oceanographic (METOC), battle plans, force position projections). Overlays and projections may include location of friendly, hostile, and neutral units, assets, and reference points. The COP may include information relevant to the tactical and strategic level of command. This includes, but is not limited to, geographically oriented data, planning data from JOPES, reconnaissance data from the Global Reconnaissance Information System (GRIS), weather from METOC, predictions of nuclear, biological, and chemical (NBC) fallout, and Air Tasking Order (ATO) data.

common relevant operational picture: A presentation of timely, fused, accurate, assured, and relevant information that can be tailored to meet the requirements of the joint force commander and the joint force and is common to every organization and individual involved in a joint operation.

decision superiority: The ability of the commander, based upon information superiority and situational understanding, to make effective decisions more rapidly than the adversary, thereby allowing him to dramatically increase the pace, coherence, and effectiveness of operations.

decisive operations: Those operations assigned to or undertaken by the US Military in which there is a firm or conclusive resolution.

defeat mechanisms: the best arrangement of ways and means to destroy the adversary's coherency and achieve our RDO campaign objectives

desired operational capability (DOC): A concept based statement of the ways and means to satisfy a JFC's capabilities requirements. A fully articulated DOC identifies subordinate tasks, associated conditions, and criteria for measurement.

dominant maneuver: The ability of joint forces to gain positional advantage with decisive speed and overwhelming operational tempo in the achievement of assigned military tasks. Widely dispersed joint air, land, sea, amphibious, special operations and space forces, capable of scaling and massing force or forces and the effects of fires as required for either combat or noncombat operations, will secure advantage across the range of military operations through the application of information, deception, engagement, mobility and counter-mobility capabilities. JV2020

effects-based operations: A process for obtaining a desired strategic outcome or “effect” on the enemy, through the application of the full range of military and non-military capabilities at the tactical, operational, and strategic levels. An “effect” is the physical, functional, or psychological outcome, event, or consequence that results from a specific action or actions.

effects tasking order: An order developed by the Effects Cell of the SJC2E that expresses the intent of the JFC in terms of specific responsibilities for effects accomplishment assigned to an appropriate functional component commander.

expeditionary aerospace force: The US Air Force concept of an expeditionary force capable of carrying out assigned air missions from forward deployed bases or long-range missions from home bases.

focused logistics: The ability to provide the joint force the right personnel, equipment, and supplies in the right place, at the right time, and in the right quantity, across the full range of military operations. JV 2020

force health protection: The health and medical portion of agile sustainment operations.

full dimensional protection: The ability of the joint force to protect its personnel and other assets required to decisively execute assigned tasks. Full dimensional protection is achieved through the tailored selection and application of multilayered active and passive measures, within the domains of air, land, sea, space, and information across the range of military operations with an acceptable degree of risk. JV2020

full spectrum dominance: 1. The ability of US forces, operating unilaterally or in combination with multinational and interagency partners, to defeat any adversary and control any situation across the full range of military operations. 2. The interdependent application of DM, PE, FL, and full dimensional protection utilized in order for the joint force to accomplish its mission. JV 2020

global information grid: The worldwide information network currently being developed by the US that will link all data and communications networks together in a seamless environment. 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 warfighters, 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. It also includes National Security Systems as defined in Section 5142 of the Clinger-Cohen Act of 1996. The GIG supports all Department of Defense, National Security and related Intelligence Community missions and functions (strategic, operational, tactical and business), in war and in peace. The GIG provides capabilities from all operating locations (bases, posts, camps, stations, facilities, mobile platforms, and deployed sites). The GIG provides interfaces to coalition, allied and non-DOD users and systems. ASD (C3I) Memo dated 22 Sep 99

indirect effects: Delayed and/or displaced second- and third-order consequences of military and non-military actions. They are often accentuated by intermediate events or mechanism to produce desired outcomes that may be physical or psychological in nature. Indirect effects also tend to be difficult to recognize and are often a cumulative or cascading result of many combined direct effects.

information superiority: The degree of dominance in the information domain which permits the conduct of operations without effective opposition.

information system: The organized collection, processing, transmission, and dissemination of information, in accordance with defined procedures, whether automated or manual. In information warfare, this includes the entire infrastructure, organization, and components that collect, process, store, transmit, display, disseminate, and act on information.

intermediate staging and support base: A temporary location used to both stage forces and to locate sustainment and maintenance support when anti-access conditions and/or infrastructure in the JOA preclude early entry. Also called ISSB (new term).

joint interactive planning: Planning between the different Service commanders in a joint environment that takes place through the utilization of multiple electronic or communications systems in which responses are direct and continual.

joint mission force: That military force that shares a common mission or goal that will allow for the overall attainment or success in completion of the assigned task.

key enabler: That crucial element that supplies the means, knowledge, or opportunity that allows for the success of an assigned task or mission. American Heritage College Dictionary

knowledge: 1. Familiarity, awareness, or understanding, gained through experience or study. 2. The sum or range of what has been perceived, discovered, or learned. American Heritage College Dictionary

objective force: The strategically responsive force that will result from the Army's transformation process. The objective force, capable of dominating at every point on the spectrum of conflict, will be characterized by its responsiveness, deployability, agility, versatility, lethality, survivability, and sustainability.

operational net assessment (ONA): A process that uses a coherent knowledge base to link national objectives and power to apply integrated diplomatic, information, military, and economic options that influence an adversary's perceptions, decision-making, and elements of national will.

operational-level effects: Operational effects influence activities at the operational level of war and focus on campaigns and operational objectives.

precision engagement: The ability of joint forces to locate, surveil, discern, and track objectives or targets; select, organize, and use the correct systems; generate desired effects; assess results; and reengage with decisive speed and overwhelming operational tempo as required, throughout the full range of military operations. JV2020

rapid decisive operations: Rapid decisive operations is a concept for future joint operations. A rapid decisive operation will integrate knowledge, C2, and operations to achieve the desired political/military effect. In preparing for and conducting a rapid decisive operation, the military acts in concert with and leverages the other instruments of national power to understand and reduce the regional adversary's critical capabilities and coherence. The United States and its allies asymmetrically assault the adversary from directions and in dimensions against which he has no counter, dictating the terms and tempo of the operation. The adversary, suffering from the loss of coherence and unable to achieve his objectives, chooses to cease actions that are against US interests or has his capabilities defeated.

relevant information: The full range of necessary information about friendly forces, the enemy, the battlespace, and anything else that affects operational decision-making.

ship-to-objective-maneuver: The concept of maneuvering landing forces directly to objectives ashore in order to avoid the necessity of establishing a beachhead and avoiding enemy defensive efforts. USMC Concepts and Issues 2000.

technologies: 1. The application of science, especially to industrial or commercial objectives.
2. The scientific method and material used to achieve a commercial or industrial objective.
American Heritage College Dictionary

Acronyms:

AA: assured access
ACTD: Advanced Concept Technology Demonstrations
AJC2: adaptive joint command and control
AOF: Army Objective Force
AOR: area of responsibility
C2: command and control
C4ISR: command, control, communications, computers, intelligence, and surveillance, reconnaissance
CINC: commander in chief
COA: course of action
CONUS: Continental United States
COP: common operational picture
CROP: common relevant operational picture
CVA: concept vulnerability assessment
DIME: diplomatic, information, military, and economic
DM: dominant maneuver
DOC: desired operational capabilities
DOD: Department of Defense
DOS: Department of State
DOTMLPF: doctrine, organization, training, material, leadership, people, and facilities
EBO: effects based operations
EMW: expeditionary maneuver warfare
ETO: effects tasking order
FDO: flexible deterrent option
FDP: full dimensional protection
FHP: force health protection
FLEEDO: focused logistics: enabling early decisive operations
GIG: global information grid
GRIS: global reconnaissance information system
HSV: high speed vessel
IO: information operations
IPB: intelligence preparation of the battlespace
IS: information superiority
ISB: intermediate staging base
ISR: intelligence, surveillance, and reconnaissance
ISSB: intermediate staging and support base
ITV: in-transit visibility
JFACC: joint forces air component commander
JFC: joint force commander
JFL: joint futures lab
JFLCC: joint force land component commander
JFMCC: joint force maritime component commander
JFSOCC: joint force special operations component commander
JIP: joint interactive planning

JIPB: joint intelligence preparation of the battlespace
JMF: joint mission force
JISR: joint intelligence, surveillance, and reconnaissance
JOA: joint operations area
JOPEs: joint operation planning and execution system
JRSOI: joint reception, staging, onward movement, and integration
JSF: joint strike force
JTAV: joint total asset visibility
JTF: joint task force
JTLM: joint theater logistics management
JV2020: Joint Vision 2020
JWID: Joint Warfighting Integrating Demonstrations
J-X: interagency operational support directorate
LOC: line of communication
LOE: limited objective experiment
LPI: low probability of intercept
MC02: Millennium Challenge 2002
MNO: multinational operations
MPF: maritime prepositioning force
MPF(F): maritime prepositioning force (future)
NBC: nuclear biological chemical
NCA: national command authorities
OC04: Olympic Challenge 2004
OCONUS: outside the continental united states
OMFTS: operational maneuver from the sea
ONA: operational net assessment
OTH: over the horizon
OODA: observe, orient decide, & act
PE: precision engagement
PMESI²: political, military, economic, social, infrastructure, and information
POE: port of embarkation
POL: petroleum, oils, and lubricants
RDO: rapid decisive operation
ROE: rules of engagement
SDHSS: shallow draft high-speed shipping
SJC2E: standing joint command and control element
SJFHQ: standing joint force headquarters
SOF: special operations forces
SSC: smaller-scale contingency
SDHSS: shallow draft, high speed surface effect ship
SSTOL: super short take off and landing
STOM: ship-to-objective-maneuver
TEP: Theater Engagement Plan
TSV: theater support vessel
TTP: tactics, techniques, and procedures
UAV: unmanned aerial vehicle

ULA: ultra large airship

USTRANSCOM: United States Transportation Command

USJFCOM: United States Joint Forces Command

V/STOL: vertical/short takeoff and landing aircraft

WMD: weapons of mass destruction

WME: weapons of mass effect

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APPENDIX B

Service Concepts for Future Operations

The Services, in partnership with USJFCOM, are developing advanced concepts for the rapidly deployable, knowledge-based, precision forces necessary to conduct RDO. Recent experimentation has demonstrated that key elements of Service future concepts, organizations, and equipment support RDO and contribute to the operationalization of JV2020. These efforts must be developed in a manner that will ensure fully technological and operational interoperability.

Army

The future Army Objective Force (AOF) will provide the JFC with the essential elements of land power necessary to the achievement of strategic dominance across the range of military operations. The AOF will provide properly equipped and trained *general purpose* land forces to joint, and multinational formations for missions across the spectrum of humanitarian assistance and disaster relief, to peace operations, to major theater wars, including conflicts involving the potential use of WMD. The AOF will be *responsive* and dominant at every point on that spectrum. The AOF will be strategically responsive through forward-deployed forces, forward positioned capabilities, engagement, and force projection from CONUS. It will be *rapidly deployable* to any place in the world—with the goal of deploying one ready to fight brigade combat team in 96 hours, a division in 120 hours, and five divisions in 30 days. More importantly, the AOF will provide the JFC with the means and forces needed to seize the initiative and then maintain operational momentum once engaged. The AOF will be strategically, operationally, and tactically *agile*, able to seamlessly transition from stability and support to defensive and offensive war fighting operations, on the move. It will be a *versatile* organization capable of generating mission tailored force packages that can dominate land operations at any point on the spectrum of conflict with minimum adjustments and in minimum time. AOF will generate decisive combat power (*lethality*, mobility, leadership, protection, and information) through technologically enabled overmatch. The AOF will be *survivable* anywhere in the expanded battlespace by combining low observability, ballistic protection, long-range acquisition and targeting, early attack, and higher first round hit/kill technologies. The AOF will be *sustainable* within a small logistic “footprint” created by major reductions in replenishment (fuel, ammunition and spare parts) demand. The AOF will provide the JTF commander with a dominant land warfare capability that is integral to achieving rapid, decisive outcomes in all future integrated, coherent joint operations.

Air Force

The future Expeditionary Air Force (EAF) commander will rapidly deliver and sustain effects to dominate the battlespace from within the atmosphere, from beyond the atmosphere, and throughout cyberspace. Aerospace forces will capitalize on improved stealth, speed, standoff, and precision. Smaller, lighter, and more effective munitions and systems will enable agile combat support to lay the foundation for persistent, full spectrum, effects-based operations

(EBO). Rapid global airlift will enable unprecedented responsiveness for the joint force. The EAF will deploy into austere contingency areas anywhere in the world within hours or days with minimum amounts of strategic airlift and sealift, and will have a reduced forward footprint. The EAF will provide the JFC with more responsive and immediate access to space in the form of readily available launch platforms and payloads, including intelligence collection devices. These space capabilities will be horizontally and vertically integrated with air breathing surveillance and reconnaissance capabilities, manned and unmanned, providing fused battlespace awareness. EAF global attack capabilities will hold any adversary at risk. Predictive battlespace awareness will generate focused target sets to create specific operational and strategic effects while greatly reducing undesired and unexpected effects. PE will deny the adversary sanctuary and pause since the EAF will be able to attack hidden, hardened, deeply buried, time sensitive, and moving targets in all weather conditions. The EAF will be capable of applying levels of force and effect that are orders of magnitude greater than current capabilities, while requiring fewer sorties and less force to attain the effect. Highly refined, dynamic C2 of aerospace operations, with distributed reachback to EAF, joint, government, and coalition organizations, using networked and integrated IO, including computer network defense, will enable commanders to make better decisions and execute them at a pace faster than an adversary can react. The EAF of the future will be adept in planning and executing aerospace campaigns at the operational and strategic levels. It will rapidly gain aerospace superiority, halt the adversary short of its objective, gain battlespace access for follow-on joint forces, control the battlespace, and rapidly set the conditions that ensure joint aerospace and land forces have the freedom to engage the adversary from a position of significant advantage.

Navy

The Navy's *Network Centric Operations A Capstone Concept for Naval Operations in the Information Age* and the four major supporting concepts: *Information and Knowledge Advantage*, *Assured Access*, *Effects-Based Operations*, and *Forward Sea Based Forces* were developed to operationalize JV2020. These concepts provide substantial support to RDO in the context of joint operations. Forward presence of naval forces provides real-time shared battlespace awareness and immediate employment of capabilities for flexible deterrent options (FDOs), IPB, C2, fires, and force protection. These forward naval forces will maintain or gain access to a crisis area and provide interoperable C2 and sensing in preparation for deployment of additional joint forces. This capability will become increasingly important as global trends indicate decreasing access to regional infrastructure and potential adversaries' increasing capability to employ readily available technologies to create sophisticated and overlapping area denial systems. These area denial systems will include mines, tactical aircraft, submarines, coastal defense cruise missiles, theater ballistic missiles, integrated air defenses, and IO as elements of an anti-access strategy in the contested littorals. Emerging technologies will allow future Navy forces to provide and sustain an expeditionary sensing capability to create real-time, shared battlespace awareness. These forces will employ miniaturization, robotics, and off-board autonomous platforms to perform many repetitive and inherently dangerous missions. They will provide some of the capabilities to protect the air ports of debarkation and sea ports of debarkation, including theater air missile defense coverage, to ensure the safe flow of forces into the area of responsibility. They will allow the Navy to employ a distributed, fully netted force to provide concentrated, high volumes of precision fires in support of joint land forces. The

synergy of these capabilities will enable effects-based operations that can substantially contribute to the JTF commander's ability to create an overwhelming tempo of operations to which the enemy is unable to effectively respond.

Marine Corps

Expeditionary Maneuver Warfare (EMW) envisions Marine Corps application of the philosophy of maneuver warfare as America's expeditionary force-in-readiness to fight and win the nation's battles enabling future JFC's to achieve Full Spectrum Dominance. Marine forces will continue to provide JFCs with a single, integrated, combined arms force relevant across the spectrum of conflict. The emerging concept of EMW will capitalize on the supporting employment concepts to include Operational Maneuver From The Sea (OMFTS), and Ship To Objective Maneuver (STOM) to support RDO. The Marine Corps' organizational structure, multi-dimensional deployment character, and operational methods are uniquely tailored to provide Joint Force Commanders with a wide range of options, from indefinite forward presence to forcible entry and sustained operations ashore – with or without host nation infrastructure or support. The enhancement envisioned in Maritime Prepositioning Force (Future) (MPF(F)) will provide for the at sea arrival and assembly of the maritime prepositioning force, eliminating the requirement for access to secure ports and airfields. Institutionally, the Marine Corps strategic agility is its ability to deploy forces world wide to a theater of operations through any combination of lift (sea, air, land) and employ them without an “operational pause” to equip, organize, or train for a particular situation. The highly flexible Marine Air Ground Task Force (MAGTF) organization allows for the rapid and efficient building of a combined arms task force specially tailored for a specific mission, yet capable of performing a wide variety of unrelated tasks if necessary. This force possessing enhanced capabilities in operational reach and tactical flexibility provides the JFC with a relevant force available for employment. MAGTFs will deploy by a mixture of amphibious lift, fast sealift, strategic airlift, as well as over land. These MAGTFs, will conduct collaborative planning, conduct virtual rehearsals, and carry out well-coordinated battle space shaping activities supported by strategic reachback while enroute to the objective area. At the same time, future MAGTFs will retain the ability to shift from high intensity combat operations to a full range of other missions should the situation dictate. The forward presence posture and rapid response time of sustainable Marine forces provides unmatched enabling capabilities for the JFC.

Special Operations Forces

SOF Vision 2020 is the United States Special Operations Command's (USSOCOM) framework for building and maintaining the necessary operational capabilities of future special operations forces (SOF). The vision incorporates two fundamental strengths—quality people with unequalled skills and a broad-based technological edge—to ensure tomorrow's SOF are structured, trained, and equipped to counter diverse threats to national security. *SOF Vision 2020* is underpinned by a rigorous assessment of the future geo-political landscape and attendant threats and outlines three parallel paths—professional development, technological innovation, and proactive acquisition.

SOF's role in peacetime engagement will continue; however when threats escalate, SOF will

deter, defend, or enable follow-on forces to halt aggression using their rapid mobility and surgical strike capabilities to achieve strategic and operational objectives. In a world of increased global interaction, SOF can extend US influence, ideals, and values providing access and promoting stability with affordable yet effective forward presence and engagement posture that defines USSOCOM as the world's premier SOF—already their or first to deploy—in a volatile and uncertain world. These capabilities enable the United States to devise and execute innovative solutions to crisis in an uncertain world.

SOF will have a significant impact on the conduct of RDO. SOF is inherently organized, trained, and equipped to support RDO through regional expertise and continuous presence in theater through engagement activities. Forward-deployed SOF will often be the first responders to developing crises. Regional expertise and habitual relationships with potential multi-national partners built through engagement activities will provide the CINC's with mature, reliable human intelligence and expanded options for RDO execution. This allows SOF to assist the theater commander by shaping the beginning stages of a crisis toward deterrence, and if deterrence fails, helps the commander set the conditions for swift victory. Following RDO, SOF would remain engaged to ease the transition to peace.

Fundamentally, the role of SOF in RDO is that of an 'accelerator.' In other words, early, knowledge-based, and judicious employment of SOF assets will enhance both the speed and focus (decisiveness) of RDO. SOF's flagship capabilities highlight the unique capacity and expertise SOF brings to RDO. Those capabilities are: strategic agility, global access, regional expertise, information superiority, continuous and secure connectivity and reachback, self-sufficiency, and full spectrum integrated.

SOF's capabilities will enable the CINC to act on warning to employ low visibility, asymmetrical and unconventional forces to shape, define, and potentially defuse crises. If the crisis develops beyond the deter/influence phase, SOF capabilities can be utilized by the CINC, the JFC, and conventional JTF component commanders to support RDO.

APPENDIX C

Rapid Decisive Operations Concept Vulnerability Assessment (CVA) Abstract

1. This is an unclassified abstract of on-going intelligence analysis leading to a more comprehensive intelligence estimate of adversary capabilities relating to the RDO operational concept. There is a classified version, available upon request that is a detailed 900-page RDO Concept Vulnerability Assessment. It is an interim assessment that provides concept and experiment developers preliminary information regarding those adversary capabilities that have the potential to threaten the achievement of concept objectives. The Concept Vulnerability Assessment is a much more comprehensive portrayal of the adversary and relates information to the system and sub-system levels.

2. Analysis, conducted within the context of a Southwest Asia scenario (2015), reveals significant vulnerabilities to the RDO concept. Singularly and collectively, the following capabilities present highly effective asymmetric and in some cases symmetric threat countermeasures to this concept.

- Ground Air Defense
- Information Operations
 - Public Affairs
 - Civil Military Operations
 - Physical Destruction (Terrorism)
 - Psychological Operations
 - Computer Network Attack (Civilian Infrastructure)
 - Deception
- Weapons of Mass Effects
- Undetectable Surveillance Radars
- Smart Munitions Countermeasures
- Radar Countermeasures
- Over the Horizon Radars
- Proliferation of Cruise Missiles
- Naval Mines
- Digitally Enhanced Performance
- Global Positioning System
- Space-Based Systems
- Space Control Systems

The most serious and farthest-reaching threats are ground air defense and IO.

3. Ground Air Defense.

- May be able to stand-off in-theater ISR assets to excessive ranges diminishing situational awareness, targeting and C2 to such a degree that decision cycles, operational tempos, maneuver, EBO, establishing conditions for joint operations, force protection, logistics, and PE may suffer to the point of attrition warfare.
- The ability to move forces “over and around” will be vulnerable, to ground air defenses, at large, but especially to man portable air defense system and anti-aircraft artillery controlled and guided by undetectable surveillance and control radars.
- Potential source of numerically high and high visibility casualties.
- Fully capable of protecting critical high value assets, in point defenses, from air attack by any means regardless of the radar cross section or altitude.
- Modern systems can fulfill both strategic and tactical roles.
- The more modern systems are practically impervious to anti-radiation missiles munitions and smart munition countermeasures will be commonplace.
- They will enable the effective employment of WME capable ballistic missiles exploiting a force protection vulnerability.
- They are difficult to target because of their high mobility and short set-up times.
- They will affect sea-based operations because they can detect and fire on aircraft at considerable ranges.

4. The second major threat is IO. Although much of these operations are outside the control of the military domain, the effects to that same domain could be profound. The adversary clearly has the intent, capability, and experience to conduct intense campaigns in public affairs, psychological operations, computer network attack (civilian infrastructure), deception, and physical attack by means of terrorism. Computer Network Attack will not necessarily be against military operational systems alone, but rather the highly vulnerable civilian infrastructure systems such as finance, transportation, power distribution, utilities, telecommunications, air traffic control, business management, and commodity distribution systems. The intent of which is to create an environment where military operations are governed by public opinion polls.

5. Terrorism is clearly a central issue and the adversary has the intent, means, and experience to employ it at unprecedented levels reaching far beyond the boundaries of the military theater, creating effects that may be beyond calculation, especially if WME are employed.

6. Bi-static and multi-static radars.

- Effectively counters many of the concept's maneuver, C2, and logistic desired capabilities.
- The adversary has an undetectable means of situational awareness enabling surveillance of large areas.
- They can be used for target acquisition and guidance detecting even low observable targets.
- Targeting of these assets is not possible.
- Adversary decision cycles may be shortened considerably.

- EBO might be much more difficult because it relies heavily on the lack of adversary situational awareness.
- The ability to take away the adversary's initiative also becomes much more difficult.

7. Effective countermeasures to paramount military functions such as C2, maneuver, situational awareness, maneuver, targeting, and attack are proliferating. These countermeasures are relatively inexpensive and offer excellent low-cost alternatives to traditional approaches (procurement of high cost end-items). In many cases, they represent significant performance improvements to existing capabilities.

- Smart weapon countermeasures are particularly problematic in that they complement the countermeasures and capabilities found in modern ground air defense systems making attack solutions much more hazardous with a much lower level of effectiveness.
- Radar countermeasures. Aircraft would be vulnerable to low probability of intercept (LPI) radar systems, since these radars would degrade an aircraft's ability to know it is being targeted, and also seriously degrade radar countermeasures or make them significantly more difficult.

8. Over the Horizon (OTH) Radar. OTH radars will allow air corridor monitoring, aircraft and ship deployment observation, and extended cruise missile attack capability against sea-based operations with a much higher level of effectiveness.

9. The proliferation of inexpensive cruise missiles on mobile launchers, supported by undetectable and OTH radars, seriously threatens force protection, sea based operations, logistics, EBO, and DM. They enable an adversary to extend their influence without the absolute need of force mobility either in offensive or defensive operations. It is an effective countermeasure to many of the desired RDO capabilities.

10. Naval Mine Technology. Denial operations will be significantly enhanced through the use of technologies such as propelled-warhead mines, wireless remote control, multiple influence sensors, and stealth components.

11. The disruption or denial of global positioning systems, either in navigation or guidance, will have an immediate and disproportionate effect on maneuver, C2, EBO, targeting, establishing conditions for joint operations, force protection, and logistics.

12. It is the era of information technology but it is also the age of digitally based equipment. Once equipment is either upgraded to digital or initially developed as digital, profound performance enhancements are possible very quickly and relatively inexpensively. This is especially true for air defense weapons, radars, smart munitions countermeasures, and electronic warfare countermeasures.

13. The above adversary capabilities, especially ground air defense and IO, present serious vulnerabilities to the RDO operational concept. The adversary probably can:

- maintain their situational awareness while impeding the JTF's;
- shorten their decision cycle while extending the JTF's;
- slow the operational tempo to unacceptable levels;
- conduct effective, focused denial operations;
- inhibit high-speed, over and around, maneuver;
- frustrate early entry operations;
- effectively protect high value assets;
- inflict unacceptable casualties;
- decelerate force projection operations;
- jeopardize sea-based operations;
- prolong the conflict beyond acceptable limits; and,
- influence US and world opinion against the United States.

14. As necessary, the adversary of 2015 on which we conduct an RDO will employ some excellent technologies, capabilities, and tactics to mitigate, and possibly negate our numerical, informational and technological advantages. As we employ assured access, dimensional superiority, and attempt to contain his land forces, he will employ anti-access and asymmetric counters to cloud our ONA, deceive our EBO and prevent us from selectively applying force to achieve the desired RDO effects. The question is not whether we can destroy/win against a regional threat in 2015. The question truly is whether we can do so in a rapid and decisive manner? For the next fifteen years, our adversaries will watch, learn and develop counters to significant portions of the RDO concept. They watch, they learn, and, within the constraints of national budgets, they will execute counter-EBO to defeat our RDO.