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Joint Doctrine Series**

Pamphlet 4



***Doctrinal Implications of
Operational Net Assessment (ONA)***

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Preface

This US Joint Forces Command (USJFCOM) Joint Warfighting Center (JWFC) pamphlet, ***Doctrinal Implications of Operational Net Assessment***, is part of a “**Joint Doctrine Series**” intended to facilitate changes to joint doctrine based on the good ideas and other results that emerge from the Joint Concept Development and Experimentation Program and related joint doctrine development initiatives. The primary purpose of **JWFC Doctrine Pam 4** is to raise awareness, promote debate, and discuss doctrinal implications associated with the initiative to develop and field an operational net assessment (ONA) capability for the joint force.

Operational net assessment is one of the important enablers for the Standing Joint Force Headquarters (SJFHQ), one of USJFCOM’s top transformation priorities. ONA is a new approach that has the potential to improve dramatically what we know about all elements of the battlespace. This approach integrates people, processes, and tools, which use multiple information sources and collaborative analysis to generate products that improve decision-making. The goal is to develop the kind of actionable knowledge that helps decision-makers focus capabilities when, where, and how needed to achieve desired outcomes.

We welcome your comments and ideas on this important topic. Point of contact for JWFC Doctrine Pam 4 is Mr. Rick Rowlett, JW2114, 757-686-6167 (DSN 668), rowletr@jwfc.jfcom.mil.



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*"For knowledge itself is
power."*

Francis Bacon

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Section I — Introduction

*"He will win who knows when to fight
and when not to fight."*

Sun Tzu

Background

USJFCOM JWFC Doctrine Pam 4 is intended to facilitate changes to joint doctrine based on the good ideas and other results that emerge from the Joint Concept Development and Experimentation Program and related joint doctrine development initiatives. **The primary purpose of this pamphlet is to raise awareness, promote debate, and discuss doctrinal implications associated with operational net assessment (ONA).** The stimulus for this topic is the conceptualization and experimentation conducted by USJFCOM

J-9 and the close association of ONA as an important enabler of the Standing Joint Force Headquarters (SJFHQ) in the conduct of effects-based operations. The Secretary of Defense¹ has directed the implementation of an SJFHQ in each geographic combatant command (GCC) by FY 05. See JWFC Pamphlet 3 for more information on the SJFHQ.²

The ONA concept originated in the Rapid Decisive Operations (RDO) Wargame 2000 and is described as a "key joint transformation enabler" in the USJFCOM J-9 RDO Concept, 18 July 2002. Operational net assessment is ***the integration of people, processes, and tools that use multiple information sources and collaborative analysis to build shared knowledge of the adversary, the environment, and ourselves.***³ As the name implies, ONA focuses on the operational level; it consists of

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¹ Defense Planning Guidance for Fiscal Years 2004-2009, May 2002, p. 15.

² Joint Warfighting Center Pamphlet 3, *Doctrinal Implications of the Standing Joint Force Headquarters (SJFHQ)*, 16 June 2003.

³ USJFCOM J-9 *Operational Net Assessment Concept Primer*, Oct 03.

both process and products intended to significantly enhance both deliberate and crisis-action effects-based planning.

USJFCOM has experimented with various aspects of ONA since the RDO Wargame in mid-2000. Major experimentation events have included MILLENNIUM CHALLENGE 2000 (MC 00) during summer 2000; UNIFIED VISION 2001 (UV 01) during summer 2001; and MILLENNIUM CHALLENGE 2002 (MC 02), summer 2002. MC 02 was a congressionally mandated, operational-level, joint experiment that combined live forces with virtual and constructive forces. USJFCOM designed this event to assess the ability of a JTF to execute the RDO warfighting concept in this decade, given a set of enabling and supporting concepts such as SJFHQ and ONA. As part of a notional combatant commander's (CCDR) staff, the prototype SJFHQ focused on preparing the ONA and on other pre-crisis planning activities, including development of a contingency plan for the operation. During the experiment, the SJFHQ merged into the JTF headquarters.⁴ It enhanced the JTF HQ with significant planning augmentation; regional situational awareness and understanding through the ONA process and products; additional experience with collaborative tools; and joint operations expertise.



In general, MC 02 participants and observers concluded that the SJFHQ provided value-added C2 support to the JTF HQ; reduced the ad hoc nature of activating the JTF; helped reduce the JTF HQ stand-up learning curve; and facilitated continuity in planning and operations from crisis development through execution and transition. **Operational net assessment was one of 13 assessment areas selected for detailed observation and analysis.** Post-event analysis revealed that aspects of ONA also affected other assessment areas such as "Establish and Maintain Information Superiority" and "Conduct Decisive Effects-based Operations."

According to the MC 02 Final Report, **the ONA concept demonstrated very strong potential and was recognized as beneficial to military operations.** Although expectations and opinions varied among participants concerning ONA's content and utility, ONA contributed to Blue Force success by providing a more thorough understanding of the adversary, and demonstrated its potential to be the knowledge foundation for effects-based operations (EBO).

Survey responses indicated that ONA was useful in preparing for board, center, and cell collaboration sessions; it provided situational

MC 02 Hypothesis

If an enhanced joint force headquarters is informed by an operational net assessment and employs effects-based operations which utilize the full range of our national capabilities, **Then** the 2007 joint force will be able to conduct rapid decisive operations against a determined 2007 adversary.

⁴ HQ III Corps was designated as the JTF HQ for MC 02.

awareness; it enabled the JTF to act faster and with better knowledge; and the constructive cataloging of adversary PMESII⁵ elements of power was understood and useful. Based on this, USJFCOM submitted a Transformational Change Package to the Joint Staff in Sep 02, which was then staffed with combatant commands, Services, and various agencies. The Joint Requirements Oversight Council (JROC) endorsed the final package on 8 December 2003.⁶ The MC 02 Final Report discusses ONA findings in detail.

Operational Net Assessment

Operational:

- Focus on integrated operations, plans, and intelligence.
- Focus at the joint/combined task force HQ.
- Theater-strategic to operational levels.

Net:

- The consideration of all aspects and perspectives resulting in those elements relevant and significant to the problem at hand.

Assessment:

- The systematic process of analysis, appraisal, and review to determine the salient information to develop knowledge.

USJFCOM has submitted a number of other Transformational Change Packages to the Joint Staff for consideration, including packages for the SJFHQ and the Collaborative Information Environment. The SJFHQ package listed ONA as one of several key enablers. The ONA process and products are now incorporated in the USJFCOM prototype SJFHQ's *Concept of Employment*⁷ and the more detailed SJFHQ standing operating procedures (SOP).

USJFCOM has designated ONA as a “prototype”—a model suitable for evaluation of design, performance, and production potential.⁸ Operational net assessment and other prototypes focus on improving near-term (within the next five years) joint warfighting capabilities. These prototypes are linked on the USJFCOM's **Prototype Path**⁹ to assist in the fielding of the SJFHQ prototype. Specifically, the ONA prototype is *a product, process, and organization all focused on understanding the operational environment as well as the effects of friendly actions.*¹⁰ The ONA conceptual effort also supports the mid-term “challenge” *achieve decision superiority*, an important focus area of USJFCOM's **Concept Development Path.**¹¹

ONA prototype experimentation continues. For example, Multi-national Limited Objective Experiment (LOE) 2 looked specifically at information sharing in a multi-national environment; a follow-on multi-national event will look at effects-based

⁵ **PMESII** is an acronym for **p**olitical, **m**ilitary, **e**conomic, **s**ocial, **i**nfrastructure, and **i**nformation. The construct helps ONA analysts categorize effects associated with the adversary's primary systems.

⁶ JROC Memorandum (JROCM) 227-03, subject: “Operational Net Assessment”, 8 Dec 03.

⁷ USJFCOM SJFHQ(P) *Concept of Employment* (CONEMP), 25 Jun 03.

⁸ JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 12 Apr 01 (as amended through 5 Jun 03).

⁹ *The Joint Concept Development and Experimentation Campaign Plan FY 2004-2011* (25 Nov 03) establishes two experimentation paths—the Prototype Path and the Concept Development Path.

¹⁰ Ibid, p. 19.

¹¹ Ibid, p. 23.

planning in that environment. USJFCOM observed US Forces Korea's (USFK) ULCHI FOCUS LENS 03 to determine existing processes and how an effects-based approach would improve effectiveness and efficiency. Plans are to continue that engagement through the Theater Effects-based Operations advanced concept technology demonstration (and further participation in USFK exercises).

Key Terms

The ONA concept and prototype exist in close association with other concepts and prototypes. Since these relationships are somewhat complex, following is a brief summary of key constructs to assist in understanding their use throughout the remainder of this pamphlet.

- **Standing Joint Force Headquarters (SJFHQ):** This organization is a full-time, joint C2 element that is part of the geographic CCDR's staff. **ONA development is one of the SJFHQ's principal functions.** An SJFHQ prototype organization exists at USJFCOM headquarters for the purpose of helping designated combatant commands as they implement their own SJFHQ. See JWFC Pamphlet 3 for more information on the SJFHQ.
- **Operational Net Assessment.** ONA, a key enabler of effects-based operations and the SJFHQ, is the integration of people, processes, and tools that use multiple information sources and collaborative analysis to build shared knowledge of the adversary, the environment, and ourselves.
- **Collaborative Information Environment (CIE).** The CIE, a key enabler of the SJFHQ, is a virtual aggregation of individuals, organizations, systems, infrastructure, and processes to create and share the data, information, and knowledge needed to plan, execute, and assess joint force operations and to enable a commander to make decisions better and faster than the adversary. CIE's collaborative tools, organizations, and databases are essential to responsive ONA development and revision.
- **Effects-based Operations (EBO).** Effects-based operations are actions that change the state of a system to achieve directed policy aims using the integrated application of the diplomatic, informational, military, and economic (DIME) instruments of national power. ONA supports EBO with a holistic understanding of the adversary, the environment, and ourselves. The SJFHQ and other near-term capabilities now in prototyping will help the joint force commander (JFC) conduct EBO.
- **Joint Intelligence, Surveillance, and Reconnaissance (JISR).** Although not a prototype, JISR is a related prototyping activity and maturing enabler of EBO. The intent is to transform current ISR processes by changing business practices and more coherently integrating assets, capabilities, and products.

ONA and JISR are intended to be mutually supporting processes that develop complementary products.

➤ **System-of-systems Analysis (SoSA).** SoSA is a collaborative process that continues throughout the ONA life cycle. It views the adversary as an interrelated system of PMESII systems (footnote 5). SoSA attempts to identify, analyze, and relate the goals and objectives, organization, dependencies and inter-dependencies, external influences, strengths, vulnerabilities, and other aspects of the various systems. The objective is to determine the significance of each PMESII system and its various elements to the overall adversary system in order to assess the systemic vulnerability of the various elements and how we can exploit them to achieve desired effects.

CCDR	combatant commander
CIE	collaborative information environment
DIME	diplomatic, informational, military, economic
EBO	effects-based operations
JFC	joint force commander
JTF	joint task force
ONA	operational net assessment
PMESII	political, military, economic, social, infrastructure, information
SJFHQ	standing joint force headquarters
SoSA	system-of-systems analysis

Although the glossary contains a comprehensive list of abbreviations and acronyms, Table 1 lists those highlighted in this pamphlet.

Table 1: Key Acronyms

The Way Ahead

ONA prototyping to support SJFHQ implementation is a continuing, multi-year process of experimentation, concept refinement, and capability development, which could culminate in fielding an operational ONA capability in each GCC. Major exercises such as TERMINAL FURY 04 in US Pacific Command and AGILE RESPONSE 04 in US European Command—as well as USJFCOM-generated activities such as limited objective experiments, workshops, and SJFHQ SOP development—have helped refine and validate the ONA process and products. Concurrently, key materiel initiatives, such as the Deployable Joint Command and Control Program, should provide greatly enhanced C2 capabilities for geographic CCDRs as well as their respective SJFHQs, beginning in FY 05.

USJFCOM's Joint Concept Development and Experimentation campaign conducts activities on two pathways—the **Joint Prototype Path**, which focuses on near-term prototype implementation—and the **Joint Concept Development Path**, which explores a broad range of ideas to address military challenges beyond the near term. **The prototype ONA concept and events link directly to the SJFHQ and focus on improving near-term joint warfighting capabilities.** Activities on this path will leverage combatant command exercises and actual operations as well as Service-

sponsored wargames and seminars. But near-term ONA efforts also can affect the Concept Development Path, which uses iterative experiments and common scenarios to focus on specific “big joint issues.” The results on this path will be packaged as actionable recommendations for senior leader discussion.

Prototype Path Objectives

- Field the SJFHQ, including the enabling concepts for developing transformational joint command and control.
- Pursue rapid prototyping of capabilities (such as ONA) to improve joint warfighting now.

Concept Development Path Objectives

- Provide actionable recommendations from experimentation results to senior leaders to inform options for future force investments.

Section II — The ONA Concept

"War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty... The commander must work in a medium which his eyes cannot see; which his best deductive powers cannot always fathom; and with which, because of constant changes, he can rarely become familiar."

Carl Von Clausewitz

Introduction

In joint operations, what we do not know is as important as what we know. The predominant opinion is that one cannot know everything, but each military conflict seems to teach us that it would have been good to know more—more about the adversary, ourselves, the operational environment, and even factors that we did not identify until well into the conflict.

Any military conflict demands relevant information, knowledge, and understanding—critical components of the decision-making process. Innovations in technology now allow an advanced knowledge environment that focuses on and supports that process. **Even with the most advanced information tools, understanding and knowledge reside in the minds of people, not in databases.** Still, the coherent and integrated application of national power requires extensive understanding and knowledge well beyond that of an individual, of the commander's immediate staff, or of direct support organizations.

The ONA concept represents the complex 21st-century security environment by demonstrating our understanding of a potential adversary as a complex, adaptive system. It also offers a unique perspective by instituting a red-versus-blue wargaming process to assess how we are viewed through the eyes of our adversary. Ultimately, it may create a shared information space in which our nation's diplomatic, information, military, and economic capabilities may be networked and integrated to enable combatant commanders to plan faster, to make better decisions, and to achieve decisive effects.

ONA Concept Primer

Operational net assessment is a new approach with the potential to improve dramatically what we know about all elements of the battlespace. ONA offers a methodology and framework to develop the kind of actionable knowledge that helps decision-makers focus capabilities when, where, and how needed to achieve desired effects. ONA can expand our view of the adversary as a complex, adaptive, system of systems. This should help the CCDR coordinate and integrate the military instrument more efficiently and effectively with the other DIME instruments of national power against the adversary. This collaborative process and its products promote operational- and tactical-level planning, execution, and assessment.

ONA is the integration of people, processes, and tools that use multiple information sources and collaborative analysis to build shared knowledge of the adversary, the environment, and ourselves. ONA products are based on a system-of-systems analysis and understanding of key relationships, dependencies, strengths, and vulnerabilities within and between the adversary's PMESII elements. These products identify leverage points, key nodes, and links that we can act upon to influence decisively the adversary's behavior, capabilities, perceptions, and decision-making. This assessment, combined with knowledge of friendly capabilities and the battlespace, allows for development of a range of options from which decision-makers can choose to achieve desired outcomes.

ONA is not a substitute for current intelligence, operations, or logistical planning processes and activities. However, it supports effects-based planning (EBP) and existing processes such as joint intelligence preparation of

the battlespace by proposing options expressed in terms of **effect-node-action-resource links**. This deepens the SJFHQ's knowledge of friendly forces and the adversary. The concept calls for persistent and habitual collaboration among subject-matter experts from a wide variety of organizations, such as those from the interagency community (IAC) and centers of excellence (COE), as well as traditional military organizations. Once the CCDR identifies a specific focus area, the SJFHQ ONA analysts lead the SJFHQ effort to produce the baseline ONA. The three primary products of this process are—

- A web-based portal to a system-of-systems analysis that examines the adversary's PMESII systems.
- A web-based portal to a net assessment of "blue" and "red" objectives, capabilities, and vulnerabilities.

Effect: *The physical and/or behavioral state of a system that results from a military or non-military action or set of actions.*

Effects-based Operations: *Actions that change the state of a system to achieve directed policy aims using the integrated application of select instruments of power. These actions are planned, executed, assessed, and adapted using a holistic understanding of the adversary and battlespace.*

- A relational database application that is populated with linked effects, nodes, actions, and resources. This database contains tools to support planning, operations, effects assessment, and situational awareness functions.

An Effects-based Approach

ONA enables effects-based operations by providing a more comprehensive view of the CDR's area of responsibility and specific focus areas. This increases insight into complex relationships, inter-dependencies, strengths, and vulnerabilities within and throughout an adversary's political structure, military capabilities, economic system, social structure, and information and infrastructure networks. By viewing an adversary as an adaptive system of systems, we can understand how to use the full array of our national and coalition instruments of power to achieve desired effects.

Effects-based operations consist of four primary components: knowledge superiority, an effects-based planning process, dynamic and adaptive execution, and accurate, timely effects assessment. ONA contributes to the first component by producing pre-analyzed actions and leverage points contained in a comprehensive database of **effect-node-action-resource (ENAR)** links. Planners use this database—updated for a specific crisis—to develop potential courses of action. **Through this process, ONA helps decision-makers focus capabilities when, where, and in the ways required to generate desired effects.** EBO are intended to be part of an overarching campaign to translate policy into actions to achieve a desired end state.

- **Effect:** The physical and/or behavioral state of a system that results from a military or non-military action or set of actions.
- **Node:** A person, place, or physical thing that is a fundamental component or junction of a system.
- **Action:** An activity directed at a specific node.
- **Resources:** DIME capabilities directed at specific nodes.
- **Link:** A relationship between an effect, a node, an action, and resources to execute the action. Links can be behavioral, physical, or functional when used to describe the association between entities in a systems analysis.

Table 2: ONA Database Key Terms

What is an “effect”? Understanding the nature of “effects” is essential to understanding ONA, since the ONA database consists of ENAR linkages complete with additional (secondary and unintended) effects. An effect is a result or consequence of an action. The SJFHQ SOP¹² modifies this dictionary definition to put the term in an EBO context (Table 2). Current joint doctrine¹³ provides examples of “direct” and

¹² Standing Joint Force Headquarters Standing Operating Procedures & Tactics, Techniques, and Procedures, draft, 25 Jul 03.

¹³ JP 3-60, *Joint Doctrine for Targeting*, 17 Jan 02, p. 1-6.

“indirect” effects and discusses the cumulative, cascading, and collateral nature of effects. Joint operations generate effects across the range of military operations and at all levels of war. From a doctrinal perspective, a military effect can be very specific, such as the destruction of one target by a single bomb. However, ONA typically views these as potential tactical-level measures of performance. ONA effects generally focus more at the operational and theater-strategic levels. For example, the Russian withdrawal of missiles from Cuba during the 1962 Cuban Missile Crisis was a strategic effect (consequence, result) of military activities (such as the various intelligence-gathering efforts and US naval “quarantine”) combined with diplomatic action at the highest levels. **Actions relative to each of the DIME instruments of national power taken against key nodes can generate effects.**

The ONA and EBO concepts and the SJFHQ SOP describe effects in the specific context of the adversary’s behavior; i.e., in terms of what we want the adversary to do or not do. For example, a doctrine-based OPLAN might establish the following **objective**:

Keep the Straits of Hondo open to shipping and friendly access.

In this case, the objective represents the **desired effect**, result, or consequence of our actions taken against an adversary system. The same potential **effect** would be stated as follows:

Red does not prevent shipping and friendly access through the Straits of Hondo.

The significance of this approach from an ONA perspective is that it provides a better link to the SoSA effort to examine the adversary’s PMESII systems and sub-systems and establish the ENAR database. Stating effects in terms of the adversary’s behavior carries through to effects-based planning, execution, and assessment as envisioned by the EBO concept and the SJFHQ SOP.

Baseline ONA Development

The ONA baseline process begins when the CCDR designates a focus area (a specific nation, region, contingency, or entity) within the AOR. The SJFHQ considers the CCDR’s general guidance regarding the area; the Defense Planning Guidance, Joint Strategic Capabilities Plan, and the Theater Security Cooperation Plan; existing OPLANS, CONPLANS, and intelligence estimates; and recent events and trends in theater. From these considerations, the SJFHQ identifies a likely source of conflict (or contingency), defines the focus area, and presents it to the CCDR for guidance and/or approval.

The initial “baseline” ONA effort for a specific focus area is to develop a **system-of-systems analysis**, which is populated with data on **the adversary system, its organization, characteristics, and relationships**. **This effort produces a nodal analysis and, along with effects development, forms the basis for linking nodes to effects, actions to nodes, secondary and unintended effects to actions, and**

resources to established E-N-A linkages. Joint force planners use this database—updated when a crisis is imminent—to develop, compare, and recommend effects-based courses of action (COA) for the JFC's decision.

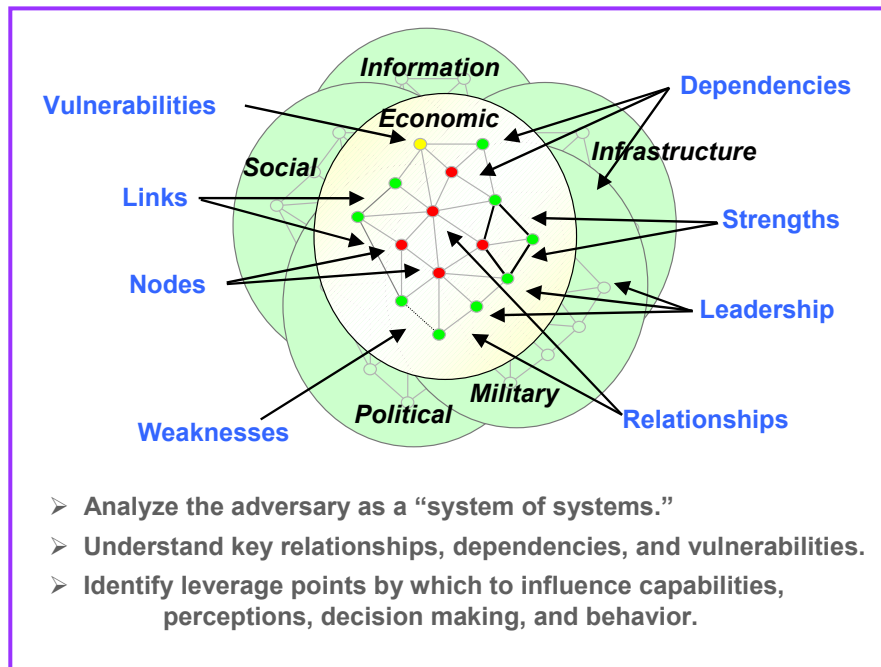


Figure 1: System-of-Systems Analysis

ONA supports EBP by helping the JFC and planners answer the question, “How do we create the necessary understanding of the operating environment, the enemy as an adaptive entity within that environment, and ourselves so we can determine how to most effectively and efficiently influence a potential adversary’s perceptions, capabilities, behavior, and decision making.”¹⁴ The deliberate ONA process that answers this question typically begins with a thorough SoSA before a crisis occurs. This approach advocates viewing the adversary as an interrelated system of PMESII systems (Figure 1). SoSA attempts to identify, analyze, and relate the goals and objectives, organization, dependencies and inter-dependencies, external influences, and other aspects of the various systems and sub-systems. The objective of this function is to determine the systemic significance of each element to the overall PMESII system’s goals and manifested behavior. This will help us assess the systemic leverage points of the various elements and determine how we can exploit these points to achieve desired effects. From this understanding, analysts identify nodes (leverage points), linkages, and rationales to influence focus-area systems in order to achieve a desired effect.

A dedicated SoSA element within the JFC’s HQ functions as the lead for systems analysis. Analysts examine and synthesize existing and developing information on the adversary and the battlespace into a coherent and relevant knowledge environment for

¹⁴ USJFCOM J-9 ONA Briefing, Oct 03.

- Red and Blue Views: ONA considers how we view both ourselves and the adversary, including strategic and operational goals, objectives, potential courses of action, centers of gravity, capabilities, and vulnerabilities. Moreover, ONA also takes an “opposing force” or “red team” perspective, and analyzes how the adversary views us—our values, centers of gravity, vulnerabilities, strengths, and other factors.
- Effects development, in the center of Figure 2, is the collaborative sub-process whereby a cross-functional team from the SJFHQ conducts identifies potential effects. The CCDR uses this list to select the combination of **baseline effects** that will achieve campaign objectives and strategic goals. The next step links **nodes** (identified in SoSA) to specific effects derived during the effects-development sub-process (these become key nodes). A follow-on step marries potential **DIME actions** that can be taken against specific key nodes to produce a desired effect, together with attendant secondary and unintended effects for each E-N-A linkage. The final step in development of **ENAR linkages** is to associate **resources** with each effect-node-action combination. The result of the process is a pre-analyzed range of options to achieve potential effects. The results are captured in a database and web portal to facilitate update and retrieval. The populated ONA database is the source for developing courses of action in the ONA Planning Tool. The SJFHQ updates the ONA during pre-crisis and crisis-action planning.

Follow-on Actions

As a crisis develops, the SJFHQ focuses activities in its essential task areas on the developing situation. This includes updating and refining the baseline ONA for this specific focus area. The earlier example listed the following as a desired effect:

Red does not prevent shipping and friendly access through the Straits of Hondo.

Assuming that the operation at hand still involves unimpeded access to the straits by neutral shipping and friendly forces, SJFHQ planners could determine that the above effect is too broad. They could continue planning by designating additional specific effects such as those below. These also could be considered measures of effectiveness to determine progress toward achieving the original desired effect:

Red does not attack shipping and friendly forces by air.

Red does not attack shipping and friendly forces by sea.

Red does not mine the straits.

During baseline ONA development, analysts would have identified a number of nodes, actions, secondary and unintended effects, and resources associated with the above desired effects. For example, baseline analysis might have determined that Red had the capability to mine the straits both from ships and aircraft. Analysts obviously would have identified airfields and ports as nodes associated with this effect, and could

link military resources and actions accordingly. Analysts also could have identified both Red and neutral country leaders as nodes. Since mining the straits could affect both Red and neutral commerce, there could be potential diplomatic and economic actions that could achieve the desired effect. United States and coalition leaders could apply pressure using both diplomatic and economic instruments of power to attempt to coerce the Red leader to keep the straits free of mines.

Effects assessment is essential. The current planning process includes identification or development of relevant **battle damage assessment** measures—those typical indicators of physical effects resulting from direct attack of targets by military means. JP 3-60, *Joint Doctrine for Targeting*, and JP 2-01.1, *JTTP for Intelligence Support to Targeting*, contain information on this process. From a broader perspective, JP 3-0, *Doctrine for Joint Operations*, provides joint doctrine on **combat assessment**—the determination of the overall effectiveness of force employment during military operations. Planners must consider relevant **effectiveness and performance measures** that will indicate progress toward accomplishing tasks and achieving a wide range of effects. How will a JFC know if and when Red has decided not to mine the Straits of Hondo (or is incapable of doing so) in the example above? How does the JFC determine if the task requires additional engagement? Effects assessment becomes more complex when ways and means of the other instruments of national power are employed in conjunction with military capabilities to achieve specific effects. Effects assessment broadens the current combat assessment process by focusing not only on the results of specific tasks, but also on the subsequent changes that occur in an adversary's systems and behavior related to campaign objectives.

In summary, ONA helps effects-based planners link mission-specific policy aims to tactical actions through the mechanism of ENAR linkages, providing greater clarity for the desired outcome of each action. By design, this process ties discreet actions to campaign objectives, forming the basis of a campaign analysis process that considers the complexity of the modern battlespace and dynamic, adaptive nature of the adversary.

Section III — ONA's Relationship to Other Concepts and Prototypes

*"Human knowledge and human power meet in one;
for where the cause is not known the effect
cannot be produced."*

Francis Bacon

USJFCOM continues to investigate and refine several concepts and their associated capabilities, which are designed to enhance SJFHQ peacetime and crisis-response operations. These concepts also have the potential to affect the broader functions of planning and C2, as well as their associated communications, computers, and intelligence systems capabilities. Several concepts designated as "prototypes" are closely related, particularly with regard to enabling the SJFHQ prototype.

Standing Joint Force Headquarters

This new organization—an initiative of the Secretary of Defense—is a full-time, joint, command and control element within the geographic combatant commander's staff. Its daily focus is warfighting readiness, and it is a fully integrated participant in the deliberate and crisis-action plans and operations of the CCDR's staff. The SJFHQ provides the combatant command with a staffed, trained, and equipped joint C2 capability, specifically designed to enhance situational understanding within designated focus areas. The SJFHQ exploits new organizational and operational concepts and technology to enhance the command's peacetime planning efforts, accelerate the efficient formation of a JTF HQ, and facilitate crisis response by the joint force. **ONA development is one of the SJFHQ's principal functions, and ONA products are key enablers of SJFHQ effects-based planning activities.** See JWFC Pam 3¹⁵ and the SJFHQ *Concept of Employment*¹⁶ for more information.

¹⁵ Joint Warfighting Center Pamphlet 3, *Doctrinal Implications of the Standing Joint Force Headquarters (SJFHQ)*, 16 June 2003. This document is available of JWFC's web site.

¹⁶ *Concept of Employment*, USJFCOM Standing Joint Force Headquarters Prototype, 25 Jun 03.

Collaborative Information Environment¹⁷

CIE capabilities are intended to transform joint collaborative planning from a relatively sequential, hierarchical process to a more parallel approach that allows “virtual,” collaborative interaction during plan development by all organizations regardless of their location. Important components of CIE include a virtual information warehouse that contains all relevant information required by joint force planners; collaborative decision-support and situational-awareness tools to support effects-based planning; and an “enterprise information portal”—an electronic gateway to access the virtual information warehouse. The CIE is essential to baseline ONA development and subsequent ONA updates during a specific contingency.

This CIE capability is intended to exist across all levels of joint forces (not just the SJFHQ) to provide a medium that transforms a collection of networks into a common “cyber environment.” Specific collaborative tools, organizations, and databases are brought into and dropped from the CIE as the task or mission requires. The CIE will broaden the knowledge base, improve planning and assessment, and increase the “speed of command.” See the CIE Concept Primer¹⁸ for more information.

Effects-based Operations¹⁹

Current concept thinking in USJFCOM defines EBO as “. . . actions that change the state of a system to achieve directed policy aims using the integrated application of select instruments of national power.²⁰ An effects-based approach to operations has four components: knowledge superiority, an effects-based planning process, dynamic and adaptive execution, and accurate, timely effects assessment.²¹

- **Knowledge superiority** to support an effects-based approach requires the ability to develop a “knowledge advantage” sufficient to enable precise and bold action through battlespace understanding and situational awareness. **ONA is a key contributor to building the situational awareness essential for knowledge superiority.**
- An **effects-based planning process**, the second major element of effects-based operations, develops a campaign plan that matches strategic aims with— theater and operational objectives; the effects needed to achieve those

¹⁷ The JROC endorsed the USJFCOM CIE Transformational Change Package on 5 Feb 03 and requested that ASD(C3I) designate a CIE lead agent.

¹⁸ Concept Primer, *Collaborative Information Environment (CIE)*, USJFCOM PAO, Oct 03. This document is available through the USJFCOM PAO and on USJFCOM J-9’s web site.

¹⁹ There is no Transformational Change Package specifically for EBO. For a more detailed discussion, see the USJFCOM PAO Concept Primer, *Effects-based Operations*, Nov 03, available through the USJFCOM PAO and on USJFCOM’s J-9 web site.

²⁰ *Concept of Employment*, USJFCOM Standing Joint Force Headquarters Prototype, 25 Jun 03.

²¹ Concept Primer, *Effects-based Operations (EBO)*, USJFCOM PAO, Nov 03. This document is available through the USJFCOM PAO and on USJFCOM J-9’s web site.

objectives; the joint actions that create the effects; and the joint, interagency, and multinational capabilities needed to execute the actions. As Section II describes, **the ONA provides a comprehensive database of ENAR links that effects planners use during the planning process.**

➤ During ***dynamic and adaptive execution***, joint force components support each other with the specific capabilities needed to conduct joint tactical actions. Interoperable joint forces quickly assemble, enter the collaborative environment, and synchronize their activities at the point of action. Upon successful completion of a joint tactical action, the forces return to their parent components to prepare for their next task.

➤ ***Accurate and timely assessment*** is the fourth and possibly most challenging EBO component. Unlike simply measuring the percentage of a target destroyed, effects assessment determines the operational effect of an action. This requires a concentrated, multidimensional effort to integrate imagery, signal intelligence, human intelligence, and other sophisticated technologies and operations to provide rapid sensing, fusion, and assessment.

Joint Intelligence, Surveillance, and Reconnaissance

Although not a prototype, JISR is a related prototyping activity. The intent is to transform current ISR processes by changing business practices and integrating assets, capabilities, and products into a coherent picture. ONA and JISR are intended to be mutually supporting processes that develop complementary products.

JISR is a network-centric approach to the management of ISR capabilities aimed at better supporting the demands of the joint warfighter across all domains and levels of war. JISR uses automated collection management and information-sharing tools to feed information to the CIE. This improved information sharing helps commanders and staffs make informed decisions using accurate and timely intelligence that is linked to operational needs. Multinational data-sharing policies embedded in the CIE allow intelligence sharing among coalitions. Further, algorithms and tools will be developed to match intelligence collection requirements with available assets. To enhance synchronization of intelligence activities with ONA and EBO, JISR emphasizes collaboration among commands, national agencies, and multinational organizations; automates current manual collection management processes; and provides new tools for faster, multilevel information sharing.

Joint Interagency Coordination Group²²

Applying the full range of the instruments of national power in a coherent manner requires capabilities beyond those in the Department of Defense. These capabilities reside in other departments and agencies of the government—representing the other

²² USJFCOM submitted a JIACG Transformational Change Package to the Joint Staff on 20 November 2002.

instruments of national power—that have not historically fused their efforts into coherent interagency operations. The JIACG can provide a multi-functional advisory element that can facilitate information sharing, planning and coordination, and political-military synthesis across the IAC for the CCDR and staff. A typical JIACG would include links to the various US ambassadors and their country teams. The JIACG's primary role is to bridge the gap between civilian agency and military campaign planning efforts for regional engagement and potential regional crises. Information on the JIACG has been included in JP 3-08, *Interagency Coordination During Joint Operations*, during the current revision process.

Section IV — Doctrinal Implications

"If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle."

Sun Tzu

This section explores some of the potential joint doctrine implications associated with fielding an ONA capability as a key enabler for each SJFHQ. It also addresses implications of broader use of ONA throughout the joint community. Central to this discussion is the question—**is current joint doctrine sufficient in its treatment of this emerging capability?** From a doctrinal perspective, analysis of joint concepts and experimentation results focuses on the potential near-term improvements to future joint operations represented by the ways and means described in the concept. **The analysis objective is to determine if these ways and means will fill a doctrinal void, fix a deficiency, reduce risk, improve effectiveness, or otherwise represent added value to current, approved doctrine.**

Current Doctrine Summary

A search of the JEL and JWFC Research Library produced “hits” on **operational net assessment**, a new term, only in documents related directly to joint experimentation. A search for the term **net assessment** resulted in a link to a discussion of *Joint Net Assessment* (JNA), described in CJCSI 3100.01A, *Joint Strategic Planning System*, 1 Sep 99. JNA is a strategic assessment that assesses and compares current force structure capabilities to capabilities of potential adversaries. JNA seems to have a national-strategic focus, while ONA orients on the theater-strategic and operational levels. However, there does not appear to be a substantial link between the JNA and ONA purposes, processes, and products.

Operational net assessment is an integrated plans, operations, and intelligence process. In general, both ONA and existing intelligence analysis, production, and dissemination processes have a similar goal relative to the adversary—a thorough understanding of the adversary’s capabilities, strengths, weaknesses, intentions, and

likely courses of action. ONA goes beyond the production of “current” intelligence by more deliberately exploring other PMESII areas. ONA develops potential effects and identifies ways to achieve them. Current doctrinal deliberate planning processes accomplish this function with respect to objectives, but do not use an ENAR model to develop courses of action. A reasonable, broad conclusion is that many of the conceptual aspects of the ONA process and its products are not covered by current joint doctrine, even though there is an evident overlap.

Potential Issues

Joint Experimentation concepts typically do not exist independently. The SJFHQ, CIE, ONA, and EBO concepts and related prototypes are closely related and mutually supportive. For example, the baseline ONA provides the database of potential effects, nodes, actions, and resources that the SJFHQ’s Joint Planning Group uses to develop the Prioritized Effects List (PEL) and the initial Effects Tasking Order. During operations, planners revise the ONA and PEL based on ongoing effects assessment, which measures the joint force’s progress toward achieving the desired effects. Thus, it is difficult to analyze one concept without including others in the analysis. This is particularly true of the ONA-EBO concept combination.

From USJFCOM’s perspective, the SJFHQ represents a “package” of capabilities rather than simply a group of additional personnel. Although the initial, near-term focus of enabling capabilities such as CIE and ONA is on the SJFHQ, **these enablers will affect joint operations across joint force echelons**. Following are examples of issues that the joint doctrine community might have to consider in future joint doctrine assessment and development.

➤ **Peacetime Planning.** A primary task for the SJFHQ in peacetime is to build and maintain ONAs for specified contingencies. This important process and its products support both deliberate and crisis-action planning. According to the USJFCOM’s ONA Transformational Change Package,²³ ONA implementation requires—

- Interagency community support for fielding a JIACG in each GCC.
- Full cooperation of the IAC in sharing common, interoperable databases and other elements of information.
- Establishment of a network of COEs to conduct detailed analysis in each operational domain.
- A national information fusion and assessment capability.
- Advanced analytical tools to deal with the volume of information and to understand potential cause-and-effect links.

²³ ONA Transformational Change Package, 1 November 2002, p. 7.

The near-term emergence of the above arrangements and capabilities is problematic. Likewise, the relationship between projected ONA processes and existing intelligence processes—as they support the planning function—requires additional experimentation and assessment. Also at issue is how the conceptual effects-based planning process, if validated, will change the current planning process described in joint doctrine and the Joint Operation Planning and Execution System.²⁴

➤ **Crisis Action Planning.** Supported by ONA products and a CIE, EBP is intended to become the centerpiece of the early stages of crisis response. During this period, the daily roles and responsibilities of the SJFHQ shift to focus on the crisis and expand to become an integral part of the overall GCC staff's crisis response. In MC 02, III Corps experimented with a web-based “effects tasking order” (ETO)—a product of ONA and EBP—as a replacement for the traditional operations order. The intent is to develop the ETO using decision aids and collaboration tools, which allow joint force planners at distributed locations to collaborate in real time, significantly reducing planning timelines. Further experimentation should help determine the utility of the ETO compared to the traditional operations order.

➤ **Intelligence.** The ONA concept primer states, “ONA is not a substitute for current intelligence, operations, or logistics processes. It supports effects-based planning and complements existing products such as the joint intelligence preparation of the battlespace, which remains the responsibility of the theater joint intelligence center.” Clearly there are overlaps between ONA and current processes. For example, today's doctrinal intelligence and planning activities analyze both friendly and adversary strategic and operational goals and objectives; most likely and dangerous courses of action; centers of gravity and key nodes (decisive points); capabilities and vulnerabilities; and second-order and unintended effects of friendly actions against the adversary. Current planning considers actions not only against the adversary's military capability, but also actions against other PMESII components.

Current intelligence procedures provide for deployment of a national intelligence support team (NIST) composed of area experts from DIA and a myriad of other intelligence-oriented agencies. This team supports the CCDR's joint intelligence center or the joint intelligence support element that supports a JTF in some cases. The NIST does this by reaching back to its respective agencies to tailor and expedite responses to JFC information requirements. It is optimized primarily for crisis support of military-related information requirements and addresses the other aspects of the PMESII information requirements by exception. ONA seeks a more continuous and balanced PMESII approach, and it may take up to a year to develop a stand-alone ONA database. Tailoring the

²⁴ The CJCSM 3122 series.

NIST's products to synchronize them with the ONA would have a substantial impact on the NIST's mission. NIST members historically do not have the resources to conduct detailed PMESII SoSA. They may facilitate the process by reaching back to their parent organizations, but they do not conduct the analysis as the ONA concept currently envisions.

ONA is a potentially thorough and disciplined process that could provide a more comprehensive and integrated SoSA approach to an adversary's PMESII components than do current processes. This could result in better understanding the adversary (and the adversary's view of us), with consequent benefit to the planning effort in terms of course-of-action options, risk-reduction, and operational efficiency. However, although the ONA Primer acknowledges current related processes, ONA-related documents currently do not describe the common components and interaction on the seams between ONA and the intelligence function. Although it is likely that the PMESII SoSA approach could be accommodated within current intelligence processes and products (a possibility that requires further analysis), the ONA process and products are new concepts that relate as much to plans and operations as to intelligence. ONA is intended to synthesize large amounts of analyzed, fused information and convert it into actionable knowledge captured in a specifically designed database application, which functions as the ONA database and supports an EBO planning tool. In other words, **ONA uses intelligence and information to enable the effects-based planning process.** The ONA, considered in its entirety, is an operations planning tool.

➤ **Effects-based Execution.** *Execution* is the least mature of EBO's four components. ONA plays an important role in providing **knowledge superiority** and provides the basis for **effects-based planning**. ONA, EBP, and **effects assessment** have been areas for examination and refinement during the prototyping process. However, do these new ideas, processes, and capabilities actually change the way the joint force and its components apply military ways and means at the tactical and operational levels? Additional concept development, experimentation, and prototyping should answer this question. EBO is the intended topic for JWFC Pamphlet 6, *Doctrinal Implications of Effects-based Operations*.

ONA Challenges

The ONA Concept Primer acknowledges a number of challenges to fully realizing the process and developing the products envisioned by the concept. These include participation and cooperation of national, multinational, and non-governmental organizations and centers of excellence beyond DOD's control; obtaining analytical and decision-support capabilities that are in various stages of maturation and approval; and the defense community's ability to provide SoSA analysts (with unique skill sets) in addition to other SJFHQ staffing requirements. These and other challenges impede the joint community's ability to execute ONA in the near term to the full extent envisioned by

the concept. Nonetheless, ONA products could be produced with current capabilities to a lower level of resolution if the joint community commits to the process and products.

In the longer term, the JROC-endorsed ONA Transformational Change Package recommended a national Knowledge Advantage Capability (KAC). The KAC would be the extended knowledge environment beyond the CCDR's direct control that is necessary for the CCDR to draw upon all instruments of power and the best possible information and knowledge resources to enable decision superiority. KAC, like ONA, would be composed of people, process, tools, and products resident within various communities of interest throughout the DOD and beyond as necessary and feasible. KAC can be likened to the CCDR's CIE, extended to broader sources, that spans the various boundaries posed by classification, national origin, and inter- and intra-agency organization and policy.

The envisioned KAC would facilitate the knowledge sharing and collaboration needed from national departments and agencies—as well as with coalition partners, non-government organizations and the private sector—to support combatant commands and the SJFHQ in ONA and EBO. KAC addresses many of the challenges to fully realizing the ONA process at the combatant command.

Applicability of the SJFHQ and Enabling Concepts to the Broader Joint Community

Due to their close association with the SJFHQ, “enabling” concepts such as ONA, CIE, and EBO often are considered only in an SJFHQ context. However, these concepts are intended to enhance joint operations across the levels of war and full range of military operations. The ONA Concept Primer discusses the general application of ONA, but current field-testing of the ONA prototype focuses almost exclusively on internal SJFHQ procedures. However, the ONA Transformational Change Package identifies the necessity for collaboration between centers of excellence, communities of interest, agencies, and combatant commands. USJFCOM has initiated collaborative actions to investigate these links and relationships, such as envisioned through the development of the KAC.

There is also a related issue of appropriate location of resources. For example, the Information Superiority Group (ISG) of the SJFHQ manages ONA development for the combatant command staff. SoSA analysts reside within the ISG. If the SJFHQ deploys in a contingency, should the SoSA analysts also deploy or can they better accomplish their function (updating the ONA) in a reach-back capacity from the combatant command headquarters? Additionally, there could be concurrent ONA SoSA requirements for other focus areas in the combatant command's AOR that require attention. Where should this small, highly specialized team be located to serve the CCDR's needs best? How many analysts are sufficient to accomplish the combatant command's SoSA requirements, both for deliberate planning as well as during crisis action planning when continuous manning requirements are the norm? The location

and size of the SoSA Team will likely depend on the number and complexity of the CCDR's focus areas, and the issue resolved only through SJFHQ prototype implementation by combatant commands.

Conclusions

There is sufficient justification for the Joint Doctrine Development Community to monitor closely the ONA concept, ONA prototyping in the SJFHQ, and other ONA implementation efforts in order to assess the impact on joint doctrine and revise affected JPs accordingly.

A number of challenges mentioned above could affect the ability to execute ONA to the full degree concept envisions. This could change as the ONA concept is refined and SJFHQ prototype field-testing continues. If the full set of ONA enabling capabilities is developed (including interagency and multinational protocols) and if ONA is eventually approved for implementation throughout the joint community, ONA would affect a number of joint doctrine publications. Following are key examples:

- JP 2-0, *Doctrine for Intelligence Support to Joint Operations* (and subordinate JPs), could have substantial changes. While it is not likely that the basic, six-step "intelligence cycle" would require modification, JP 2-0 would need to introduce the interaction between ONA and the intelligence process and the relationship of their products. JP 2-01, *Joint Intelligence Support to Military Operations*, would expand the discussion in each of the intelligence cycle's phases, particularly with regard to satisfying the CCDR's intelligence requirements for contingency plan development. JP 2-01.3, *JTTP for Intelligence Preparation of the Battlespace*, would need to clarify the relationship of JIPB to ONA, since JIPB is a dynamic process that both supports and is supported by each phase of the intelligence cycle.
- JP 3-08, *Interagency Coordination during Joint Operations*, discusses the evolving role of the military relative to the various agencies and the interagency process. The SJFHQ and others involved in ONA will link to agency centers of excellence during the ONA process. JP 3-08 should acknowledge this interaction. As Section III mentioned, the JIACG plays a role for the CCDR in this process.
- JP 3-60, *Joint Doctrine for Targeting*, states, "Targeting matches the JFC's objectives, guidance, and intent . . . to identify the forces and effects necessary to achieve the objectives." The targeting process is an integral component of ONA and EBO, since targeting activities extend through all four EBO phases. Targeting is essential to matching available lethal and non-lethal capabilities against desired effects in each ENAR combination. Since JP 3-60 focuses on integrating **military force** to achieve the JFC's objectives, guidance, and intent, it will also need to address relevant diplomatic, informational, and economic instruments of national power in addition to traditional targeting considerations.

- JP 5-0, *Doctrine for Planning Joint Operations*, is the keystone planning publication. It would need to introduce ONA in the current section on campaign planning, and continue the discussion in the chapter on “Joint Operation Planning and Execution.” However, most of the ONA-related discussion would be more appropriate in JP 5-00.2, *Joint Task Force Planning Guidance and Procedures*. JP 5-0 must also discuss the effects-based nature of planning as a lead-in to embedding EBO in JP 5-00.2, once the EBO concept has matured.
- JP 5-00.2 likely would contain significant ONA and EBO discussion. This JP not only amplifies the planning process described in JP 5-0, but also covers all JTF functions, boards, centers, and cells. ONA doctrine would be included in a number of places throughout the JP, both in conjunction with a discussion of the SJFHQ and in specific functional areas such as intelligence, operations, and planning. JP 5-00.2 would also amplify the effects-based planning process.

The nature of the content of JP 5-00.2 and its current revision schedule (formal assessment began Oct 03) make this JP an ideal candidate to assess many of the potential impacts on joint doctrine. The Joint Doctrine Development Community should expect to address issues related to the SJFHQ, ONA, EBO, and other enabling concepts during the JP 5-00.2 revision process.

USJFCOM JWFC welcomes comments on these and other perspectives concerning the potential impact of the SJFHQ and enabling concept development on joint doctrine.

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Glossary

Part I — Abbreviations and Acronyms

AOR	area of responsibility
C2	command and control
CCDR	combatant commander
CIE	collaborative information environment
CJCS	Chairman of the Joint Chiefs of Staff
COA	course of action
COE	center of excellence
DIME	diplomatic, informational, military, economic
DOD	Department of Defense
DOTMLPF	doctrine, organizations, training, materiel, leadership and education, personnel, and facilities
EBO	effects-based operations
EBP	effects-based planning
ETO	effects-tasking order
GCC	geographic combatant command
IAC	interagency community
IS	information superiority
JFC	joint force commander
JIACG	joint interagency coordination group
JISR	joint intelligence, surveillance, and reconnaissance
JOC	joint operations center
JOpsC	<i>Joint Operations Concepts</i>
JP	joint publication
JPG	joint planning group
JROC	Joint Requirements Oversight Council
JTF	joint task force
JTTP	joint tactics, techniques, and procedures
JWFC	Joint Warfighting Center
KAC	knowledge advantage capability
LOE	limited objective experiment
MC 00	MILLENNIUM CHALLENGE 2000
MC 02	MILLENNIUM CHALLENGE 2002
ONA	operational net assessment

PMESII	political, military, economic, social, infrastructure, information
RDO	rapid decisive operations
SJFHQ	standing joint force headquarters
SOP	standing operating procedure
SoSA	system-of-systems analysis
USJFCOM	United States Joint Forces Command
UV 01	UNIFIED VISION 2001

Part II — Terms and Definitions

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

effects-based planning (EBP). An enhancement to the current planning process that emphasizes consideration of the various effects (physical and/or behavioral changes in the state of a system) caused by an action or set of actions that result from application of capabilities associated with the instruments of national power (diplomatic, informational, military, and economic).

effects-based operations (EBO). Actions that change the state of a system to achieve directed policy aims using the integrated application of the diplomatic, informational, military, and economic (DIME instruments of national power. ONA supports EBO with a holistic understanding of the adversary and battlespace. The SJFHQ and other prototypes help the joint force commander conduct EBO.

joint interagency coordination group (JIACG). A multifunctional advisory group composed of US Government civilian and military experts accredited to the CCDR and typically located with the GCC headquarters. It provides regular, timely, and collaborative day-to-day working relationships between civilian and military operational planners.

knowledge advantage capability (KAC). The extended knowledge environment beyond the combatant commander's direct control that is necessary for the combatant commander to draw upon all elements of power and the best possible information and knowledge resources to enable decision superiority.

operational net assessment (ONA). The integration of people, processes, and tools that use multiple information sources and collaborative analysis to build shared knowledge of the adversary, the environment, and ourselves.

system-of-systems analysis (SoSA). A process that views the adversary as an interrelated system of political, military, economic, social, infrastructure, and information (PMESII) systems. SoSA attempts to identify, analyze, and relate the goals and objectives, organization, dependencies and inter-dependencies, external influences, weaknesses, vulnerabilities, and other aspects of the various systems.

standing joint force headquarters (SJFHQ). A full-time, joint, (C2) element that is part of the geographic CCDR's staff.

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"Viewing the adversary as an adaptive system of systems allows us to understand how we may use the full force of our national and coalition diplomatic, information, military, and economic power to achieve far-reaching effects. ONA aims to provide a thorough understanding of the total effect and of how to achieve it."

ONA Concept Primer
October 2003