Commander's Handbook
for an
Effects-Based Approach
to
Joint Operations

Joint Warfighting Center

Joint Concept Development and Experimentation Directorate

Standing Joint Force Headquarters

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MESSAGE TO THE JOINT WARFIGHTERS

During the past four years, members of the joint community have continued to evolve their understanding of "effects" and related aspects of an effects-based approach to joint operations. This evolution has been accompanied by both healthy debate and practical application, which we believe are critical to vetting new ideas properly before we accept them in joint doctrine.

Organizations are using these constructs today, to varying degrees, in many ongoing joint and Service operations. An effects-based approach has been promoted in combatant commands by their Standing Joint Force Headquarters, and is being incorporated as "best practices" in major exercises. Headquarters deployed for operations in Iraq, Afghanistan, and elsewhere have received training on the methodology and are applying effects-related ideas.

As US Joint Forces Command continues to interact with combatant commands and Services, we recognize that there is not universal agreement on the specific use of effects and related ideas. We have developed this handbook to provide our perspective and a common, practical baseline for continuing this evolution. While we believe it contains "best practices," this handbook is not doctrine. But it is an important pre-doctrinal product that will help us capture value-added ideas for incorporation in emerging joint doctrine.

In sum, **this handbook was developed for joint force commanders and their staffs to advance the conduct of joint operations**. We ask that you stay actively engaged in this important process, and we welcome your specific critique of constructs in this handbook. Send comments, questions, and suggestions for handbook improvement to the Commander, Joint Warfighting Center.

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PREFACE

1. Scope

This handbook is a pre-doctrinal document on "an effects-based approach to joint operations." It provides the fundamental principles, procedures, and techniques that are evolving in the joint community and being incorporated in joint publications. This **handbook serves as a bridge between the joint prototype and its migration into doctrine**. As such, it is intended to inform doctrine writers, educators, and trainers of effects-based ideas for inclusion in joint doctrine, education, and training.

2. Purpose

This publication is a product of United States Joint Forces Command (USJFCOM) and more specifically, the Joint Warfighting Center (JWFC), the Standing Joint Force Headquarters (Standards and Readiness), (SJFHQ/S&R), and the Joint Experimentation Directorate (J-9). It represents a collaborative effort to provide **a common baseline for an effects-based approach to joint operations that fills the existing void between evolving transformational concepts and published joint doctrine**. This handbook presents well developed definitions that have been harmonized with current and evolving joint doctrine and discusses those "best practices" that have "proven value" during on-going military operations, exercises, and experimentation. In short, this handbook is a response to the request of many potential joint and Service users for **a definitive publication on "how" echelons at the theater strategic and operational levels can employ effects-based procedures and techniques**, particularly during the planning, execution, and assessment of an operation.

3. Application

This handbook is meant to educate the joint community on how to think in effects-based ways and to offer some procedures and techniques that that can be used today in the unified commands by joint commanders and their staffs. It **concentrates on deploying and employing joint forces in concert with the other instruments of national power**. The handbook does not address Title 10 "organize, train, and equip" functions, nor does it discuss Operational Net Assessment (ONA) which has been associated with the effects-based approach in the past. Finally, while its scope does not include Service applications, **the handbook is not intended to limit an effects-based approach exclusively to the joint community**.

4. Command

All commanders—joint force or Service—must decide for themselves what effects-based practices can improve their operations. In the end, an effects-based approach is not a substitute for the commander's intuition, experience, and judgment.

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EXECUTIVE SUMMARY
COMMANDER'S OVERVIEW

- **Complementing—rather than supplanting—extant joint processes for "centralized planning/direction and decentralized execution."**

- **Reinforcing that "mission" remains the most powerful way of expressing what needs to be done and why (purpose).**

- **Visualizing the operational environment beyond the traditional military battlespace as an interconnected system-of-systems comprised of friends, adversaries, and the unaligned.**

- **Harmonizing and synchronizing military actions with the actions of other instruments of power.**

- **Appreciating strategic and operational effects—outcomes separated in space and time from their causative actions—whether they are desired or undesired.**

- **Assessing system behaviors and capabilities: an emphasis on effects attainment rather than just task accomplishment.**

- **Collaborating more extensively with superiors, subordinates, the interagency community, and multinational partners.**

- **Establishing a definitive baseline for applying an effects-based approach.**

The majority of this handbook provides the techniques and procedures of **an effects-based approach to planning, executing, and assessing joint operations against a joint doctrine baseline**. **Chapter I** introduces the effects-based approach in a joint context. **Chapter II** discusses how to enhance situational awareness through a systems perspective of the operational environment (OE). **Chapter III** covers the details of the effects-based approach to planning. **Chapter IV** discusses how the development of effects during planning can enhance the joint force commander's (JFC) flexibility and adaptation during execution, particularly with regard to assessing progress toward achieving operational and strategic objectives. And **Chapter V** summarizes the way ahead—initiatives and requirements related to the continued development of an effects-based approach. Finally, **Appendices A, B, C, and the Glossary** provide, respectively, organizational implications, a sample order that incororates effects, references to source documents, and a compendium of abbreviations and definitions.

Joint Context

An effects-based approach to joint operations calls for thinking differently about how best to employ national instruments of power. The JFCs seek a broader and deeper understanding of the OE: a systems perspective of the operational area (OA). This understanding and thinking includes how to use the military instrument beyond just force-on-force campaigns, battles and engagements. **The effects-based approach, however, remains within the framework of operational art and design using the joint operation planning process (JOPP) as applied in the *Joint Operation Planning and Execution System (JOPES)***.

Systems Perspective

With a systems perspective, JFCs gain the situational awareness to determine what effects (behaviors) need to be attained within the OA to achieve their objectives. This knowledge of the OE at the theater strategic and operational levels allows the JFCs to mitigate risk and act with greater precision. JFCs can then seize the initiative with greater confidence that their operations will succeed. This type and degree of situational awareness improves planning and execution.

JFCs and their joint staffs are better able to separate "the important" from "the unimportant" because they understand the battlespace they are about to enter. They are more apt to attain their desired effects while avoiding undesired strategic and operational consequences. **Acquiring a systems perspective of the OA may take more resources (and time) upfront, but yields greater joint command and staff effectiveness and efficiency throughout the remainder of the operation when coupled with continuous assessment.**

Planning

An effects-based approach to planning offers more options to the JFCs. It potentially brings more capabilities to bear on the OE. In an effects-based approach, desired and undesired **effects steer both the mission analysis and course of action (COA) determination processes**. When the JOPP is done with effects in mind, then adaptation during execution is made far easier and more rapid. But more importantly, this **effects-based approach enhances the probability that objectives can be translated more accurately into actionable direction by the JFCs**.

The key to an effects-based approach in COA development, analysis, comparison, and selection is for the JFCs to have **a shared common understanding of the effects for the entire campaign before tasks are prescribed and assigned** among those agencies and organizations who will be operating within the OA. And the better the collaborative climate, the more likely the various interagency capabilities can be integrated and brought to bear in a contingency or crisis. In sum, **the effects-based approach to planning is designed to give greater precision and rigor to the formulation and coordination of unified action before, during, and after an operation.**

Execution

An effect-based approach to execution involves monitoring the OA, assessing the ongoing changes in it, updating and refining plans, and directing friendly actions that alter the OE to conform to the JFCs' intent. Execution is not just about determining better ways to apply kinetic energy to create tactical physical results. While the direct, immediate physical outcomes from specific weapons or actions employed by tactical units are the most observable events in an OA, they rarely—by themselves—produce the conditions or operational effects needed to achieve theater or national objectives. JFCs **must weigh targeting decisions to meet the immediate needs of the tactical fight against the longer term requirements to create or support the strategic and operational effects** within the battlespace to achieve the desired end state.

Effects assessment is crucial to execution. JFCs can only gain sufficient situational awareness and adapt their **current operations, future operations, and future plans** if the staff is assessing "the right things" in the battlespace. While still an important part of an overall assessment process, the measurement of task accomplishment is not as significant as focusing assessment on the attainment of effects—the ongoing effects occurring on key systems in the OA during execution.

The Way Ahead

As joint concept development and experimentation progress, users of an effects-based approach should expect refinements to the enabling doctrines, organizations, processes, and technologies. Regardless of the scope or rapidity of these refinements, **the effects-based approach can already be judged as an important stimulus to future improvements to joint operations**.

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CHAPTER I
JOINT CONTEXT

"... an increased awareness and appreciation for the fact that integrating the full spectrum of military efforts with all other instruments of national power is essential to the achievement of national objectives"

Capstone Concept for Joint Operations, August 2005

1. Introduction

a. This handbook is a pre-doctrinal follow-on to JWFC Pamphlet 7, *Operational Implications of Effects-based Operations (EBO),* and presents major aspects of an effects-based approach in the context of current and emerging joint doctrine. **It is intended to provide sufficient detail to help joint force commanders (JFCs) and their staffs understand and apply an effects-based approach to joint operations.** While the approach described in this handbook focuses primarily on JFCs and their staffs, it also should be of interest to subordinate commanders within a joint force and to interagency/multinational partners.

b. Faced with challenges to our national interests, the United States (US), along with its allies, can respond by using the capabilities resident in one or more of the instruments of national power (diplomatic, informational, military, economic, and others). US military operations typically are conducted within a framework that includes other national and international agencies and multinational partners. A strategic, top-down approach aligns and harmonizes a variety of ways and means with a set of desired strategic ends. These ends provide the fundamental purpose and context for committing military and other instruments of national power. **Joint operations should, therefore, always be conducted within the context of unified action in support of a strategic purpose expressed in national objectives.**

c. An effects-based approach to joint operations focuses on improving our ability to affect an adversary's behavior and/or capabilities through the integrated application of select instruments of national power. This approach connects strategic and operational objectives with operational and tactical tasks by identifying desired and undesired effects within the operational environment (OE). From a joint perspective, **effects-based thinking and practices have the most impact at the strategic and operational levels**, affecting headquarters' (HQ) organization, processes, and products. At the tactical level this approach represents more of a way of thinking, **with minimum impact on <u>how</u> tactical commanders apply their ways and means to accomplish tactical tasks**. As effects-based constructs continue to evolve through concept development, experimentation, and practical application in ongoing operations, the aim is to yield these broad outcomes:

(1) **Increased clarity of actionable direction at all levels.**

(2) **Improved unity of effort between military, interagency, multinational partners, and nongovernmental organizations at the operational level.**

(3) **Enhanced economy of force and more precise employment of capabilities.**

2. The Operational Environment

a. Today's adversaries, including both state and non-state actors, can operate within a federation of networked, complex, adaptive systems that extend beyond geographic boundaries. **Unified action**—joint, interagency, and multinational—is essential to effectively meet the challenges of these adaptive, networked adversaries. **Joint operations against contemporary adversaries require unity of effort in planning and execution with interagency and multinational partners who are not under military command authority**. This effort depends on building and sharing a common understanding of the strategic purpose and the problem to be solved; developing relevant goals and objectives; knowledge of the OE; and harmonization of the actions required to resolve the problem.

b. **The OE is the air, land, sea, space, and associated adversary, friendly, and neutral systems (political, military, economic, social, infrastructure, informational, and others) which are relevant to a specific joint operation, regardless of geographic boundaries**. An effects-based approach seeks to develop a commonly shared understanding of the OE among all members of the joint, interagency, and multinational team, thereby facilitating unity of effort. This perspective provides to the combatant commander (CCDR) a more comprehensive picture of the challenges to be faced and the best balance of capabilities to use to shape the environment. For strategic-level and operational-level JFCs, this perspective increases the fidelity of joint operation planning and operational design.

c. Development of a detailed perspective of the OE requires analysis of its relevant systems and their interrelationships. For example, if a geographical region is the focus of a developing crisis, then the systems of that region (military, political, infrastructure, and so forth) should be viewed holistically as a network of nation states and non-state actors. In turn, these nation states are also composed of systems that allow them to function as sovereign countries. Simply put, in a joint operation these systems and their major elements and interrelationships—the multitude of nodes and links that comprise each system—become potential "objects" for unified action when preempting or resolving a crisis. However, it is essential to understand that some systems—particularly those involving economic, political, and social interaction—are dominated by humans, can adapt readily to actual or anticipated actions, and are not as open to observation as the more static systems such as infrastructure. Thus, **JFCs and staffs must expect uncertainty and supplement current intelligence with their judgment and intuition**.

3. Terminology

An effects-based approach has added some new terms and refined others. These terms are intended to clarify and define areas of emphasis within this approach, yet remain consistent with the current decision-making processes for joint operations. While most terms are compatible with current joint doctrine, it is important to understand what new terms are essential to an effects-based approach, why some terms' definitions differ from current doctrine, and how these terms can enhance joint operations. Proposed new terms and revised definitions (bolded in Glossary) will be incorporated in doctrine consistent with the joint community's acceptance of this emerging construct. The following definitions amplify two requisite terms associated with an effects-based approach. Other relevant terms will be introduced later in the handbook where appropriate. (The source for each term is identified in Part II of the Glossary.)

Effect: 1. The physical and/or behavioral state of a system that results from an action, a set of actions, or another effect. 2. A change to a condition, behavior, or degree of freedom.

System: A functionally, physically, or behaviorally related group of regularly interacting or interdependent elements; that group of elements forming a unified whole. Systems associated with national security include political, military, economic, social, infrastructure, information, and others.

4. The Joint Doctrine Baseline

a. Joint doctrine codifies joint operation planning processes and operational design. Other joint publications, such as the Joint Operation Planning and Execution System (JOPES) and *Joint Task Force Headquarters Master Training Guide*, provide additional techniques and procedures. **These processes and related products represent the baseline for incorporating effects and related constructs such as a "systems perspective" in joint operation planning and execution processes**. This approach is intended to improve our ability to respond to the nature and challenges of today's OE. **It builds on rather than replaces these core processes**.

b. Figure I-1 highlights key processes associated with JOPES. The handbook will discuss how the JFC and staff use effects and a systems perspective of the OE to enhance situational awareness and improve planning, execution, and assessment. **The handbook focuses at the theater-strategic and operational levels, particularly on the interaction and collaboration between combatant commanders, subordinate joint HQ, and their Service and functional components (the highlighted center band of Figure I-1).** The use of effects described in the handbook applies both to contingency planning and to the more time-sensitive crisis action planning.

c. The handbook **emphasizes the development and use of effects to better relate objectives to tasks**. This approach connects strategic and operational objectives to tactical tasks through identifying desired and undesired effects within the OE. Combined with a systems perspective, the identification of desired and undesired effects can help commanders and their staffs gain a common picture and shared understanding of the OE that promotes unified action with multinational and other agency partners. CCDRs plan joint operations by developing theater-strategic objectives supported by measurable strategic and operational effects and assessment indicators. Subordinate JFCs develop operational-level objectives supported by measurable operational effects and assessment indicators. Joint operation planning uses measurable effects to relate higher-level objectives to component missions, tasks, and/or actions.

d. **An "effect" is the physical and/or behavioral state of a system that results from an action, a set of actions, or another effect**. A desired effect represents a condition for achieving an associated strategic or operational objective, while an undesired effect could inhibit progress toward the same objective. A single objective may require achievement of more than one effect. **The full set of desired effects would represent the conditions required to achieve the strategic objective(s)**.

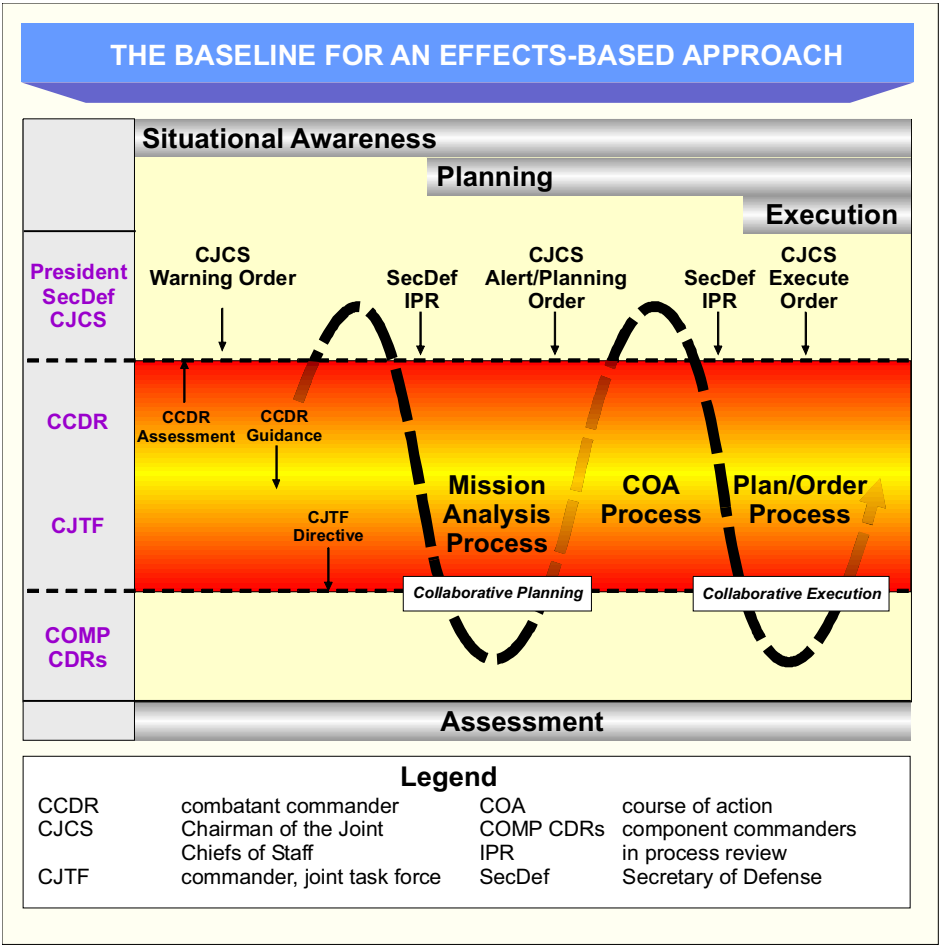

Figure I-1. The Baseline for an Effects-Based Approach

e. Objectives and tasks typically are stated in terms of friendly goals and actions, **while effects are stated in the form of behaviors and capabilities of systems within the OE—friendly, neutral or adversary behavior**. For example, in a conflict over a government's legitimacy and sovereignty, the JFC's **objective** might be that ***Insurgents are defeated***. To achieve this objective, the JFC identifies the conditions **(effects) required within the OE to achieve the objective**. Two of these might be that ***Population resists insurgent influence*** and ***Neighboring countries support the central government***. The JFC includes these desired effects as part of commander's intent in the operation order (OPORD) and assigns broad tasks to subordinate commanders to support attainment of the desired effects. The component commanders plan their specific actions to accomplish their assigned tasks. Additionally, the CCDR coordinates interagency support through the Joint Staff and US embassies to draw on additional diplomatic, informational, and economic resources to support military actions and build the unity of effort needed to achieve desired effects.

f. The JFC may also direct the forces to ***monitor the amount and frequency of foreign manpower and materiel support to the insurgents***, a **specified task** that contributes directly to measuring the attainment of the second effect. In this way, the JFC has used effects to link

subordinate actions to the objective through one of the effects. As Figure I-2 shows, effects help form the basis for assigning tasks to subordinate and supporting organizations.

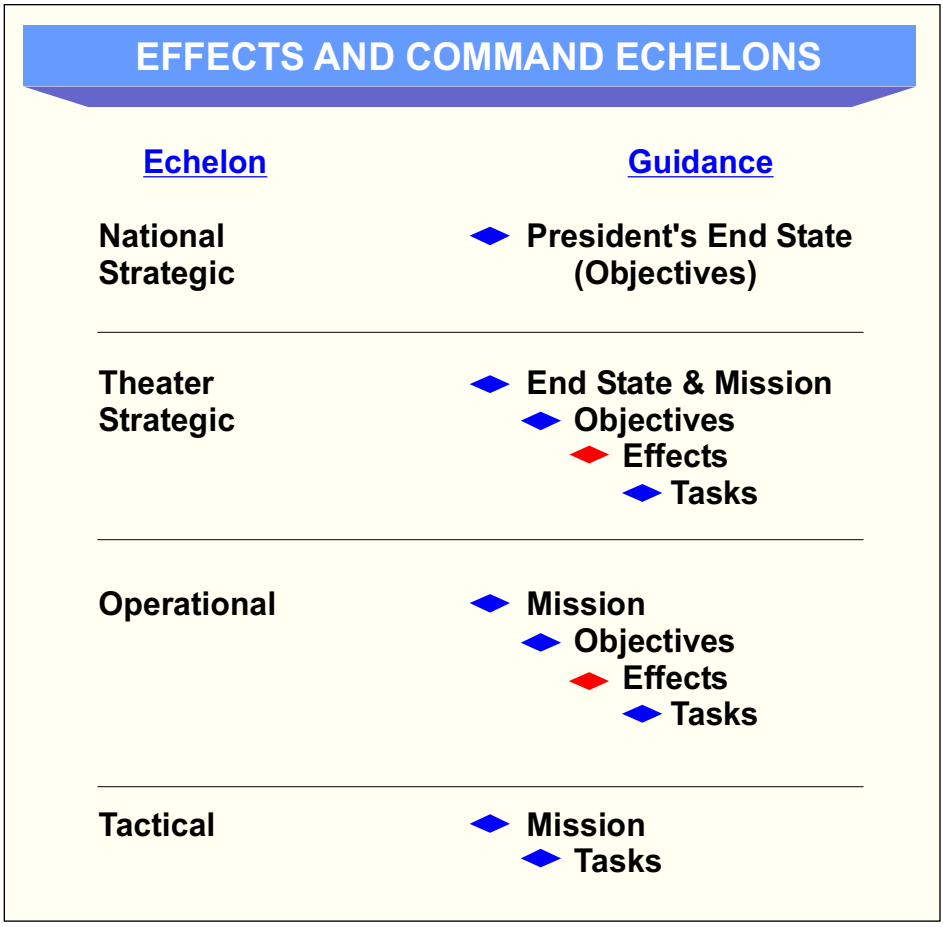

Figure I-2. Effects and Command Echelons

g. **Assessment** is another important area that is enhanced by an effects-based approach. Once the JFC determines the effects required to achieve his objectives, the staff develops those indicators (effects measures) that will show if the required system behaviors and capabilities are being created or prevented. The JFC describes commander's critical information requirements (CCIR) that are structured to support measuring effects and key decision points. Joint force components develop supporting collection plans and CCIRs. One example of an effects metric might be **the number of "tips" per day within a city**—an indicator associated with the effect ***Population resists insurgent influence***. (See Chapters III and IV for more information on effects assessment.)

5. Illustrative Vignette

a. To illustrate how an effects-based approach can enhance current doctrine, **this handbook offers some historical examples and a vignette with a single scenario to help the**

reader understand the nuances of the approach that instructional text alone cannot provide. The vignette will be presented in blue-colored text boxes throughout the handbook.

b. **The vignette is fictional**, representing a scenario intended to replicate many of the national security challenges of the foreseeable future. **The scenario does not portray any past operation, any particular geographic area or any specific adversary**. It does attempt to offer a perspective of the OE for this decade and the next.

Scenario: After terrorists blew-up a chemical plant in a densely populated area on the continent of Gold killing more than 45,000 civilians, the intelligence agencies of the US—with help from some of its allies—traced the origins of the perpetrators and their logistic support to two rogue nations: Brown and Silver. Three months have elapsed during which intense diplomatic negotiations have yielded no cooperation from the two nations. Consequently, the President has decided to support the friendly nation that was attacked by launching an operation into Brown to initiate a regime change. Accordingly, the President has established **four strategic objectives** for Operation PRECISE PURGE:

1. **Expulsion of the terrorists from the country of Brown.**
2. **Installation of a friendly government in Brown.**
3. **No domination by any single tribe in Brown.**
4. **Peace and stability in the region.**

This US-led operation will be conducted concurrently with a separate operation led by the attacked ally nation. Both operations include participation by other countries from the continent of Gold. The rogue nations are not allies and their territories are separated by an ocean and a large land mass. The US-led operation anticipates major conventional and unconventional operations with a high probability of a follow-on counterinsurgency operation. In contrast, the ally-led operation in Silver will not seek a change of government, but is intended to punish the indigenous terrorists and destroy their infrastructure.

6. Conclusion

a. **An effects-based approach to joint operations calls for thinking differently** about the adversary, the OE, and how best to employ national instruments of power. Joint commanders require a broader and deeper understanding of the OE. This understanding also includes how to use the military instrument beyond just force-on-force engagements. Some of the implications of an effects-based approach include:

(1) Visualizing the OE beyond the traditional military battlespace as an interconnected system-of-systems comprised of friends, adversaries, and the unaligned.

(2) Identifying a potentially broader range of options from pre-crisis through post-crisis.

(3) Improving the harmonization and sequencing of military operations with the actions of other instruments of power to achieve unity of effort.

(4) Clarifying strategic and operational objectives by appreciating systemic effects—behavior changes separated in space and time from their causative actions—whether they are desired or undesired.

(5) Assessing system behaviors and capabilities: effects attainment in addition to task accomplishment.

(6) Collaborating more extensively with superiors, subordinates, the interagency community, and multinational partners.

b. **Effects are attained as a consequence of actions**. While actions at the tactical level can achieve proximate, limited effects (such as target destruction), this handbook focuses on the broader application of effects, which JFCs and their staffs use to describe the conditions (or system states) required in the OE to achieve operational and strategic objectives. **In operational design, effects provide a bridge between national strategic objectives and tactical actions**.

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CHAPTER II
THE SYSTEM PERSPECTIVE

"But in war more than any other subject we must begin by looking at the whole; for here more than elsewhere the part and the whole must be thought of together."

Clausewitz

1. Introduction

a. JFCs must gain and maintain a current, accurate assessment of the situation at the earliest opportunity, particularly in crisis action planning. This assessment should provide sufficient situational awareness and understanding for the JFC to give actionable direction to the joint force staff and subordinate commanders. The more comprehensive the awareness and understanding, the better the direction.

b. A systems perspective of the OE supports an effects-based approach to joint operations. A systems view comprises all major elements within the environment that are potentially relevant to the success of the operation. These include elements (and their interrelationships) in friendly, adversary, and neutral or unaligned systems. Typical systems relevant to joint operations can be characterized as political, military, economic, social, infrastructure, informational and others. **To the extent it is knowable, the JFC directs action based on understanding the current and potential behaviors and capabilities of friendly, adversarial, and neutral systems, as well as the full environment in which they operate**.

2. A Systems Approach to Situational Understanding

a. **Joint command and staff processes should begin, proceed, and end with substantial understanding of the OE**. This is not limited to feedback to commanders during execution after operations have commenced. Awareness begins before the onset of an operation with the assessment of the current situation within the OA—not only what is happening, but to the extent possible, why it is happening.

b. Once a warning order is issued, the JFC's estimate will be followed by the commander's planning guidance and an initial commander's intent. **Without an accurate understanding of the OE, a JFC cannot express the purpose and scope of the operation clearly enough to ensure subordinate commanders know what constitutes success**.

c. During contingency planning, CCDRs focus on specific areas in the theater based on assigned planning requirements (from the *Contingency Planning Guidance* or another source) and anticipated or potential "trouble spots." While led by the J-2, the entire staff helps develop a **systems perspective** of the OAs. (For example, the J-5 or J-3 may lead the effort to gain a systems perspective of friendly systems and the Joint Interagency Coordination Group may be responsible for the unaligned systems.) To assist understanding the complex interconnected nature of today's OE, the battlespace is described as a system of interconnected systems—

military and non-military (Figure II-1). This systems perspective provides a comprehensive, holistic view of the fundamental elements (nodes) and their relationships (links) to each relevant system. The staff concentrates on those relevant systems, nodes, and links while applying operational design to the anticipated or assigned mission. A disciplined systems understanding is crucial to a holistic perspective of the OE. A variety of factors, including available planning time, will affect the fidelity of this perspective. One technique to perform this assessment is a process called **system-of-systems analysis** (SoSA), which allows the staff to gain a baseline appreciation of the environment and to organize information in a form useful to the commander.

d. A systems approach to understanding the designated OA considers more than just an adversary's military capabilities, order of battle, and tactics. The SoSA process typically categorizes systems—Blue (friendly), Red (adversarial), and Green (neutral or unaligned)—as **political, military, economic, social, infrastructure, informational** and others as appropriate.

e. System **nodes** are the tangible elements within a system that can be "targeted" for action, such as people, materiel, and facilities. **Links** are the behavioral or functional relationships between nodes, such as the command or supervisory arrangement that connects a superior to a subordinate; the relationship of a vehicle to a fuel source; and the ideology that

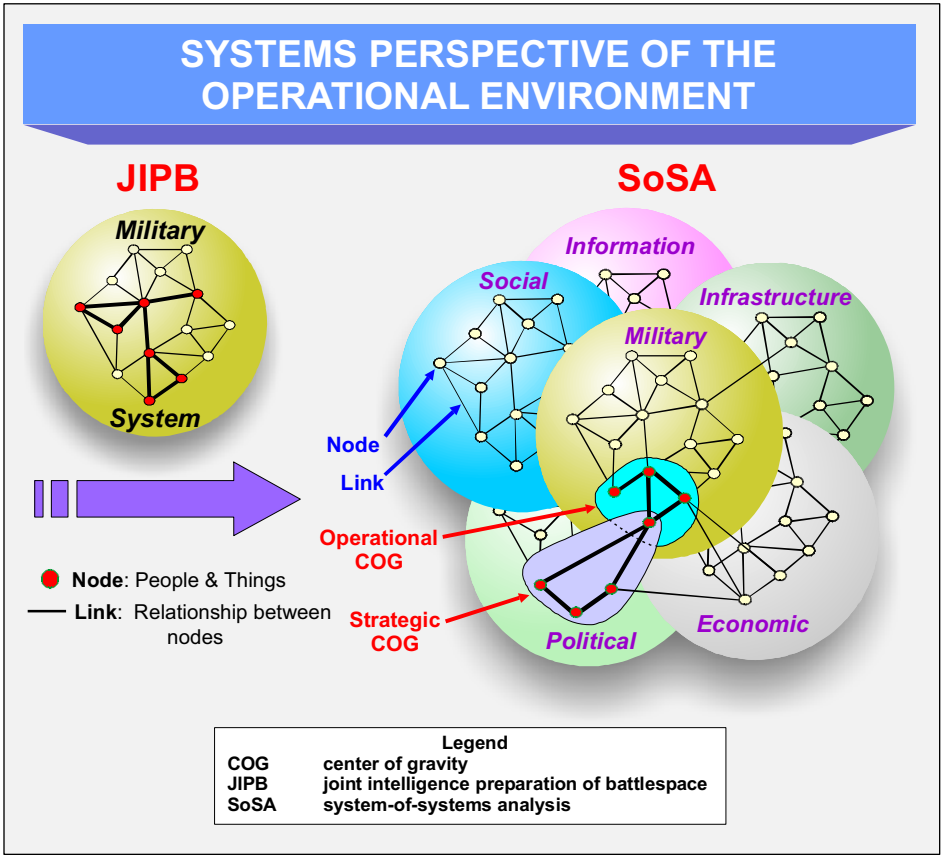

Figure II-1. Systems Perspective of the Operational Environment

connects a propagandist to a group of terrorists. Links establish the interconnectivity between nodes that allows them to function as a system—to behave in a specific way (accomplish a task or perform a function). Thus, the purpose in taking action against specific nodes is often to destroy, interrupt, or otherwise affect the relationship between them and other nodes, which ultimately influences the system as a whole.

System: A functionally, physically, and/or behaviorally related group of regularly interacting or interdependent elements; that group of elements forming a unified whole.

Node: An element of a system that represents a person, place or thing.

Key Node: A node that is related to a strategic or operational effect and/or a center of gravity.

Link: An element of a system that represents a behavioral, physical, or functional relationship between nodes.

f. **Analysts link nodes to each other with sufficient detail to inform the JFC of potential key nodes**. These are nodes related to a strategic or operational effect or a center of gravity (COG). **Some may become decisive points for military operations** since, when acted upon, they could allow the JFC to gain a marked advantage over the adversary or contribute materially to attaining a desired effect. **Key nodes are likely to be linked to, or resident in, multiple systems**. Since each adversary system (infrastructure, social, etc.) is composed of nodes and links, the capabilities of US instruments of national power can be employed against selected key nodes to attain operational and strategic effects.

g. Every **system can be analyzed using a node-link analysis**. The scale (breadth and depth) of the analysis depends on the JFC's needs and the level at which the JFC operates (Figure II-2). From the CCDR's perspective, for example, the OE for a specific mission can encompass an entire geographic region composed of many nation states. Thus, the systems analysis would focus on upper-level aspects of the specific systems relevant to the CCDR's strategic objectives, mission, and desired effects (the top tier in Figure II-2) and "drill down" to more detailed aspects of these systems as required. A subordinate JFC's staff would need to understand the higher-order aspects of these systems, but could conduct a more exhaustive analysis of specific systems, nodes, and links relevant to the JFC's operational-level mission, desired effects, and tasks. For example, this analysis could require an operational-level JFC to understand node-link relationships of elements as small as an individual terrorist cell and its enabling systems, nodes, and links. From the CCDR's perspective, an enemy armored corps could be a single node in the adversary's military system. But to the operational-level JFC, the corps would be a separate system composed of nodes representing maneuver units, command and control HQ, and various supporting capabilities for air defense, indirect fire support, and logistics. Finally, the information used in a node-link analysis can come from national-level intelligence agencies, as well as from any echelon within the joint force.

h. Figure II-2 indicates that actions against nodes at lower levels can affect nodes and links at higher levels, and vice versa. A benefit of graphically portraying these node-link

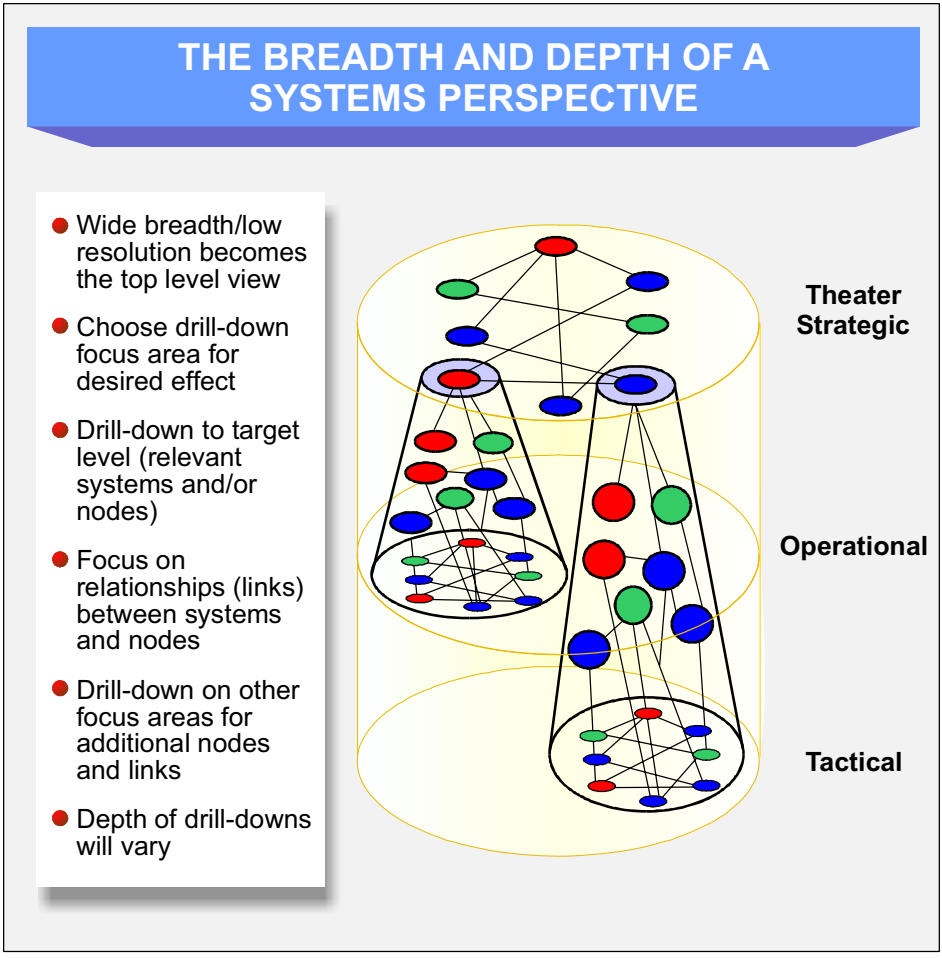

Figure II-2. The Breadth and Depth of a Systems Perspective

relationships (in as much detail as time permits) is that the potential impact of actions against certain nodes can become more evident. Also, the **number of links** between a node and other nodes is often an indicator of the importance of the node to the behavior or functioning of the system. The **strength or intensity of a single link** also could be relevant to determining the importance of the functional relationship between nodes and the overall significance to the larger system. Therefore, **both the number and strength of links to a node or set of nodes can be indicators of a potential COG.**

i. A SoSA of the OA promotes a holistic view of the OE that focuses on those key nodes that could influence the outcomes of an operation. By viewing the OE in terms of systems, nodes, and their associated links, commanders can concentrate on understanding more thoroughly the aspects of adversary behaviors and capabilities that directly impact attainment of strategic and operational objectives and effects.

j. The following is a simple example, per the vignette established in Chapter I, of how planners could portray nodes and links to understand how an adversary system functions.

In the US-led operation against one of the rogue nations, one of the targeted nodes is a specific transnational terrorist cell. Analysts can portray the cell as part of a larger system that encompasses the cell's enabling capabilities, as well as the intentions and motivations of its leaders. Depicting **this node-link relationship graphically, as in Figure II-3, helps planners discover decisive points against which the joint force can act** to render the terrorist system unable or unwilling to fulfill its mission. It also helps planners understand the variety of interagency actions that may need to be conducted in conjunction with joint operations against the terrorists—in this case to prevent the terrorists from using a weapon of mass effects (WME) against the United States or its allies. Even if the joint force cannot locate the terrorist cell, terrorist actions could be prevented by interdicting the flow of money that finances the terrorists, weapons materials in transit, or the WME assembly point. This understanding allows planners to devise COAs that can be employed successfully against the terrorist system. In short, with a systems perspective, unified action—diplomatic, military, economic, or any combination of ways to attain greater unity of effort that has proved difficult in the past—can more readily be applied to achieve the objective: ***Expulsion of terrorists from the country of Brown.***

3. Joint Intelligence Preparation of the Battlespace

a. Joint intelligence preparation of the battlespace (JIPB) contributes to the JFCs' situational awareness of the OE. The JIPB is often a derivative of the Service or functional component's intelligence preparation of the battlespace (IPB). This practice may lead to a JIPB that is focused too narrowly on the military instruments of power within the OA. A SoSA technique will enhance JIPB by having commanders, planners, and analysts view the OE more broadly: on all instruments of power, on all actors within the OA (not just the adversary), and on the inter-relatedness of systems and their elements.

b. From a joint doctrine perspective, **JIPB and SoSA should not be separate and distinct processes**. Joint doctrine for intelligence processes should embed a SoSA approach to increase the breadth and depth of the JFC's and staff's understanding of the OE. This approach likely will require the joint force J-2, as the lead for this effort, to adjust the current JIPB process and products. While the natural focus of JIPB for potential large-scale combat operations will continue to be on the adversary's military capabilities, a thorough analysis and understanding of other systems is essential to get a full picture of the OE. This understanding can reveal additional ways to attain desired effects, avoid undesired effects, and influence the adversary's COG(s) in a manner that could shorten combat operations, reduce risk, or otherwise improve prospects for success. The J-2 may need to strengthen collaboration with "centers of excellence" that can provide expertise in political, economic, social, infrastructure, informational, and other aspects of the OE. The opportunities for this collaboration can be significant in peacetime contingency planning, but limited during a crisis-action situation.

c. **JIPB, enhanced by an embedded SoSA approach, produces predictive intelligence with regard to the adversary's probable intent and most likely COAs** for countering friendly operations. Modified to accommodate an effects-based approach (highlighted in bold below), this process follows a four-step sequence: (1) define the OE, (2) describe battlespace effects on friendly and adversary operations, (3) evaluate the adversary, and (4) determine adversary COAs. (This four-step process is integral to and supportive of the JFCs' mission analysis and COA determination described in Chapter III.)

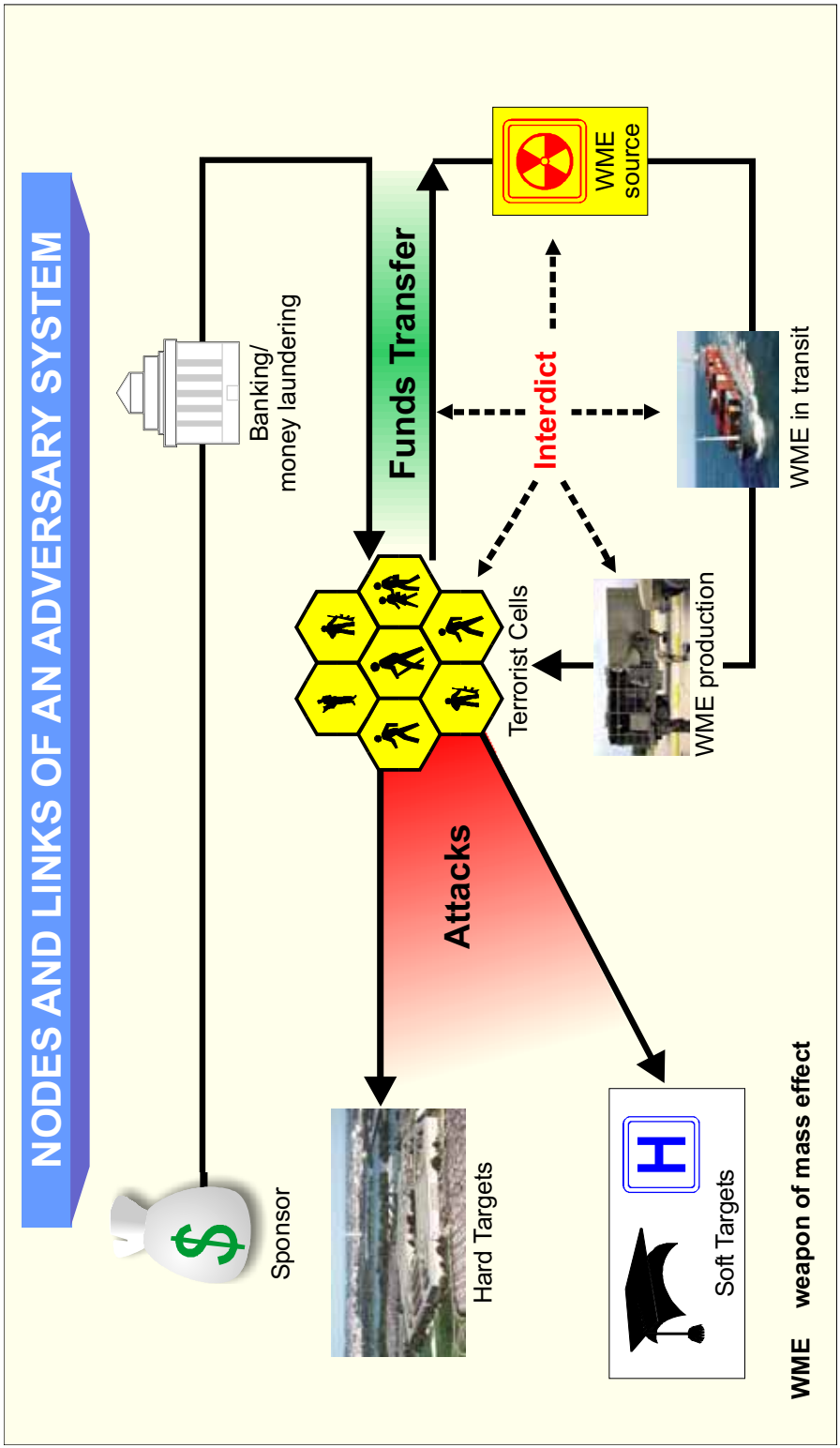

Figure II-3. Nodes and Links of an Adversary System

(1) **Define the Operational Environment**. After the JFC designates the area of focus or establishes the OA, the joint HQ (supported by other staff organizations as required) assesses the OE via the ensuing activities.

(a) Analyze the joint force's mission and JFC's intent

(b) Identify geographic and non-geographic boundaries of the JFC's OA

(c) Establish the limits for each geographic and non-geographic system within the commander's guidance and intent

(d) Determine the full, multi-dimensional, geographic and non-geographic systems of the joint force's OA: terrain, weather, military, political, economic, social, etc.

(e) **Determine the relevant OE systems and depict their elements as nodes and links**

(f) Identify the amount of OE detail required and feasible within the time available

(g) Evaluate existing databases and identify information gaps and priorities

(h) Collect the information and intelligence required to support further system analysis

(2) **Describe the Battlespace Effects on Friendly and Adversary Operations**. The staff evaluates the JFC's desired and undesired effects through the following actions: (For large-scale joint operations, interim effects may be aligned to specific phases.)

(a) Analyze the OE

(b) **Evaluate the potential effects on military operations in each system**

(c) **Analyze the desired and undesired effects identified by the J3/5 to identify key nodes and links**

(d) **As part of joint operation planning, describe the JFC's effects on adversary, friendly, unaligned systems: desired and undesired behaviors**

(3) **Evaluate the Adversary**. The joint force staff anticipates the future consequences of an operation by doing these actions:

(a) **Identify adversary and friendly systems, nodes, and links and potential interrelationships**

(b) **Conduct COG analysis in terms of systems, nodes, links and the interrelationships between potential friendly and adversary COGs**

(c) Update or create OE models

(d) Determine the current adversary and friendly situations

(e) Identify adversary intentions and critical factors (see paragraph 4 of this chapter for more information on critical factors)

(4) **Determine Adversary Courses of Action**. The joint force staff describes adversary potential COAs using various wargaming techniques and by completing these actions:

(a) Identify the adversary's likely objectives and desired end state

(b) Identify a full set of COAs available to the adversary

(c) Portray the adversary's perspective of anticipated friendly COAs

(d) Evaluate and prioritize each adversary COA

(e) Develop each COA in the amount of detail time allows

(f) Identify initial intelligence collection requirements for adversary, friendly, and unaligned systems

d. The joint force J-2 is responsible for managing the analysis and development of products that provide a systems understanding of the OE. This responsibility requires collaborative relationships not only with various intelligence organizations, but also with other government agencies (OGAs) and nongovernmental centers of excellence. In sum, **J-2 is the primary directorate responsible for creating and sustaining the systems perspective of the OE that (in an effects-based approach) extends beyond the adversary to encompass friendly and unaligned systems**.

4. Center of Gravity Analysis

a. The COG construct is useful as a tool to help JFCs and staffs analyze friendly and adversary sources of power as well as their vulnerabilities. COG analysis, both friendly and adversary, is a continuous process throughout a joint operation. This process cannot be taken lightly, since a faulty conclusion resulting from a poor or hasty assessment can have very serious consequences, such as the inability to achieve strategic and operational objectives at an acceptable cost. An integrated systems approach to understanding the OA can help refine and expand traditional COG analysis by identifying potential sources of power (and capabilities) that provide the adversary its freedom of action, physical strength, and will or ability to act.

b. In combat operations, this COG analysis involves identifying the adversary's strengths and weaknesses and understanding how an adversary organizes, fights, and makes decisions. A systems approach will support identification of traditional military-related COGs, but will also help reveal potential COGs in other systems. Graphically depicting the OE as interconnected systems allows planners **to portray prospective COGs in terms of systems,**

nodes, and links. This technique helps planners analyze relationships (links) between friendly, adversarial, and non-aligned system COGs, providing a clearer picture that can facilitate COA development by focusing joint force actions on key nodes and links within adversary systems. **Identifying all potential COGs in an OE remains essential to operational design, mission analysis and COA determination**.

c. **A COG** rarely consists of a single key node in a system (such as a head of state as a strategic COG), but **typically will encompass a number of key nodes and links** that comprise a subsystem within a system (such as an armored corps as an operational-level COG—a component of a larger military system). **Both the number and strength of links to a node or set of nodes can be indicators of a potential COG**. Figure II-1 shows notional COGs at the strategic and operational levels, each composed of a number of nodes and their links. It also shows that a relationship often exists between COGs, as represented by the common node in the overlapping shaded areas. The expanded view in Figure II-4 shows this relationship and also depicts how SoSA helps identify various critical factors (critical capabilities, requirements, and vulnerabilities) associated with any system in the OE, particularly with a COG.

d. **By depicting a system's capabilities as a combination of interconnected nodes, analysts can enhance their understanding of which elements are most critical to system performance or behavior and, in turn, which capabilities are most vulnerable to friendly**

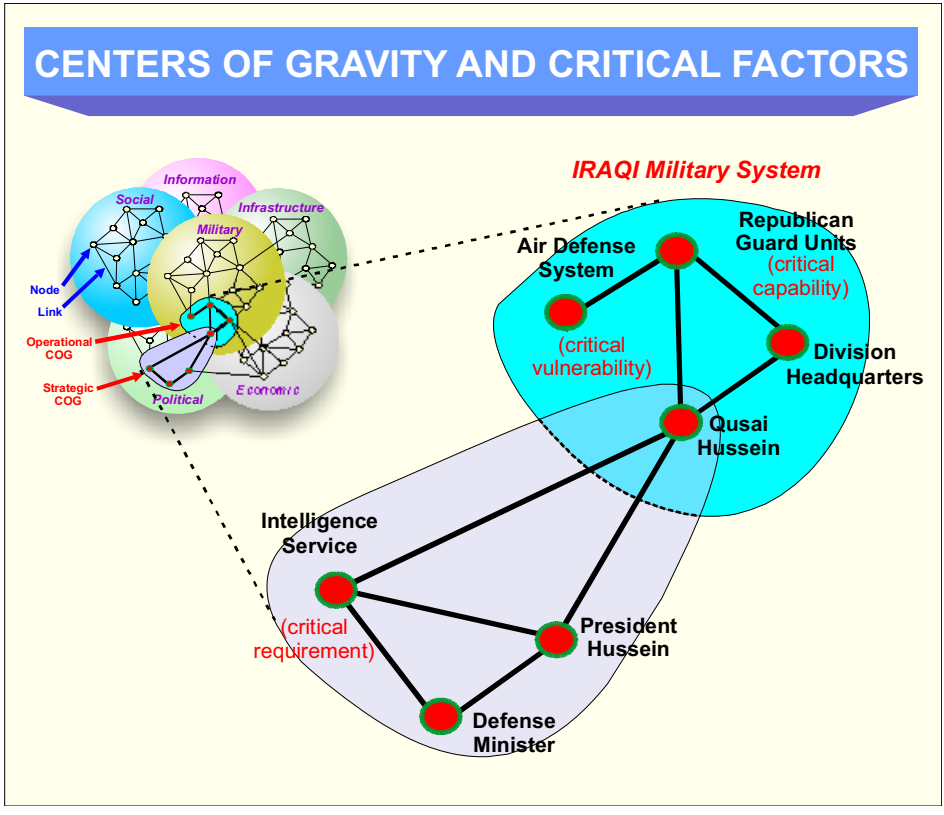

Figure II-4. Centers of Gravity and Critical Factors

influence. They can use three **critical factors**—critical capabilities, requirements, and vulnerabilities—to aid in this understanding. **Critical capabilities (CCs)** are those nodes and links that are considered crucial enablers for a COG to function as such, and are essential to the accomplishment of specified or assumed objective(s). **Critical requirements (CRs)** are the resources and/or means (which also can be identified as nodes and links) that enable a critical capability to become fully operational. **Critical vulnerabilities (CVs)** are those elements of critical capabilities that are deficient or vulnerable to influence, interdiction, or attack. Action taken against these vulnerabilities can produce decisive or significant results which are often disproportionate to the military resources applied. From the perspective of an adversary's military system, a JFC must possess sufficient operational reach and combat power to take advantage of an adversary's critical vulnerabilities. Similarly, the JFC must protect friendly critical capabilities within the operational reach of an adversary. (The JFC also must consider appropriate ways and means to identify and affect vulnerabilities in other systems of the OE.)

e. **To "operationalize" the "critical factors" methodology with the systems approach**, the following basic steps are applied to the relevant system-of-systems—enemy, friendly or unaligned—within the OA.

(1) **Determine the system-of-systems' CCs**, the absolutely essential capabilities the system needs to function and designate them as "key" nodes. (The system might have many capabilities, but not all are critical to its central function.)

(2) **Identify the system's CCs' principal source of power**: the system's COG expressed as a combination of key nodes and links.

(3) **Identify the COG's CRs**: its enabling CC subordinate capabilities expressed as nodes and/or links.

(4) **Identify nodes and links that are vulnerable to influence or change**: disruption, dissuasion, destruction, co-option, deterrence, etc. These **CVs** become the decisive points—the key nodes and links for friendly action to target—and for the enemy to protect and defend. **Remember, the essence of operational art and design is a focused operation against an enemy's COGs while protecting one's own**.

f. For illustration, when assessing Iraq's military capabilities during Operations **DESERT SHIELD** and **DESERT STORM**, military experts considered the Republican Guard (RG) units as the most capable forces in the Iraqi military system (Figure II-4). Some experts even suggested these military units were a COG for the Iraqi regime. Consequently, given their importance to Iraqi governance, the Allied coalition expended considerable effort assessing both the capabilities and vulnerabilities of the RG forces. As DESERT STORM unfolded, President Saddam Hussein and his son Qusai (as a pivotal leader of the RG) made a strategic judgment not to use the RG units to engage coalition forces in Kuwait. Despite the limited declaratory objective of the Allied coalition—Iraqi withdrawal from Kuwait (vice a regime change in Iraq)—the RG units were held in reserve to protect Baghdad and the Husseins' inner circle of Ba'athist leaders. As a consequence of this Iraqi decision, RG CCs were largely immune to actions from coalition ground forces. But with the early and extensive attrition of the

Iraqi air defense system, these capabilities became vulnerable to interdiction from coalition air.

g. While the historical example above focuses on a politico-military system, **any system—social, economic, etc.—can be dissected into its critical capabilities and their potential critical requirements and vulnerabilities. With a SoSA-enhanced JIPB, analysts and planners can gain greater definition and understanding of the relevant elements of a system and better communicate which elements are critical to campaign success and most susceptible to influence**. Such a portrayal—in a graphic visualization—is an important element of any common operational picture (COP) of the OA, allowing JFCs to bring greater clarity and context when they issue their commanders' intent.

5. Attaining Effects Directly and Indirectly

a. **The aim of an effects-based approach is to create desired operational and strategic effects within the OE while avoiding undesired effects**. This aim demands a comprehensive understanding of the relationships between individual nodes both within and across systems as well as vertically and horizontally between and across the levels of war. This understanding is necessary to anticipate the likely behavior of the adversary system and its impact on friendly systems and the remaining OE. **Effects can be attained both directly and indirectly**. This means that some effects will be created as a first-order result of actions against nodes, while other effects can be attained by taking actions against other nodes not directly related to the node being targeted. SoSA can help determine direct and indirect relationships within and across systems.

b. To illustrate (using the handbook scenario), the CCDR tasks the commander, joint task force (CJTF) to, ***drive a wedge between the insurgency and the terrorists*** to create the effect: ***Insurgents reconcile with the central government***. To attain this desired effect **the CJTF needs to understand both the insurgent system and the terrorist system, especially their key nodes and links to each other and the country's larger tribal system**. For example, five tribes coexist in one region of the country (Figure II-5). The Alpha tribe (Node Alpha) supports the insurgents and terrorists; the Delta tribe (Node Delta) supports only the insurgents and is ethnically related to the Alphas; and the Chi tribe (Node Chi) supports neither, but controls the access to water for the Deltas. The Beta (Node Beta) and Epsilon (Node Epsilon) tribes are neutral or unaligned. Therefore, one indirect approach would be to bribe (A1) the Chis to coerce (E1) the Deltas to persuade the Alphas to abandon (E2) the terrorists and ultimately, for both the Alpha and Delta tribes to stop supporting the insurgency. And, of course, whatever precipitating action is chosen, it cannot result in the undesired effect (E3): ***Deltas support both the terrorists and the insurgency***.

c. The intended result of an effects-based approach is the creation of higher-order effects with tactical and operational actions: to produce strategic and/or operational effects, rather than just tactical effects. But to do so, **JFCs have to understand the relevant systems in the OA—the interconnectivity of key nodes: the probable causal link between an action on a node and its impact on the node and the other nodes linked to it**. If JFCs and their staffs can anticipate, with reasonable confidence, how a system might behave after executing a COA, their operation is far more likely to be successful.

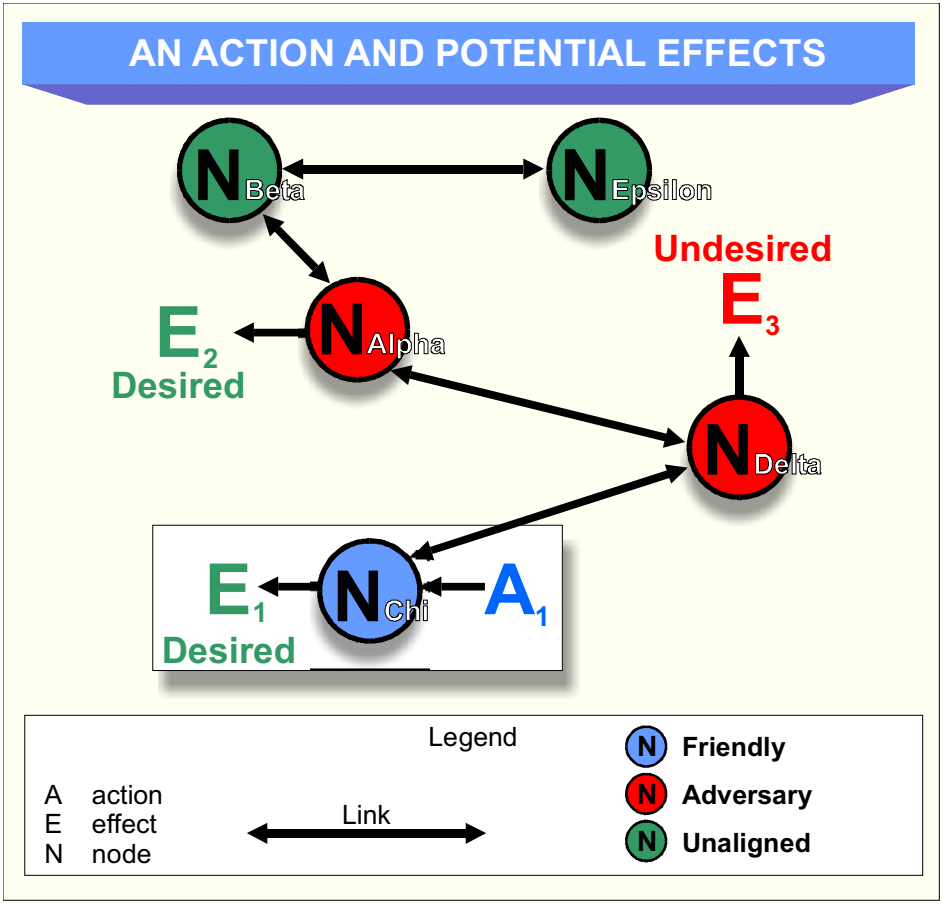

Figure II-5. An Action and Potential Effects

6. Conclusion

a. **A systems perspective can enhance the JFC's situational understanding**. A systemic knowledge of the OE helps JFCs determine what effects (behaviors) will help them achieve operational and strategic objectives, mitigate risk, and act with greater precision. JFCs can then seize the initiative and have greater confidence that their plans and operations will succeed. A system-of-systems approach also provides a way to help identify where to look for changes in behavior or capability that signal adversary activity in multiple systems, potentially resulting in a more accurate and complete assessment of the outcomes of joint force actions.

b. This type and degree of situational awareness also improves planning and execution. **JFCs and their joint staffs are better able to separate "the important" from "the unimportant"** because they understand the battlespace they are about to enter. In sum, they are more apt to attain their desired effects while avoiding undesired strategic and operational consequences. **Gaining a sufficient systems perspective may take more time and consume more resources up-front, but ensuing planning, execution, and assessment should yield greater effectiveness and efficiency throughout the remainder of the operation**.

CHAPTER III
PLANNING

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

Francis Bacon

1. Introduction

a. Planning for the employment of military forces occurs at every echelon of command and across the range of military operations. **An effects-based approach to planning complements the current JOPP. It seeks to fully integrate military actions with those of the other instruments of national power while clearly coupling tasks to objectives within an assessment framework that supports JFC guidance**. Theater strategic and operational planning translates national and theater strategic objectives into the CCDR's strategy and ultimately into tactical action, **by integrating ends, ways, and means between the echelons of command**.

b. Planning begins when a focus area (geographic or functional) is identified that anticipates military employment under a specific set of circumstances or as part of crisis response. Contingency planning provides the opportunity to develop a more comprehensive systems understanding of the OE (via a SoSA-improved JIPB as described in Chapter II). In a crisis, planners update their systems perspective as part of plan refinement and execution. **The amount of available planning time affects the fidelity of the systems analysis, JIPB and subsequent plan development**. JFCs continuously expand and refine their systems understanding of the OA throughout the crisis. In areas where no pre-crisis SoSA has been done, JFCs rapidly build systems knowledge by seeking to identify common elements from areas already analyzed within the same geographic region by subject matter experts. Examples of common elements might include political organizations, demographics, and ideologies of regional "actors." **In many OAs the systems are similar, but the specific nodes and links are different**.

c. Just as a systems perspective can improve established JIPB processes and products, **the development and use of effects can enhance the JFC's (particularly the CCDR's) ability to promote unified action**. Given the national objectives and a more comprehensive systems-based understanding of the OE, the CCDR and staff decide how, when, and where the other instruments of national power and our multinational partners will (or could) be employed. This understanding provides the basis for the CCDR's collaboration with various agency and multinational leaders, and determines how the CCDR will address the actions of other participants during joint operation planning. Well-crafted effects statements can provide a common language that will help these leaders see their role and potential actions in the pending operation. **In this way, the CCDR can achieve unity of effort whether the military instrument is in the lead or in a supporting role during various phases**. The same philosophy applies to subordinate JFCs. These considerations affect all steps of the planning process, from mission analysis through publication of the plan or order.

d. This **chapter discusses an effects-based approach to the JOPP (Figure III-1) as conducted by a combatant command and a subordinate JTF**, but also includes national and JTF component activities when relevant. Accordingly, **the JOPP provides the construct for this discussion** (see Joint Pub 5-0, *Joint Operation Planning*, for more information). This process provides an orderly and logical approach to planning at any level and in any organization. CJCSM 3122.01A (*JOPES Volume I*) is also an appropriate reference when the joint command (typically the combatant command) must prepare plans and orders in accordance with specific JOPES formats and milestones for interaction with the President and Secretary of Defense. JOPES and JOPP are complementary. The aim of this chapter is to emphasize how JFCs and planners develop effects and incorporate them into relevant JOPP steps, from initial receipt of a mission to the issuance of execution directives. **The chapter focuses on mission analysis, COA determination and selected elements of operational art and design** as described in JP 3-0, *Joint Operations* and JP 5-0.

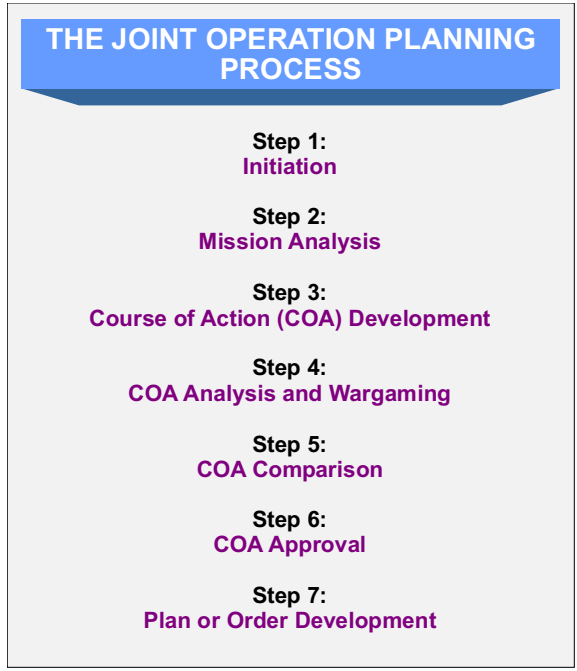

Figure III-1. The Joint Operation Planning Process

e. **All joint operation planning—contingency and/or crisis action—is enhanced through involved, top-down commander-centric processes**. The use of a collaborative information capability helps these planning processes by providing the capacity for frequent vertical and horizontally interaction between commanders and joint staffs at different echelons. JWFC Pamphlet 5, *Operational Implications of the Collaborative Information Environment (CIE)* provides greater insight into this capability.

SECTION 1: MISSION ANALYSIS

2. Effects and Their Relationship to Objectives and Tasks

a. An effects-based approach to planning is a refinement of the JOPP. It emphasizes (1) understanding the behavior of systems in an OA and (2) the importance of setting the right conditions for success. Figure III-2 highlights (in blue) those steps of mission analysis where these two key areas of emphasis have the greatest impact. The **mission analysis process is iterative and collaborative, but not always sequential**. It is, however, **always centered on and driven by the JFC's and staff's systems perspective:** data, information, knowledge, and understanding of the OE in which the friendly and adversary systems interact.

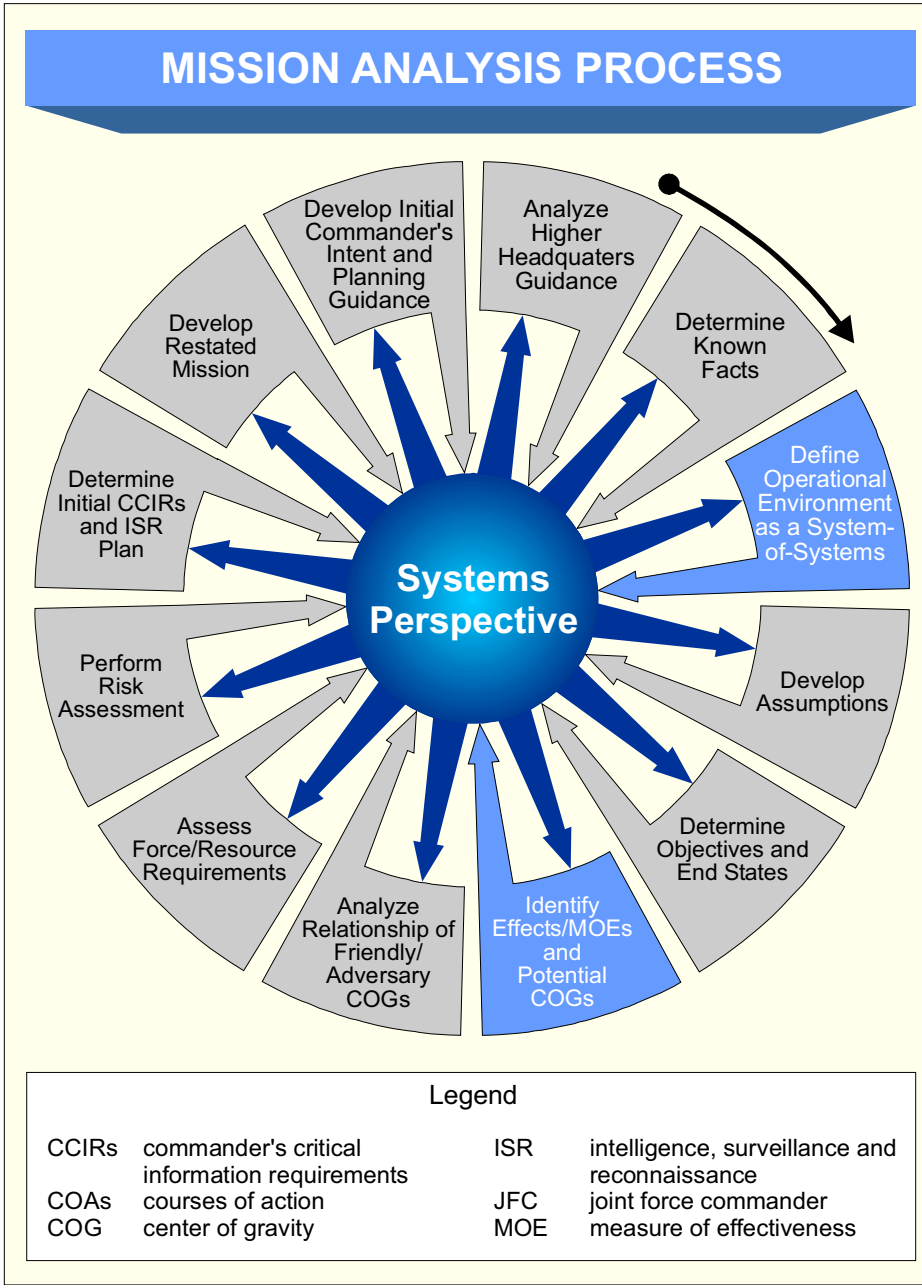

Figure III-2. Mission Analysis Process

b. Mission analysis is the process through which the JFCs, the staffs and all supporting and supported organizations and agencies develop a common understanding of the problem to be resolved and the "boundaries"—the aims, authorities, responsibilities, resources, etc.—that impact its solution. In broad terms, mission analysis gives the JFCs answers to crucial questions and provides focus to plan development:

(1) What are the **purpose and objectives**: the primary aims toward which the operation is directed?

(2) What **desired effects** (conditions), across the OE systems, need to be created or supported to achieve the objectives?

(3) What **undesired effects**, across the OE systems, need to be avoided.

(4) What friendly capabilities and resources can or cannot be used to attain the **desired effects**?

(5) What friendly actions are required, or are counterproductive, to attain the **desired effects**?

c. For situations that require the employment of US capabilities (particularly, for military operations), the President and Cabinet Secretaries typically establish a set of **national strategic objectives**. These objectives can be expressed in terms of diplomatic, military, economic, and other end states: the required set of goals for the successful conclusion of an operation. The CCDR often is responsible for more than one objective and has a supporting role in other objectives. Because **today's operations take place within a joint, interagency, multinational context**, the CCDR works (even in a unilateral US response to a crisis) with civilian leaders in DOD and other agencies to identify the major stakeholders who will or are operating in the OA. Once identified, these stakeholders become "players" in the activities and operations undertaken. **Recognition of stakeholder concerns, interests, and capabilities are important to mission analysis**.

d. The language used to craft objectives, effects, and tasks is critical to understanding how these mission elements relate to each other, both horizontally and vertically across organizations and echelons of command. **It is important to use language that clearly distinguishes effects from objectives and tasks**.

e. Objectives developed at the national-strategic and theater-strategic levels are the defined, decisive, and attainable goals towards which all operations—not just military operations—and activities are directed within the OA. **Objective statements do not suggest or infer the ways and means for accomplishment**. Passive voice is a convention that can help a JFC distinguish an objective from an effect and state objectives without inferring potential ways and means, thereby broadening the range of possible actions to achieve the objective. For example, a campaign objective ***Destroy the terrorists*** implies a military-only solution and describes a task which may or may not contribute to the goal of the coalition; however, ***Terrorists are eliminated*** or ***The elimination of terrorists*** are objective phrases that are less restrictive, providing more options and flexibility in supplementing the joint force's capabilities with non-military ways and means. In brief, an objective statement should have these attributes:

Objectives prescribe friendly goals.

Effects describe system behavior in the operational environment

Tasks direct friendly action.

(1) **Establishes a single goal:** a desired result, providing one concise "end" toward which operations are directed.

(2) **Is system specific:** identifies the key system, node or link to be affected.

(3) **Does not infer causality:** no words (nouns or verbs) that suggest ways and/or means.

f. **Effects are derived from objectives. They help bridge the gap between objectives and tasks by describing the conditions that need to be established or avoided within the OE to achieve the desired end state**. They provide an agreed-upon set of desired and undesired system behaviors within an OA, which helps focus all instruments of national/international power to achieve national/coalition and theater strategic objectives. Effects reflect the outcome of extensive collaboration with supporting and supported commands and agencies—DOD, non-DOD, US, non-US organizations and agencies operating within the area of responsibility (AOR). The JFC approves a draft priority effects list (PEL) as part of mission analysis. This initial set of effects reflects the JFC's understanding of the conditions that must be established within the OA to achieve the joint force's objectives. The vignette below, continued from Chapter I, shows how a commander could begin mission analysis,

Situation: The CCDR received direction from the President three hours ago to begin final planning for an operation with a D-day as early as one month from today and has convened a video-conference with the former US Ambassador to Brown, the CJTF, and three of the four component commanders. The CCDR wants the commanders to gain a better understanding of the President's intent and the operational environment. He will use "effects" formulation as a technique to inform them.

CCDR: "I've put the President's objectives on Screen Two, and on Screen Three I've got a picture of all the major political and military systems in the OA. I want to discuss the effects we need to attain on these systems in the theater to achieve our boss's objectives. I want to nail this down before we give it to the staffs to work. **The staffs need a clear appreciation of what we want the enemy to do and not do.** For right now I just want to focus on the political and military effects with regard to the enemy for the initial campaign phases. Also, I want you to treat the President's second objective—which I rephrased—as the overall campaign end state: 'Representative government functions in Brown.'"

"Now I want you to keep referring back to this campaign end state and the "COP" on Screen Three, especially as we discuss the desired and undesired effects on Brown and the entire region. Because this is our first cut, we should only aim for one or two desired effects for each phase. When we are done today I will put these effects in my initial planning guidance. But they will not be prioritized or as refined as the ones we will put in the PEL—after the staff has shown us some MOEs."

"So, that's what we are going to do for the next few hours. Any questions before we begin?"

consider effects appropriate to campaign objectives, and discuss these with subordinate commanders.

g. The CCDR continues this initial discussion by establishing **campaign objectives** and **identifying the effects** that support the campaign end state as shown in the example of the adjacent text box. The effects may be refined as mission analysis continues, and additional effects may be developed based on changes in Presidential or Secretary of Defense guidance and/or changes to the situation in the OA.

Presidential Objective: "Expulsion of the terrorists in the country of Brown."

CCDR Objective: "Terrorists are eliminated in Brown."

Effect: "Brown government ceases support to terrorists."

Effect: "Brown tribes cooperate with Coalition."

h. When effects statements are developed, **the text should conform to the following criteria** in order to impart the JFC's explicit intent and to clearly distinguish effects from objectives and/or tasks:

(1) **Describes the behavior of a single system or systems:** desired or undesired.

(2) **Supports one or more objectives:** aligns to strategic or operational ends.

(3) **Does not suggest ways or means:** no hint of friendly capabilities, tasks, or actions.

(4) **Does not infer causality:** the nexus between action and effect.

(5) **Uses active voice:** subject (noun), verb (active), object (noun)—who, what, etc.

(6) **May include a timeframe:** window or no later than time/date.

(7) **Is measurable:** ability to observe changes in behavior or system attributes.

i. As the planning evolves, a framework to assess the attainment of objectives and effects will be developed. Effects assessment will be discussed in more detail later in this chapter and Chapter IV.

j. At the operational and tactical levels, subordinate commanders use the effects and broad tasks prescribed by the JFCs as the context in which to develop their supporting mission plans. **Normally, the effects established by the JFCs have been developed in collaboration with subordinate commands and supporting agencies**. At a minimum, the development of effects—or at least, those in the PEL—should have the full participation by the JFCs, as well as empowered representatives from interagency organizations.

k. If appropriate, CCDRs could assign responsibility for certain effects to subordinate JTFs and components when attaining the effect is solely within their capability and authority. However, the CJTF typically will not assign effects down to the next level (the tactical level), because effects usually require resources and actions broader in scope

Situation: The CJTF convenes the first Executive Steering Group meeting composed of former and potential stakeholders in Brown: other government agencies (OGAs), nongovernmental organizations (NGOs), and intergovernmental organizatons.

CJTF: "I asked you to bring in your organizations' top three goals for Brown. We are going to take our military objectives and all of your goals and see where they may be conflictive or supportive. I understand we all come from very different organizational cultures, so we have to make sure we use a common language. Therefore, we are going to translate these goals and objectives into effects: the specific and enduring desired behaviors for the new government, the population, international commerce, the media, etc—all those areas that will compete for management attention and, of course, resources. Going through this effects development process should reveal all the 'friction points' in our cooperative efforts in Brown."

and responsibility than tactical-level subordinates possess. Therefore, the tasks required to attain a specific effect are normally spread across two or more tactical components. Often these component actions require the close and continuous coordination and "harmonization" with the activities of the interagency and international organizations operating within the OA—in order to ensure unity of effort.

l. An important product developed during mission analysis and refined throughout the planning process is the PEL. This is a list of those effects (normally only desired effects) required to achieve the JFC's objectives. The JFC does not prioritize this list until COA selection. **The PEL—the theater strategic and operational effects arrayed according to their importance —becomes an essential mechanism the JFC uses to identify the actions and their sequence, in time and space, required to develop a concept of operations (CONOPS)**. (While various commanders may enumerate effects, the PEL is owned by the CCDR and/or CJTF.) The complete PEL is normally covered in Appendix 17, Annex C, *Operations* of an order, and their assessment criteria are covered in Appendix 18, Annex C. (See Appendix B to view a sample order.)

m. The number of effects in the PEL will be dictated by many factors: the complexity of the environment, the tempo of operations, the sizes of the forces engaged, etc. **The final number of effects in the PEL for any given campaign phase must be kept relatively small** (no more than 10), reflecting the minimum number that, if attained, would achieve the requisite objectives. A large number becomes unmanageable and does not provide the essential focus necessary for plan development and effective plan execution. **At the same time that desired effects are identified, the staff also identifies a list of undesired effects that help identify those conditions that friendly actions should not produce: *Villages provide sanctuary to terrorists* and *Population provides intelligence to insurgents*.**

Task: "Support temporary autonomy of the tribes."

Task: "Prevent the terrorists from initiating or supporting an insurgency.

Task: "Deny sanctuary, support, transit, and staging to the terrorists."

n. Once the JFC and staff understand the objectives and effects that define the operation, they then match appropriate tasks to desired effects. Task determination begins during mission analysis, extends through COA development and selection, and provides the basis for the tasks eventually assigned to subordinate and supporting commands in the operation plan or order. The list of tasks in the box at the bottom of the previous page could help produce the effects described earlier. They are shown here to illustrate the difference in language between task statements and those for effects and objectives.

o. **Not all tasks are connected to effects**. Support tasks such as those related to logistics and communications also are identified during mission analysis. However, the JFC emphasizes the development of effects-related tasks early in the planning process because of the obvious importance of these tasks to objective accomplishment. **Each of these tasks aligns to one or more effects, reflects action on a specific system or node, is written in active voice, and can be assigned to an organization in the operation plan or order.** (See Section 3, Course of Action Determination Process, for more information on tasks.)

3. Mission Statement, Commander's Intent, and Commander's Guidance

a. Mission analysis normally concludes with a decision briefing by the staff to the commander. A standard mission analysis briefing includes items such as the commander's intent; the CONOPS of the next higher HQ; a review of the JFC's initial planning guidance; initial JIPB products; specified, implied, and essential tasks; and a recommended restated mission. The J-2's JIPB and COG analysis part of the brief should graphically represent the OE and COGs using the SoSA-developed node-link relationships. The briefing will incorporate a recommended PEL based on the JFC's initial guidance and the staff's analysis. From the perspective of an effects-based product, **the briefing should result in an understanding of the effects required (by phase if appropriate), the broad tasks necessary to attain them, and the associated resource implications.**

b. As part of the mission analysis briefing, the JFC approves a restated mission based on the staff's recommendation and the JFC's desired modifications. This restated mission then becomes the organization's mission. The adjacent text box shows the CCDR's approved mission statement for the handbook's vignette.

CCDR Mission Statement:

"The Coalition, on order, conducts operations to defeat Brown military forces, prevent a counterinsurgency, and establish a friendly government in order to deny sanctuary and support to transnational terrorists."

c. The JFC also refines and issues commander's intent and commander's planning guidance (these are both done as part of the mission analysis decision brief). These products shape COA development. The **commander's intent** is a clear and concise expression of the purpose of the operation and the desired end state that serves as the initial impetus for the planning process. **The JFC's intent statement can also include the effects (in the PEL) that must be attained** to achieve the operation or campaign end state. (The text

box shows a truncated CCDR's intent statement for the handbook's vignette. See Appendix B, Annex B, for a more complete example of the format and content of an OPORD to include a mission statement, commander's intent, etc.)

CCDR Intent Statement:

"Eliminate terrorists in Brown and replace the existing regime with a representative government ruled by law and able to sustain its own internal and external security."

d. To ensure focused and effective planning, the JFC and staff develop and communicate **planning guidance** that will accompany tentative COAs to subordinate and supporting commanders for their estimates of feasibility and supportability. This guidance is a verbal and/or graphic portrayal of the how the JFC envisions achieving the overall aims of the operation. Along with commander's intent, it both describes and bounds "the problem" for the staff and subordinate commands. **It describes in broad terms how the JFC visualizes the plan will unfold—its phases, priorities, and decision points**. Together, they express what the joint force will strive to accomplish within the battlespace and in general terms, who will do it. The JFC provides sufficient detail for the staff and subordinate commanders to understand **the broad tasks and desired effects** within the OE and the undesired effects to be avoided. Following the mission analysis decision briefing, the staff will normally issue a warning order to subordinate and supporting commands to formalize the commander's decision and allow parallel planning.

4. Measuring Progress in an Operation

a. **Assessment measures the effectiveness of employing friendly capabilities during joint operations**. More specifically, assessment helps the JFCs and staffs decide what to measure and how to measure it to determine progress toward accomplishing a task, creating an effect, and achieving an objective. This process begins during planning and continues throughout execution. It involves developing relevant assessment measures, continuously monitoring joint force actions, and adjusting plans and operations accordingly.

During a collaborative session when refining the "commander's intent" this question was posed.

CJTF: "Sir, what tells me we have achieved that third effect in your current PEL?"

CCDR: "When the terrorists can no longer recruit local people to act as suicide bombers, then we'll begin to see the unraveling of their indigenous network. That will be the MOE, the leading indicator."

b. During the development of effects and the PEL as part of mission analysis, the staff begins the development of those measures that will be used to determine progress toward attaining desired effects. The staff normally amplifies the JFC's priority effects by developing one or **more measures of effectiveness (MOEs)** for each effect in a PEL. An MOE gives more precision to an effect and lessens the opportunity for subordinates to misinterpret the commander's intent. **MOEs are usually quantitative measures that can show a trend, as well as progress relative to a numerical threshold.** (See Chapter IV.)

c. **MOEs are designed, first, to help refine the set of effects statements during planning and, second, to give JFCs tangible indicators that the operation is "doing the right things" during execution.** The MOEs measure system changes—usually behavioral, but can include changes in capability—in the OA: the effects on the military, political, economic and other battlespace systems. They also can measure the causal relationship between the strategic or operational effects and the tactical tasks or actions. (See Chapter IV.) In sum the totality of MOEs informs the JFCs if the battlespace is conforming to the desired strategic or operational effects or end state. **(MOEs do not measure task accomplishment or performance by friendly organizations or forces.)**

d. During planning and execution, **measurement of task accomplishment** is also an aspect of an assessment. The principal aim of this assessment is to discover if **"things were done right."** These measurements are called **measures of performance (MOPs)**.

e. Tactical commanders and their staffs also use MOEs and MOPs and provide input on indicators for both. At the tactical level, **these measures typically are part of combat assessment, which includes providing input for battle damage assessment (BDA), munitions effectiveness assessment, and reattack recommendations**. These measures offer feedback on how well tasks are accomplished and what proximate, tactical-level effects were attained.

f. Also important is the determination of the **causal relationship between effects and actions**. These **MOEs try to discover those actions that are producing desired or undesired effects**. These measures are hard to develop, especially for actions designed to generate indirect behavioral effects. For example, it is relatively easy to determine by observation the **causal relationship** between dropping a precision-guided bomb (the action) on a building (the node) to destroy the building (the target effect). However, it is not easy to determine if bombing (the action) likely terrorist strongholds caused terrorists (the node) to depart the country (the desired effect), just because the number of terrorist events per day has decreased. Perhaps the terrorists are relocating within the country in preparation for later attacks. In short, **these MOEs offer a "correlation analysis" between effect(s) and action(s).**

g. Despite the obvious challenge of measuring causality, these MOEs are crucial to an assessment, particularly when other MOEs suggest that progress in attaining the desired effects are insufficient, or worse, show regression relative to the objective or end state. Finally, assessment of effects should underpin the decision support template or matrix of the JFC. MOE indicators—the specific measurements (measure, metric, and threshold if quantitative) that show a trend toward or away from an effect—can offer evidence for a predictive judgment by a CCDR or CJTF on deciding when a phase shift should occur or when to commence branch/sequel planning. (Again, see Chapter IV for a more in-depth discussion of assessment, particularly on quantitative measurement.)

5. Commander's Critical Information Requirements

The use of effects helps the JFC's staff concentrate on those information requirements that are critical to the operation: those crucial to understanding the behaviors of key systems to determine any decision points that support JFC decision-making. **This broader systems view of the OE requires that the JFC identifies CCIRs in three interrelated areas**. First,

Situation: The Joint Planning Group (JPG) convenes to "flesh out" the CCDR's latest guidance. He has expressed some discomfort with his situational awareness of Brown's political control over its military forces. He believes these forces are not under centralized direction and has asked his J-5, J-2 and J-3 to "scrub" the PIRs so he can get a better understanding of the "links" between Brown's political and military systems. The CCDR does not want to waste any ISR resources.

JPG Chief: "The commander is concerned that we—both the HQ and the joint force—are expending too much effort collecting and analyzing data on the wrong things. As you know, the JFCs and the component commanders currently believe the enemy's COG resides somewhere in Brown's political and military systems "lash-up." Bottom line, the commander wants to ensure his CCIR produces the knowledge he needs to affect the critical capabilities and vulnerabilities of the enemy from the "get-go."

J-2 Rep: We have a good sense of the key nodes for Brown's tactical order of battle. But we have little intelligence on the political structure and who wields the levers of power during military employment. We will have to get with our interagency group. And, by the way, we still have not gotten the information from the planners on the friendly COG and its capabilities and vulnerabilities. You know the FFIRs are part of the CCIRs that feeds the JIPB and builds a COP that shows relationships between Blue, Red and Green.

the priority intelligence requirements (PIRs) need to focus collection assets on key elements of the political, military, economic, social, information and infrastructure systems. This collection effort includes and extends traditional PIRs collection. Second, the environment requirements—the "ER"—supports those actions by both civilian and military agencies directed at the unaligned (Green) or neutral elements in the OA. Finally, friendly force information requirements (FFIRs) expand to include reporting on key elements of the entire joint, interagency, multinational force. Clear identification of the JFC's CCIRs across the force is essential to effective integration of all available friendly capabilities and the ability to seize opportunities and mitigate undesired effects in the OA.

SECTION 2: COURSE OF ACTION DETERMINATION

6. Course of Action Process

a. Once the mission analysis is sufficiently complete, the staff receives the JFC's planning guidance and begins a **COA determination process**. This leads to the JFC's approval of a COA, which then forms the basis for the CONOPS paragraph in the operation plan or order. The four general steps in the COA determination process are **COA development, COA analysis, COA comparison, and COA selection**. **Figure III-3** shows a number of key steps and highlights those where the staff considers a systems perspective and the use of effects. See JP 5-0, *Joint Operation Planning*, for details on COA determination.

While the intent of mission analysis is to develop a common understanding of the problem to be solved and the boundaries within which to solve it, the goal of the COA determination process is to develop a common understanding of the solution to the problem and the sequence of actions in time and space to accomplish the mission.

b. **COA Development**. A COA typically consists of at least the following information: **what** action will be taken; **who** will take the action; **when** the action will begin; **where** the action will occur; **how** the action will occur (employment of forces); and **why** the action will be taken (purpose). Each consists of a verbal and/or graphic statement of how the operation will unfold over time, consistent with the commander's intent and planning guidance. A COA addresses deployment (when required), employment, and sustainment of the joint force, the major tasks to be accomplished by component commands, the task sequence in time and space, and supported and supporting relationships for execution of major tasks. **A good COA attains the JFC's desired effects, avoids creating undesired effects, positions the joint force for future operations, and provides flexibility to meet unforeseen events during execution.** To amplify, a complete COA typically includes:

A Valid Course of Action Is—

Adequate—Can accomplish the mission within the commander's guidance.

Feasible—Can accomplish the mission within the established time, space, and resource limitations.

Acceptable—Can balance cost and risk with the advantage gained.

Distinguishable—Is significantly different from the other courses of action.

Complete—Incorporates:

- major operations and tasks to be performed
- major forces required
- concepts for deployment, employment, and sustainment
- time estimates for achieving objectives
- desired end state and mission success criteria (including desired effects)

(1) A description of the major tasks to be accomplished, their sequence in time and space, designation of main and supporting efforts, general concept of support and supporting actions.

(2) A CONOPS, including decision points, forces required, force flow priorities, and support plans.

(3) An incorporation of other instruments of national power.

(4) Tasks for components (based on the JFC's desired effects).

(5) A joint force task organization.

(6) C2 relationships (supported and supporting relationships) for major operational tasks.

(7) Coordination measures for friendly apportionment of the battlespace.

(8) Enumeration of adversary COAs.

(9) Staff estimates to include Blue/Red assessments.

c. The highlighted COA steps (in blue) in Figure III-3 emphasize where the JFC and staff typically incorporate effects and SoSA-enhanced JIPB results.

(1) Using a SoSA technique, JIPB produces a portrayal of the OA as an interactive system composed of nodes (relevant people and things) and their links (interrelationships) for friendly, adversary, and unaligned systems.

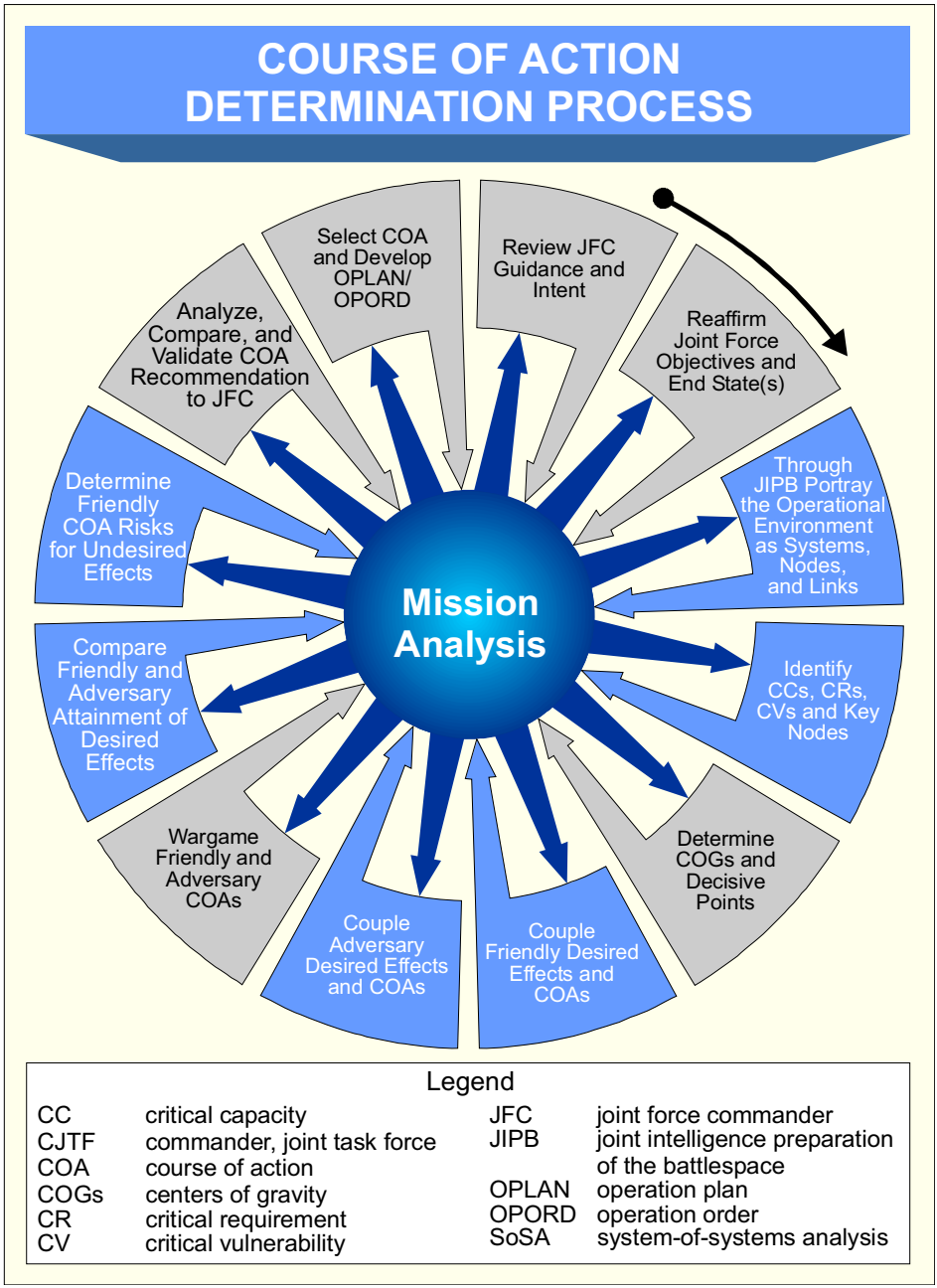

Figure III-3. Course of Action Determination Process

(2) These systems are assessed to discover their CCs and CRs—expressed as systems, nodes and links—in order to confirm the centers of gravity first identified during mission analysis and then to find which nodes and links—decisive points are most vulnerable in a COG. This assessment includes both adversary and friendly COGs.

(3) Friendly desired effects (determined from mission analysis) are then coupled to those potential COAs most likely to produce the objectives.

(4) Adversary desired effects are also identified and coupled to their associated COAs.

(5) After wargaming the interaction of friendly and adversary COAs, a comparison of the resultant friendly and adversary effects and actions are accomplished.

(6) Finally, before friendly COA validation and selection, the risks involved in each candidate COA are assessed in terms of their probability for creating unacceptable or undesired effects for the stakeholders.

d. **COA Analysis**. After the joint force staff validates potential COAs, they, analyze and compare them to determine which COA (or combination) holds the greatest promise of success. The commander and staff analyze each tentative COA separately. **Given that each COA is valid (based on criteria described earlier) at this point in the process, the focus is now to determine which COA will most effectively accomplish the mission**. This analysis could cause the JFC to refine effects statements or to change the order in which effects will be attained, which could affect tasks to components and the final CONOPS. Analysis of the proposed COAs should reveal the following:

(1) The adversary's potential COA in response to each friendly COA.

(2) Key decision points.

(3) Task organization adjustment.

(4) Incorporation of other instruments of national power.

(5) Identification of plan branches and sequels.

(6) Refinements to statements of desired and undesired effects.

(7) A better understanding of risk and the probability of undesired effects.

(8) Identification of high-value targets: vulnerable key nodes/CCs.

(9) Data for use in a synchronization matrix or other decision-making tool.

(10) Recommended CCIRs.

e. A rigorous, comprehensive analysis of tentative COAs is difficult even without time constraints. **Wargaming** provides a means for the JFC and staff to analyze a tentative COA and obtain insights that otherwise might not have been evident. Wargaming is a conscious attempt to visualize the flow of the operation based on joint force strengths and dispositions, adversary capabilities and possible COAs, and other aspects of the OE. Each critical event within a proposed COA should be wargamed based upon time available using the action, reaction, counteraction method of friendly and/or opposition force interaction. The wargaming process can be as simple as a detailed narrative effort which describes the action, probable reaction, counteraction, assets, and time used. A more comprehensive version is the "sketch-note" technique, which adds operational sketches and notes to the narrative process in order to gain a clearer picture. The most sophisticated form of wargaming is modern, computer-aided modeling and simulation. However, the most important element of wargaming is not the tool used, but the people who participate. **Staff members involved in wargaming should have been deeply involved in the development of COAs and the PEL**.

f. **A proactive staff cell that can aggressively pursue the adversary's point of view when considering adversary counteraction is essential to COA analysis**. This "Red Cell" role-plays the adversary commander and staff. If formed, the cell would work for the joint force J-2 and typically would reside in either the joint intelligence support element (JISE) or the joint planning group (JPG). The cell would be cross-functional in composition, with representatives from the intelligence, planning, operations, and logistic functions (and others as required) to provide a complete picture of the adversary's capabilities, limitations, and likely actions. The Red Cell develops critical decision points relative to the friendly COAs, projects adversary reactions to friendly actions, and estimates adversary "losses" for each friendly COA. By trying to "win the wargame" for the adversary, the Red Cell helps the JFC's staff fully address friendly responses for each adversary COA. **If subordinate functional and Service components establish similar cells that mirror their adversary counterparts, this Red Cell network can collaborate to effectively wargame the adversary's full range of capabilities against the joint force**. In addition to supporting the wargaming effort during planning, the Red Cell can continue to view friendly joint operations from the adversary's perspective during execution.

g. **COA Comparison**. COA comparison starts with all staff members analyzing and evaluating the **advantages and disadvantages of each COA** from their functional and cross-functional perspectives. Staff members each present their findings for the others' consideration. Using evaluation criteria developed before the wargame, the staff outlines each COA and highlights its advantages and disadvantages. Comparing the strengths and weaknesses of each COA identifies its advantages and disadvantages relative to others. The Red Cell should participate in this process with its perspective of the effectiveness of each friendly COA. Actual comparison of COAs is critical. A common, proven technique is the **decision matrix**, which uses evaluation criteria to assess the effectiveness and efficiency of each COA—relative to desired and undesired effects. However, a decision matrix alone cannot provide solutions. Its greatest value is in providing a method to compare COAs against criteria that, when met, can produce success.

h. **COA Selection**. Using a decision support template, points-based decision matrix, or other decision-support tools, the staff determines the best COA to recommend to the commander. The staff briefs the commander on the COA analysis and wargaming results, including a review of important supporting information. This information could include the intent and desired effects of higher commanders; the current status of the joint force; the current JIPB; assumptions used in COA development; how the recommended COA best attains the JFC's desired effects and avoids undesired effects; and other factors as required. Ultimately, JFCs select a COA based upon the staff recommendations and their personal experience, intuition, and judgment.

7. Plan or Order Development

a. During plan or order development, the JFC and staff, in collaboration with subordinate and supporting components and organizations, expand the approved COA into a detailed joint OPLAN or OPORD by first developing an executable **CONOPS — the eventual centerpiece of the operation plan or order**. The staff writes (or graphically portrays) the CONOPS in sufficient detail so that subordinate and supporting commanders understand their mission, tasks, and other requirements and can develop their supporting plans accordingly. It clearly and concisely expresses what the JFC plans to accomplish and how it will be done using available resources. Among many factors, the CONOPS:

(1) States the commander's intent, **including desired and undesired effects**.

(2) Links strategic objectives **to strategic and operational effects** and the tasks assigned to subordinate and supporting commanders.

(3) Provides for the application, sequencing, synchronization, and integration of forces and capabilities in time, space, and purpose.

(4) **Includes a description of the contributions of other instruments of national power**.

(5) Describes when, where, and under what conditions the supported commander intends to give or refuse battle, if required.

(6) **Focuses on friendly and adversary COGs and their associated critical factors**.

(7) Provides for controlling the tempo of the operation.

b. During CONOPS development, the JFC must assimilate many variables under uncertain circumstances to determine the conditions (effects), sequence of actions, and application of forces and capabilities to achieve strategic objectives. **JFCs and their staffs must be continually aware of the strategic objectives and associated effects that dominate the JOPP at every juncture**. If operational objectives and effects are not linked to their strategic counterparts, the desired "nesting" is broken and, eventually, tactical considerations can begin to drive the overall strategy and put operations between echelons at cross-purposes.

c. **From the beginning of the planning process, planners consider elements of operational design**, such as COGs, lines of operations (LOOs), and decisive points. They use these elements, particularly, in conjunction with COA determination. Chapter II discussed COG analysis in the context of a systems perspective of the OE and "direct versus indirect" methods. Section 3 of this chapter addresses other relevant elements of operational design in the context of a CONOPS.

SECTION 3: CONCEPT OF OPERATIONS AND OPERATIONAL DESIGN

8. Related Operational Design Elements

JFCs and their staffs use various elements of **operational design** as they identify, analyze, and compare COAs and eventually develop the CONOPS for the operation plan and order. During execution, they continue to consider design elements and adapt current operations, future operations, and future plans as the joint operation unfolds. They base this adaptation on their assessment of the success of their actions in attaining the desired system effects within the OA, which will lead to the termination of an operation and achievement of the end state and objectives. While the staff uses a number of design elements in this process, the accompanying text box highlights those emphasized in this and previous chapters, as well as additional elements (such as "effects") that could become doctrinal elements of operational design.

Operational Design Elements

- Termination
- End State and Objectives
- Effects
- Decisive Points
- Arranging Operations
- Forces and Functions
- Lines of Operations
- Center of Gravity
- Direct versus Indirect

9. Termination

a. Early during the mission analysis process, **establishing under what conditions military operations can be terminated is crucial** to understanding the intended "ends" of a campaign. The end state conditions must shape the development of the entire plan. Each phase of the campaign is shaped by its preceding phase. The actions designed to achieve phase transition conditions and campaign effects must therefore be planned, sequenced and executed so as to achieve the designated termination criteria. This appreciation will play a major part in what military operations are conducted and in how and where the joint force employs its lethal and nonlethal capabilities. Termination of military operations does not always equate to final crisis resolution. It can mean that the conditions in the crisis area no longer require a significant military presence to support continued actions by interagency and multinational organizations. In sum, **military planners need to understand that the ways and means used to conduct their operations have a long term impact on the follow-on non-military operations**.

b. Criteria for ascertaining termination conditions need to be kept within the regional context in which the crisis or operation takes place. While commanders desire clear, attainable, measurable termination criteria around which to build their plan, **the conduct of military**

operations in a supporting role to resolve a crisis may make the military end states hard to define. Nevertheless, JFCs must include an end state and termination criteria review in their overall assessment process during campaign execution.

10. Arranging Operations and Phases

a. Every campaign or operation can be divided into phases that describe a set of pre-crisis, crisis and post-crisis activities. These phases are not limited to a prescribed number. Joint doctrine is moving to adopt the following six phases: (1) Shape, (2) Deter, (3) Seize the Initiative, (4) Dominate, (5) Stabilize, and (6) Enable Civil Authority. Phases help JFCs think about ends, ways and means when framing their planning guidance and developing their plans. A phase can bound the JFC's priority of effort during a discrete timeframe. Although phases overlap, **each phase sets the conditions for succeeding phases**. The ultimate aim of later phases, obviously, is to create the effects (conditions) needed for transition to civilian authority. As planners seek to integrate the activities associated with each phase, several considerations should be kept in mind during design and arrangement of operations within an operations plan.

b. Because the requisite conditions—behaviors and capabilities—to attain desired effects may span multiple phases, the effects on the adversary alone cannot be used as phase end states. Therefore, **conditions and capabilities that end or begin a phase are identified for friendly and unaligned systems as well as enemy systems**. This combination of effects and capabilities becomes the criteria for entering the next phase of the operation and informs/determines the CCIRs and decision points. These decision points, in turn, require an understanding of effects (battlespace behavior) and friendly tasks, capabilities, force positioning, etc.

c. Every plan is synchronized in purpose, time, space, and resource application. A plan describes across time (phase) how a unit will organize its resources for specific purposes (supported/supporting actions by subordinate and supporting units /organizations) in a specified portion of the battlespace to accomplish its mission and the CCDR's objectives.

11. Effects and Decisive Points

a. In an effects-based approach, applying actions to decisive points (key nodes) in time and space requires greater understanding of the OE because of the need to closely link military actions with those of the other members of the joint, interagency, multinational team. First, it demands an appreciation of the concurrent actions being taken by the interagency and the multi-national community. Second, an effects-based approach requires the JFCs to have a sense for the effects their actions will have on the systems, their decisive points and how actions directed against one system affects other systems. **Certain effects will apply throughout the entire operation while others will be applicable to specific phases**.

b. Key to COA determination **is identification of the decisive points within the interrelated systems of the OA and the management of JFCs' decision points to orchestrate the sequencing of subsequent actions against these decisive points**. Ascertaining these decision points is critical to allowing sufficient lead-time to set the conditions for subsequent operations. Equally important they are tied to decisions to execute branch and sequel plans to take advantage of opportunities that develop and to

preclude undesired effects. Effects can be linked to the decision support matrix providing the commander with another method to phase completion and/or the initiation of the next phase of the operation. **Every COA selected by the JFC contains decisive points and their associated CCIR**.

c. Based on both the CCDR's and CJTF's assessment of the OE and in conjunction with embassy(s) and other non-military stakeholders, effects are determined that once attained, will achieve the theater and national objectives. These effects are generated by actions of multiple agencies within an OA. Strategic and operational effects are generally not attained quickly, but evolve through the cumulative outcomes of the tasks/actions executed over multiple phases. **CJTFs do not generally need to develop their own effects**. In some cases, a CJTF may need to create specific effects within the JOA. When required, these CJTF effects must be nested within those developed and placed in the PEL in collaboration with or by the higher command. (Some subordinate commands have used terms like "enabling effects" to describe these supporting effects, but this technique is not recommended)

12. Forces and Functions

a. An **effects-based approach increases the emphasis on how to affect system functions in the OE**. The staff concentrates on how the various battlespace systems work or function. By thinking about function, rather than specific forces alone, they can expand the number of options or range of actions that might produce the desired effects on an enemy system or unit beyond just force-on-force kinetic engagements.

b. A classic example is the Nazi war machine that was virtually invincible at the tactical level of war. Consequently, Allied planners began to analyze the entire national system of the Third Reich to determine what elements (nodes and links) allowed it to function as an effective

Situation: One hour into a JPG meeting, the information operations representative—in a highly agitated state—interrupts the ongoing discussion.

IO Rep: You know our efforts and those of our interagency friends are not going to be well integrated into this effects-based 'stuff' unless our non-kinetic world can be translated into your kinetic world. 'Fires and effects' guys keep talking about applying actions to key nodes to affect system functions, but then all your nodes are just physical things: command facilities, platforms, communications or whatever. We deal in the cognitive and information domains—the world of ideas, beliefs and values that affect human intentions and motivations. Our target is the 'hearts and minds' of the enemy and ultimately, that of world opinion."

JPG Chief: "I was going to deal with this later, but I will give you an answer now. Actions, kinetic or non-kinetic, are applied to nodes. In the IO community these nodes are more often human nodes: decision makers, elite groups, specific populations, and so forth. If the target for action is an ideology, it is normally expressed in a document, pronouncements from a leader, et cetera. These informational 'things' are almost always manifest in a physical form—a holy book, a video broadcast, legal papers, a military code of conduct, Okay? So, I can't see why the IO world can't use the same techniques as everyone else by expressing their targeted systems as nodes and functional links, even if those links are cognitive things."

military power. **One solution to overcome their "genius for war" was to look at Nazi equipment production, more specifically its industrial infrastructure and processes, and then to attack those key industrial elements that enabled its warfighting capacity**. Attacking functions rather than just forces helped achieve the objective: military defeat. In sum, the combination of force attrition and industrial disruption contributed to the ultimate collapse of the military, despite it remaining a potent force at the tactical level to the end of the European Campaign.

c. Whether a military system or any other battlespace system, **understanding how it functions**—the interconnectivity of its resources and processes to produce purposeful effects—is key to discovering how best to influence the system. If it is an electricity power plant, the task is relatively easy because they all function essentially the same way. If it is a transnational terrorist network that operates under mission orders, the task is vastly more difficult to discover how it functions now and how it will adapt in the future. But it is worth the effort of friendly intelligence, if system functions can be discerned.

13. Lines of Operations

a. LOOs are a way of organizing common ends, ways, and/or means. They normally span multiple phases. LOOs provide a method to visualize "what" and "how" campaign objectives will be achieved. (Figure III-4) Because of the "systems" impact of all friendly actions in the OE, tasks can support multiple LOOs, and a single LOO can support multiple effects and objectives.

b. In joint operation planning, **LOOs can help convey effects or the associated major tasks required to achieve CCDR's end state**. They establish the major "thrust lines" around which the overall plan is designed. They can be developed as (1) "instrument of power"

Situation: The Chief of Staff has requested a "simple" graphic portrayal of the CONOPS from J35 to be briefed at an upcoming Joint Interagency Coordination Group meeting, and the Chief of Future Operations is giving instructions to the division.

Future Ops Chief: "The catchword for this task is 'simplicity,' 'simplicity,' 'simplicity.' I want you to use lines of operations and I want, at least four lines—military, political (or diplomatic), economic and information. And all these lines must converge on the political end state that we've had from the start: 'a functioning representative government in Brown.' Also, I only want to portray effects and their associated tasks. Oh, yes, put some lines or color schemes on the charts to distinguish between campaign phases. And I do realize the phases overlap, but the briefer can handle that."

"But whatever you do, don't put effects and tasks on the same line. It gets too confusing. Too often the staff has put dissimilar "objects" on a single LOO and gets their 'lunch handed to them' by the directors for not separating 'ends' from 'means.' In fact, for this interagency meeting, let's just have one slide with the effects and another with just the tasks. Then, we might have some backups that show parallel lines with both the effects and their enabling tasks: one slide for each set of LOOs—diplomatic, military, and so on.

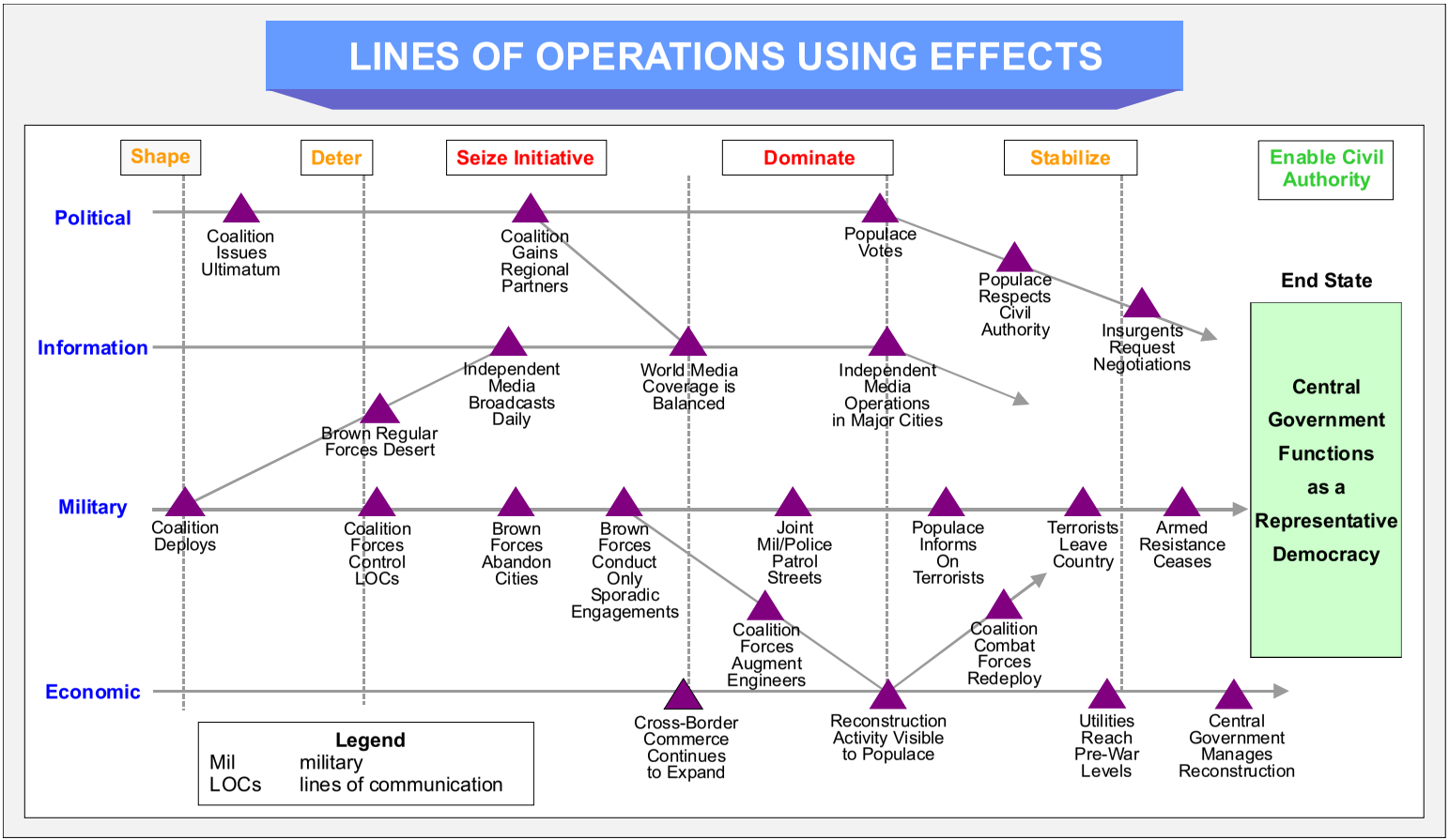

Figure III-4. Lines of Operations Using Effects

Situation: The CCDR has selected a course of action and has tasked the staff to produce the OPORD for Operation PRECISE PURGE. Now in a conversation with the directors, the commander wants to review and reinforce the process they just went through in constructing the CONOPS and to prepare them for the inevitable adjustments during execution.

CCDR: "Our primary business is warfighting, but I know you must have thought during these eight weeks of planning that the development of the CONOPS was all about nation building. But we had to fully understand the termination criteria—the end state, objectives, and effects—before we could address the front-end lethal and destructive tasks of our military mission."

"Keeping the President's objectives always in mind, we have devised a forcible entry operation, a conventional and concurrent counterinsurgency operation combined with an expansive information operation. We have all understood from the start that eliminating the Brown regime will create a tremendous power vacuum that could compound the global terrorist threat—not only in Brown, but the entire region. Therefore, our CONOPS has been built around a strategy of precise force application: the employment of sufficient force to achieve the desired effects on three enemies—the Brown government and ruling party, the terrorists and any potential insurgents. And we 'gamed' the various COAs to preclude unacceptable effects on friendly forces and the region. In short, we have done our best to merge our political, military, economic and informational instruments for unified action to enable the standup of a functioning, indigenous civil authority within the first 15 months of the operation."

"The key has been our systems approach: identifying relevant battlespace systems, how they function and how they could adapt during our campaign. With a lot of help from 'State' we think we have a good feel for the tribal system and how it will react to the collapse of the ruling party. We are as prepared as we can be for going after specific objectives or targets and refraining from others. And, of course, we will preserve the country's infrastructure at every opportunity as long as we can keep friendly forces out of harm's way. And we have also established measures to give us feedback, if adversary or neutral systems begin behaving differently than we anticipated so we can adjust operations."

" To sum up, throughout mission analysis and COA development we have made sure each major action can be tied to a specific desired effect and that effect represents a precondition to the attainment of the Brown and regional desired end state. We have tried to anticipate when effects would occur and the order they might occur. But we all understand that certain conditions or effects may be unrecognizable until they are past the 'tipping point.' And we realize that the adversaries' centers of gravity are likely to shift over time as we take down the Brown regime and begin to install the replacement government. Clearly, new systems, nodes and links will evolve and produce unanticipated effects on friendly forces. Again it's been a tough two months, but we are as prepared as any force who has ever had to undertake a similar mission. I thank you for your effort and remaining flexible in this unfamiliar effects-based thinking process. I assure you when we get into execution we will not be disappointed in our planning.

groupings (political/diplomacy, military, economic, and informational); (2) along functional categories such as security, governance, economic development, communications; or (3) other combinations that provide a logical breakdown of the major activities required to resolve the crisis. **Linking of LOOs to specific effects and objectives helps the commander keep the overall focus and purpose of individual actions in context and provides the framework to identify the timing of decision points and assessment actions** (Figure III-4). As stated above, LOOs are a way of arranging effects (or tasks/actions, but not both on the same line) to achieve overall objectives or end states.

14. Conclusion

a. An **effects-based approach to planning offers more options to the JFC**. It potentially brings more capabilities to bear on the OE. In planning, the commander's intent and early identification of desired and undesired effects steer both the mission analysis and COA determination processes. The premise is that if these joint command and staff processes are done with effects in mind, then adaptation during execution is made far easier and more rapidly. But more importantly, an **effects-based approach to planning enhances the probability that objectives can be translated more accurately into actionable direction by the JFCs**.

b. **The key to an effects-based approach to the JOPP is for the JFCs to have a shared common understanding of the effects required to achieve campaign objectives before tasks are identified and supporting/supported relations developed with non-military agencies and organizations that will be operating within the OA**. This understanding recognizes that the military commander may be, at best, one of several "equals" operating within the designated OA. And the better the collaborative climate, the more likely the various interagency capabilities can be integrated and brought to bear for effective, long term crisis resolution.

c. In sum, an effects-based approach to planning is designed to institutionalize some of the thought processes, procedures, and techniques of the most successful leaders of the past and present. It represents a more inclusive **effort that will bring greater robustness and precision to the JOPP while enhancing the opportunities to promote unified action**.

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CHAPTER IV
EXECUTION

"No matter how involved a commander may become in the elaboration of his own thoughts, it is sometimes necessary to take the enemy into account."

Winston Churchill

1. Introduction

a. Execution can be best characterized as monitoring, assessing, planning and directing actions in the battlespace to create desired effects. Like planning, **execution is a cyclical, iterative and multi-echelon collaborative process**. The execution process uses operational design and the feedback mechanisms—MOE and MOP indicators—developed in the planning process to adjust tasks and actions that fail to yield the desired effects as determined in the assessment process. The pace of execution differs at each HQ echelon and within those echelons—generally, being less time sensitive at the theater strategic level as compared to the tactical level, and current operations moving more rapidly than future plans. Figure IV-1 depicts these relationships with the size of the respective discs indicative of the scope of execution at each echelon.

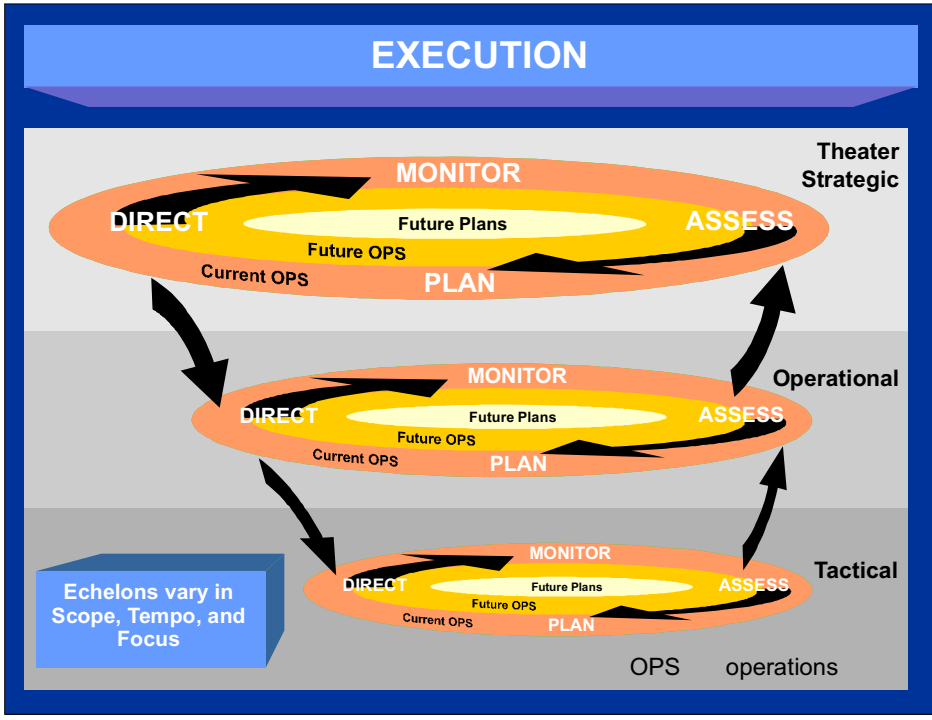

Figure IV-1. Execution

b. The execution process puts the joint plan into action by integrating the instruments of national power to create desired effects on select systems in the OA. These effects are realized by sustaining a situational understanding of the OE through continuous assessment and adaptation. Moreover, the JFC cannot loose sight of the fact that the application of combat power generates tactical effects—the death and destruction of forces, for example. **Properly devised, these tactical effects may produce important strategic or operational system effects. Improperly devised, they may achieve the desired tactical effects, while creating undesired system effects**. Tactical expedience needs to be weighed against longer term system consequences. Accordingly, the JFCs coordinate, integrate, and synchronize component tasks to ensure attainment of desired effects by phase and in conformity with campaign objectives and the PEL.

c. Consistent with current practices at joint HQs, **a dynamic tasking and re-tasking process cycle is necessary to monitor, assess, plan and direct the actions that can attain the requisite effects to meet campaign objectives**. During execution, plan adaptation occurs synchronously at each command echelon within certain windows: (1) current operations, (2) future operations, and (3) future plans (Figure IV-2). Task execution is constantly correlated to effects attainment, which the JFCs have coupled to operational and strategic objectives. To sustain this alignment, the joint force performs three critical activities: (1) locating and monitoring key systems, (2) directing actions against key nodes within those systems and (3) assessing the system effects of those actions.

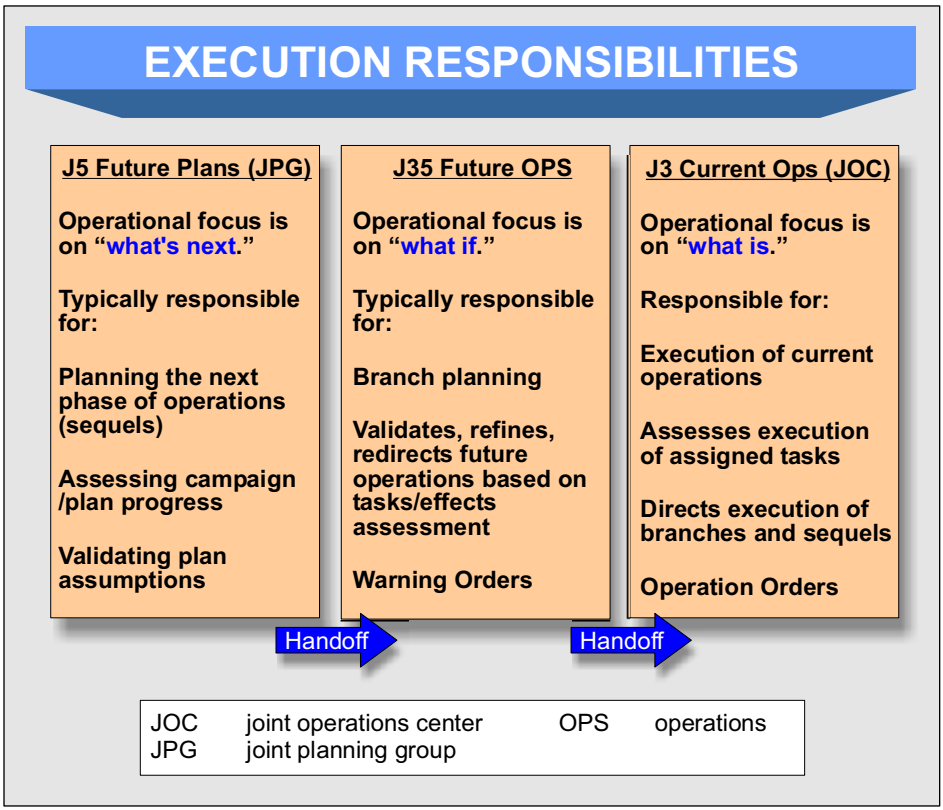

Figure IV-2 Execution Responsibilities

2. Headquarters Operations

a. Combatant command and JTF HQ develop a daily, weekly, and monthly battle rhythm integrating the activities of the three primary event horizons described above to support the JFCs' decision-making process. Figure IV-3 is a sample of the CCDR's daily battle rhythm (a CJTF battle rhythm would be similar, but tailored to echelon requirements). During high tempo operations, staff activities take place more often than during operations that are unfolding less rapidly. The joint battle rhythm supports **centralized control of strategic/operational planning and decentralized execution of tactical actions**. The rhythm includes these iterative steps for the monitor-access-plan-direct cycle:

(1) **Maintain the COP for the OA: the collective shared situational awareness of the OE—adversary, friendly, and unaligned system status**.

(2) Review execution of subordinate tasks to ensure they are accomplished as intended.

(3) **Assess operations and recommend adjustments to ensure desired effects are attained and undesired effects are avoided**.

(4) **Identify deficiencies and recommend improvements to operations effectiveness and efficiency based on assessment of MOEs and MOPs**.

(5) Assist the rapid adaptation of plans and orders relating to current operations. (Subsequent planning efforts are the result of assessing the direction of current operations and developing estimates for changing or continuing in that direction. Subsequent planning also refines previously identified branches or sequels, or develops new COAs along with revised/new assessment plans.)

(6) Issue revised plans and orders.

b. In a crisis HQ operations are normally organized within the following structure: **boards**, meetings chaired by a senior leader who may be joined by representatives from all major staff elements with the purpose of gaining a decision; **centers**, enduring organizations with a designated location or facility and a supporting staff that is designed to perform a broad function within the HQ; and **planning teams**, cross-functional staff elements formed to perform specific tasks. Planning teams are not enduring and dissolve upon completion of assigned tasks. Finally, **cells** or **working groups** are organizations formed around a specific function whose purpose is to provide analysis to users. Cells and working groups consist of a core functional group, other staff, and component representatives. They are chaired by a J-code functional lead. Cells and working groups can be enduring or ad hoc and can support multiple planning teams. **Generally all these organizations, while led by a member from a specific staff directorate—J/C-3, J/C-4, J/C-2—are cross-functional in membership and operation**. (See Appendix A for more organizational details.)

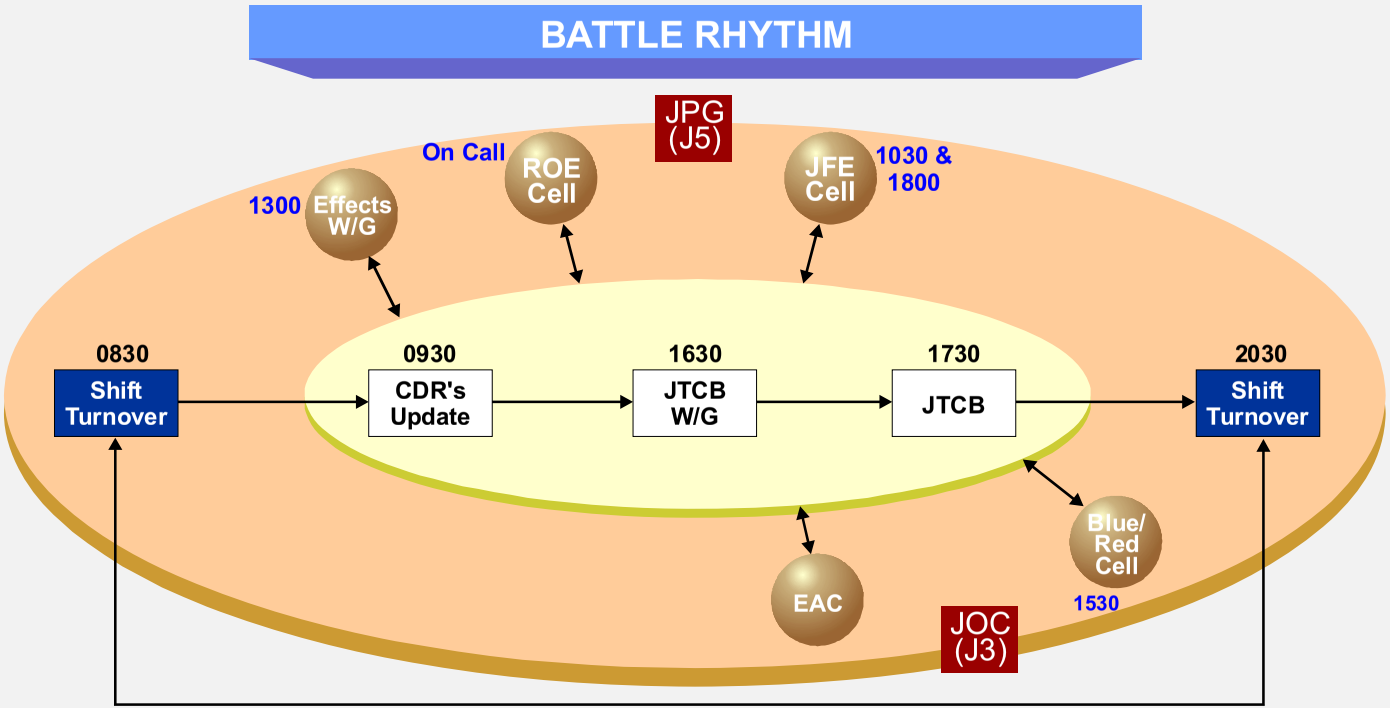

Figure IV-3. Battle Rhythm

c. **Two staff organizations are unique to effects-based processes: Effects Working Group (EWG) and Effects Assessment Cell (EAC)**.

(1) **Effects Working Group**. During plan development, the EWG is responsible for the development of strategic and operational effects. Additionally, it selects explicit actions against specific nodes required to achieve the desired effects and identifies resources to implement those actions. During execution, it analyzes the results of the EAC and provides recommendations to the JFC. The EWG is chaired by a senior J-3 or J-5 representative and is composed of senior representatives from the joint staff directorates, the Joint Intelligence Center (JIC) or Joint Intelligence Support Element (JISE), and interagency organizations. It may also include its own dedicated effects assessment personnel and SoSA analysts. In sum, **this group provides the primary venue for developing initial recommendations/effects guidance** that directly informs the JFC and includes these specific responsibilities:

(a) Develops Priority (or Prioritized) Effects List and recommends changes to it.

(b) Works with SoSA analysts and/or the J2 to determine relationships of key nodes to desired effects.

(c) Develops MOE indicators and recommends MOE additions or changes.

(d) Conducts analysis to determine why the tactical action either contributed, or failed to contribute to the attainment of the desired effect.

(e) Recommends alternate options to JPG planners (or future operations staff) to address deficiencies in effects attainment.

(2) **Effects Assessment Cell**. The effects assessment function is normally conducted by an organization under the supervision of the J3, with significant participation by the J2, J5 and relevant agencies. Normally, this action officer-level cell is chaired by a J-3 representative. Cell membership includes joint directorate representatives, JIC/JISE personnel, interagency representatives, component planners, dedicated effects assessment personnel and SoSA analysts. The EAC assesses reports and analysis from all available sources (functional components, JIC, JIACG, and other organizations supporting the plan) to determine if, based on the status of MOE and associated indicators, the joint force's actions are causing the desired system behaviors. The cell provides an integrated assessment of trends using pre-established MOE indicators to determine progress: the desired system changes that result from actions taken against targeted nodes. The EAC receives inputs from the JIC and other organizations tasked to report on indicators (based on the collection plan). This input is normally objective or quantifiable measures predetermined as part of the planning process. This cell meets prior to each EWG meeting to provide a timely and relevant assessment. Coordination with the J-2, IO/STO, JIC, JIACG, and components is usually done prior to submission of the MOE assessment summary to the EWG. See paragraph 3i for more information on how the EAC processes MOE assessment results.

d. Following the issuance and synchronization of the OPORD/FRAGORD, component HQs support each other in finalizing their supporting plans and conducting joint and/or combined operations to execute assigned tasks directed toward attaining desired effects and avoiding undesired effects. Component HQ execution tasks include:

(1) Review JFC guidance and intent.

(2) **Examine approved effects for prioritization and sequencing.**

(3) **Maintain systems perspective of the OA.**

(4) Appraise approved COA component integration matrix.

(5) **Monitor MOPs continuously for task accomplishment.**

(6) Confirm that ongoing operations sustain "ends to ways to means" alignment relative to the JFC's intent.

(7) Assess current state of friendly forces and resources: the disposition, allocation, and movement of forces: people and materiel.

(8) Assist in the adaptation of plans and orders relating to current operations.

(9) Evaluate actions to identify operational deficiencies and recommend methods to improve execution effectiveness.

e. With an understanding of the strategic and operational effects in the PEL and a systems perspective of the OA, **component commanders are able to exercise their own initiative**, within the JFCs' intent, to achieve theater objectives and assigned missions: to direct, prioritize, synchronize and sequence tactical tasks and actions. Mission type orders to tactical commanders include clear higher HQ commander's intent, mission and purpose statements. In short, below the JTF HQ level, **effects are not separately stated, but are an essential part of commanders' intent at every joint echelon**.

f. At echelons below the component HQ level, tactical units quickly assemble and synchronize their actions before or at the point of application. Upon completion of their task, the units check back with their parent components to review how they did and to prepare for their next task. Within this adaptive execution process, plans and orders are issued as the situation fluctuates from the interaction of friendly and adversary systems. In sum, **execution requires highly flexible tactical units with the equipment, procedures, and training necessary to make rapid adaptation routine**.

3. Assessment of the Joint Operation

a. **Assessment measures the effectiveness of joint operations**. More specifically, assessment helps the JFC **to determine progress toward accomplishing a task, creating an effect, or achieving an objective**. It helps identify opportunities and any need for

course corrections. This process involves continuous assessment of joint force performance throughout planning and execution.

b. Assessment occurs at all levels and across the range of military operations. In a general sense, the term "**assess**" can apply to a wide range of command and staff activities that determine the status of something, such as assessing the organization's readiness and morale, assessing the suitability of a site for occupation, and assessing risk and threats to the joint force. During planning and preparation for an operation, for example, the staff continuously assesses the joint force's ability to execute the plan based on available resources and changing conditions. However, **the following discussion focuses on assessment for the purpose of determining the progress of the joint force toward attaining effects and accomplishing tasks**.

c. **JFCs and their staffs determine relevant assessment actions and measures during planning**. They consider assessment measures as early as mission analysis, and include assessment measures and related guidance in commander and staff estimates. They use assessment considerations to help guide operational design, because these considerations can affect the sequence of actions along lines of operations. They adjust operations and resources as required, determine when to execute branches and sequels, and make other critical decisions to ensure current and future operations remain aligned with the mission and desired end state. **Normally, the joint force J-5 is responsible for developing appropriate measures to determine the progress toward attaining effects. The J-3, assisted by the J-2 and J-5, is responsible for coordinating assessment activities (ways and means to measure progress)**. Various elements of the JFC's staff use assessment results to adjust both current operations and future planning.

d. Although tasks, effects, and objectives in major operations and campaigns are different from those in lesser contingencies, assessment is just as relevant. Even in non-combat operations, assessment of progress is important and often is more complex than traditional battle damage assessment (BDA). **As a general rule, the level at which a specific operation, task, or action occurs should be the level at which such activity is assessed, while effects assessment is done at the HQs assigning tasks**. This procedure properly focuses assessors at each level, reduces redundancy, and enhances the efficiency of the overall assessment process. Tactical-level assessment typically focuses on task accomplishment and target engagement, while strategic- and operational-level assessment efforts concentrate on broader tasks, effects, and objectives. Assessment of results at the tactical level helps JFCs determine operational and strategic progress, therefore JFCs must have a comprehensive, integrated assessment plan that ties assessment activities and measures at all echelons.

e. Assessment helps the JFC identify potential mismatches between task accomplishment and the achievement of higher-level effects and objectives. These mismatches may result from resource shortfalls, inadequate progress in meeting required operational milestones, or misdirection of allocated resources or assigned tasks. This assessment looks at plan execution to date to identify any "delta" between current and desired effects within the OA. It validates and refines future operations and plans and provides a forum for the JFC to provide guidance and direction. Assessment results can

lead to refinement of effects statements; reapportionment of resources; changes in force requirements and flow; assignment of additional and/or alternative tasks; changes in ROE; decisions related to phase transition; and requests to higher HQs or supporting government agencies for assistance. This final stage of **the overall assessment process seeks to answer the questions "how effective is the plan" and "are the assigned missions, objectives, and desired effects being achieved."**

f. **Strategic-Level and Operational-Level Assessment**.

(1) While tactical assessment focuses on target engagement and task accomplishment, assessment at the operational and strategic levels concentrates more on measuring progress toward creating desired effects. **Effects assessment (EA)** typically is broader than combat assessment (CA) and focuses on measuring strategic and operational effects that support strategic and operational objectives. EA helps the JFC determine if the joint force is "doing the right things" to achieve objectives, not just "doing things right" at the tactical level. Effects can result from both combat and noncombat actions with both lethal and nonlethal means. The JFC also can use effects assessment to determine progress toward success in those noncombat operations for which tactical-level combat assessment ways, means, and measures do not apply.

(2) **Friendly diplomatic, informational, and economic actions applied to systems in the OE can impact military effects and objectives**. When relevant to the mission, the JFC also must plan for using EA to evaluate the results of these actions. This typically requires collaboration with other agencies and multinational partners—preferably within a common, accepted process—in the interest of unity of effort. Many of these organizations may be outside the JFC's directive authority. Accordingly, the JFC should grant some joint force organizations direct liaison authority with key outside organizations—such as national intelligence agencies, intelligence sources in other nations, and other combatant commands—to the extent necessary to ensure timely and accurate assessments.

(3) **The frequency of effects assessment may be daily, weekly, or monthly** based on the echelon and tempo of operations. Assessments conducted at every echelon can contribute to the JFCs' overall assessment since the non-military instruments are applied at all levels. **Active participation by the joint force component commands, supporting commands, multinational partners, and relevant agencies is essential to an accurate and comprehensive assessment of the joint operation**.

g. **Tactical-Level Assessment**.

(1) **Combat assessment** is a term that encompasses many tactical-level assessment actions. CA typically focuses on determining the results of target engagement (with both lethal and nonlethal capabilities), and thus is essential to the joint targeting process and cycle (see JP 3-60, Joint Targeting). CA typically measures system capability that can be observed from physical events, and consists of measures of a system's capacity to perform its intended purpose, mission, or function at the tactical level. These measurements may include indicators of force movements, unit fire rates, communication activities, and similar behaviors. These indicators show how capacity changes over time

by observing the adversary system alterations that result from tactical-level actions. However, CA methodology also can be applied by joint force functional and Service components to other tactical tasks not associated with joint targeting. The results of tactical tasks are often physical in nature, such as target destruction, but also can reflect the impact on specific functions of systems. **CA is composed of three related elements: battle damage assessment (BDA), munitions effectiveness assessment (MEA), and future targeting or reattack recommendations (based on BDA results)**.

(a) **BDA** is the complementary activity to the selection of targets performed in target development. The purpose of BDA is to compare **what was actually accomplished to what target development determined should be accomplished** when the targeting options were being formulated. It proceeds from a micro-level examination of the damage produced on a specific target to ultimately arriving at macro-level conclusions regarding the functional outcomes created in the target system.

(b) **MEA** directs its assessments to after-the-fact studies of how capabilities were performed and the method in which they were applied. It examines the forensic evidence after attacks to determine whether weapons and weapon systems performed as expected. The purpose of MEA is to compare the actual effectiveness of the means employed to their anticipated effectiveness calculated during the joint targeting process. The results of MEA support both near-term improvement in force employment tactics and techniques and long-term improvements in lethal and nonlethal capabilities. (See JP 3-60, *Joint Targeting*.)

(c) **Future target nominations and reattack recommendations** merge the picture of what was done (BDA) with how it was done (MEA); and compares the result with predetermined measures that were developed at the start of the CA process. The aims of this stage in the process are to determine degree of success in task accomplishment and to formulate any required follow-up actions, or to indicate readiness to move on to new tasks in the path to achieving the broader strategic or operational objectives.

(2) The JFC and staff can apply a generic CA approach to non-combat operations as well. They monitor each task to determine what was accomplished, how effectively the ways and means performed, and what else should be done (if anything) to complete the task to specified standards.

h. **Assessment Measures**.

(1) The JFC and staff use **MOPs** and **MOEs** to determine progress toward accomplishing tasks, creating effects, and achieving objectives. **More specifically, MOEs are associated with creating effects and MOPs are associated with task accomplishment**. Well-devised measures can help the commanders and staffs understand the causal relationship between specific tasks and desired effects. See Figure IV-4.

(a) **MOEs are criteria for assessing progress toward creating desired effects**; they do not measure task accomplishment or performance by friendly forces. These measures typically are more subjective than CA measures and indicators, but still

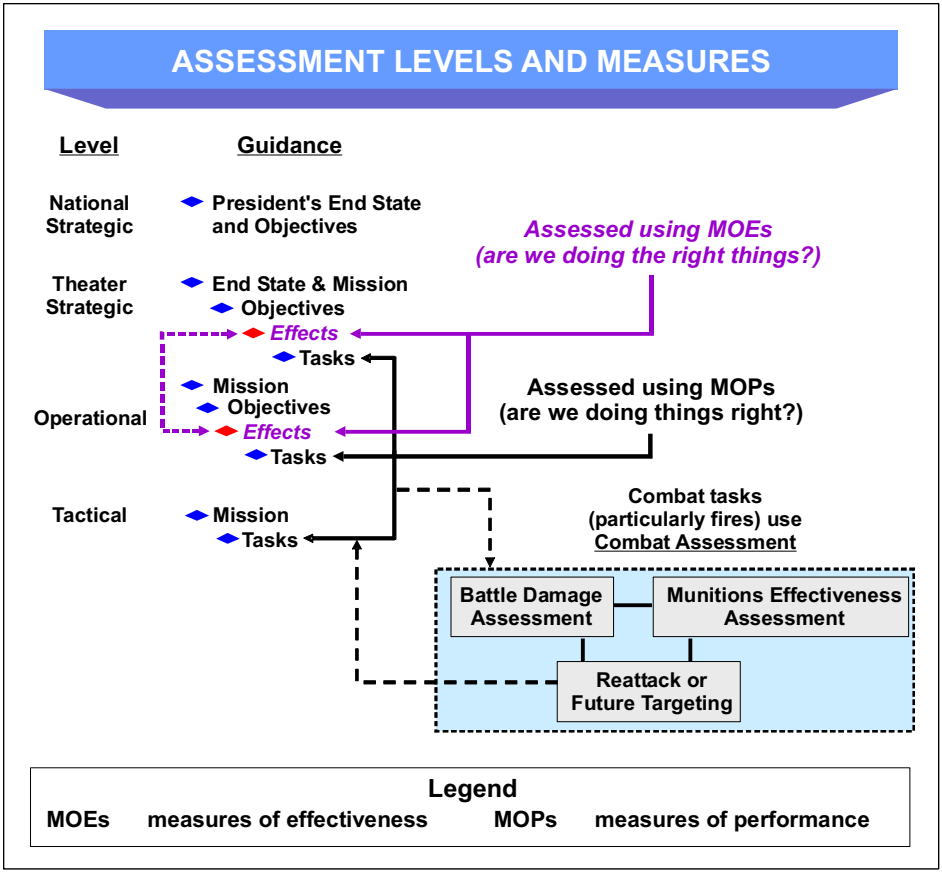

Figure IV-4. Assessment Levels and Measures

can be based on quantitative indicators to reflect a trend and show progress toward a measurable threshold. For example, if the desired effect is that ***Brown government forces withdraw from the cities***, the MOE could be stated as ***Increase or decrease in level of forces in the cities***. Progress toward this effect can be measured readily with ISR ways and means. However, if the desired effect is that the ***Brown government engages the terrorists to leave the country***, an MOE such as ***Increase or decrease in coercive content of diplomatic communiqués*** could be more difficult to track, measure, and interpret. While effects assessment MOEs may be harder to derive than MOPs for a discrete task, they are nonetheless essential to the assessment construct.

(b) **MOPs are criteria for measuring task performance or accomplishment**. MOPs are generally quantitative, but also can apply qualitative attributes to task accomplishment. They are used in most aspects of CA, since it typically seeks specific, quantitative data or a direct observation of an event to determine accomplishment of tactical tasks; however, MOPs also can be used to measure operational and strategic tasks, but the type of measurement might not be as precise or as easy to devise.

1. During the planned forcible entry, an example of a desired operational-level effect might be **Brown armor corps cannot block Coalition force**

entry into Brown. The JFC tasks the JFACC to prevent the enemy's armor corps from moving south of Black River for the next 72 hours to provide sufficient time for friendly ground forces to establish defensive positions in the JOA (an operational-level interdiction mission in this instance). The MOP for this task will not be numbers of targets engaged or tanks destroyed by interdiction. Instead, the MOP could be numbers and types of armor corps elements that cross Black River. While the desired number is zero, it may be more realistic to accept that some corps reconnaissance elements could cross the river undetected, and that the corps artillery could move close enough to place indirect fires south of Black River. The JFACC must determine the specific parameters for success in collaboration with the JFC and must allocate interdiction and CA assets accordingly.

2. In the same scenario, the JFACC might determine that it is necessary to destroy three bridges that cross Black River. The target destruction MOP for this tactical task might be an observed minimum length of the gap required on each bridge that exceeds the enemy's bridging capability. Destruction of the bridges is a desired target "effect" that can be measured directly by BDA means.

(2) MOPs and MOEs must be relevant to the desired effect or task result so that there is no false impression of accomplishment. Quantitative measures can be helpful in this regard. The staff should **determine relevant assessment measures during planning and reevaluate them continuously throughout execution**. The JFC and staff derive MOEs and MOPs during the planning process. They consider assessment measures during mission analysis, refine these measures in the JFC's initial planning guidance and in commander's and staff's estimates, COA wargaming, and include MOE and MOP in the approved plan or order.

(3) Just as tactical tasks relate to operational- and strategic-level tasks and effects, there is a relationship between assessment measures. By monitoring available information and using MOEs and MOPs as assessment tools during planning and execution, the JFC and staff determine progress toward creating desired effects, achieving objectives, and attaining the military end state. They also use the assessment results to identify requirements to modify the plan. Well-devised MOPs and MOEs, supported by effective information management, help the commanders and staffs understand the linkage between specific tasks, the desired effects, and the JFCs' objectives.

i. **Assessment Reporting**

(1) During execution, the EAC analyzes indicator reporting data and assesses the status of effects and their MOEs in order to produce summary reports as required by the commander and to support future operations and future plans. How often these formal reports are provided is determined by (1) the scope of the effects being assessed (some effects with discrete, tactical MOE indicators may change more frequently than strategic effects) and (2) the pace of operations—effects tied to decision points that can be assessed in sufficient time to provide the information as directed in the CCIR. **Based on these information requirements and the nature of the operation, the EAC can provide these reports at whatever frequency the JFC requires—daily, weekly, or bimonthly**.

(2) **MOP Reporting.**

(a) As actions are executed, designated agencies, components, and other JFC subordinates report the status of task execution using MOP metrics (designated during the planning process via reporting requirements) to the JOC and then to the EAC in a format designated by the JFC. These metrics provide the EAC with the status of specific actions or missions tasked in the operation plan. They are normally reported as RED (action either not conducted or not progressing successfully to completion), AMBER (action in progress toward completion), or GREEN (action completed). MOPs may be based on any of a number of criteria, but are usually based upon quantitative indicators. For example, MOPs for military strikes are normally based on the results of BDA.

(b) Regardless of the criteria used, however, **MOP reports focus only on the status of the action itself, independent of the attainment status of the associated desired effect**. This reporting also provides justification for MOP assessments when the report is based upon subjective judgment. Reports can address the status of specific tasks, lines of operations, or mission accomplishment (in the case of a supported component performing an operational task). In addition to providing an explanation of task status, MOP reports indicate corrective action being taken and any requests for assistance. Figure IV-5 provides an example of a task status report summary slide.

(3) **MOE Reporting**.

(a) The process for reporting MOEs is similar to the MOP reporting. As data is collected for specific MOE indicators (whether "pushed" from DOD-controlled collection assets or "pulled" from non-DOD information sources), the indicator data is collated and assessed using a pre-planned criteria and reported in summary formats designated by the JFC. Regardless of reporting responsibility, all **MOE indicators are normally collected, verified for accuracy and analyzed by the JIC or JISE prior to being forwarded to the EAC**. If a HQ uses distributed, automated assessment reporting and display software applications, data may be entered directly by reporting units. If a HQ does not use an automated reporting system, MOE indicators may be tracked manually using spreadsheet software programs. As with MOP reporting, responsibility for effects assessment is most often assigned to J-3, again with significant input from J-2, J-5, and the interagency community. Regardless of who has responsibility, the lead organization should reflect a fully integrated and cross-functional team with an ability to assess and provide input to future operations and future plans.

(b) Upon receipt of the MOE reports, the EAC reviews the MOE indicators, assesses them as they relate to specific MOEs, determines the current status of effects attainment, and produces an effects summary (Figure IV-6). In addition to MOE assessment, the EAC also considers other relevant intelligence/information that may fall outside the scope of the applicable MOEs, but which directly impacts on effect(s) attainment. (This particular procedure is important when assessing undesired effects, which are also included in the summary.) As a technique, the EAC may also include a "level of confidence" evaluation that reflects the validity and reliability of the intelligence/information as well as the MOE reporting process that supports the assessment. If the EAC finds that attainment of desired effects is proceeding in accordance with pre-

TASK SUPPORT REPORT

Objective: Brown ground attack is defeated

Desired Effect (PH III):

Brown regular forces stop fighting and return to garrison

Task/Mission Status (D+91):

Air Superiority	Maintain DCA; Move DCA CAP closer; Establish forward HVAA CAP; Identify Additional GDCA locations; Coord. Escort/Support Packages; Prevent Recuperation	G
IO	Inform populace of Brown of Coalition military purpose; Neutralize propaganda; Disrupt Strategic C2; Disrupt Tactical C2; Sever GOB POL-MIL relationships; Disrupt support to GOB and Terrorist leadership	A
USSTRATCOM/ IO/Global	Prevent C2 disruption; Deny enemy collection; Protect friendly operations, plans/status; Deter foreign support to Brown; Inform world public of enemy illegitimacy; Inform world public of friendly mission/actions; Promote coalition legitimacy and activities; Neutralize Brown regional propaganda	A
Diplomatic Campaign	Deliver demarche; Seek international isolation; Promote international condemnation; Obtain United Nations resolution; Receive settlement proposal; Start formal negotiations; Achieve capitulation/ withdrawal; Obtain border recognition	G

Remarks/recommendations:
- Continue to execute assigned missions in support of subject effect
- Expect attainment trend to improve upon establishment of HVAA CAP in 96 hours

C2	command and control	GDCA	ground defensive counterair	PH	phase
CAP	combat air patrol	GOB	government of Brown	POL-MIL	political-military
Coord	coordinate	HVAA	high value airborne asset	USSTRATCOM	United States Strategic Command
DCA	defensive counterair	IO	information operations		

Modified 1 May 2006

Figure IV-5. Task Status Report

Situation: The PSYOP orchestrated by the JFSOCC has begun to affect the relationship between specific tribes and the foreign terrorists. In a collaborative session with the component commanders and the CCDR, the CJTF wants to add an effect to the PEL.

CJTF: "Our assessment indicates that the leadership in several tribes no longer trusts the foreigners. They are convinced their agenda and that of foreign 'volunteers' no longer converge. So, I think its time to help the PSYOP effort along by having the Chi tribe lead our police patrols. And if we can get some of the Delta tribe involved, even better. The effect we want is for the populace to see their own people are in charge of security in some of the villages. In short, we need to diminish the 'face' of the coalition on 'the streets.' I'll have the staff draft the effect statement and the MOEs. The JFLCC is the lead again with the JFSOCC in support. You'll both see the 'FRAGO' within 12 hours."

established timelines (developed during COA development), the cell compiles and forwards the results to the JPG via the EWG. If the results indicate that progress is insufficient, assessors and planners conduct deficiency analysis to determine the cause and recommend corrective action. This determination is conducted in the EWG. The goal of conducting deficiency analysis is not to provide a "silver bullet" to J-3 future operations and J-5 planners; rather, the desired product is a range of potential options

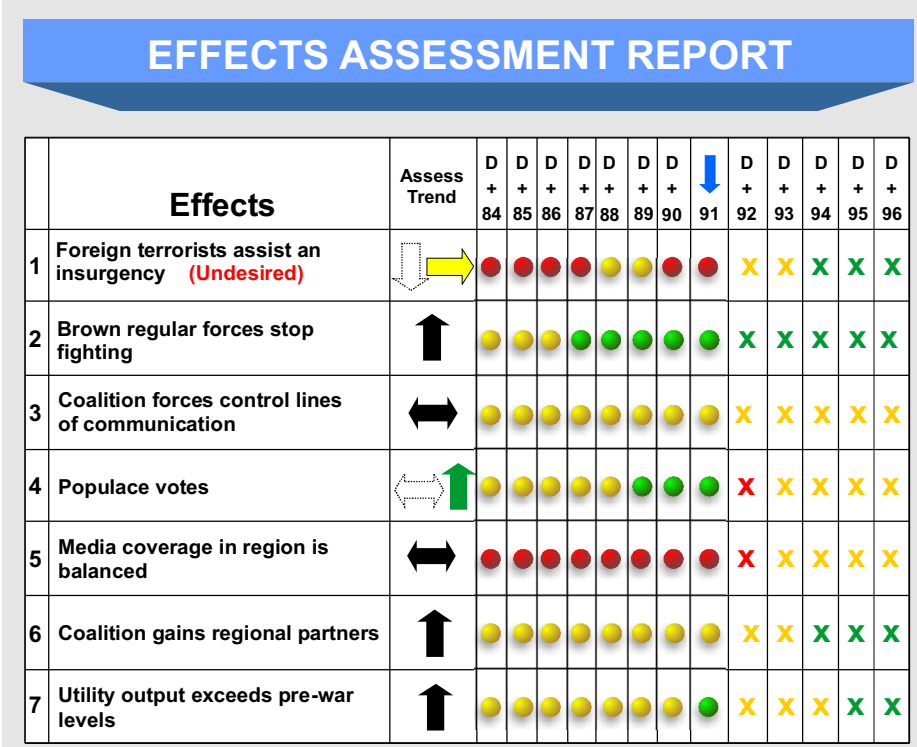

Figure IV-6. Effects Assessment Report

that are executable and are in keeping with previously promulgated commander's intent and limitations (constraints and restraints). In sum, **effects assessment represents a significant contribution to the overall assessment of the joint operation**.

(4) **Quantitative Measurement**

(a) MOEs and MOPs can be qualitative or quantitative. Whenever possible, **quantitative measurements are preferred** because they are less susceptible to interpretation—subjective judgment. They demand more rigor (or proof) and can be replicated over time even if the analysts and the users—the commanders—change. For these quantitative measures to have maximum utility, however, they should have three common characteristics: each indicator must consist of, at least, a unit of measure, a metric, and a standard. (Figure IV-7.)

(b) **A measure is a data point that depicts the degree to which an entity possesses an attribute**. And this degree is expressed by a unit of measurement. In an effects-based approach, assessment is concerned with trends: changes in systems (nodes and/or links) or actions (behavior and/or capability). **A metric is two or more measures**. It shows a trend over time. But quantitative measurement is not complete until the metric is compared against a specific **criteria (standard or threshold)**. These thresholds can be minimums, maximums, or both. Comparison of measures against established criteria **gives commanders a sense of whether they are making progress in accomplishing their objectives, effects, or tasks**.

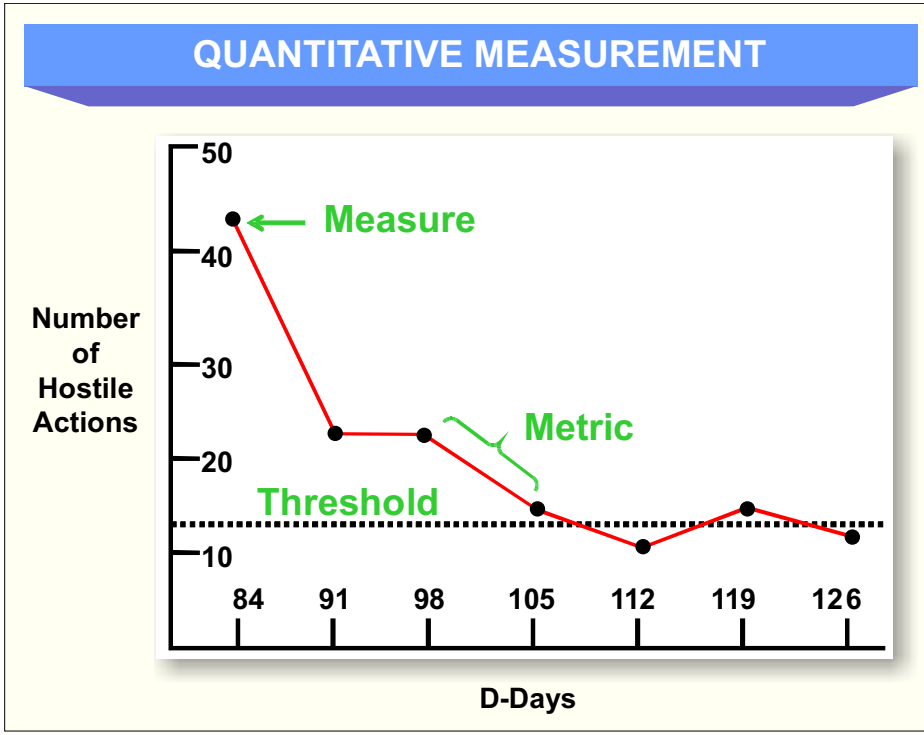

Figure IV-7. Quantitative Measurement

Task: "Diminish the 'face' of the Coalition in all operations."

MOP: Number of patrols led by local commanders per area each week.

MOP: Number of requests for Coalition assistance per event by area.

Task: "Deny sanctuary, support, transit and staging to the insurgency."

MOP: Number of hostile actions per area each week.

MOP: Number of munitions caches found per week.

(c) In the text box above are two tasks and their associated MOPs where numbers can be applied. The most difficult part, however, is determining the numerical threshold that allows commanders to know that progress is being made or sustained. In short, what is an acceptable number of "hostile actions"? Moreover, a threshold can change as the OE changes, whether assessing task accomplishment (MOPs) or effect attainment (MOEs).

Situation: Major combat operations have concluded and the Coalition is entering the "stabilize" phase. This phase requires a different set of MOEs to guide the joint force in the transition to "civil authority." The Effects Working Group and the Effects Assessment Cell are meeting in a combined planning session.

EWG Chief: "We've done a pretty good job with our MOEs and MOPs so far. We've kept the measurement of output separated from the measurement of input. Now as we begin to enter the 'civil' domain it's going to get tougher to distinguish between input and output."

"Take the example of one of the earliest effects the joint commanders put in the PEL: 'Population votes in country-wide elections.' Many of you initially wanted to measure the population's attitudes or feelings on individual 'safety' or 'security.' But for our purposes that would be too input-oriented. Yes, a feeling of safety is one of several conditions that will promote voter turnout, but it is the 'turnout' itself that is the measure of success: the single best measure of attaining the effect. And it is that MOE that the 'family' of indicators should be built around."

"So, as we craft the new set of indicators for this phase, lets make sure we concentrate on the explicit behaviors—the effects—we want to see, not the interim conditions. Otherwise, our subordinates will focus on the wrong tasks and develop the wrong MOPs. They don't need to believe that securing the voting booths and the LOCs alone will ensure high voter turnout."

4. Conclusion

a. **Execution involves monitoring the OA, assessing the ongoing changes in it, updating and refining planning and directing friendly actions that alter the OE to conform to the JFCs' intent**.

b. **Execution is not just about determining better ways to apply kinetic energy to create tactical physical results**. While the direct, immediate physical outcomes from

specific weapons or actions employed by tactical units are the most observable in the battlespace, they rarely—by themselves—produce the conditions or operational effects necessary to achieve longer term theater or national objectives. Instead, **operational effects are attained through the integration of military operations with activities by the other instruments of national/multinational power**. Integration of these non-military activities and military actions are far more likely to create the desired operational effects required to achieve joint operations success. More precisely, the JFC cannot let

Situation: The Country of Brown has had its government replaced by a "Coalition Authority" and this authority is working to transition to a new government that is fully representative of the various diverse tribal groups. Without the dictatorial structure of the old regime, the population is beginning to behave in unanticipated ways, prompting the CCDR to revisit the PEL and the associated assessment process. A meeting with all directors and the special staff is in session.

CCDR: "Something's broke! Our objectives have not changed. But no one predicted the effects that are now occurring throughout the theater. Did our actions cause them—directly or indirectly? Did we fail to understand the tribal system or their shared culture? A lot of what's happening now was never identified as potential undesired effects."

J-2 Director: "We knew the social systems in the OA were the least understood. And when we deposed the existing government, we knew political power would devolve to the tribal chiefs. We just did not have the knowledge to anticipate some of the new tribal alliances and their apparent goals for the region. But the main problem is not the failure to understand the system, it was our assessment process. It did not forecast these unintentional consequences to give us enough time to adapt. The MOE indicators were good and the MOPs were fine. But we did a lousy job of connecting the two: discovering the causal links to subsequent effects."

J-5 Director: "I agree. In my judgment some of our stabilization actions produced the wrong effects. They may have achieved all the desired PEL effects, but they also generated some delayed and now enduring effects, especially the tribes' distrust of the Coalition Authority. In short, we failed to adjust for their cultural needs. We had no metrics that mapped the links between our MOEs and MOPs. Yeah, the MOEs showed us we got the primary effects we wanted and the MOPs told us we performed the enabling actions as planned. But, then we got lazy and never verified if our actions caused the desired effects, or whether the effects were caused by things outside our control. And we have yet to develop and use metrics to discover the cause of these pervasive and totally unanticipated and/or unintentional effects."

CCDR: "OK, the Chief of Staff will put a team together from the EWG, the J-2, and the J-5. Their task is to come up with TTP for this assessment 'gap' between the MOEs and MOPs. Also, this team has license to challenge our solution. If they think the problem lies somewhere else I want to know. And make sure the interagency guys get involved. We are now transitioning to their civil domain and virtually all the effects will reside in the political and economic arena. They will have to be as agile as we have had to be. They will need our lessons learned, especially with regard to the assessment of this seemingly capricious tribal environment. Maybe, they will have more success due to their language skills and specialization. But if they don't have a rigorous assessment process, they'll get 'blindsided' as we have on occasion."

the targeting process be driven by generating physical damage on targets to meet purely tactical requirements. Instead, **the JFC must weigh targeting decisions to meet the immediate needs of the tactical fight against the longer term requirements to create or support the operational effects within the OA necessary to achieve theater objectives**.

c. **Effects assessment is crucial to execution**. In today's increasingly dynamic OE, JFCs can only gain sufficient situational awareness and adapt their current operations, future operations, and future plans if the staff is assessing "the right things" in the OA. Focusing on the overall effectiveness of executed tasks becomes more important than evaluating the tasks themselves. **Execution of an effects-based approach at the CCDR and CJTF levels is a way of thinking that impacts HQ organizations, processes, products and operations**. At the component commander level, it is again a way of thinking, but with less impact on the HQ. Below the component level, effects-based execution remains a way of thinking, but its influence is generally limited to determining when, where, and with whom operations are conducted.

CHAPTER V
THE WAY AHEAD

"The only thing harder than getting a new idea into a military mind is getting an old idea out."

Liddell Hart

1. Introduction

a. An effects-based approach to joint operations is a way of thinking—about ourselves, the adversary and the OE—translated into the joint operation planning, execution, and assessment processes that are informed by data, information, and human collaboration.

b. Technology, especially computer automation, has an enormous potential for collecting, organizing, disseminating, storing, retrieving, correlating, and displaying data so decision makers can digest it. But **a technology or tool can be misused if its products are not rigorously applied under the scrutiny of sound military judgment**. JFCs issue directives within an OE that is extraordinarily complex and in a constant state of adaptation. Tools have the potential to help simplify the OE so commanders can give actionable direction based on a superior understanding of the battlespace. **Commanders can never have perfect knowledge to help them prevail, but they can have a better and timelier understanding of the OE than their adversaries.** And they can be more inclusive in developing and implementing solutions to their problems.

c. Organizations, processes, and supporting technologies associated with an effects-based approach will continue to improve through a multi-year effort of conceptual development, experimentation, prototype testing, and operational use involving combatant commands, Services, agencies, and allies. Draft joint doctrine is addressing effects-based processes in key publications such as JP 3-0 and JP 5-0, and institutions such as senior Service schools are teaching aspects of these processes in their curricula. USJFCOM is incorporating procedural, organizational, and technological aspects of an effects-based approach in various training venues. And some Services are considering how to incorporate effects-related ideas into Service doctrine. The following text highlights these efforts and their evolving requirements that are intended to advance an effects-based approach.

2. Concept Development and Prototyping

a. In USJFCOM the **effects-based concept was founded on "General Systems Theory," not "Chaos Theory" or "Complex Adaptive Systems" methods addressed in the mathematical sciences**. In other words, JFCs view the real world as a set of systems composed of tangible elements (nodes) and their relationships (links) to each other. The nodes represent discrete elements (people, materiel, facilities, and information) and the links portray the physical, functional and/or behavioral relations that can exist between and among nodes and systems. **Both nodes and links are <u>only</u> symbolic. They are "icons" meant to simplify the complexity of the real world:** to make important the things in the OE that the

JFCs may wish to influence or change during an operation. A more complete discussion on the **theoretical and conceptual underpinnings of an effects-based approach can be found in the Joint Electronic Library as a supplement to this handbook (http://www.dtic.mil/doctrine/other_publications.htm)**.

b. As the concept evolved, the effects-based approach became focused on the theater strategic and operational echelons and was largely confined to processes used by JFCs and their staffs. It also was entwined with other concepts, most notably, **Operational Net Assessment (ONA)** and the **Collaborative Information Environment (CIE)**. While ONA **represents one technique to gain a systems perspective, this technique is not inherent to the effects-based approach**. However, ONA is evolving and has been used in real world planning in, at least, one theater. More information on **ONA can be found in the Joint Electronic Library as a supplement to this handbook (http://www.dtic.mil/doctrine/other_publications.htm)**.

c. As for CIE, it is applicable to any joint process where collaboration is needed. Although important to joint command and control, **CIE is not unique to an effects-based approach**.

3. Experimentation

a. Concept development and experimentation regarding effects-based processes has continued at USJFCOM. Whereas current effects-based processes have been tailored for use by US joint forces, some experimentation has shifted to a coalition-based combined JTF application. This experimentation effort culminates in the spring of 2006 with Multinational Experiment #4. **While the existing US process provides the basis for this handbook, it also served as a point of departure for the multinational experiment, but with several distinct differences in the process and its associated terminology**. Like the US process, the multinational effects-based process is designed to make the overall approach to operation planning, execution, and assessment more effective and adaptive.

b. While development of an effects-based multinational approach is led by USJFCOM, this evolving product was "born" multinational. Scores of experienced military and interagency representatives from Australia, Canada, Finland, France, Germany, Sweden, and the United Kingdom, as well as NATO's Allied Command Transformation (ACT), are fully integrated into this effort. The resulting cross-cultural vetting process is expected to provide an effects-based approach that **can apply to combined JTFs as well as to US joint force operations**.

c. Some of the anticipated features of the multinational effects-based process are as follows:

(1) Detailed procedures for a step-by-step core process catalogued in terms of step purpose, staff element involvement, inputs, and outputs.

(2) Applicability to both contingency and crisis action situations.

(3) Applicability to any mission type or scale, using any organizational construct and any command and control architecture.

(4) Specific treatment within each step addressing coalition and interagency issues.

(5) Scalable descriptions of the multinational effects-based process applied at three levels and segmented into **four major functions** (Knowledge Base Development, Effects-Based Planning, Effects-Based Execution, and Effects-Based Assessment) for orientation and task organization. (The four functions are comprised of approximately **twenty activities** consisting of approximately **50 discreet process steps**.)

(6) Development in consonance with processes for Multinational Information Sharing, Multinational Interagency Coordination Group, Multinational Information Operations, and supporting Intelligence and Logistics/Support/Medical concepts.

(7) Tailored suite of software tools; key among them is NATO's Effects-Based Tool for Operational Planning, Force Activation, and Simulation.

d. Following testing in Multinational Experiment #4, the national partners will mutually refine and publish the ***Effects-Based Approach to Multinational Operations–Concept of Operations and Implementation Procedures***. Like all new processes, this multinational approach will have to be vetted and accepted as having "value added" in numerous forums before its inclusion into US joint doctrine.

4. Technology Requirements

a. **Collaboration**

(1) Collaboration is an important capability that supports commanders' decision-making. This collaboration extends from the CCDR to the component commanders and across the interagency community, linking all stakeholders in the joint, interagency, multinational team. While the degree of collaboration depends on the leadership styles of the decision makers, **collaboration promotes a situational awareness among the joint commanders that can greatly enhance and sustain a unity of effort**. This situational awareness also facilitates parallel or simultaneous planning, execution, and assessment processes that can significantly compress the command and staff decision cycles.

(2) Collaboration permits greater participation in decision making, but more importantly, **collaborative tools give subordinate commanders and staffs the capacity to gain a greater understanding of the thinking behind higher HQs directives**—a fuller appreciation of commander's intent. But this understanding relies on the capability of reliable and user friendly collaborative technologies. Some of the requisite characteristics of collaborative technologies follow:

(a) Instantaneous connectivity to centers of excellence and communities of practice.

(b) Clarity of transmission and reception for visual and audio information.

(c) Reduction in bandwidth demands for collaboration systems extended to all theater strategic, operational, and tactical echelons.

(d) Provision for dynamic bandwidth management and compression capabilities to increase throughput.

(e) Embedded "collaborative rules and practices" for simultaneous, synchronous, or asynchronous communication among and between various participants in all echelons and domains.

b. **Visualization**

(1) **A common operational picture is particularly crucial to gain a systems perspective of the OE that is shared by every command echelon**. Among many capabilities, an improved COP could (1) portray the battlespace as an interconnected system composed of key nodes and links, (2) display the CONOPS as parallel lines of operations with sequenced effects leading to an end state, (3) show MOEs and MOPs graphically, (4) amplify the text of directives with pictures and graphics, and (5) depict major joint command and staff processes and products pictorially.

(2) Technologies for visualization require significant human engineering to ensure graphic information can be absorbed and processed by individual decision makers. These visualization technologies are the best means of fostering a systemic situational awareness among joint commanders and their staffs.

(3) When portraying a systems perspective of the real world as interconnected key nodes and links, the following properties are relevant.

(a) A view of the entire battlespace—its current state and end state—to include the key adversary, friendly, and unaligned systems, nodes and links and their connectivity.

(b) Uniform icons for each category of nodes (physical entities): people, materiel, facilities, etc.

(c) Uniform icons for each category of relationships (links): behavioral, functional, etc.

(d) Capability to "peel back" or "drill down" on each key node and link, thereby revealing the sub-nodes and sub-links that comprise the higher order physical entity (node) or relationship (link) between entities.

(e) Ability to "highlight" key nodes to be acted upon according to timing and/or importance in priority vis-à-vis the attainment of a desired effect or end state.

(f) Capacity to select a node or link icon and display relevant end state and effects (text and measures), potential tasks, actions and capabilities (text and measures), "effects-to-tasks" process status, etc.

c. **Modeling and Simulation for Wargaming**

(1) When analyzing and comparing various friendly COAs, the staff's capacity to model the OE and run wargaming simulations can help the JFCs appreciate the variety of risks and probability of success for any proposed COA. This capability can improve the speed and accuracy of the JFCs' collaborative decision–making process.

(2) These modeling and simulation requirements are numerous, but at a minimum include the following:

(a) Construction of a dynamic OE that allows all major elements to interact and change in accordance with the interaction.

(b) Capability to model the adversary and friendly orders of battle.

(c) Ability to simulate force-on-force interaction and resultant consequences.

(d) Capacity to do sensitivity analysis on any combination of COAs.

(e) Ability to integrate kinetic and non-kinetic (political, psychological, etc.) activities and their results.

d. **Synchronization**

(1) **One of the most challenging responsibilities of command is the synchronization of ends, ways and means in time, space and purpose**. The need for JFCs to reduce an almost infinite number of potential actions to a relative few is an essential aspect of operational art. Synchronization tools will be vital to limiting the staff workload to a manageable level.

(2) **The challenge is that systemic battlespace effects are not readily amenable to synchronization as are friendly actions**. Operational effects can be harmonized in purpose, but their appearance is often delayed and displaced from the initiating action. This phenomenon is particularly true for individual or group behavior that results from multiple actions taken against dissimilar nodes. More often than not these behaviors are an indirect occurrence of actions applied some distance and time from the intended effect. Synchronization technologies can help manage the possible causal relationships between actions and effects. To accomplish this feat, these technologies need the following attributes.

(a) Conversion of combinations of effect-to-node-to-action (E-N-A) strings to COA options.

(b) Capability to build the E-N-A strings and connect the nodes within the entire battlespace system.

(c) "End-to-end" flow chart display of every major JFC planning and assessment process.

(d) Ability to see on what step joint force HQ directorates, boards, centers, and cells is working at any given moment of time.

(e) Identification of each product—interim or final—for each process step.

(f) Capacity to organize a vast array of dissimilar data.

5. Organization and Human Resource Requirements

a. Based on experience with fielding an effects-based approach, several "friction points" have been identified. By themselves they are not unique; when taken together they present challenges that must be thoughtfully addressed. Once addressed and resolved, they offer the ability to meet the ever increasingly complex requirements of the contemporary OE. Implications of an effects-based approach on HQ organizations at the combatant command and JTF level follow.

b. The current joint manning document for most JTFs does not reflect the requirements for several key HQ positions associated with an effects-based approach. Such positions include **effects assessment planners and analysts** to assist in the planning and assessment; **Blue/Red planners** who help develop and then keep updated a Red perspective of the "fight" and its implications; political/military planners to help correlate and integrate interagency input; and **positions dedicated to help build and maintain a systems view of the OE—a COP derived from a SoSA enhanced JIPB**. In the future these requirements could include knowledge management **(KM) positions in each major staff directorate and an overall KM manager (working for the Chief of Staff)**. KM is focused on people and processes to obtain knowledge and attain understanding. The KM function would identify key stakeholders and—in conjunction with the information manager and communications personnel—design the HQ infrastructure to connect stakeholders. Together they develop and enforce KM processes for a joint HQ and its component HQ.

c. **Organization of working groups and planning teams needs continuing examination to improve integration of the assessment process**. This requirement includes identifying the leadership and membership of the EWG and EAC and the integration of these teams into the HQ battle rhythm and JFCs' decision cycle. **Establishing an organizational structure and process to gain an interagency perspective is also needed**.

d. Joint training and joint **professional military education** must keep pace with the incorporation of approved effects-based constructs in joint doctrine and actual operations.

e. Other human resource requirements include:

(1) Increases in the number of skill sets devoted to the behavioral, cultural, and political sciences.

(2) Increases in the number of personnel able to facilitate collaborative activity in a virtual environment.

(3) Designating skill identifiers to track effects-based planning and assessment specialists.

(4) Awarding certification for effects-based skill proficiencies.

6. Process Requirements

a. **The effects-based approach** has yet to be fully integrated across the joint community from a process standpoint. To date this approach **has been largely additive to current US joint command and staff processes**.

b. The approach continues to be refined in many arenas: ongoing operations, joint and Service exercises, experiments and so on. Some of the other more notable refinements to effects-based processes, techniques, and procedures are being developed in the following venues:

(1) USCENTCOM Operations in Iraq, Afghanistan and the Horn of Africa

(2) USPACOM Multinational Planning Augmentation Team (MPAT)

(3) USPACOM J2 Intelligence Course

(4) USSTRATCOM IO Joint Munitions Effectiveness Manuals

(5) USJFCOM SJFHQ and OT Instruction

(6) USJFCOM Joint Targeting School

(7) USAF Air Operations Center Courses and Tools

(8) USFK Theater Effects-based Operations (TEBO)

7. Joint Doctrine Requirements

a. Joint publications have begun to incorporate effects-based ideas into joint doctrine. Following are examples of joint publications that are relevant to the potential advancement of effects-based thinking.

(1) JP 3-0, *Joint Operations*

(2) JP 5-0, *Joint Operation Planning*

(3) JP 5-00.2, *Joint Task Force Headquarters*

(4) JP 2-0, *Doctrine for Intelligence Support for Joint Operations*

(5) JP 2-01.3, *Joint Intelligence Preparation of the Battlespace*

(6) JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*

(7) JP 3-60, *Joint Targeting*

(8) JP 3-13, *Information Operations*

(9) JP 1, *Joint Warfare of the Armed forces of the United States*

b. Since some Service doctrine on effects-based terminology and procedures has preceded the publication of joint doctrine, some misconceptions will have to be overcome with regard to the application of effects-based thinking in joint processes. **Since the Services do not focus on activities above the operational level, their effects-based requirements are qualitatively and quantitatively different from those described in joint doctrine**. Parsing these differences will demand accommodations from all communities to promote a common understanding of an effects-based approach as it pertains to the synchronization of the "ends, ways, and means" of unified action.

8. Conclusion

a. **As the effects-based approach matures, the joint, interagency, and multinational communities can expect significant refinements to the enabling doctrines, organizations, processes, and technologies**. At its core it will remain primarily a way thinking (both individual and collective)—an approach to joint operations that seeks to be more inclusive, addresses the complexity of today's OE, and focuses on longer term strategic solutions versus shorter term tactical solutions. Regardless of the scope or rapidity of these refinements, the effects-based approach can already be judged as an important stimulus to future improvements to joint operational art and design.

b. The majority of this handbook captures current "best practices" and (in this chapter) attempts to identify future requirements based on these practices. **The requirements specified here are not exhaustive, but are only representative** of the numerous future joint capabilities that hold significant promise for enhancing the JFCs' capacity to employ an effects-based approach.

APPENDIX A
ORGANIZING FOR AN EFFECTS-BASED APPROACH

"It is absolutely necessary…to have persons that can think for me, as well as execute orders."

George Washington, 1776

1. Introduction

a. No matter if a HQ is employing an effects-based approach or another approach, **the design of an organization—one that can effectively operate within the joint, interagency, and multinational environment—takes considerable thought and effort**. This requirement is especially true of Service HQ that are tasked to become the core around which a joint or coalition HQ is formed. The transition from a staff directorate organization of a traditional staff to a cross-functional organization is significant to both organizational design and processes. HQ must be designed to fully integrate select members of the joint, interagency, and multinational team: some as subordinates, some as supporting agencies and organizations, and all of them need to contribute to the production of JFC directives. In short, today's operations (especially, those applying an effects-based approach) require **cross-functional expertise at every stage of assessment, planning and execution**. Therefore, these processes are primarily managed and executed through a series of boards, centers, teams, working groups, and cells that have a diversity of military and interagency expertise.

b. Because US military operations are conducted as joint operations, a description of the various joint organizations that are likely to plan, direct, monitor and assess these operations using effects-based techniques and procedures is relevant. While these organizations are not unique to effects-based thinking or action, they do take on increased importance in getting the right cross-functional teams within a HQ formed as the "engines" for plan development and order production.

c. **Since an effects-based approach is an art, no single organizational construct will suffice.** The capacity to conduct effective HQ operations depends on many factors to include the involvement of the interagency, the size of the OA, the number of JTFs and their subordinate echelons, the scope and intensity of operations, the nature of the adversary, not to mention the national interests at stake.

2. Echelons and Headquarters

a. When addressing national security organizations, it is important to recognize that several levels or echelons of government exercise command and control of an operation. In fact, **most operations involve four echelons: national strategic, theater strategic, operational and tactical**. Although organizations can overlap and span more than one echelon, the processes at each echelon do vary in purpose, scope, intensity, and detail.

b. At the national strategic level, **the President and the Cabinet set policy and objectives** via an organization built around committees: **the Principals, Deputies and Policy Coordinating Committees**. These committees vet various policy options and when necessary, the President issues a directive (with or without a political-military plan) initiating an operation. They make policy, but **do not have the capacity to execute a major operation**.

c. At the theater strategic level, a CCDR leads a HQ staff composed of functional directorates: Personnel (J-1), Intelligence (J-2), Operations (J-3), Logistics (J-4), Plans (J-5) and Communications (J-6). These directorates are where the major staff products are first developed and later refined in the various cross-functional teams: boards, centers and cells.

d. At the operational level, a CJTF has a HQ organization that also is structured around functional J-Code directorates (or C-Codes if a combined HQ) and formal standing boards, centers and planning teams, working groups and cells. And it is at this echelon and the theater strategic level that an effects-based approach is most applicable.

CCDR: "For the effects-based approach to work in this command we have to become more "cross-functional." We need to dismantle the directorate 'stovepipes." Remember our headquarters has to be the 'integrator'—vertically and horizontally. We don't have a national operations center above our level that can pull this together. We have to take the lead within the interagency and make sure we're all on 'the same page.' Our civilian bosses set policy and give us our objectives, but we are going to have to harmonize the inevitable conflicts that will arise between agencies, not to mention the allies.

Chief of Staff: "Every center, board and cell has a J-3, J-5, and J-2 'rep' and every major working group or team also has these directorates represented. The problem is getting the interagency fully engaged as they can't provide the number of people we need in many of these groups. And a FBI guy, obviously, can't speak for CIA and no one can speak for 'State' except 'State.' Oh yes, we better not forget a single ally: we just have to work through the security gauntlet to allow as much exchange of information as permissible under the law.

CCDR: "In this headquarters I want our cross-functional teams built around our three processes: future plans, future ops and current ops. This headquarters needs to provide top cover for the CJTF and his staff. We have to give them the politico-military context so they can direct the military operation 'in synch' with the interagency and the allies. They need to focus on the enemy forces. We need to anticipate the political, diplomatic and economic consequences of their military actions. Future Plans ensures we stay on course by anticipating any strategic shifts in the OA. Future Ops manages the harmonization of the interagency—to the extent possible. Current Ops ensures the CJTF has sufficient direction to allow maximum freedom of action without violating the restrains and constrains of our political masters. The only way any of this happens is if we all have the same system perspective—the current and desired future state of the battlespace."

3. Joint Task Force Headquarters

a. What follows is a breakout of directorates, boards, centers, cells and groups and their probable contribution to an effects-based approach to joint operations. And because the effects-based approach requires cross-functional collaboration, the emphasis is on those organizations that have multi-functional authorities and responsibilities. (Figure A-1.)

b. **Centers, groups, boards, planning teams and cells are the best place to conduct effects-based collaboration** because they provide the cross-functional input essential to operations within a complex OE and executed by the joint, interagency, multinational team. The following organizations are where most of the activity related to effects-based planning and operations will occur.

c. **Joint Operations Center.** The CJTF normally sets up a JOC to serve as the lead organization for all operational matters. **The JOC manages both friendly and enemy information, maintaining the common relevant picture of the operational environment**—in all its forms—for the CJTF and the staff. Accordingly, this center also controls the CCIRs. It also promulgates all CJTF orders. And **the JOC ensures the PEL reflects both the CCDR's and CJTF's most current priorities and monitors the progress of the operation**.

d. **Joint Planning Group**. At the onset of a JTF formation, the CJTF can create a JPG and establish its responsibilities and interfaces, especially between the functions of the J-5 and J-3. The JPG manages crisis action planning, OPORD development and future planning. It is **the organization that oversees the CJTF's operational design: integrates commander's intent with center of gravity and mission analysis to produce a CONOPS and an approved COA**. And it maintains the state of friendly systems, particularly the effects to those systems initiated by the adversary. **JPGs are normally future plans oriented**. JPGs may form multiple planning teams to deal with specific problems or tasks. For future operations planning, CJTFs may stand up operational planning teams.

e. **Joint Intelligence Support Element (JISE).** When formed by the CJTF, the JISE is the hub for intelligence in the JOA. **It provides the CJTF, JTF staff and JTF component staffs the most complete situational awareness of the adversary's air, land, space and maritime systems disposition in the context of the OE defined primarily by combatant commander's Joint Intelligence Center (JIC)**. Capabilities of the JISE include order of battle (OB) analysis, identification of adversary COGs, analysis of adversary command, control, communications, and computers (C4), targeting support, and collection management. **It also plays a significant role in the development of a SoSA, especially the military systems and their links to other adversary systems**.

f. **Joint Collection Management Board (JCMB).** When established, the JCMB serves as a joint forum for the management of collection requirements and the coordination of collection operations. The JCMB is chaired by the J-2 and should include J-3 and component representatives. It receives collection target nominations from the components, validates and prioritizes these requirements into a joint integrated prioritized collection

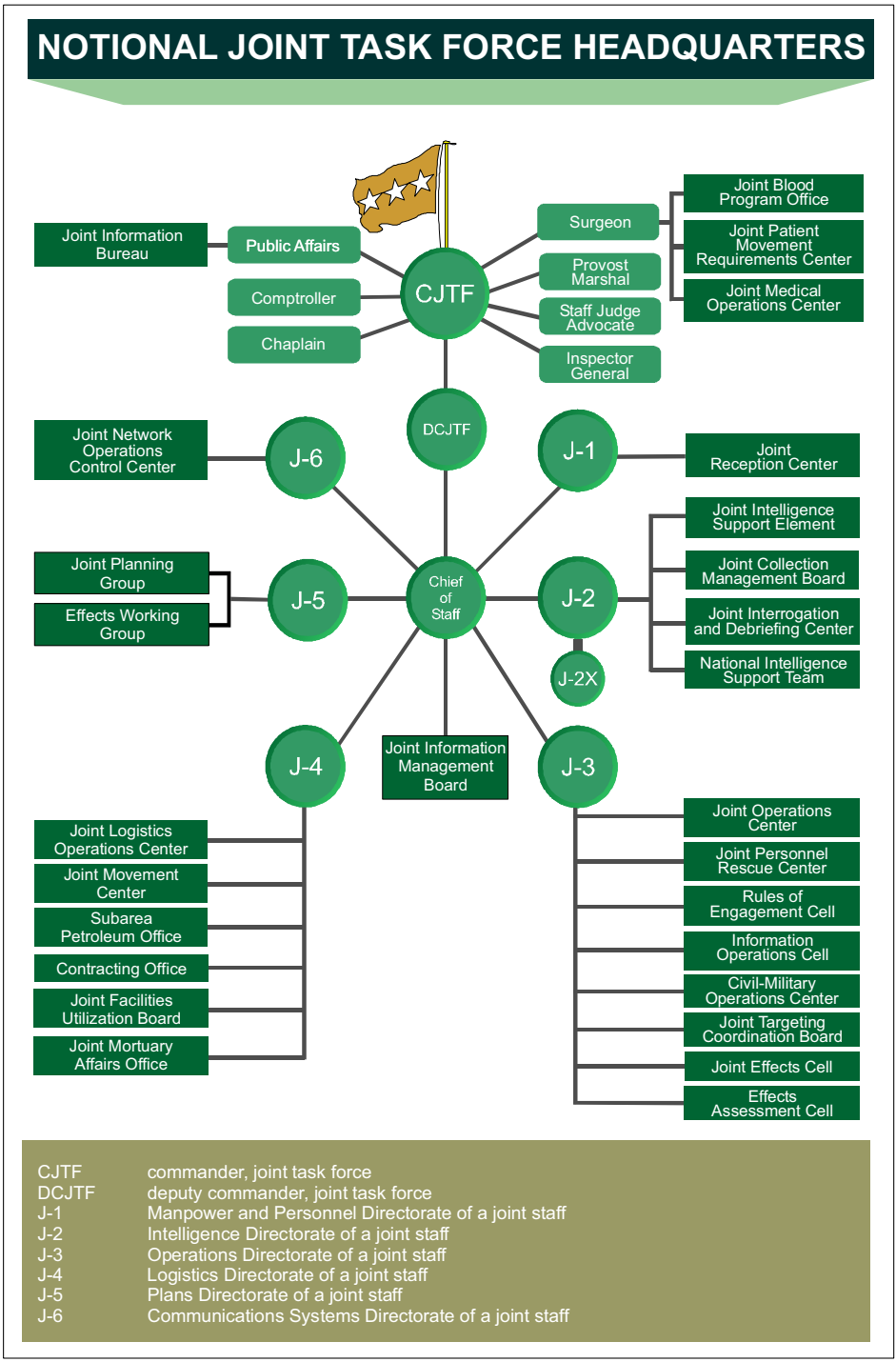

Figure A-1. Notional Joint Task Force Headquarters

list (JIPCL), and recommends the apportionment of organic ISR assets to meet JIPCL requirements. **In addition, it ensures collection requirements reflect the necessary feedback to determine effects attainment**.

g. **Joint Targeting Coordination Board (JTCB).** The JTCB is an integrating board to accomplish broad targeting oversight functions. It is the organization that oversees targeting for both kinetic and non-kinetic activities. **This board maintains a macro-view of the JOA and ensures targeting nominations are consistent with the CCDR CONOPS and the PEL**.

h. **Joint Effects Cell (JEC).** The JEC (formerly, the Joint Fires Cell) helps the J-3 plan and coordinate kinetic and non-kinetic JTF targeting actions. **It maintains visibility of the combatant command's JIACG planning activity and ensures military actions are mutually supportive with interagency operations**.

i. **Effects Assessment Cell.** This cell assesses reports and analysis from all available sources (functional components, JIC, JIACG, other organizations supporting the plan) to determine if executed actions are causing the desired adversary behaviors. **It provides an integrated assessment of trends using pre-established MOE indicators to determine progress: the desired system changes that result from actions taken against targeted nodes**. Normally, this action officer level cell is chaired by a J-3 representative. Cell membership includes joint directorate representatives, JIC/JISE personnel, interagency representatives, component planners, dedicated effects assessment personnel (if assigned) and SoSA analysts. The EAC receives inputs from the JIC and other organizations tasked to report on indicators based on the collection plan. This input is normally objective or quantifiable measures predetermined as part of the planning process. This cell meets prior to each EWG to provide a timely and relevant assessment. Coordination with the J-2, IO/STO, JIC, JIACG, and components is usually done prior to submission of the MOE assessment summary to the EWG.

j. **Effects Working Group.** During plan development, the EWG is responsible for the development of effects to support strategic and operational objectives. Additionally, **it selects specific actions against specific nodes required to achieve the desired effects and identifies resources to implement those actions**. During execution, it analyzes the results of the EAC and provides recommendations to the JFC. The EWG is chaired by a senior J-3 or J-5 representative and composed of senior representatives from the joint staff directorates, JIC/JISE, and interagency organizations. In addition, it normally has its own dedicated effects assessment personnel and SoSA analysts. In sum, this group provides the prime venue for effects guidance that directly informs the JFC.

4. JTF HQ Directorates

a. **An effects-based approach has application to every joint function, but on a JFC staff effects-based processes are most relevant to the Intelligence (J2), Operations (J3) and Plans (J5) Directorates**.

b. These directorates have the numbers of people and skill sets to produce functional products that are the basis for a cross-functional review by the boards, centers, and cells.

In an effects-based approach every process and product requires a merger of intelligence, operations, and plans activities. Specific directorate responsibilities follow.

5. JTF J-2 Intelligence Directorate

a. Historically, the intelligence directorate gives the CJTF the situational awareness needed to conduct an operation. This awareness has normally been centered on the adversary—its intentions and capabilities—within an OA. The directorate analyses the environment and adversary in order to identify possible adversary COAs. In short, the directorate manages how adversary and friendly COAs are evaluated and wargamed to support the CJTF's decision-making process.

b. In an effects-based approach a force-on-force analysis is not sufficient. **The JTF Intelligence Directorate has to provide the CJTF analyses that go beyond the purely military aspects of the operation**. The CJTF needs to understand the diplomatic, political, cultural and the other implications of various friendly COAs in order to determine the most efficacious COA: the set of actions that will lead to the desired effects. They also access—via the JIC—the interagency sources of intelligence.

6. JTF J-3 Operations Directorate

a. The J-3 is charged with ensuring the CJTF gives actionable direction to the subordinate commands. Its organization is explicitly designed to manage the overall operation by providing the structure and resources that support the JOC and its associated boards, centers, groups, cells, and elements.

b. The JTF operations directorate is the ultimate integrator of all the disparate activities from the other staff directorates. It actualizes the plans of the staff, especially the work of the J-5. It essentially runs the JOC and is the final staff arbiter before products are given to the CJTF for approval. **Along with the combatant command J-3, this JTF directorate also provides the resources that maintain the current state of friendly systems: national and international, government and non-government to include their interconnectivity**.

7. JTF J-5 Plans and Policy Directorate

a. The J-5 supports the management of OPLAN/OPORD development. It manages the means for campaign and joint operations planning and associated estimates of the situation. It conducts the mission analysis for future operations and develops the courses of action.

b. **The JPG receives much of its support directly from the J-5 staff and manages the CJTF's operational design, especially its effects-based aspects**. In short, the JPG manages the CONOPS that, along with commander's intent, guides the mission analysis and COA development, analysis, comparison and approval.

8. Combatant Command Headquarters

a. **The supported combatant command has the predominate role in an effects-based approach** to ensure joint force operations are inherently part of a unified action. The combatant command has to be organized to harmonize its operations with that of the interagency and the multinational community. To accomplish this purpose the CCDR's HQ requires organizations that can effectively deal with non-military activities—both governmental and non-governmental—which can impact the conduct of the joint operation. These organizations are the Standing Joint Forces Headquarters (SJFHQ), the JIACG, the JIC, and the Executive Steering Group (ESG).

b. **Standing Joint Force Headquarters. The SJFHQ conducts effects-based planning and maintains day-to-day situational understanding of the OE as an integral part of the overall HQ planning and execution efforts lead by the J5 and J3**. It offers the CCDR or CJTF a capability to augment the combatant command, the JTF staff or both by providing a trained cadre that has a system perspective of the battlespace and is able to apply effects-based thinking to mission analysis and COA development. Because it normally operates at the theater strategic level, the SJFHQ can help the JTF staff broaden their view of how to attain the strategic and operational end states and effects. Its purpose is to provide an additional planning capability to the CCDR's HQ and a means to help "jump start" the formation and operation of a JTF HQ.

c. **Joint Interagency Coordination Group.** Another combatant command HQ organization is the JIACG. **It is a multifunctional advisory group on the CCDR staff that facilitates planning, coordination and information sharing across the interagency community**. The primary role of the JIACG is to enhance the interchange among military and civilian organizations and make unified action more cohesive.

d. **Joint Intelligence Center.** The JIC is the intelligence center of the combatant command HQ. The JIC is responsible for providing and producing the intelligence required to support the CCDR and staff, components, subordinate joint forces and elements, and the national intelligence community. **It is the principal organization among the JFCs' HQs with the potential reachback capability to integrate the view of the OE for non-military systems**.

e. **Executive Steering Group.** The ESG may be composed of the principals from the combatant command, JTF, the embassy, NGOs and intergovernmental organization communities present in the OA, and other organizations as appropriate. Lacking another similar forum, the ESG can provide high-level outlet for the exchange of information about operational policies as well as for resolution of difficulties arising among the various organizations. **The ESG plays a policy role and is charged with interpreting and coordinating theater aspects of strategic policy to promote unified action**. The ESG may be charged with formulating, coordinating, and promulgating local and theater policies required for the explanation, clarification, and implementation of policies vetted by the JIACG. The ESG should either be co-chaired by the JFC and Ambassador or assigned outright to either individual, depending on the nature of the US mission.

9. Conclusion

a. **The effects-based approach to planning, execution and assessment influences the processes of many organizations in both the combatant command and JTF HQs**. It cannot be confined to any single organization because it is a pervasive joint force command and staff process that aligns ends, ways, and means. But this approach is most applicable to those organizations whose authorities and responsibilities are centered on three functions: intelligence, operations and plans.

b. Because every CCDR and CJTF has the authority to organize the joint HQs as they deem fit, the number and diversity of boards, centers, cells and groups among the combatant commands and JTFs is enormous within DOD. Even so, **every effects-based process and product needs a principal owner:** a responsible and accountable organization. This chapter is merely suggestive of where this organizational accountability could reside.

APPENDIX B
ORDERS FOR AN EFFECTS-BASED APPROACH

"Action is the governing rule of war."

Ferdinand Foch

1. Introduction

a. **The basic five-paragraph operation order/fragmentary order remains relevant in an effects-based approach.** The text may be enhanced with pictures, graphics and hyper-links, and the finished product may be posted on a web page. However, the general order format is unchanged. It includes: (1) Situation, (2) Mission, (3) Execution, (4) Administration and Logistics, and (5) Command and Control. **Increased emphasis is placed on development and refinement of the order within a collaborative process that has taken full advantage of input from all subordinate and supporting commands and agencies.** This collaborative process is a significant departure from legacy staff practices where action officers create orders and then ask for a review and comment from their subordinate and higher HQs.

b. What follows in Annex A of this appendix are recommended changes (or additions) associated with orders developed to support an effects-based approach to joint operations. To the extent feasible these changes conform to the basic format contained in JP 5-0, *Joint Operation Planning*. Also, in Annex B of this appendix, a sample OPORD is presented using the handbook vignette—during the later phases of Operation PRECISE PURGE.

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ANNEX A TO APPENDIX B
INSTRUCTIONS FOR WRITING ORDERS WITH EFFECTS LANGUAGE

An OPORD or FRAGORD with effects-based language is designed to sustain a system perspective of the OA at every phase of the operation while promoting situational understanding by all participants. A well written order ensures the JFC's intent is fully understood at all echelons and integrates, to the extent possible, all available resources and capabilities available to achieve the overall purpose and end state of the operation. Increased weight is placed on synchronizing or "harmonizing" military and non-military actions. This integration is not confined to annexes or appendices, but is incorporated in the basic order, especially, paragraphs 1, 2 and 3. The instructions that follow expand this format to include the most relevant effects-based content—highlighted in red text.

TITLE
References (SoSA Summaries are referenced.)

1. Situation

a. General.
b. Area of Concern
   (1) Area of Responsibility
   (2) Area of Interest
   (3) Joint Operations Area
c. Deterrent Options/Actions (General description)
   (1) Diplomatic Deterrent
   (2) Informational Deterrent
   (3) Military Deterrent
   (4) Economic Deterrent
d. Enemy Systems
   (1) Centers of Gravity
   (2) Critical Factors (Emphasis on vulnerable key nodes/critical capabilities)
   (3) - (6) (No change)
e. Friendly Systems (Friendly instruments of power will be described to include, at a minimum, the diplomatic, military, informational and economic.)
   (1) Centers of Gravity
   (2) Critical Factors (Emphasis on vulnerable key nodes/critical capabilities)
   (3) Multinational Forces
   (4) Supporting Commands and Agencies
      (a) US Departmental strategic goals: diplomatic, economic, informational, humanitarian, etc.
      (b) Significant milestones in the transition (to civilian control) process
f. Assumptions
g. Legal Considerations

2. Mission (No Change)

3. Execution

a. Concept of Operations

(1) Commander's Intent

(a) Purpose

(b) End State (Describe in detail what the CCDR wants the (military) situation to be when operations conclude. The end state resolves the crisis, reestablishes the peace, and sets the conditions for stability.)

(c) Objectives (Describe the clearly defined, decisive, and attainable strategic goals toward which all operations are directed. If necessary, the thread between objectives, effects and then actions could be detailed.)

(d) Effects (Describe the desired physical and/or behavioral state of the relevant systems. Under this paragraph component actions (tasks) can be linked to each PEL effect. Subordinate commands must understand their contribution in terms of actions that will support the accomplishment of the CCDR level effects, ultimately achieving the national strategic objectives.)

(e) Deployment

(f) Employment

(2) General. (Concept of Operations)

(a) Phase X

1. Commander's Intent

2. Phase Timing (Describe the period of action—the start and end point for each section of the operation.)

3. Phase End State (Describe in detail what the CCDR wants the conditions to be when operations conclude at the end of the phase. This paragraph could also include the phase objectives.)

4. Phase Effects (For each period of action—the end point for each section of the campaign—describe the physical and/or behavioral state of relevant systems.)

5. Phase Tasks (For each period of action- the end point for each section of the campaign list and describe the task by phases assigned by the commander to the supported and supporting commanders. Fully explain the purpose of each task and list the associated effect that must be achieved by conducting the assigned task.)

6. Risks (Commanders must have a process for identifying and controlling risk arising form operational factors and making an informed decision that balances risk with mission benefits. Risk assessment must occur on all phases and all undesired effects.)

7. Supported/Supporting Roles

a. Interagency Community (Pertinent objectives and supporting /supported tasks that need to be accomplished for each participating agency.)

b. Multi-national (Pertinent objectives and supporting / supported tasks that need to be accomplished for each international partner.)

c. Nongovernment Organizations (Pertinent objectives and supporting /supported tasks that need to be accomplished by each contributor.)

b. Coordinating Instructions

4. Administration and Logistics

5. Command and Control

a. Command Relationships (including transition to civilian control)
b. Command Posts
c. Succession to Command
d. Command, Control, Communications, and Computer (C4) Systems

ANNEX A- TASK ORGANIZATION

ANNEX B - INTELLIGENCE

Appendix 1 – 10 (No change)

Appendix 11 Blue Red Analysis

The Blue Red cell provides insight into the adversary's political and military objectives and potential COAs in response to real or perceived Blue actions or intentions.

The Blue Red Cell will:

- Provide relevant input and critical assessment of the Blue-developed SoSA.
- Address potential key nodes developed through the SoSA process.
- Address potential adversary responses to counter Blue COAs and objectives.
- Identify critical Blue vulnerabilities and potential operational miscues that an adversary might exploit to include (1) a Red view of Blue's systems' critical capabilities/vulnerabilities, (2) a Red view of Red's systems' critical capabilities/vulnerabilities, and (3) a Red view of Red's military and non-military actions and strategies that might be used against Blue's systems.

Appendix 12 - ISR Collection (Emphasis on discovering system behavior as it relates to desired and undesired effects—the strategic and operational conditions to be attained.)

ANNEX C, OPERATIONS

Appendix 1 – 16 (No change)

Appendix 17 – Prioritized Effects List (PEL) (The PEL consists of three principal parts: (1) JFC's prioritized list of effects, (2) refined engagement/targeting guidance and links to applicable web-based documents, and (3) key nodes (and associated effects). The PEL supports execution operations.

Appendix 18 - Effects Assessment Guidance (Includes PEL effects and their associated MOE/indicators.)

ANNEX D thru J (No change)

ANNEX K, COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER SYSTEMS

Appendix 1 – 7 (No Change)

Appendix 8 – Collaborative Information Environment

ANNEX L thru U (No change)

ANNEX V, INTERAGENCY COORDINATION

Appendix 1 General

(1) Conflictive US/international goals

(2) Political impact on neighboring countries and region

(3) Evaluation of political initiatives

(a) Isolation of belligerents

(b) Support from other nations

(c) Inclusion of OGA, NGOs, and intergovernmental organizations

(4) Political-Military Team Identification (Expect JIACG to provide in depth advice and assistance, and actual personnel: most operations will require specific members from agencies to be temporarily assigned to a CCDR staff.)

(5) Interagency Leads (Identify agency points of contact for decision.)

Appendix 2 Centers of Excellence Coordination and Security Requirements (List COEs and their points of contact. Identify security clearance mismatches and their resolutions.)

ANNEX X, EXECUTION CHECKLIST

ANNEX Y, JOINT INTEGRATION MATRIX

ANNEX Z, DISTRIBUTION

NOTE: The letters I, O, and Y are intentionally omitted as appendix designations. I and O are not authorized. Y may be used, if required.

ANNEX B TO APPENDIX B
SAMPLE ORDER

FROM: CJTF XXX
TO:
OPER/**PRECISE PURGE**//
MSID/34/CJTF XXX//

1. GENTEXT/**SITUATION**/
A. GENERAL. MAJOR COMBAT OPERATIONS AGAINST THE REMNANTS OF GOB FORCES ARE COMING TO A CLOSE. THE INSURGENTS ARE DISTANCING THEMSELVES FROM THE FOREIGN TERRORISTS. THE TERRORISTS ARE PRACTICING RANDOM AND INDESCRIMINATE KILLING. THE COALITION IS GAINING SUPPORT FROM NEIGHBORING COUNTRIES. INTERIM ELECTIONS PRODUCED AN OVERWHELMING TURNOUT FROM EVERY TRIBAL GROUP.
B. AREA OF CONCERN/OPERATIONAL ENVIRONMENT
(1) ADVERSARY SYSTEM
(A) POLITICAL. THE SCHISM BETWEEN THE DELTAS AND ALPHAS HAS INCREASED TO THE POINT THEY ARE NO LONGER CONFERING ON OVERALL STRATEGY AND POLICY.
(B) MILITARY. THE DELTAS ARE NO LONGER FIGHTING AND HAVE BEGUN TO WITHDRAW THEIR LOGISTICAL SUPPORT TO THE ALPHAS.
(C) ECONOMIC. CROSS BORDER COMMERCE HAS INCREASED SIGNIFICANTLY, BUT THE WESTERN AND EASTERN REGIONS HAVE VIRTUALLY NO COMMERCIAL INTERACTION.
(D) SOCIAL. RELIGIOUS STRIFE CONTINUES TO DOMINATE THE POLITICAL EXCHANGES BETWEEN SOUTHERN AND NORTHERN FACTIONS, BUT IS UNLIKELY TO LEAD TO VIOLENCE.
(E) INFORMATION. INSURGENTS ARE STILL RECEIVING SIGNIFICANT SUPPORT IN REGIONAL MEDIA COVERAGE.
(F) INFRASTRUCTURE. INSURGENTS AND TERRORISTS MAINTAIN NO SIGNIFICANT FIXED FACILITIES AND HAVE DISPERSED WEAPONS CACHES.
(2) FRIENDLY SYSTEMS
(A) POLITICAL. THE COALITION HAS ADDED THE GOVERNMENTS OF BELLI AND FIRTH.
(B) MILITARY. THE COALITION MILITARY FORCE IS NO LONGER THE FRIENDLY OPERATIONAL COG AND HAS BEEN REPLACED WITH THE COALITION CIVIL AUTHORITY.
(C) ECONOMIC. EXPORTS HAVE REACHED PARITY WITH IMPORTS.
(D) SOCIAL. TRIBES IN THE EAST HAVE BEGUN TO FORM A POLITICAL PARTY IN ANTICIPATION OF THE FOLLOW –ON ELECTIONS.
(E) INFRASTRUCTURE. COMBAT SERVICE SUPPORT TROOPS HAVE REPLACED COMBAT TROOPS TO REINFORCE CIVILIAN RECONSTRUCTION IN THE SOUTHERN REGION.
(F) THE FIRST INDEPENDENT TV/RADIO BROADCAST NETWORK TRANSMITS 24 HOURS A DAY FROM THE CAPITAL. CITY WITH AN ESTIMATED 2 MILLION LISTENERS.
C. DETERRENT OPTIONS. SEE OPLAN XXXX.

D. ENEMY SYSTEMS/FORCES
(1) CENTERS OF GRAVITY.
(A) TERRORISTS: IDEOLOGY OF MYSTIC NIHILISM
(B) INSURGENCY: THE CONFEDERATION OPPOSED TO FOREIGN INFLUENCE (THE COFI)
(2) CRITICAL FACTORS (VULNERABILITIES):
(A) MYSTIC NIHILIST GLOBAL SCHOOL SYSTEM
(B) FORMER BROWN MILITARY OFFICERS
E. FRIENDLY SYSTEMS/FORCES
(1) CENTERS OF GRAVITY.
(A) COALITION: PUBLIC PERCEPTION OF COSTS: "BLOOD/TREASURE"
(B) MILITARY FORCES: UNIT MORALE
(2) CRITICAL FACTORS (VULNERABILITIES):
(A) HOME COUNTRY LEGISLATURES AND WORLD MEDIA
(B) FRIENDLY FORCE PROTECTION CAPABILITES
F. ASSUMPTIONS. SEE OPLAN XXXX
G. LEGAL CONSIDERATIONS. SEE OPLAN XXXX
2. GENTEXT/**MISSON**/
THE COALITION, ON ORDER, CONDUCTS OPERATIONS TO DEFEAT BROWN MILITARY FORCES, PREVENT/MITIGATE A COUNTERINSURGENCY, AND ESTABLISH A FRIENDLY GOVERNMENT IN ORDER TO DENY SANCTUARY AND SUPPORT TO TRANSNATIONAL TERRORISTS.
3. GENTEXT/**EXECUTION**/
A. CONCEPT OF OPERATIONS
(1) COMMANDER'S INTENT
(A) PURPOSE. TO ELIMINATE AND PREVENT TRANSNATIONAL TERRORISTS OPERATING FROM THE COUNTRY OF BROWN.
(B) END STATE. COUNTRY OF BROWN FUNCTIONS AS A REPRESENTATIVE GOVERNMENT RULED BY LAW AND ABLE TO SUSTAIN INTERNAL/EXTERNAL SECURITY.
(C) STRATEGIC OBJECTIVES.
1. EXPULSION OF THE TERRORISTS FROM THE COUNTRY OF BROWN.
2. INSTALLATION OF A FRIENDLY GOVERNMENT IN BROWN.
3. NO DOMINATION BY ANY SINGLE TRIBE IN BROWN.
4. PEACE AND STABILITY IN THE REGION.
(D) EFFECTS
1. PHASE IV
A. POPULACE VOTES IN PARLIMENTARY ELECTIONS
B. CROSS-BORDER COMMERCE EXPANDS TO PRE-WAR LEVELS
2. PHASE V
A. FOREIGN TERRORISTS LEAVE COUNTRY OF BROWN
B. INSURGENTS NEGOTIATE WITH CENTRAL GOVERNMENT
3. PHASE VI
A. POPULACE OBEYS CIVIL AUTHORITY
B. COALITION MILITARY FORCES WITHDRAW FROM BROWN

B. TASKS
(1) JFLCC
(A) SUPPORT THE ELECTION PROCESS
(B) KILL OR CAPTURE INSURGENT/TERRORIST LEADERSHIP
(2) JFACC
(A) PROVIDE OVERHEAD SURVELLIANCE OF TERRORIST ACTIVITY
(3) JFMCC
(A) SECURE SEAPORTS AND TERMINAL OIL PIPELINES
(4) JFSOCC
(A) DISCREDIT INSURGENT/TERRORIST AGENDAS
4. **GENTEXT**/ADMIN AND LOG/ SEE OPLAN XXXX
5. **GENTEXT**/COMMAND AND SIGNAL/ SEE OPLAN XXXX

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APPENDIX C
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GLOSSARY
PART I—ABBREVIATIONS AND ACRONYMS

BDA	battle damage assessment
CA	combat assessment
CC	critical capability
CCDR	combatant commander
CCIR	commander's critical information requirements
CDR	commander
CJTF	Commander, Joint Task Force
CJCS	Chairman, Joint Chiefs of Staff
CMD	command
COA	course of action
COG	center of gravity
COP	common operational picture
COMP	component
CONOPS	concept of operations
CR	critical requirement
CV	critical vulnerability
EA	effects assessment
EAC	effects assessment cell
ESG	executive steering group
EWG	effects working group
EXORD	execute order
FRAGORD	fragmentary order
HQ	headquarters
IM	information management or manager
ISR	intelligence, surveillance and reconnaissance
IPB	intelligence preparation of the battlespace
IO	information operations
JCS	Joint Chiefs of Staff
JEC	joint effects cell
JFACC	joint force air component commander
JFC	joint force commander
JFLCC	joint force land component commander
JFMCC	joint force maritime component commander
JIACG	joint interagency coordination group
JIC	joint intelligence center
JIPB	joint intelligence preparation of the battlespace
JIPCL	joint integrated prioritized collection list
JISE	joint intelligence support element
JOA	joint operations area

JOC	joint operations center
JOPES	joint operation planning and execution system
JOPP	joint operation planning process
JPG	joint planning group
JTCB	joint targeting and coordination board
KM	knowledge management or manager
LOO	line of operation
MEA	munitions effectiveness assessment
MOC	measure of causality
MOE	measure of effectiveness
MOP	measure of performance
NGO	non-government organization
OA	operational area
OGA	other government agency
ONA	operational net assessment
OPORD	operation order
PEL	priority (or prioritized) effects list
PIR	priority intelligence requirements
PSYOP	psychological operations
ROE	rule of engagement
RUF	rule for the use of force
SJFHQ	standing joint force headquarters
SoSA	system of systems analysis
STO	special technical operations
USCENTCOM	United States Central Command
USFK	United States Forces Korea
USJFCOM	United States Joint Forces Command
USPACOM	United States Pacific Command
USTRATCOM	United States Strategic Command
WME	weapon of mass effect

PART II—TERMS AND DEFINITIONS

(All the relevant terms in this handbook have been judiciously used to conform to existing and evolving doctrine. The definitions that follow come from JP 1-02, *DOD Dictionary of Military and Associated Terms,* except for those that are "bolded" in their entirety.)

battle damage assessment. The timely and accurate estimate of damage resulting from the application of military force, either lethal or non-lethal, against a predetermined objective. Battle damage assessment can be applied to the employment of all types of weapon systems (air, ground, naval, and Special Forces weapon systems) throughout the range of military operations. Battle damage assessment is primarily an intelligence responsibility with required inputs and coordination from the operators. Battle damage assessment is composed of physical damage assessment, functional damage assessment, and target system assessment.

battlespace. The environment, factors, and conditions that must be understood to successfully apply combat power, protect the force, or complete the mission. This includes the air, land, sea, space, and the included enemy and friendly forces; facilities; weather; terrain; the electromagnetic spectrum; and the information environment within the operational areas and areas of interest.

behavior. Beliefs, intentions, and/or their resultant actions. (USJFCOM)

branch. The contingency options built into the basic plan. A branch is used for changing the mission, orientation, or direction of movement of a force to aid success of the operation based on anticipated events, opportunities, or disruptions caused by enemy actions and reactions.

campaign. A series of related military operations aimed at accomplishing a strategic or operational objective within a given time and space.

capability. The ability to execute a specified course of action. (A capability may or may not be accompanied by an intention.)

center of gravity. The source of power that provides physical and moral strength, freedom of action, or the will to act. (JP 3-0, RFC)

combat assessment. The determination of the overall effectiveness of force employment during military operations. Combat assessment is composed of three major components: (a) battle damage assessment; (b) munitions effectiveness assessment; and (c) re-attack recommendation.

commander's critical information requirements. Commander's critical information requirements comprise information requirements identified by the commander as being critical in facilitating timely information management and the decision-making process that affect successful mission accomplishment. Two of the three key subcomponents are critical friendly force information and priority intelligence requirements.

commander's intent. A concise expression of the purpose of the operation and the desired effects and end state that serves as the initial impetus for the planning process. It may also include the commander's assessment of the adversary commander's intent and an assessment of where and how much risk is acceptable during the operation. (USJFCOM)

common operational picture. A single identical display of relevant information shared by more than one command. A common operational picture facilitates collaborative planning and assists all echelons to achieve situational awareness.

component. One of the subordinate organizations that constitute a joint force. Normally a joint force is organized with a combination of Service and functional components.

concept of operations. A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The concept of operations frequently is embodied in campaign plans and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose.

condition. Those variables of an operational environment or situation in which a unit, system, or individual is expected to operate and may affect performance.

course of action. Any sequence of activities that an individual or unit may follow.

decision point. The point in space and time where the commander or staff anticipates making a decision concerning a specific friendly course of action. A decision point is usually associated with a specific target area of interest, and is located in time and space to permit the commander sufficient lead time to engage the adversary in the target area of interest. Decision points may also be associated with the friendly force and the status of ongoing operations.

decisive point. **A geographic place, specific key event or effect, critical system, or function that, when acted upon, allows commanders to gain a marked advantage over an adversary or contribute materially to achieving a desired effect, thus greatly influencing the outcome of an action. (JP 3-0, RFC)**

directive. A military communication in which policy is established or a specific action is ordered.

effect. 1. The physical and/or behavioral state of a system that results from an action, a set of actions, or another effect. (JP 3-0, RFC) 2. A change to a condition, behavior, or degree of freedom.

end state. The set of required conditions that defines achievement of the commander's objectives.

fires. Actions using lethal or nonlethal weapons to produce a specific effect on a target. (JP 3-0, RFC)

functions. The appropriate or assigned duties, responsibilities, missions, or tasks of an individual, office, or organization.

harmonization. The process and/or results of adjusting differences or inconsistencies to bring significant features into agreement.

indicator. One or more metrics that provides system understanding by comparing metrics with standard(s) to assess an action, task, effect, or end state. (USJFCOM)

intention. An aim or design (as distinct from capability) to execute a specified course of action.

joint force commander. A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force.

joint intelligence preparation of the battlespace. The analytical process used by joint intelligence organizations to produce intelligence assessments, estimates and other intelligence products in support of the joint force commander's decision making process. It is a continuous process that includes defining the total battlespace environment; describing the battlespace's effects; evaluating the adversary; and determining and describing adversary potential courses of action. The process is used to analyze the air, land, sea, space, electromagnetic, cyberspace, and human dimensions of the environment and to determine an opponent's capabilities to operate in each. Joint intelligence preparation of the battlespace products are used by the joint force and component command staffs in preparing their estimates and are also applied during the analysis and selection of friendly courses of action.

joint operation planning. Planning for contingencies that can reasonably be anticipated in an area of responsibility or joint operations area of the command. Planning activities exclusively associated with the preparation of operation plans, operation plans in concept format, campaign plans, and operation orders (other than the Single Integrated Operational Plan) for the conduct of military operations by the combatant commanders in response to requirements established by the Chairman of the Joint Chiefs of Staff.

joint operations. A general term to describe military actions conducted by joint forces or by Service forces in relationships (e.g., support, coordinating authority) which, of themselves, do not create joint forces.

key node. A node that is associated with a center of gravity or an operational/ strategic effect. (USJFCOM)

lines of operations. 1. The major grouping of effects or tasks required to achieve operational/strategic, objectives and/or end states. They establish the major

"thrust lines" around which the overall plan is designed. They can be developed through political/diplomacy, military, economic, informational groupings, or along functional grouping such as security, governance, economic development, communications or other combinations that provide a logical breakdown of the major activities required to resolve the crisis and achieve the commander's objectives. (USJFCOM) 2. Physical line that defines the directional orientation of the force in time and space in relation to the enemy. It connects the force with its base of operations and its objectives.

link. An element of a system that represents a behavioral, physical or functional relationship between nodes. (USJFCOM) See node.

measure. The degree to which an effect, action, system, node or link possesses a given attribute. (USJFCOM)

measure of effectiveness. A criterion used to assess changes in system behavior or capability that is tied to measuring the attainment of an end state, achievement of an objective, or creation of an effect. (JP 3-0, RFC)

measure of performance. A criterion used to assess friendly actions that is tied to measuring task accomplishment. (JP 3-0, Rev, 2)

metric. A portrayal of an attribute based on two or more measures. (USJFCOM)

mission. The task, together with the purpose, that clearly indicates the action to be taken and the reason therefore.

node. An element of a system that represents a person, place or physical thing. (USJFCOM)

objective. The clearly defined and attainable goal toward which every operation is directed. (JP 3-0, RFC)

operation. A military action or the carrying out of a strategic, operational, tactical, service, training, or administrative military mission.

operation order. A directive issued by a commander to subordinate commanders for the purpose of effecting the coordinated execution of an operation.

operational area. An overarching term encompassing more descriptive terms for geographic areas in which military operations are conducted. Operational areas include, but are not limited to, such descriptors as area of responsibility, theater of war, theater of operations, joint operations area, amphibious objective area, joint special operations area, and area of operations.

operational art. The employment of military forces to achieve strategic and/or operational objectives through the design, organization, integration, and conduct of strategies, campaigns, major operations, and battles. Operational art translates

the joint force commander's strategy into operational design, and, ultimately, tactical action, by integrating key activities of all levels of war. (JP 3-0, Rev, 2)

operational design. The process of developing the intellectual framework that will underpin joint operation plans or campaigns and their subsequent execution. (JP 3-0, Rev, 2)

operational area. An overarching term encompassing more descriptive terms for geographic areas in which military operations are conducted. Operational areas include, but are not limited to, such descriptors as area of responsibility, theater of war, theater of operations, joint operations area, amphibious objective area, joint special operations area, and area of operations.

operational environment. 1. The air, land, sea, space, and associated adversary, friendly, and neutral systems (political, military, economic, social, informational, infrastructure, legal, and others), which are relevant to a specific joint operation. (JP3-0, Rev, 2) 2. A composite of the conditions, circumstances, and influences that affect the employment of military forces and bear on the decisions of the commander.

operational level of war. The level of war at which campaigns and major operations are planned, conducted, and sustained to achieve strategic objectives within theaters or other operational areas. Activities at this level link tactics and strategy by establishing operational objectives needed to achieve the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events. (JP 3-0, RFC)

prioritized (or priority) effects list. The effects that a joint force commander identifies to guide the planning, execution and assessment of an operation. (USJFCOM)

priority intelligence requirement. An intelligence requirement, stated as a priority for intelligence support, the commander and staff need to understand with regard to the adversary or operational environment. (JP 3-0, Rev, 2)

reachback. The process of obtaining products, services, and applications, or forces, or equipment, or material from organizations that are not forward deployed.

sequel. A major operation that follows the current major operation. Plans for a sequel are based on the possible outcomes (success, stalemate, or defeat) associated with the current operation.

strategic level of war. The level of war at which a nation, often as a member of a group of nations, determines national or multinational (alliance or coalition) security objectives and guidance, and develops and uses national resources to accomplish these objectives. Activities at this level establish national and multinational military objectives; sequence initiatives; define limits and assess risks for the use of military and other instruments of national power; develop global plans or theater war plans to achieve these objectives; and provide military forces and other capabilities in accordance with strategic plans.

supported commander. 1. The commander having primary responsibility for all aspects of a task assigned by the Joint Strategic Capabilities Plan or other joint operation planning authority. In the context of joint operation planning, this term refers to the commander who prepares operation plans or operation orders in response to requirements of the Chairman of the Joint Chiefs of Staff. 2. In the context of a support command relationship, the commander who receives assistance from another commander's force or capabilities, and who is responsible for ensuring that the supporting commander understands the assistance required.

supporting commander. 1. A commander who provides augmentation forces or other support to a supported commander or who develops a supporting plan. Includes the designated combatant commands and Defense agencies as appropriate. 2. In the context of a support command relationship, the commander who aids, protects, complements, or sustains another commander's force, and who is responsible for providing the assistance required by the supported commander.

synchronization. The arrangement of military and non-military actions in time, space, and purpose to achieve maximum effectiveness.

system. 1. A functionally, physically, or behaviorally related group of regularly interacting or interdependent elements; that group of elements forming a unified whole. Systems associated with national security include political, military, economic, social, informational, infrastructure, and others. (JP 3-0, Rev, 2)

system-of-systems analysis. An analytical process that holistically examines a potential adversary and/or operational environment as a complex, adaptive system, including its structures, behavior, and capabilities in order to identify and assess critical factors and system interrelationships. (USJFCOM)

tactical level of war. The level of war at which battles and engagements are planned and executed to achieve military objectives assigned to tactical units or task forces. Activities at this level focus on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives. (JP 3-0, Rev, 2)

target. An area, complex, installation, force, equipment, capability, function, or behavior identified for possible action to support the commander's objectives, guidance, and intent.

task. A directive statement used to assign a discreet action or set of actions to an organization that enables a mission or function to be accomplished. A single task may incorporate multiple individual actions. (USJFCOM)

theater. The geographical area outside the continental United States for which a commander of a combatant command has been assigned responsibility.

unified action. A broad generic term that describes the wide scope of actions (including the synchronization of activities with governmental and nongovernmental agencies)

taking place within unified commands, subordinate unified commands, or joint task forces under the overall direction of the commanders of those commands.

unity of effort. A broad generic term that describes the intended synchronization and coordination of activities with governmental and non-governmental agencies taking place by unified commands, subordinate unified commands, joint task forces, and their subordinate commands, with organizations and agencies not under the overall direction of the commanders of those commands towards a common set of objectives. (USJFCOM)

warning order. 1. A preliminary notice of an order or action which is to follow. 2. A crisis action planning directive issued by the Chairman of the Joint Chiefs of Staff that initiates the development and evaluation of courses of action by a supported commander and requests that a commander's estimate be submitted.

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Standing Joint Force Headquarters (Core Element)


Joint
Experimentation


JOINT
WARFIGHTING CENTER
USJFCOM