SERGEANTS MAJOR ACADEMY
J600: Coalition/Joint Force Land Component Command Operations

Lesson J604
Joint Intelligence Preparation of the Operational Environment (JIPOE)

Reading A
JP 2-01.3
JIPOE
(Excerpt)
21 May 2014

CHAPTER I
AN OVERVIEW OF JOINT INTELLIGENCE PREPARATION OF THE OPERATIONAL ENVIRONMENT

"Nothing is more worthy of the attention of a good general than the endeavor to penetrate the designs of the enemy."

Niccolo Machiavelli
***Discourses*, 1517**

1. Introduction

a. Joint intelligence preparation of the operational environment (JIPOE) is the analytical process joint intelligence organizations use to produce intelligence assessments, estimates, and other intelligence products in support of the joint force commander's (JFC's) decision-making process. Throughout the document the term adversary may imply other relevant actors based on the threat or impact the relevant actors may have on joint operations. JIPOE is a continuous process that involves four major steps:

(1) Define the operational environment (OE).

(2) Describe the impact of the OE.

(3) Evaluate the adversary and other relevant actors.

(4) Determine the course of action (COA) for adversary and other relevant actors, particularly the most likely COA and the COA most dangerous to friendly forces and mission accomplishment.

b. The OE is a composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. The JIPOE process is used to analyze all relevant aspects of this environment, including the adversary and other actors; the physical domains (air, land, maritime, and space); the information environment (which includes cyberspace); and political, military, economic, social, information, and infrastructure (PMESII) systems and subsystems. Joint force, component, and supporting command staffs use JIPOE products to prepare their estimates and to analyze and select friendly COAs. Because the intelligence directorate of a joint staff (J-2) leads the effort to understand this environment, the J-2 is a key participant in operational design that begins early during mission analysis and drives the rest of the joint operation planning process (JOPP).

c. JIPOE's main focus is to provide predictive intelligence designed to help the JFC discern the adversary's probable intent and most likely future COA. The JIPOE process identifies adversary and other relevant actor centers of gravity (COGs) and determines their capabilities to operate within the OE. JIPOE also helps the JFC gain information

superiority by providing timely intelligence, focusing intelligence collection at the right time and place, and analyzing the evolving OE. By enhancing the JFC's understanding of relevant aspects of the OE, JIPOE improves the JFC's ability to understand, anticipate, and/or influence the decision making and associated behavior of relevant actors in a manner consistent with operational objectives. A holistic understanding of all relevant components within the OE helps the JFC to know how the OE constrains or shapes options, how the OE affects capabilities, and how friendly, adversary, and neutral actors' actions affect or shape the conflict. Of greatest significance, understanding relevant aspects of the OE enables the JFC to leverage aspects of the OE to achieve the objectives and attain the desired end states of the operation.

d. J-2s at all levels manage the JIPOE effort to support joint operation planning, enable commanders and other key personnel to visualize the full range of relevant aspects of the OE, identify adversary COGs, conduct assessment of enemy actions, and evaluate potential adversary COAs. The JIPOE effort needs to be coordinated, synchronized, and integrated with the separate intelligence preparation of the battlespace (IPB) efforts of the component commands and Service intelligence centers. Additionally, JIPOE relies heavily on inputs from several related, specialized efforts, such as geospatial intelligence (GEOINT) preparation of the environment (GPE) and medical intelligence preparation of the operational environment (MIPOE). All staff elements of the joint force and component commands, to include non-intelligence entities from the joint force and participating United States Government (USG) departments and agencies such as the Department of State (DOS) and the United States Agency for International Development (USAID), fully participate in the JIPOE effort by providing information and data relative to their staff areas of expertise. However, JFCs and their subordinate commanders are the key players who plan and guide the intelligence effort, and JIPOE plays a critical role in maximizing efficient intelligence operations, determining an acceptable COA, and developing a concept of operations (CONOPS). Therefore, commanders should integrate the JIPOE process and products into the joint force's planning, execution, and assessment efforts.

Refer to Joint Publication (JP) 2-0, Joint Intelligence, *and JP 2-01,* Joint and National Intelligence Support to Military Operations, *for specific procedures on requesting collection, exploitation, or production to support JIPOE. For further information regarding GEOINT, GPE, and MIPOE in joint operations, refer respectively to JP 2-03,* Geospatial Intelligence in Joint Operations, *and JP 4-02,* Health Services.

2. The Operational Environment—A Holistic View

Understanding the OE requires a holistic view that encompasses the physical areas and factors (of the air, land, maritime, and space domains) and the information environment (which includes cyberspace). Included within these are the adversary, friendly, and neutral PMESII systems, subsystems, objects, and affiliated attributes, and their relationships and interdependencies that are relevant to a specific joint operation. Understanding the OE is fundamental to identifying the conditions required to achieve stated objectives; avoiding the effects that may hinder mission accomplishment (undesired effects); and assessing the impact of friendly, adversary, and other relevant

actors, such as the local populace, on the commander's CONOPS and progress toward attaining the military end state. Figure I-1 graphically conceptualizes a holistic view of the OE.

a. **Physical Areas and Factors.** The physical areas include the assigned operational area and the associated areas of influence and interest necessary to conduct operations within the air, land, maritime, and space domains and the information environment. The OE includes numerous factors the JFC and staff must consider such as terrain, topography, hydrology, hydrography, meteorology, oceanography, and space, surface, and subsurface environmental conditions (natural or man-made); distances associated with the deployment and employment of forces and other joint capabilities; the location of bases, ports, and other supporting infrastructure; and friendly, adversary, neutral, and other combatant, or hostile, forces and capabilities. Combinations of these factors greatly affect the operational design and sustainment of joint operations.

b. **Information Environment.** The information environment is the aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information. It is made up of three interrelated dimensions: physical, informational, and cognitive. A significant component of the information environment is cyberspace, which overlaps the physical and informational dimensions of the information environment. It is

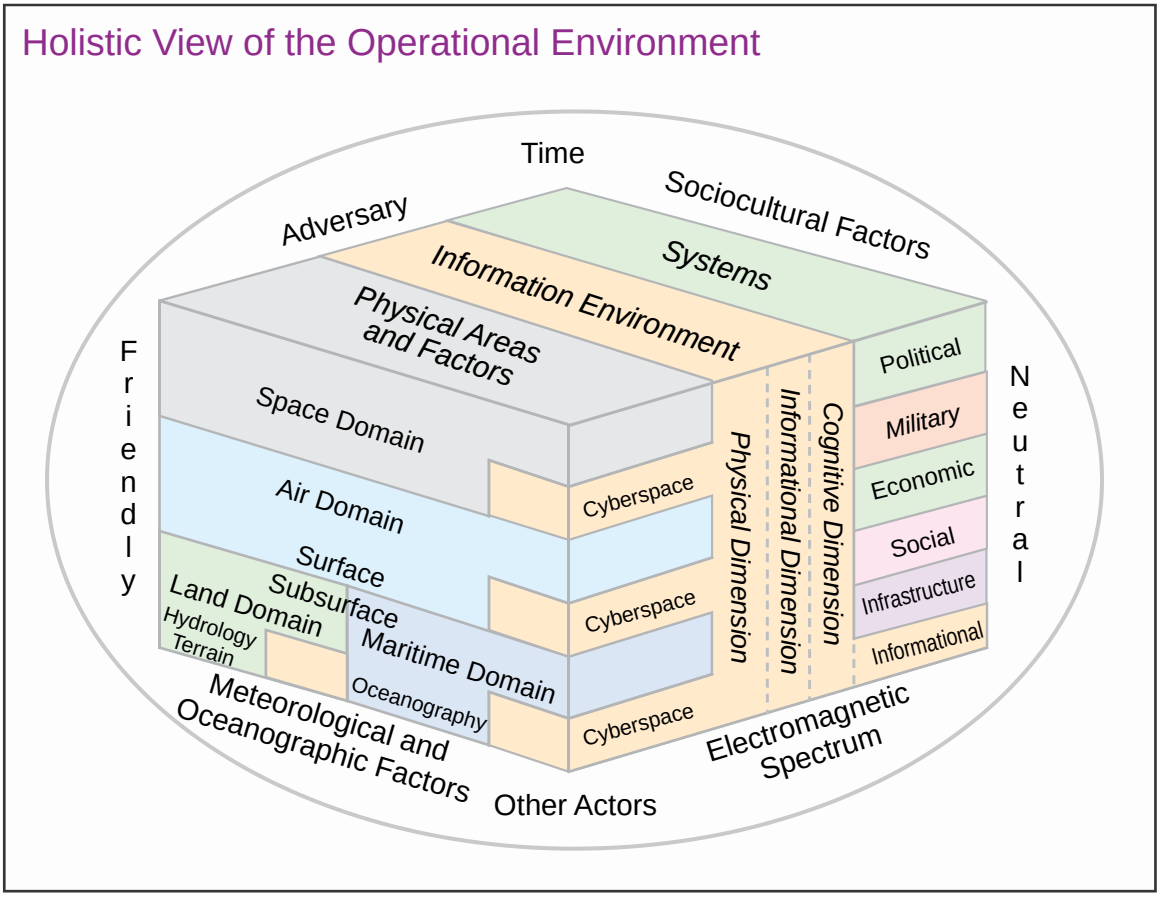

Figure I-1. Holistic View of the Operational Environment

critical that JIPOE analysis of the information environment include support to cyberspace operations (CO) and the identification of key individuals and groups having influence over the indigenous population as well as the source of their influence (e.g., social, financial, religious, political).

For more information on the information environment, refer to JP 3-13, Information Operations. *For more information on CO, refer to JP 3-12,* Cyberspace Operations.

c. **Systems Perspective.** A systems perspective of the OE usually provides an understanding of significant relationships and interdependencies within and between interrelated PMESII and other systems relevant to a specific joint operation and considering the commander's specified focus area. This focus area usually will be based on an impending or potential contingency or on other factors of interest to the JFC. Specifically, intelligence will identify key functions within the OE and derive an understanding of those functions using a systems perspective. This will enable understanding of the conditions within the OE that directly impact current functionality advantageous for friendly, adversary, or other decision makers and their decision-making processes. Among other benefits, this perspective helps intelligence analysts identify potential sources from which to gain indications and warning, and facilitates understanding the continuous and complex interaction of friendly, adversary, and neutral systems. Although this description of the OE is not itself an element of operational design, it supports most operational design elements. For example, this perspective helps analysts with COG analysis and planners with operational design by identifying nodes in each system, the links (relationships) between the nodes, critical factors, and potential decisive points. This understanding facilitates the identification and use of decisive points, lines of operation, and other operational design elements, and allows commanders and staffs to consider a broader set of options to focus limited resources, create desired effects, and achieve objectives. See Chapter III, "Describe the Impact of the Operational Environment—Step 2," for more information on the development of a systems perspective as part of the JIPOE process.

d. **Other Factors.** Some factors exert direct or indirect influence throughout all aspects of the OE. These other factors help compose a holistic view of the OE and include blue force status and location, meteorological and oceanographic (METOC) and climatology effects, sociocultural factors, and time as it relates to an adversary's ability to decide and react. In some types of operations, such as foreign humanitarian assistance, counterinsurgency, and nation assistance, some of these factors reach critical importance. Overlaying these factors is the mindset of the adversary and other relevant actors. This mindset incorporates the ambitions of key personalities, national/ethnic/sectarian aspirations, historical grievances, cultural or emotional reactions to recent events and changing conditions, the effects of information manipulation, and similar intangible motivators. A combatant command (CCMD) red team, if established, is a valuable resource in assessing the adversary mindset and estimating its impacts on the OE.

3. Differences Between Joint Intelligence Preparation of the Operational Environment and Intelligence Preparation of the Battlespace

a. JIPOE and IPB products generally differ in purpose, focus, and level of detail. The purpose of JIPOE is to support the JFC by determining the probable intent and most likely COA for the adversary and other relevant actors throughout the OE, whereas IPB is specifically designed to support the individual operations of the component commands. During operational-level, force-on-force confrontations, JIPOE utilizes a macro-analytic approach that identifies an adversary's strategic vulnerabilities and COGs, whereas IPB generally requires micro-analysis and a finer degree of detail in order to support component command operations. However, in some situations (especially during military engagement, security cooperation, and deterrence operations, or crisis response and limited contingency operations), both JIPOE and IPB will require the highest possible level of detail. JIPOE and IPB analyses support each other while avoiding a duplication of analytic effort.

b. Furthermore, the JIPOE process emphasizes a more ***holistic*** approach than IPB by analyzing and integrating a systems perspective and geospatial perspective along with the force-specific IPB perspectives of the component commands, multinational partners, or other organizations (see Figure I-2). This holistic approach creates an analytic synergy that helps JIPOE analysts assess the adversary's diplomatic, informational, military, and economic options, as well as the impacts and effects of all relevant actors on threat and friendly operations. The JIPOE process also provides a methodology for refining the assessment of the adversary's military option and for hypothesizing the adversary's most likely and most dangerous COAs. Once the JIPOE analyst has identified a likely military COA, the same analytic techniques can be used to identify the adversary's most likely CONOPS.

4. Joint Intelligence Preparation of the Operational Environment and the Joint Intelligence Process

JIPOE is a dynamic process that both supports and is supported by each of the categories of intelligence operations that comprise the intelligence process (see Figure I-3).

a. **JIPOE and Intelligence Planning and Direction.** The JIPOE process provides the basic data and assumptions regarding the adversary and other relevant aspects of the OE that help the JFC and staff identify intelligence requirements, information requirements, and collection requirements. By identifying known adversary capabilities and applying those against the impact of the OE, JIPOE provides the conceptual basis for the JFC to visualize and understand relevant aspects of the OE. It also depicts how the adversary and other relevant actors might threaten the joint force or interfere with mission accomplishment. This analysis forms the basis for developing the commander's priority intelligence requirements (PIRs), those questions the JFC considers vital to the accomplishment of the assigned mission. Additionally, by identifying specific adversary COAs and COGs, JIPOE provides the basis for wargaming in which the staff "fights" each friendly and adversary COA. This wargaming process identifies decisions the JFC

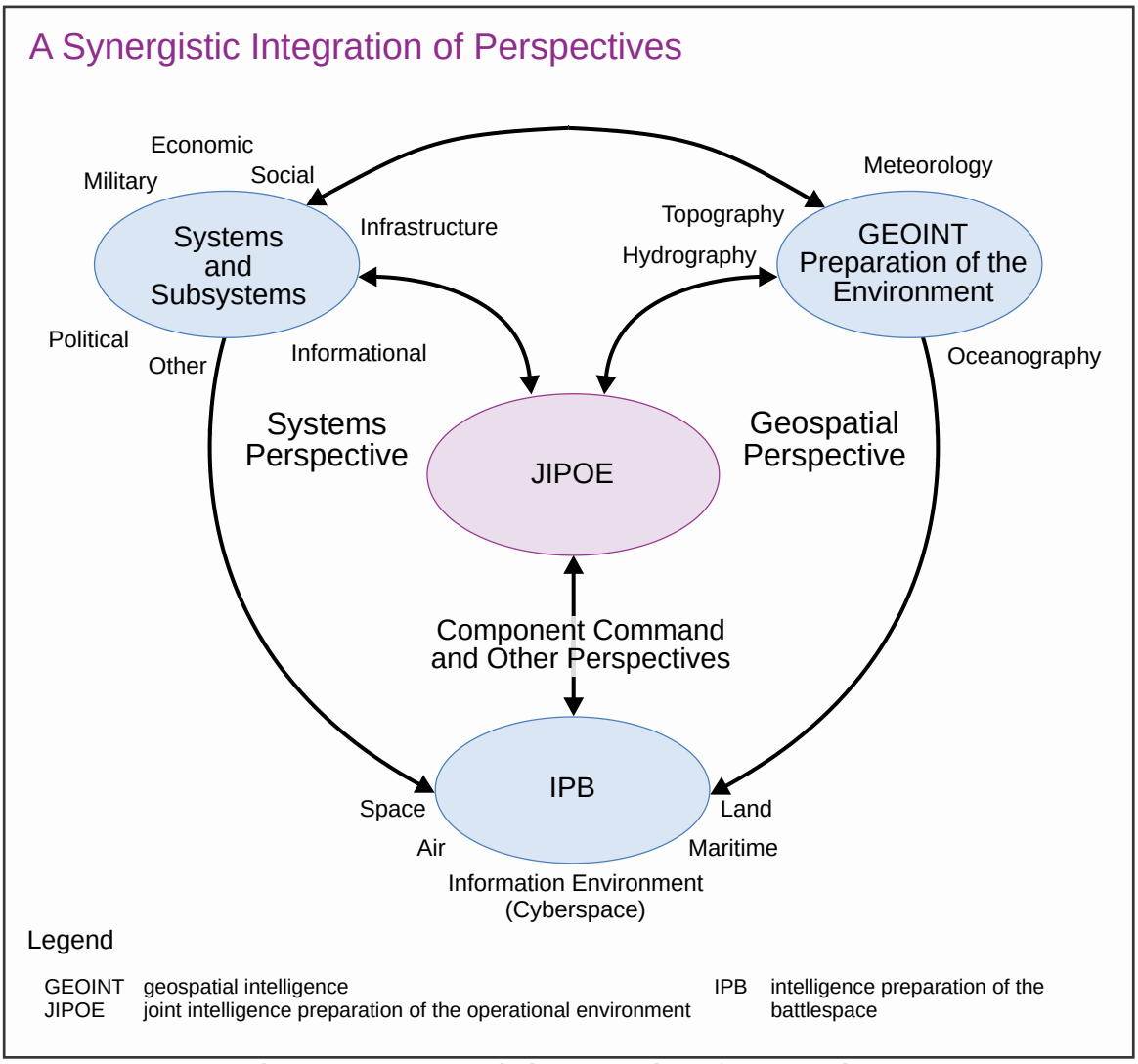

Figure I-2. A Synergistic Integration of Perspectives

must make during execution and allows the J-2 to develop specific intelligence requirements to facilitate those decisions. JIPOE also identifies critical information gaps regarding the OE in order to synchronize and prioritize collection needs and resources.

See JP 2-0, Joint Intelligence, *for a more in-depth discussion of the relationship between intelligence requirements and information requirements. See JP 2-01,* Joint and National Intelligence Support to Military Operations, *for detailed discussion of PIRs.*

b. **JIPOE and Intelligence Collection.** JIPOE supports development of an optimal intelligence collection strategy by enabling analysts to identify the time, location, and type of anticipated activity corresponding to each potential adversary or other relevant actor COA. JIPOE products include several tools that facilitate the refinement of information requirements into specific collection requirements. For example, JIPOE templates facilitate the analysis of all identified adversary COAs and identify named areas of interest (NAIs) where specified adversary activity, associated with each COA,

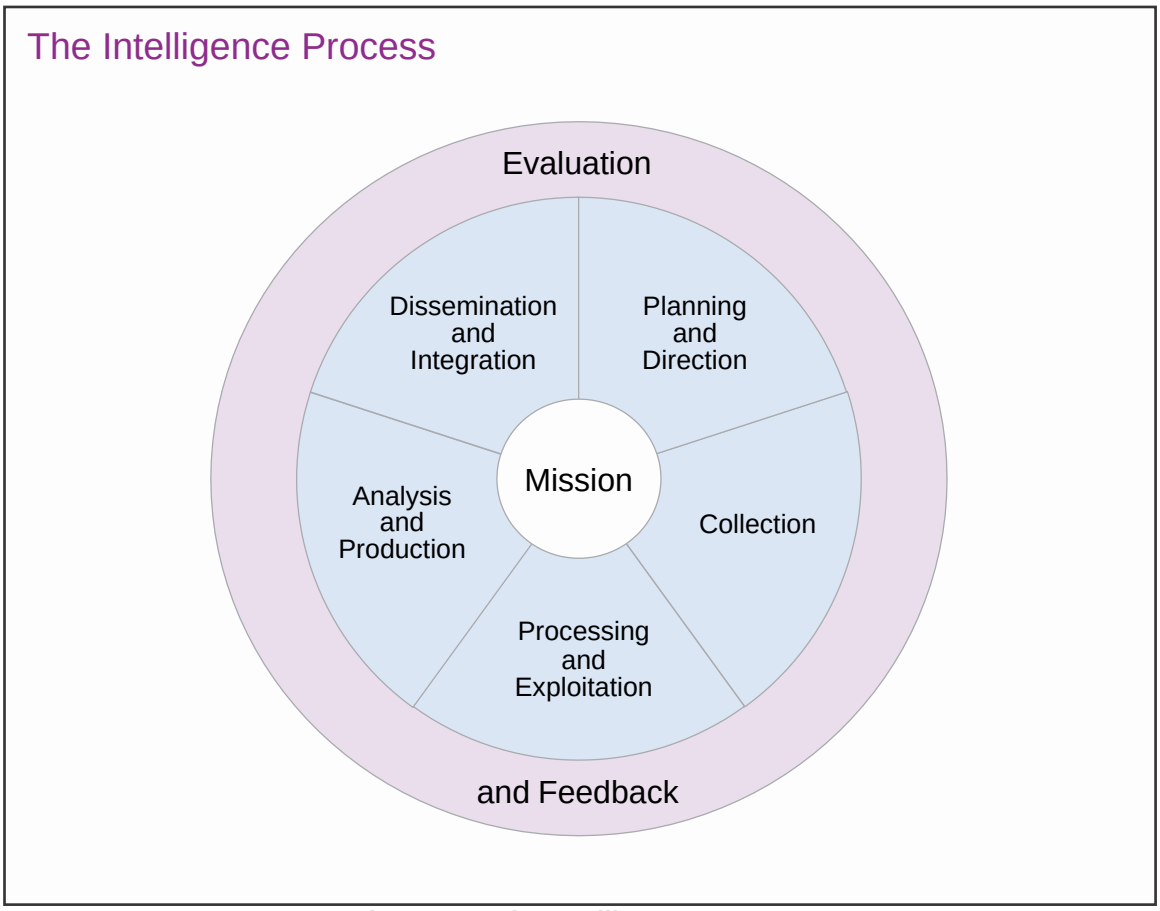

Figure I-3. The Intelligence Process

may occur. JIPOE matrices are also produced that describe the indicators associated with each specified adversary activity. In addition to specifying the anticipated locations and type of adversary activity, JIPOE templates and matrices also forecast the times when such activity may occur, and can therefore facilitate the sequencing of intelligence collection requirements and the identification of the most effective methods of intelligence collection.

c. **JIPOE and Processing and Exploitation.** The JIPOE process provides a disciplined yet dynamic time-phased methodology for optimizing the processing and exploiting of large amounts of data. The process enables JIPOE analysts to remain focused on the most critical aspects of the OE, especially the adversary. Incoming information and reports can be rapidly incorporated into existing JIPOE graphics, templates, and matrices. In this way, JIPOE products not only serve as excellent processing tools, but also provide a convenient medium for displaying the most up-to-date information, identifying critical information gaps, and supporting operational and campaign assessments.

d. **JIPOE and Analysis and Production.** JIPOE products provide the foundation for the J-2's intelligence estimate. In fact, the JIPOE process parallels the paragraph sequence of the intelligence estimate format (see Figure I-4). As shown in Figure I-4, the

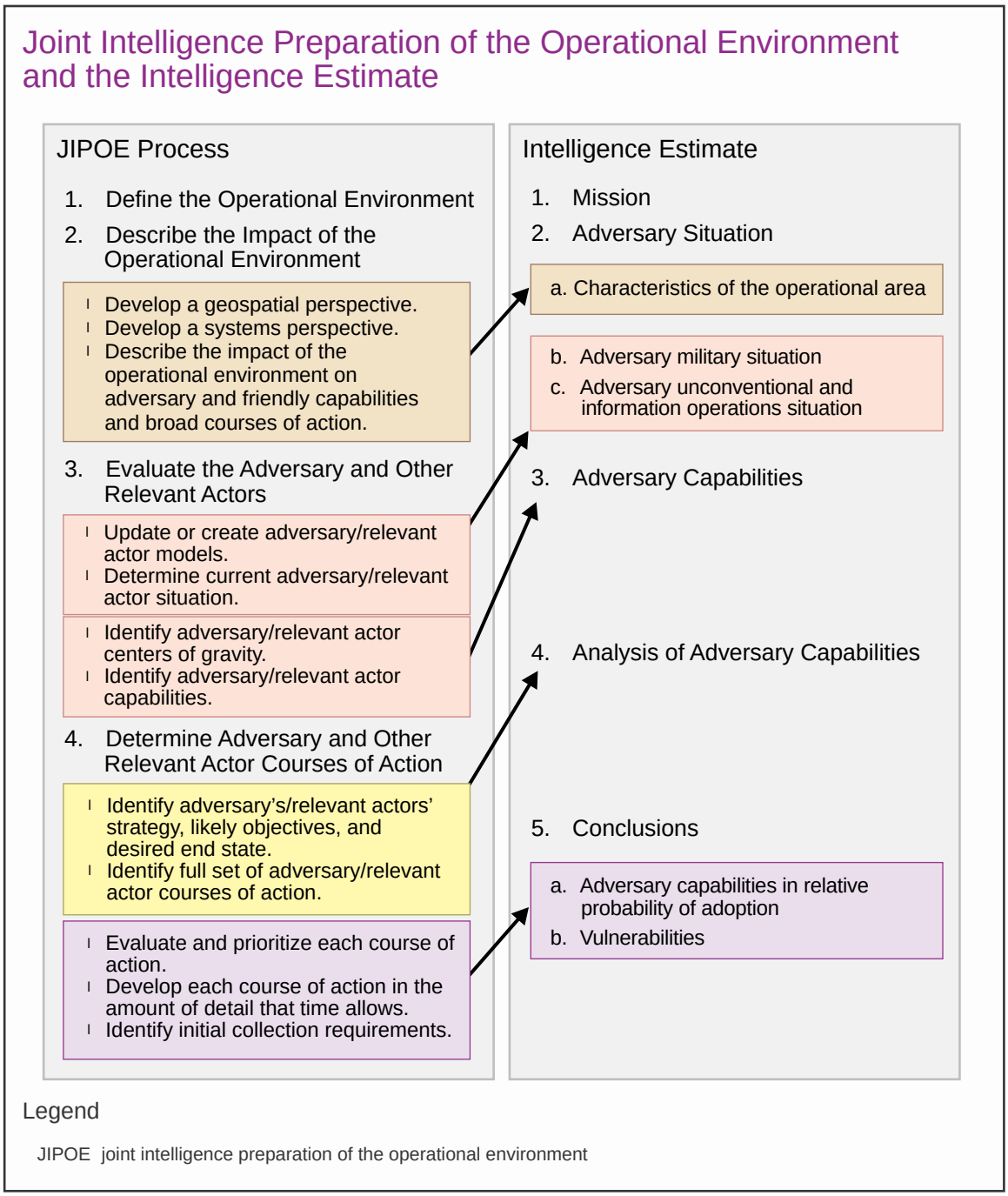

Figure I-4. Joint Intelligence Preparation of the Operational Environment and the Intelligence Estimate

intelligence estimate, paragraph 2.a., "Characteristics of the operational area," is specifically derived from the second step of the JIPOE process, which describes the impact of the OE on friendly and adversary operations. The third step of the JIPOE process, an evaluation of the adversary and other relevant actors, provides the data for the intelligence estimate's paragraphs 2.b, "Adversary military situation," 2.c. "Adversary unconventional and information operations situation," and 3, "Adversary Capabilities."

Likewise, the analysis of adversary COAs, prepared during the fourth JIPOE step, is used in paragraphs 4, "Analysis of Adversary Capabilities," and 5, "Conclusions," of the intelligence estimate.

e. **JIPOE and Dissemination and Integration.** The J-2's intelligence estimate provides vital information that is required by the joint force staff to complete their estimates, and for subordinate commanders to continue concurrent planning activities. Timely dissemination of the intelligence estimate is therefore paramount to good operation planning. If time does not permit the preparation and dissemination of a writ**t**en intelligence estimate, JIPOE templates, matrices, graphics, and other data sources should be disseminated to joint force staff sections and component and supporting commands to effectively integrate them into operation planning.

f. **JIPOE and Evaluation and Feedback.** Consistent with the intelligence process, the J-2 staff continuously evaluates and updates JIPOE products to ensure that they achieve and maintain the highest possible standards of intelligence excellence as discussed in JP 2-0, *Joint Intelligence*. These standards require that intelligence products anticipate the needs of the JFC and are timely, accurate, usable, complete, objective, and relevant. If JIPOE products fail to meet these standards, the J-2 should take corrective action. The failure of the J-2 staff to achieve and maintain intelligence product excellence may contribute to the joint force's failing to accomplish its mission.

CHAPTER II
DEFINE THE OPERATIONAL ENVIRONMENT—STEP 1

"Unrestricted war is a war that surpasses all boundaries and restrictions. It takes nonmilitary forms and military forms and creates a war on many fronts. It is the war of the future."

Colonel Qiao Liang and Colonel Wang Xiangsui,
***Unrestricted War,* Beijing, 1998**

Overview

In the first step of the JIPOE process, the joint force staff assists the JFC and component commanders in defining the OE by identifying those aspects and significant characteristics that may be relevant to the joint force's mission (see Figure II-1). The J-2 staff works with other joint force and component command staff elements to formulate an initial survey of adversary and other relevant characteristics that may impact both friendly and adversary operations. This cursory survey of general characteristics is used by the JFC and joint force staffs to visualize the OE, delineate the area of interst (AOI), determine information and intelligence gaps and collection requirements, develop realistic assumptions, and provide guidance and direction to the JIPOE effort.

a. Successfully defining the command's OE is critical to the outcome of the JIPOE process. The succeeding steps of the JIPOE process must concentrate on those aspects and characteristics of the OE that could influence the accomplishment of the joint force's mission. Correctly defining the relevant aspects of the OE during this step saves time and effort by focusing the work of the joint force staff on only those characteristics that could influence the JFC's decisions and the selection of friendly COAs.

(1) The geospatial aspects of the OE are defined within the common World Geodetic System reference framework in accordance with Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3900.01C, *Position (Point and Area) Reference Procedures*. Any associated GI&S products developed or used should meet the standards and guidelines of the NGA.

For a detailed discussion of GI&S standards, refer to JP 2-03, Geospatial Intelligence in Joint Operations.

(2) The joint force staff must also recognize and understand those aspects of the OE that transcend the physical characteristics and elements. A holistic view of the OE includes nonphysical aspects that may directly affect, but extend well beyond, the designated operational area. Examples of these nonphysical aspects include the cognitive dimension of the information environment, international public opinion, economic policies, CO, and sociocultural factors and relationships.

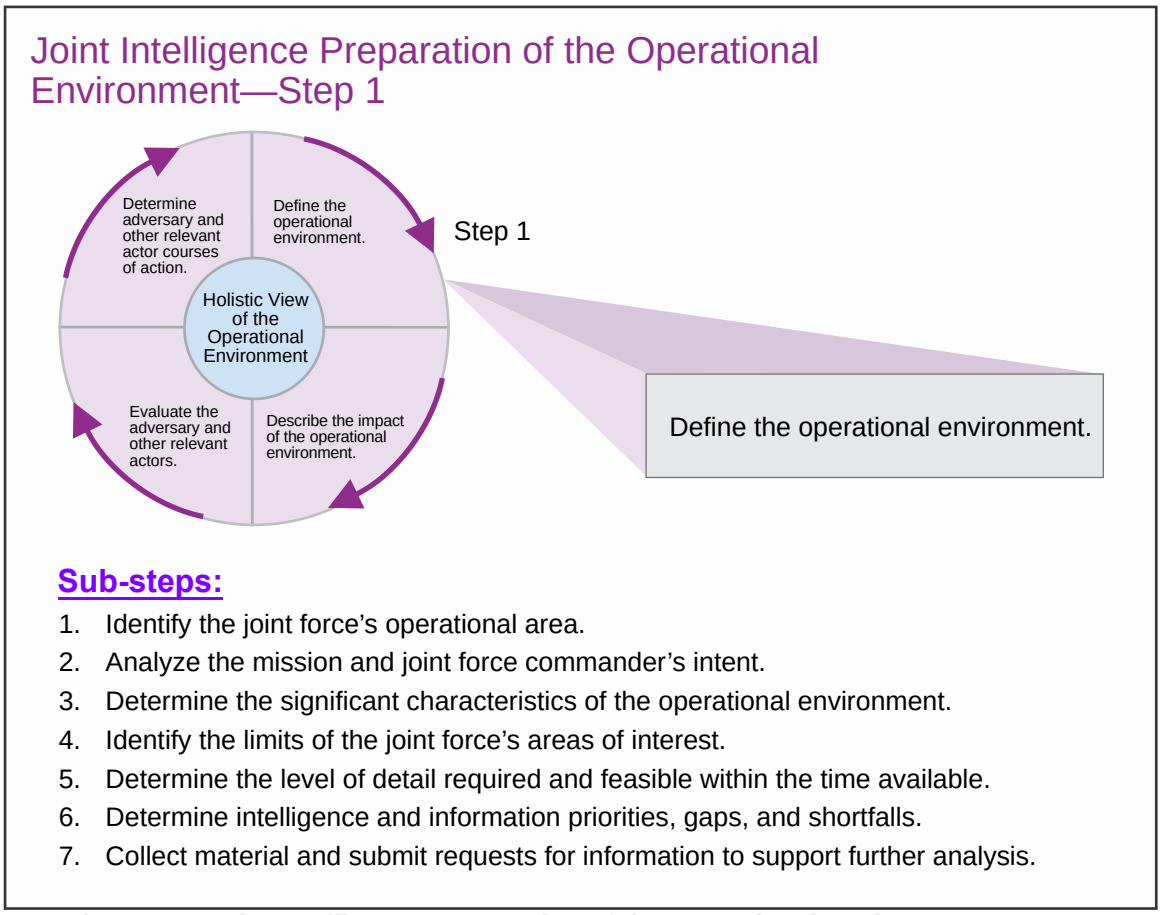

Figure II-1. Joint Intelligence Preparation of the Operational Environment—Step 1

b. Failure to focus on the ***relevant*** characteristics of the OE leads to wasted time and effort. A poorly focused JIPOE effort may result in the collection and analysis of unnecessary information. More importantly, the failure to identify ***all*** relevant characteristics may lead to the joint force's being surprised and unprepared when some overlooked aspect of the OE exerts an influence on the accomplishment of the joint force's mission.

Sub-step 1. Identify the Joint Force's Operational Area

When warranted, the geographic combatant commander (GCC) may designate theaters of war and subordinate theaters of operation for each major threat. The boundaries of these areas are normally specified in the operation order or operation plan (OPLAN) from the higher headquarters that assigned the joint force's mission. To assist in the coordination and deconfliction of joint action, JFCs may define operational areas. The size of these areas, and the types of forces employed within them, depends on the scope and nature of the crisis and the projected duration of operations. For operations somewhat limited in scope and duration, GCCs can designate operational areas such as joint operations areas (JOAs), joint special operations areas, joint security areas, amphibious objective areas, or areas of operations. Operational areas may be contiguous or noncontiguous. Normally, noncontiguous operational areas are characterized by

specially designated boundaries and elements of the force that are linked by the CONOPS. The higher headquarters is responsible for the areas between noncontiguous operational areas.

Sub-step 2. Analyze the Mission and Joint Force Commander's Intent

Mission analysis is normally accomplished under the leadership of the JFC and in cooperation with the joint force staff as part of the commander's planning process. The JFC's stated intent and all characteristics of the mission that could influence the JFC's decisions or affect the COAs available to the joint force or the adversary are of special significance to the JIPOE process. In many situations, those characteristics of the joint force's OE will extend far beyond the designated limits of the operational area. For example, in order to protect the force, the JFC should conceptualize the OE as including the surface-to-air missiles, cruise missiles, and ballistic missiles possessed by any third-party nations or potentially hostile groups that could threaten friendly operations, even though they may be located outside the designated boundaries of the operational area. Mission characteristics that could be important include the type of military operation being considered or planned; the purpose of the operation; the amount of time available for planning and execution; the expected duration of the operation; the risks to be managed; and whether multinational forces will be involved. The analyst must also consider the operational limitations (constraints and restraints) levied upon the JFC by the national military leadership which would impact the conduct of operations. For example, restrictions on civilian casualties and declarations of no-strike objects or entities will provide a framework for the scope of the JFC's mission and directly influence the JIPOE effort. JIPOE efforts during mission analysis begin to reveal gaps in understanding of the OE and the adversary, and help to identify initial intelligence requirements to support the commander's decision-making needs.

Sub-step 3. Determine the Significant Characteristics of the Operational Environment

This step consists of a **cursory** examination of each aspect of the OE in order to identify those characteristics of **possible** significance or relevance to the joint force and its mission. This includes a cursory identification of key decision makers and decision-making processes across competitor, adversary, HN, populace, and neutral parties and is a critical part of identifying significant characteristics of the OE. For example, during this step the analysis of adversary and third-party military forces is limited to the identification of those forces that could influence the joint force's mission based on their location, mobility, general capabilities, significant weapons ranges, and strategic intent. A more **in-depth** evaluation of the impact of each relevant characteristic of the OE takes place during step two of the JIPOE process, which is discussed in Chapter III, "Describe the Impact of the Operational Environment—Step 2." Specific adversary capabilities and possible COAs are evaluated **in detail** during the third step of the JIPOE process, which is discussed in Chapter IV, "Evaluate the Adversary and other Relevant Actors—Step 3."

a. Certain characteristics of the OE may take on added significance based on the type of mission assigned to the joint force. For example, the presence of civilian relief organizations would be an important factor during a foreign humanitarian assistance

operation. During a counterdrug operation, significant characteristics might include the relationships among narcotics-trafficking organizations and the governments in the region. During major operations, significant characteristics of the OE would include the locations of critical resources (such as sources of water during desert operations), the adversary's LOCs and external sources of supply, and the location and viability of friendly and third-party forces. Depending on the assigned mission, economic trade between the adversary and third-party nations could influence the JFC's decision-making process.

b. When identifying the significant characteristics of the OE, all aspects that might affect accomplishment of the joint force's mission must be considered. Depending on the situation, these might include the following:

(1) Geographical features and METOC characteristics.

(2) Sociocultural factors (ethnic groups, ideological and political factions, religious groups and sects, age distribution, income groups, public health issues, economic issues).

(3) Infrastructure, such as transportation, communications, and information systems.

(4) Operational limitations such as ROE, RUF, or legal restrictions on military operations, as specified in international treaties or agreements.

(5) All adversary conventional, unconventional, and paramilitary forces and their general disposition, capabilities, and strategic objectives.

(6) Environmental conditions (earthquakes, volcanic activity, pollution, naturally occurring diseases).

(7) Cognitive characteristics of adversary decision making (belief systems, historical grievances, values, personal ambitions, national aspirations, etc.)

(8) All locations of foreign embassies, IGOs, and NGOs.

(9) Attitude and perception of local population/neutral actor networks toward the US and multinational partners.

(10) Likely cultural sensitivities associated with advanced technologies such as nonlethal weapons and directed energy systems, and expected effectiveness of plans to counter such sensitivities.

(11) Criminal and legitimate networks that could be leveraged by the adversary.

Sub-step 4. Identify the Limits of the Joint Force's Area of Interest

The OE encompasses all characteristics, factors, and conditions that must be understood to successfully apply combat power, protect the force, or complete the mission. However, not all of these aspects are relative to **intelligence** responsibilities or capabilities. For example, the logistic capabilities, military training, and morale of **friendly** forces fall outside the responsibilities of JIPOE. Therefore, the JFC and J-2 should identify and establish limits for those physical areas and nonphysical aspects of the OE that are deemed relevant to the JIPOE effort.

a. **Physical Areas.** The pertinent physical areas in the OE include the assigned operational areas and the associated areas of influence and AOIs described in the following paragraphs. Designation of the areas of influence and interest help commanders and staffs order their thoughts during both planning and execution, and help focus the JIPOE effort.

(1) **Area of Influence.** An area of influence is a geographical area wherein a commander is directly capable of influencing operations by maneuver or fire support systems normally under the commander's command or control. The area of influence normally surrounds and includes the assigned operational area, but it can also be comprised of various commerce or population centers, transportation, communication, and social networks, or other geographic areas within the operational area. In unconventional warfare operations, the area of influence may only constitute a small percentage of the total geographic space within the operational area. The extent of a subordinate command's area of influence is one factor the higher commander considers when defining the subordinate's operational area. Understanding the command's area of influence helps the commander and staff plan branches to the current operation that could require the force to employ capabilities outside the assigned operational area.

(2) **AOI.** An AOI is that area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory to the objectives of current or planned operations. An AOI serves to focus intelligence support for monitoring adversary, neutral, or other relevant actor activities outside the operational area that may affect current and future operations. The AOI can extend well outside of the area of influence and is not restricted by political boundaries. In combat operations for example, the AOI normally extends into enemy territory to the objectives of current or planned friendly operations if those objectives are not currently located within the assigned operational area. Likewise, if a neighboring country's political developments or support for the adversary might affect the joint force's mission accomplishment, the JFC should include that country within the AOI. The commander can describe the AOI graphically, but the resulting graphic does not represent a boundary or other control measure.

b. **Nonphysical Aspects**. The joint force staff should also look beyond the geospatial limits of the AOI to identify any nonphysical factors that may impact the accomplishment of the joint force's mission. Many of these factors transcend the traditional concept of physical boundaries and have worldwide implications and relevance. Nonphysical aspects may make the AOI noncontiguous. The information environment allows instantaneous decision making from across the globe. For example, a key decision maker for an adversary or other relevant actor may be in a different country or continent than those for which he makes decisions. Cyberspace facilitates a COP for our adversaries, which allows them to leverage nonphysical aspects of the OE to their advantage. Likewise, the friendly and adversary use of the EMS, time as it relates to decision making, friendly and adversary information systems capabilities and vulnerabilities, the perceptions and attitudes of other relevant actors both inside and outside the operational area, and the relationships (links) among various adversary PMESII system nodes are some examples of nonphysical aspects of the joint force's AOI that should be considered.

Sub-step 5. Determine the Level of Detail Required and Feasible Within the Time Available

The time available for completion of the JIPOE process may not permit each step to be conducted in detail. Overcoming time limitations requires focusing the JIPOE process on the information that is most important to the JFC and subordinate commanders in planning and executing the joint mission. Identifying the amount of detail required to answer the JFC's PIRs avoids wasting time on developing more detail than necessary on any one step of the process.

a. Some situations may not require an analysis of all adversary forces or other aspects of the OE. For example, those adversary forces within the AOI that cannot interfere with the joint operation may require only a summary of their capabilities. In some cases, only select aspects of the OE may require detailed analysis based on the type of assigned mission or other planning considerations.

b. The J-2 consults the JFC and other staff elements to determine the amount of detail regarding the OE that is required to support operation planning. The J-2 plans, prioritizes, and structures the JIPOE effort by balancing the level of detail required with the amount of time available.

Sub-step 6. Determine Intelligence and Information Priorities, Gaps, and Shortfalls

The J-2 staff evaluates the available intelligence and information databases to determine if the necessary information is available to conduct the remainder of the JIPOE process. Red teams assist the commander and staff by conducting critical reviews to identify gaps in data and alternative interpretations of the available data relevant to the OE. In nearly every situation, there will be gaps in existing databases and shortfalls in the ability of the J-2 to fill all of these gaps. These gaps and shortfalls must be identified early in order for the joint force staff to initiate the appropriate intelligence requirements. The J-2 will use the JFC's stated intent, commander's critical information requirements, and initial PIRs to establish priorities for intelligence collection, processing, production, and dissemination.

Sub-step 7. Collect material and submit request for information to support further analysis.

a. Collecting data and incorporating it into the JIPOE process is a continuous effort. The J-2 staff initiates collection requirements and issues RFIs to fill intelligence gaps to the level of detail required to support the JIPOE effort. As additional information and intelligence is received, the J-2 staff or JIPOE coordination cell (if established) update all JIPOE products.

b. When new intelligence confirms or repudiates assumptions, the J-2 informs the JFC and component commanders and their staffs. If any assumptions are repudiated by new intelligence, the commander, the J-3, and other appropriate staff elements should reexamine any evaluations and decisions that were based on those assumptions.

CHAPTER III
DESCRIBE THE IMPACT OF THE OPERATIONAL ENVIRONMENT—STEP 2

"Know the enemy, know yourself—your victory will never be endangered. Know the ground, know the weather—your victory will then be total."

Sun Tzu
***The Art of War*, C. 500 B.C.**

Overview

The second step in the JIPOE process evaluates and describes broad COAs and the impact of the OE on adversary, friendly, and neutral military capabilities (see Figure III-1). All relevant physical and nonphysical aspects of the OE are analyzed by JIPOE analysts, CCMD personnel, and GEOINT analysts to produce a geospatial perspective. Likewise, a systems perspective is developed through the analysis of relevant sociocultural factors and system nodes and links. Products developed during this step might include, but are not limited to, overlays, diagrams, and matrices that depict the military impact of geography, network analysis, METOC factors, demographics, and the information environment. Other products include assessments of sociocultural factors and network analysis diagrams associated with adversary and neutral PMESII and other systems.

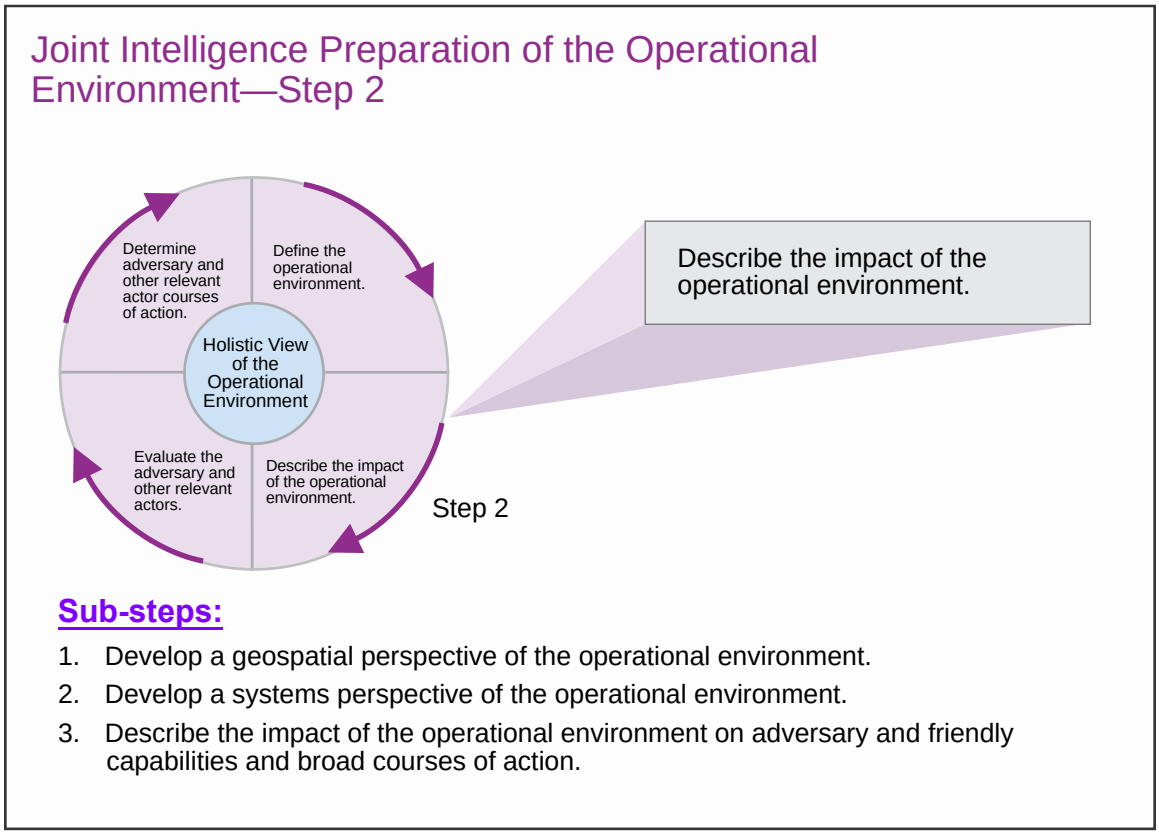

Figure III-1. Joint Intelligence Preparation of the Operational Environment—Step 2

Sub-step 1. Develop a Geospatial Perspective of the Operational Environment

A geospatial perspective supports all views of the OE by helping to analyze relevant physical, nonphysical, and locational aspects of the OE. Each aspect of the OE is assessed in a two-step process which analyzes its relevant characteristics and evaluates its potential impact on military operations. Due to the requirements of military planning, the analysis of the joint force's operational areas will generally require more detail than that of the AOI. Additionally, since the physical aspects of the OE are not homogeneous, various land and maritime areas may require greater or lesser analysis depending on the relative geographical complexity of the region. METOC conditions are considered both in terms of their ability to modify individual aspects of the OE as well as their capability to directly affect overall military operations. For example, heavy rainfall may impact the operational area by swelling streams, degrading soil trafficability, reducing overhead reconnaissance capabilities, degrading radio communications, inhibiting port and littoral access, and limiting the effectiveness of weapons systems. These physical effects may also affect economic and political systems and thereby influence the outlook of populations. Analysis should also identify the impact of the environment and weather on the field behavior of CBRN hazards. The destruction of nuclear reactors and CBRN weapons production and storage facilities presents special problems. For each known location of CBRN facilities, the surrounding terrain and forecasted weather conditions and patterns should be analyzed to facilitate modeling of post-attack contamination. Potential dispersal patterns should be drawn downwind from each site to facilitate understanding the potential extent of contamination.

a. The Land Domain. Analysis of the OE's land domain concentrates on terrain features such as transportation systems (road and bridge information), surface materials, ground water, natural obstacles such as large bodies of water and mountains, the types and distribution of vegetation, and the configuration of surface drainage. Terrain analysis must always consider the effects of weather as well as changes that may result from military action. For example, freezing temperatures may eliminate the obstacle value of rivers or marshes by freezing the surface sufficiently to allow operational maneuver. Likewise, the mobility characteristics of the operational area can be affected by military actions that may reduce built-up areas to rubble, destroy dams and bridges, and possibly create large concentrations of refugees blocking LOCs. It is also important to analyze the combined effects of wind, temperature, humidity, sunlight, topography, and precipitation on the potential use of chemical and biological weapons and their associated hazards in order to take appropriate passive defense measures. The first step in this process is to analyze the military aspects of the terrain (observation and fields of fire, concealment and cover, obstacles, key terrain, and avenues of approach). This analysis is followed by an evaluation of how the land domain will affect military operations. It is important to remember that terrain analysis is not the end product of the JIPOE process. Rather, terrain analysis is the means to determine which friendly COAs can best exploit the opportunities the terrain provides and how the terrain affects the adversary's available COAs.

(1) **Observation and Fields of Fire.** "Observation" is the ability to see (or be seen by) the adversary either visually or through the use of surveillance devices. A "field of fire" is the area that a weapon or group of weapons may effectively cover with fire from a given position. Areas that offer good observation and fields of fire generally favor defensive COAs. Factors that hinder observation and fields of fire include: the height and density of vegetation and buildings; relief features such as hills and defiles; obstructions to specific lines of sight (LOSs); target acquisition and sensor capabilities; and visibility, precipitation, and cloud cover. The analysis of each limiting factor should be combined into a single product. If time permits, LOS overlays should be prepared to assist the joint force staff in evaluating potential friendly or adversary COAs, operational avenues of approach, and the employment of LOS ground and aerial joint sensors and communications networks. The evaluation of observation and fields of fire facilitates the identification of:

(a) Potential engagement areas or "kill zones."

(b) Defensible terrain and specific system or equipment positions.

(c) Areas where maneuvering forces are most vulnerable to observation and fire.

(2) **Concealment and Cover.** "Concealment" is protection from observation, and can be provided by features such as woods, underbrush, snowdrifts, tall grass, and cultivated vegetation. "Cover" is protection from direct and indirect fires. It can be provided by such things as ditches, caves, tunnels, river banks, folds in the ground, shell craters, buildings, walls, and embankments. Areas with good concealment and cover favor both offensive and defensive COAs. Since concealment and cover are basically the inverse of observation and fields of fire, the analysis of all four of these categories should be integrated in order to:

(a) Identify defensible terrain and potential battle positions.

(b) Evaluate avenues of approach.

(c) Identify potential assembly and dispersal areas.

(3) **Obstacles.** Obstacles are obstructions designed or employed to disrupt, fix, turn, or block the movement of an opposing force, and to cause the opposing force to commit additional personnel, time, and equipment resources. Obstacles can be natural, man-made, or a combination of both. These can include buildings, steep slopes, rivers, lakes, forests, swamps, jungles, cities, minefields, trenches, and military wire obstacles. An evaluation of obstacles leads to the identification of mobility corridors. This, in turn, helps to identify defensible terrain and avenues of approach.

(a) If time permits, separate obstacle overlays should be prepared to evaluate each of the following categories and factors: vegetation density; surface drainage (stream fordability, swampy areas); natural and man-made obstacles; transportation infrastructure (bridge classifications and road width, slope, and curve

GERMAN ARMOR IN THE ARDENNES FOREST

Intelligence analysts must exercise caution in assessing restrictive terrain. During World War II, German armored forces defied conventional military wisdom and maximized surprise by attacking through the "impassable" Ardennes Forest. As the following extract points out, the Allies were surprised not once, but twice.

"Success in the preservation of secrecy had been a major factor in surprising the French High Command in May 1940. The point on which the main weight of the German offensive would fall had been concealed up to the last moment. By the time French forces had reached the Meuse between Givet and Namur, the German armored divisions were already in sight of the Semois and the French had been surprised while still on the move. But this had happened in the spring and French general staff theory had been that the Ardennes were impassable.

Guderian's breakthrough at Sedan had shown up the fallacy of the theory of the Ardennes 'fortress'. But four years later no one imagined that the same blow would be repeated. The American generals may have been inexperienced on the battlefield, but they had almost certainly studied the 1940 operation."

SOURCE: Jacques Nobecourt

radius); the lethality and area of predicted CBRN hazard dispersal patterns; and the effects of current or projected METOC conditions. These factor overlays are then combined to form a single product known as the combined obstacle overlay (see Figure III-2).

(b) The combined obstacle overlay is used to depict areas where mobility can be categorized as unrestricted, restricted, or severely restricted. Unrestricted areas are free of any obstacles or restrictions to movement. Restricted areas are usually depicted on overlays by diagonal lines to indicate terrain that hinders movement to some degree. Severely restricted areas are usually depicted by crosshatched diagonal lines to indicate terrain that severely hinders or slows military movement unless some effort is made to enhance mobility. These terrain mobility classifications are not absolute but reflect the relative effect of terrain on types of forces and combat maneuver formations. They are based on the ability of a force to maneuver in combat formations, usually linear, or to transition from one type of formation to another, as opposed to simply moving through a piece of terrain. Identifying an area as "severely restricted" terrain, for example, does not imply that movement through that area is impossible, only that in some military operations it may be impractical. Units moving in column formations along roads generally have little trouble traversing severely restricted terrain.

(4) **Key Terrain.** Key terrain is any locality, or area, the seizure or retention of which affords a marked advantage to either force. Therefore, it is often selected as a decisive point and a tactical-level or operational-level objective. Certain key terrain, such as an airport or seaport, could be designated as an operational-level objective if it significantly affects the JFC's ability to deploy or employ joint force components. For example, an operational commander may consider as key terrain an urban complex that is an important transportation center, a road network providing passage through restrictive terrain, or a geographic area that provides critical agricultural, industrial, or natural

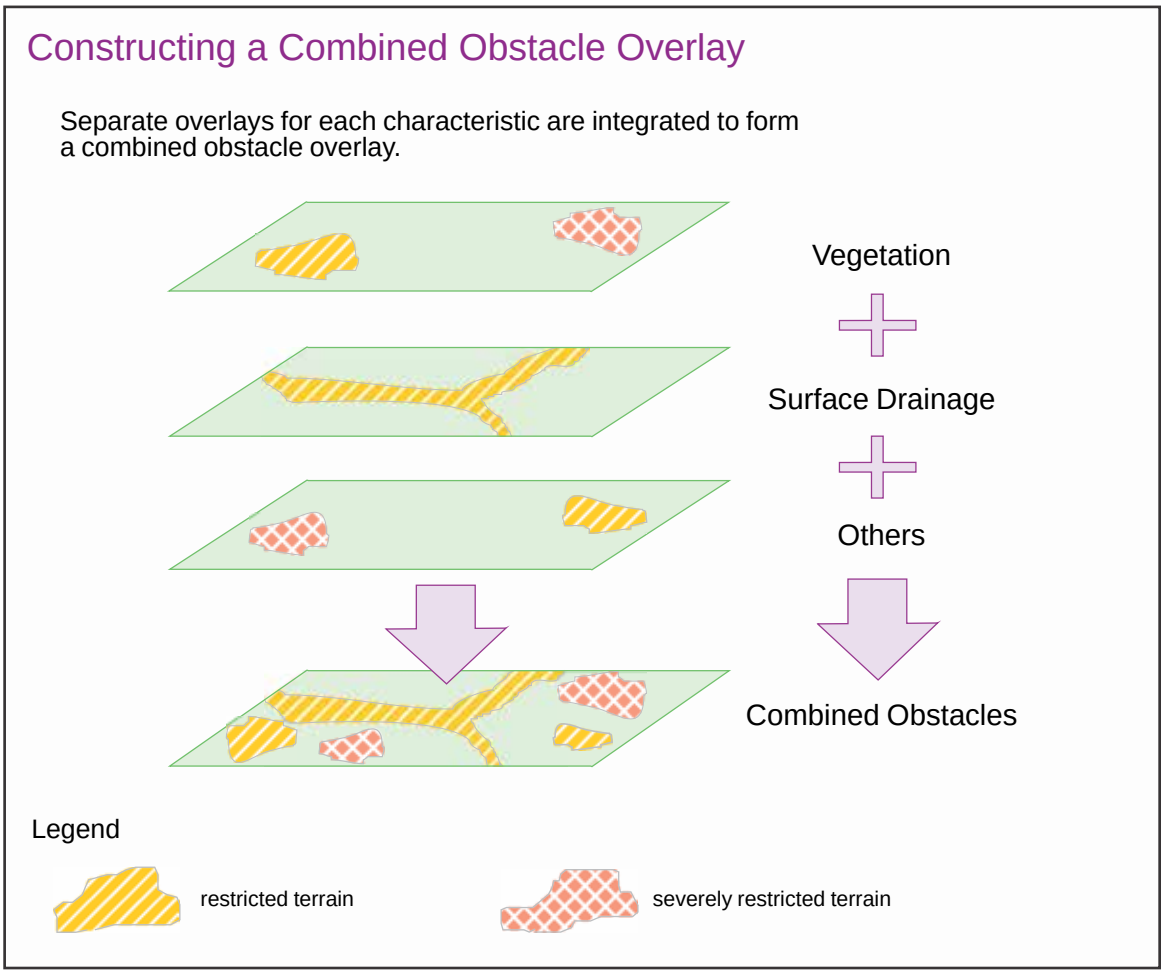

Figure III-2. Constructing a Combined Obstacle Overlay

resources. Key terrain is evaluated by assessing the impact of its seizure by either force upon the results of battle. There are two suggested techniques to assist this analysis.

(a) Evaluate the other four military aspects of the terrain first; then integrate those results to identify and assess key terrain. For example, key terrain might include a range of hills with good observation and fields of fire overlooking an area providing adversary forces a number of high-speed avenues of approach.

(b) Time permitting, conduct a "mini-wargame" to visualize possible outcomes of battle. Key terrain is commonly depicted on overlays with a large "K" within a circle or curve that encloses and follows the contours of the designated terrain. In the offense, key terrain features are usually forward of the friendly force and are often assigned as objectives. In the defense, key terrain is usually within or behind the defensive area and should offer good observation over avenues of approach, and permit the defender to cover an obstacle by fire.

(c) Additional considerations include the following:

1. Key terrain varies with the level of command. For example, a large city may represent an important objective to an operational-level commander, whereas a tactical commander may consider it to be an obstacle.

2. Terrain which permits or denies maneuver, such as bridges or chokepoints, may be key terrain.

3. Major obstacles rarely constitute key terrain. Thus, the high ground dominating a river, rather than the river itself, is considered key terrain.

4. Key terrain may include areas and facilities that may have an extraordinary impact on mission accomplishment (e.g., ballistic missile launch facilities, cruise missile launch sites, airfields).

(5) **Avenues of Approach.** An avenue of approach is an air or ground route of an attacking force of a given size leading to its objective or to key terrain in its path. The identification of avenues of approach is important because all COAs that involve maneuver depend upon available avenues of approach. During offensive operations, avenues of approach are evaluated in terms of their ability to facilitate friendly maneuver to the objective and the adversary's capability to withdraw from, or reinforce, the objective. Conversely, during defensive operations, avenues of approach are analyzed in relation to their ability to facilitate an adversary's attack on friendly positions and the capability of friendly forces to reinforce the battle area. Avenues of approach should be analyzed using the following procedures:

(a) **Identify Mobility Corridors.** Mobility corridors are areas relatively free of obstacles where a force can capitalize on the principles of mass and speed, but is canalized due to restrictive terrain along both flanks. In conventional operations, the combined obstacles overlay is used to identify mobility corridors wide enough to permit tactical maneuver. The best corridors contain unrestricted terrain wide enough to permit a force to move in its preferred doctrinal formations while avoiding major obstacles. Normally, mobility corridors are identified for forces two echelons below the size of the friendly force. Mobility corridors also depend on the type and mobility of the force being evaluated. For example, mechanized and armored units generally require large open areas, while dismounted infantry units, insurgents, and terrorists are less hindered by rough terrain and prefer areas that provide some concealment and cover. Infiltrators may actually avoid mobility corridors altogether and instead use routes along ridge lines or defiles.

(b) **Categorize Mobility Corridors.** Mobility corridors should be categorized according to the size or type of force they can accommodate, such as a mechanized division or an armored brigade. The mobility corridors may also be prioritized in order of likely use. For example, a corridor through unrestricted terrain supported by a road network is generally more desirable than one through restricted terrain without a road.

(c) **Group Mobility Corridors to Form Avenues of Approach.** Two or more mobility corridors are grouped together to form avenues of approach (see Figure III-3). This grouping may be based on factors such as crossover (gaps in the restrictive terrain separating mobility corridors) or two or more corridors that lead to the same objective. Avenues of approach are normally identified for forces one echelon lower than the friendly command, and may include areas of severely restricted terrain. Avenues of approach are depicted using arrows that encompass the mobility corridors constituting the avenue.

(d) **Evaluate Avenues of Approach.** Identify avenues of approach to evaluate those which best support maneuver capabilities. Each avenue is evaluated in terms of its suitability for access to key terrain and adjacent avenues, degree of canalization and ease of movement, use of concealment and cover, use of observation and fields of fire, sustainability through LOCs, and directness to the objective.

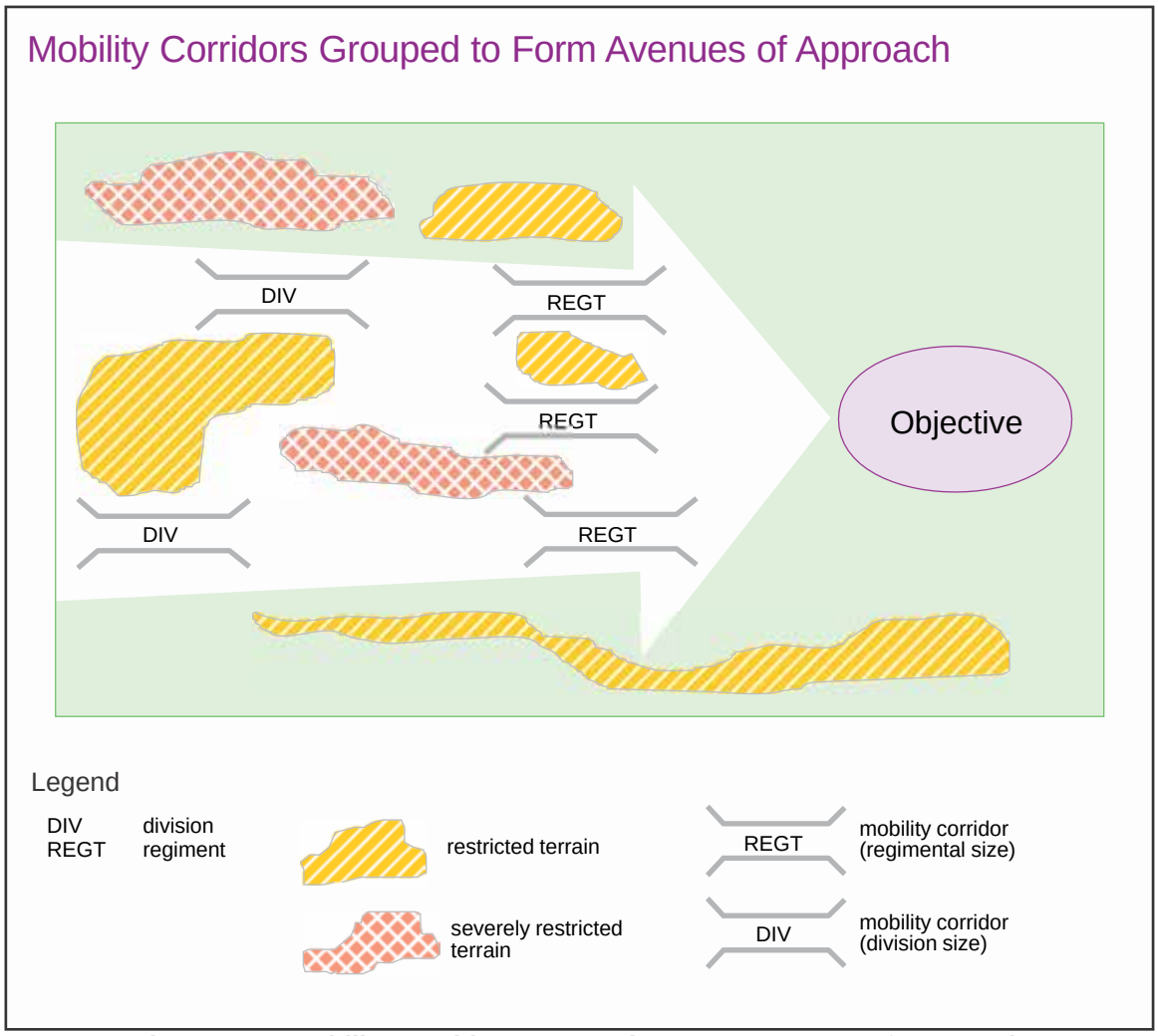

Figure III-3. Mobility Corridors Grouped to Form Avenues of Approach

(e) **Prioritize Avenues of Approach.** Prioritize each avenue of approach based on its overall ability to support maneuver.

(6) **Evaluate the Impact of the Land Domain on Military Operations.** The final step in analyzing the land domain is to relate the evaluation of the military aspects of the terrain to the various broad COAs available to friendly and adversary land forces. For this purpose, COAs are usually identified for offense, defense, reinforcement, and retrograde operations. The possible impact of the terrain on each COA is analyzed to identify areas along each avenue of approach that are suitable for use as potential engagement areas, ambush sites, battle positions, and immediate or intermediate objectives. Engagement areas and ambush sites are usually located in areas with minimal cover and concealment where a maneuvering force will be vulnerable to fire from an opposing force's weapons. Conversely, battle positions are usually selected based on the availability of cover and concealment as well as good observation and fields of fire. The terrain rarely favors one type of operation or COA throughout the entire width and breadth of the OE. For example, areas with poor battle positions and minimally acceptable engagement areas usually favor the offense, whereas the defense is facilitated by good battle positions. Areas of the OE where the terrain predominantly favors one COA over others should be identified and graphically depicted. The most effective graphic technique is to construct a modified combined obstacle overlay (MCOO) by depicting (in addition to the restricted and severely restricted areas already shown) such items as avenues of approach and mobility corridors, countermobility obstacle systems, defensible terrain, engagement areas, and key terrain (see Figure III-4). The results of terrain analysis should be disseminated to the joint force staff as soon as possible, and made available to subordinate and supporting commanders and their staffs, by way of the intelligence estimate, analysis of the operational area, and the MCOO.

b. **The Maritime Domain.** The maritime domain—the world's oceans, seas, bays, estuaries, islands, coastal areas, littorals, and the airspace above them—is a vast maneuver space that allows for tactical maneuver in the air, on the surface, and beneath the surface of the water. However, even in open ocean areas, distant land masses and supporting shore infrastructure may impact naval operations primarily due to the range of an adversary's weapons systems and sensors. Littoral areas may contain geographic features such as straits or chokepoints that restrict tactical maneuver or affect weapon and sensor effectiveness. Both the open ocean and littoral portions of the operational area and AOI should be analyzed. Key military aspects of the maritime domain can include maneuver space and chokepoints; natural harbors and anchorages; man-made infrastructures; sea lines of communications (SLOCs), whether the nation is a signatory to the UN Convention on the Law of Sea, and ocean surface and subsurface characteristics.

(1) **Maneuver Space and Chokepoints.** Surface ships compensate for the sea's lack of cover and concealment by utilizing maneuver to reduce an adversary's ability to locate them at a specific time and place. Confined ocean space limits the ability to maneuver a maritime force, thus increasing the danger that it can be located and engaged. Additionally, the proximity of a maritime force to land increases the potential threat from an adversary's antiship missiles and aircraft. A maritime force operating in

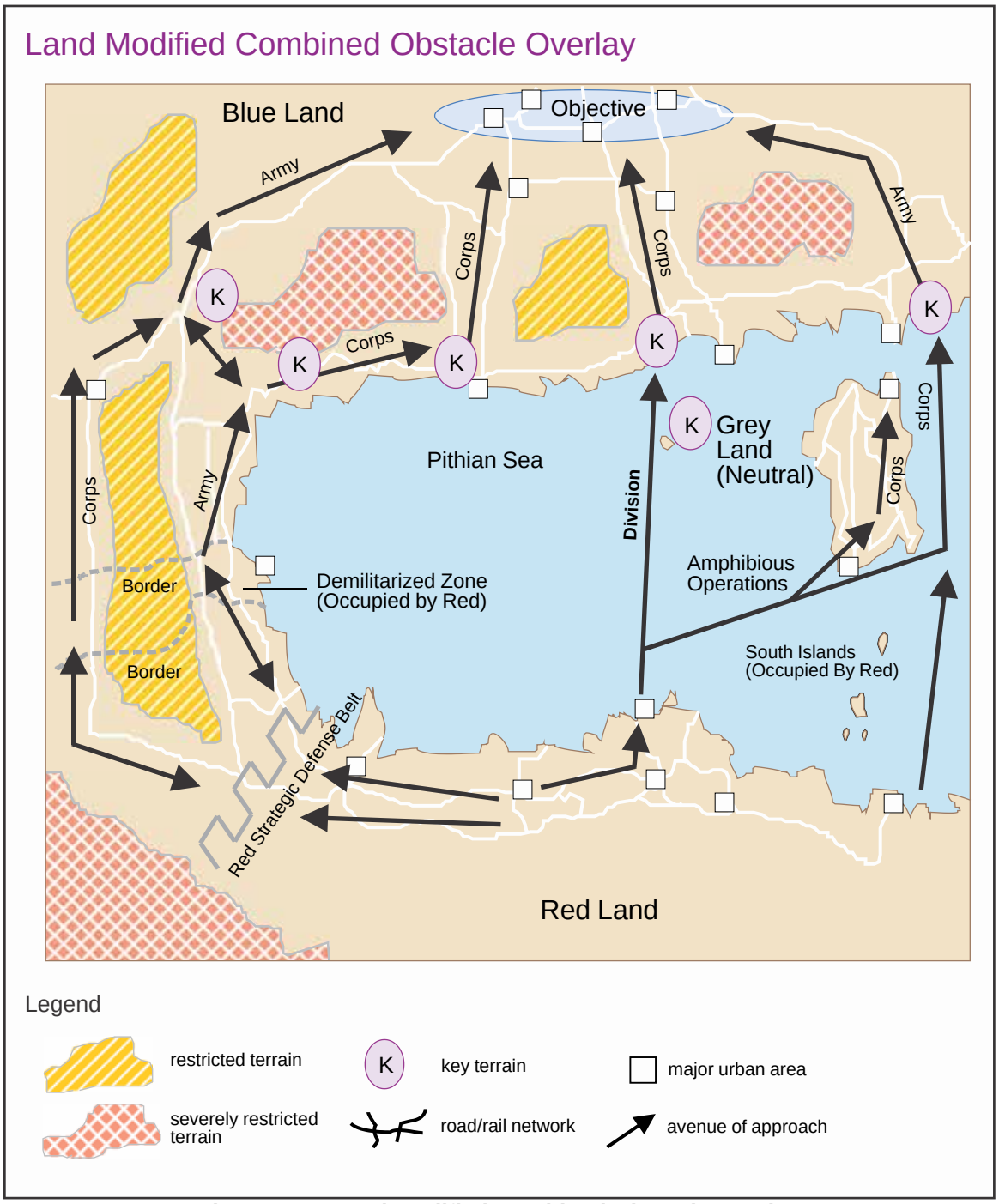

Figure III-4. Land Modified Combined Obstacle Overlay

confined waters near an adversary's shore-based air or missile assets may have insufficient warning time available to counter an incoming air threat. This is because the effectiveness of a maritime force's air defense system is largely dependent on the range at which an air threat can be detected. Chokepoints such as straits or narrows are extremely hazardous areas due to their ability to severely limit tactical maneuver. This effect is magnified for task force operations, as some ship formations may be forced to "close up"

in a confined water space and the area required for a multiship formation to maneuver is significantly greater than for an individual ship. Finally, the effectiveness of sea mines can be greatly enhanced in confined waters.

(2) **Natural Harbors and Anchorages.** Natural harbors and anchorages may be exploited by friendly or adversary naval forces and should be identified and analyzed. Depending on the surrounding terrain, some natural harbors and anchorages, such as fjords, may offer limited cover and concealment for naval combatants and may afford the adversary an opportunity to launch unexpected sorties against friendly ships. Likewise, friendly forces may utilize these areas as havens to frustrate an adversary's attempts to locate and target them.

(3) **Man-Made Infrastructure.** All man-made infrastructure capable of influencing naval operations in the AOI should be identified and analyzed. This includes civilian port facilities, naval bases, airfields, and occupied and unoccupied antiship missile sites. The capacity of civilian port facilities is particularly important when analyzing adversary and friendly logistic support capabilities. Naval bases should be analyzed in relation to how well they are positioned to support sea control, power projection, or amphibious operations in adjacent waters.

(4) **SLOCs.** SLOCs should be identified and analyzed with regard to their relative importance to adversary, friendly, and neutral countries in the AOI. Potential interdiction areas (such as chokepoints) along SLOCs should be identified along with the naval bases, coastal defense facilities, and airfields from which such interdiction operations might originate. Additional factors for consideration include the type, density, and ease of identifying shipping along the SLOCs.

(5) **Ocean Surface Characteristics.** The ocean surface environment actually varies widely depending on METOC conditions. The senior METOC officer (SMO) evaluates the effects of seasonal METOC variations on maritime surface operations throughout the AOI. Examples of some important METOC considerations include winds and temperature. Winds and storms provide the mechanism for wave formation, and therefore determine ocean surface roughness or sea state. Sea state is a major factor in determining the feasibility of naval operations and the functionality of maritime weapons platforms. Temperature controls the extent of ice formation and impacts the strength and direction of ocean currents. The presence of ocean ice is a significant seasonal variable that directly affects navigation, port operations, and harbor availability. In some instances, severe ice conditions may force naval units to seasonally redeploy to alternate bases. The presence of ocean currents is an important real-time variable that directly impacts navigation and naval operations.

Sub-step 2. Develop a Systems Perspective of the Operational Environment

a. **Overview.** An understanding of the OE's systems and their relationships and interdependencies can help JFCs and their staffs visualize and describe how military actions can affect other agency and multinational partners as well as how those partners' actions can affect the JFC's operations. Visualizing and describing the interaction of PMESII systems and subsystems can facilitate the JFC's collaboration with counterparts from other agencies and organizations and help influence actions that are beyond the JFC's direct authority. The development of a systems perspective of the OE typically will require cross-functional participation by other joint force staff elements and collaboration with various intelligence organizations, other USG departments and agencies, and nongovernmental centers of excellence. The J-2 must consider the best way to manage this cross-functional effort. Organizations such as the JIPOE coordination cell, DFE, and JTF JIOC (when formed), are particularly useful to coordinate actions and obtain external joint and national-level support for the development and maintenance of a comprehensive systems perspective. As Figure III-14 depicts, this perspective helps the JFC and staff visualize potential or actual strengths, weaknesses, key nodes, COGs, and other factors that affect the development and analysis of COAs and eventual approval of a CONOPS. A systems perspective is based on a node-link analysis of the PMESII systems associated with the adversary and other relevant actors.

b. **The Adversary and Other Relevant Actors**. The development of a systems perspective requires the identification and analysis of all relevant actors, to include their relationships and interdependencies. The relevance of actors is determined by identifying individual or group behavior and capabilities that could potentially impact (positively or negatively) the joint operation. In addition to the adversary, some examples of relevant actors may include, but are not limited to, the HN government and population, allies, international state and non-state actors, the NGO community, and civil society organizations.

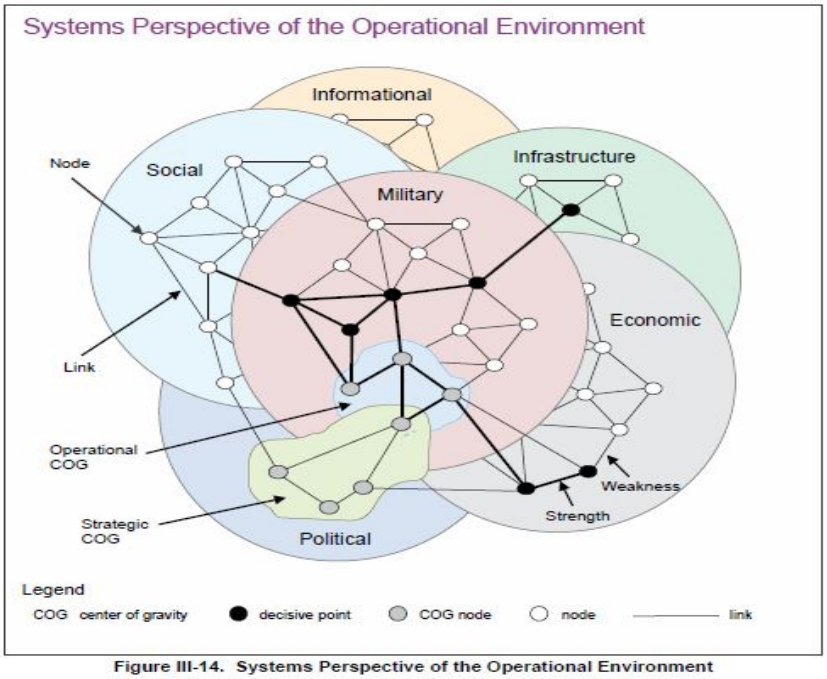

Figure III-14. Systems Perspective of the Operational Environment

c. **PMSEII**. The development of a systems perspective should be founded on the identification and analysis of all mission relevant characteristics of adversary and other actors' PMESII systems. Because the relevance of PMESII factors and characteristics will depend upon the specific situation associated with each mission, there can be no definitive listing of all characteristics appropriate under all circumstances. For example, some of the characteristics that may be considered significant during a sustained humanitarian relief operation may receive slightly less emphasis during combat operations against a conventional adversary. The analysis of an adversary's and other relevant actors' PMESII systems could provide significant indications regarding the circumstances (ideals, goals, territory) that may cause that country to resort to the use of military force or to exercise other policy options. For example, some nations may be willing to use military force to protect international principles such as freedom of navigation, while others may fight only to protect their own national borders. PMESII factors and characteristics can provide important clues as to where a nation may use military force and to what degree. For example, a country will probably make an all-out effort to defend areas it deems politically, culturally, or economically critical, while other less crucial portions of its territory might be used to trade space for time. Additionally, a thorough understanding of the PMESII systems and relationships of all relevant actors in the OE is vital to mission success.

d**. Methodology**. A system is an interconnected or interrelated network, group,or chain —a functionally, physically, and/or behaviorally related group of regularly interacting or interdependent elements that forms a unified whole. JIPOE analysts develop a systems perspective of the OE through the identification and analysis of all major elements within friendly, adversary, neutral, or other actor PMESII systems and subsystems that are potentially relevant to the success of a joint operation. Based on understanding strategic objectives, the joint force's mission, and the JFC's intent, objectives, conditions required to achieve objectives, and accomplish tasks, the J-2 identifies PMESII systems and their subordinate components that are relevant to the mission and operation. Understanding the interaction of these systems with each other and how their relationships and interdependencies change over time can help the JFC visualize how joint force actions on one system can affect other systems. A variety of restraints, including available planning time and staff resources, will affect the detail of this analysis.

(1) A system consists of interconnected nodes and links. Nodes represent the elements within a system that can be targeted for action, such as people, organizations, governments, facilities, rights-of-way, virtual locations, companies, natural resources, knowledge, municipalities, software, equipment, or law. Links are the technical, human/social, functional, organization, and thought/intent relationships between nodes, such as the command or supervisory arrangements that connect a superior to a subordinate; the relationship of a vehicle to a fuel source; and the ideology that connects a propagandist to a group of terrorists. Links help the JFC and staff visualize how various systems work internally and interact with each other. They establish the relationships and interdependencies between nodes that allow them to work together as a system—to behave in a specific way (accomplish a task or perform a function). Both nodes and links are symbolic representations meant to simplify the complexity of the real world, and are useful in identifying COGs and other things the JFC may wish to influence or change during an operation.

Sub-step 3. Describe the Impact of the Operational Environment on Adversary and Friendly Capabilities

The evaluations of all the individual aspects of the OE and the systems perspective are ultimately combined into a single integrated assessment that focuses on the overall impact of the OE on all joint COAs available to both friendly and adversary forces. This assessment may take the form of a briefing, set of overlays, written analysis of the OE, intelligence estimate, or any other format the JFC deems appropriate. Regardless of format, this product is designed to support the development and evaluation of friendly joint COAs by providing the J-3 and J-5 with an evaluated and prioritized set of land, sea, and air avenues of approach, potential engagement areas, key terrain and maritime geography, key nodes and links, and an analysis identifying periods of optimal weather conditions for specific types of military operations. Likewise, the product enables the J-2 to evaluate the OE from the adversary's perspective, and to express this evaluation in terms of a prioritized set of adversary military COAs, to include any related diplomatic, informational, or economic options. In order to accomplish this, the J-2 must remember to consider the general military capabilities of the adversary force as well as the other characteristics of the OE. For example, the OE may contain several excellent amphibious landing sites, but if the adversary does not have access to amphibious support ships, then an amphibious attack should not be listed as a viable adversary COA. The J-2 should also consider the amount of military force normally located at each of the adversary's naval, ground, and air bases and should assess whether this constitutes an offensive or defensive posture. The final result of step two of the JIPOE process is a preliminary prioritization of adversary COAs based on how well each is supported by the overall impact of the OE. This preliminary prioritization of COAs will be further refined and adjusted during step four of the JIPOE process, as discussed in Chapter V "Determine Adversary and Other Relevant Actor Courses of Action—Step 4."

CHAPTER IV
EVALUATE THE ADVERSARY AND OTHER RELEVANT ACTORS—STEP 3

"However absorbed a commander may be in the elaboration of his own thoughts, it is sometimes necessary to take the enemy into consideration."

Winston Churchill
The World Crisis, 1911-1918
1923

Overview

The third step in the JIPOE process identifies and evaluates the adversary's capabilities and limitations, current situation, COGs, and the doctrine, patterns of operation, and TTP employed by adversary forces, absent those constraints identified during step two (see Figure IV-1). During this step, models are developed that portray how adversary forces normally execute military operations or how they have reacted to specific military situations in the past. Adversary systems are also analyzed to develop candidate indicators (hypothesized anticipated changes to normal node-link relationships) associated with various COAs.

a. The JIPOE analyst must take care not to evaluate the adversary's joint capabilities by mirror-imaging US joint and Service doctrine. Effective red teams serve as a check on

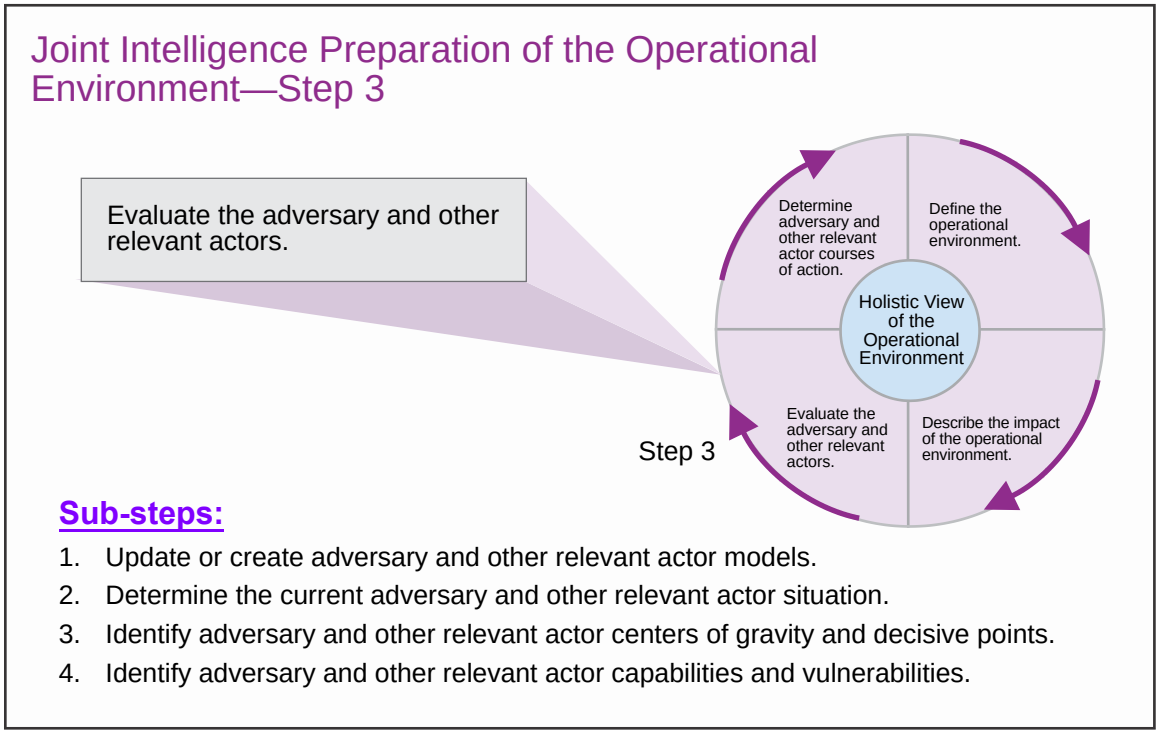

Figure IV-1. Joint Intelligence Preparation of the Operational Environment—Step 3

the analytical effort to avoid mirror imaging, to include identifying COAs not considered. In many cases the joint doctrine of potential adversaries may be embryonic or nonexistent. Although an adversary's components may operate in the same geographic area and may try, more or less, to support each other, joint operations, as practiced by US forces, are rarely conducted. Nevertheless, in virtually all cases, the Service components of an opposing force will at some level of command coordinate their operations according to a set of ad hoc or established procedures. The JIPOE analyst must try to discern the adversary's ability to integrate their capabilities in combined arms operations, no matter how rudimentary it may appear.

b. Adversary capabilities are identified in terms of broad COAs and supporting operations that the adversary can take that may influence the accomplishment of the friendly mission. Failure to accurately evaluate the adversary may cause the command to be surprised by an unexpected adversary capability, or result in the unnecessary expenditure of limited resources against adversary force capabilities that do not exist.

c. In addition to the adversary, it is important to understand other relevant actors that may positively or negatively impact the friendly mission. These actors may include the population, HN government, and potential opposition leaders. Other relevant actors may include international state and non-state actors and/or the NGO community. By first understanding who the relevant actors are and learning as much as possible about them and the relationships between them, the JFC can develop an approach that will facilitate decision making and behavior (active or passive) among relevant actors that is consistent with the desired end state of the operation. SCA and I2 enable a better understanding of the relevant actors. Note that individuals may fit into more than one category of actor. For example, a tribal leader may also work as a district governor, while also working behind the scenes to provide financial and material support to an insurgency. A comprehensive understanding of relevant actors is especially critical during IW and is discussed in greater detail in Section A, "Support During Irregular Warfare," of Chapter VII, "Special Considerations."

Sub-step 1. Update or Create Adversary and Other Relevant Actor Models

Adversary and relevant actor models can depict either an opponent's doctrinal way of operating or their observed patterns of operation under similar conditions. They serve the JFC best when they are not only based on a detailed study of the adversary's normal or "doctrinal" organization, equipment, operational procedures, and node-link relationships, but also take into account how the adversary will react to a specific military situation. Adversary models are normally completed prior to deployment, and are continuously updated as required during military operations. The models consist of three major parts: graphical depictions of adversary patterns of operations related to specific COAs (adversary templates); descriptions of the adversary's preferred tactics and options; and lists of high-value targets (HVTs).

a. **Adversary Templates.** Adversary templates illustrate the employment patterns and dispositions preferred by an adversary in the same or a similar OE. They are usually scaled graphic depictions of adversary dispositions for specific types of military

operations such as: movements to contact, antisurface warfare operations, insurgent attacks in urban areas, combat air patrols, and aerial ambushes. JIPOE utilizes single-service adversary templates that portray adversary land, sea, air, special, or space operations, and produces joint adversary templates that portray the relationships between all the adversary's service components when conducting joint operations. For example, a joint adversary template illustrating an adversary's conventional land offensive, in addition to showing ground force organization and disposition, would also portray the type, number, deployment pattern, and tactics of all supporting assets. An adversary template may also be used to depict anticipated changes to PMESII nodes and links that would be indicative of specific adversary intentions or COAs.

b. **Description of Adversary Tactics and Options**. In addition to the graphic depiction of adversary operations portrayed on the adversary template, an adversary model also includes a written description of an opponent's preferred tactics. This description addresses the types of activities and supporting operations that the various adversary units portrayed on the adversary template are expected to perform. It also contains a listing or description of the options (branches) available to the adversary—should either the joint operation or any of the supporting operations fail—or subsequent operations (sequels) if they succeed. For example, an opponent might prefer to follow successful attacks with pursuit. Should an attack begin to fail, the adversary's preferred branches might include committing reserves, reinforcements, or shifting the main effort. Should the attack fail, the preferred sequel might be a hasty defense. Additionally, an opponent's preferences regarding the use of weather or terrain must be addressed. For example, some adversaries may prefer to initiate offensive action during snowstorms or at night.

c. **List of HVTs**. The adversary model should also include a list of HVTs. These targets are identified by combining operational judgment with an evaluation of the information contained in the joint adversary template and description. Assets are identified that are critical to the success of the adversary's mission, that are key to each adversary component's supporting operation, or that are crucial to the adversary's adoption of various branches or sequels to the operation. For example, an adversary ground force defending a front across a peninsula may be vulnerable to amphibious flanking attacks in its rear area. In this situation, the adversary's ability to deny access to its rear area coastal waters may be crucial, and therefore its coastal defense assets (artillery, antiship cruise missiles, local surface and subsurface combatants) may constitute HVTs. SCA can be useful to identify and broaden the JFC's understanding of HVTs as well as potentially revealing additional options for lethal and nonlethal actions against them and determining second- and third-order effects of those actions. Within IW environments, adversary HVTs may include keys nodes within the associated human threat network. For example, the adversary may be dependent on support from local tribal/village leaders, or transnational criminal/ drug trafficking organizations to operate in the local vicinity, town, village, or sub-province, or to gain access to friendly bases through contract or local national employees.

Either of these groups may also exert influence with regional or international violent extremist organizations, and they all may provide either direct or indirect support to adversary operations. In this instance, the individuals used as middlemen to communicate or coordinate among tribal/village elders or criminal organizations may constitute HVTs. The JFC, in conjunction with the national IC, collaborates to identify HVTs with appropriate analytic production centers. This collaboration should be conducted by any available secure communications means.

Sub-step 2. Determine the Current Adversary and Other Relevant Actor Situations

All available intelligence sources, methods, technologies, and databases should be continuously exploited in an effort to analyze and determine the current situation of the adversary and other relevant actors. This analytic effort should focus on the order of battle (OB) factors for each adversary air, naval, SOF, and ground unit known to be deployed within the AOI, or that is otherwise capable of interfering with the friendly mission.

a. Current information pertaining to the composition and disposition of adversary forces is particularly important and will normally be maintained on the J-2's adversary situation overlay.

b. The current adversary situation is based on assessments of the following OB factors for each adversary force or military unit:

(1) Composition;

(2) Disposition;

(3) Strength;

(4) TTP;

(5) Training status;

(6) Logistics;

(7) Effectiveness;

(8) Electronic technical data;

(9) Personalities;

(10) Miscellaneous data (information that contributes to situational awareness, historical studies, cultural idiosyncrasies, civil-military relations).

c. In some situations, for example when dealing with asymmetric threats, traditional adversary OB models may not be sufficient. In these situations it is particularly important to analyze the situation not just for the adversary, but for all other relevant actors. The current situation for friendly, neutral, and threat actors is based on assessments of the following capabilities:

(1) Logistics;

(2) Leaders;

(3) Ideology;

(4) Fighters;

(5) Training;

(6) Weapons;

(7) Safe havens;

(8) Freedom of movement;

(9) Intelligence;

(10) Communications; and,

(11) Finance.

Sub-step 3. Identify Adversary and Other Relevant Actor Centers of Gravity and Decisive Points.

a. COGs. One of the most important tasks confronting the JIPOE analyst is the identification of adversary COGs. A COG is the source of power that provides moral or physical strength, freedom of action, and will to act. A COG is always linked to the objective. If the objective changes, the COG could also change. At the **strategic level**, a COG could be a military force, an alliance, political or military leaders, a set of critical capabilities or functions, or national will. At the **operational level** a COG often is associated with the adversary's military capabilities —such as a powerful element of the armed forces—but could include other capabilities in the OE. Since the adversary will protect the COG, the COG most often is found among strengths rather than among weaknesses or vulnerabilities. JIPOE analysts continuously assess the adversary's leadership, fielded forces, resources, intelligence capabilities, infrastructure, population, transportation systems, and internal and external relationships to determine from which elements the adversary derives freedom of action, physical strength, or the will to fight. A determination is made to see if candidate COGs are truly critical to the adversary strategy and must include a thorough examination of the mechanisms and linkages by which COGs affect adversary strategy and potential COAs. Figure IV-7 shows a number of characteristics associated with COGs.

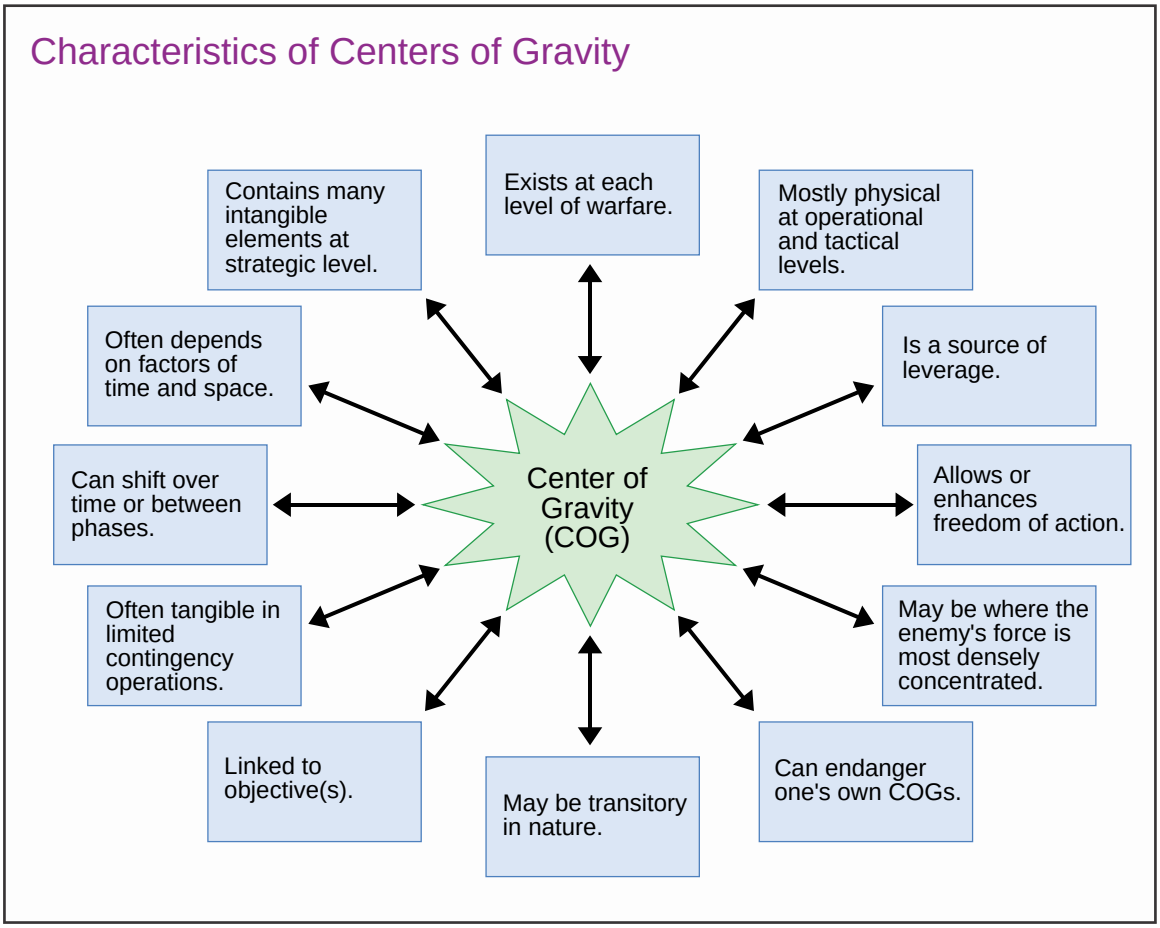

Figure IV-7. Characteristics of Centers of Gravity

b. **Decisive Points.** A decisive point is a geographic place, specific key event critical factor, or function that, when acted upon, allows a commander to gain a marked advantage over an adversary or contributes materially to achieving success (e.g., creating a desired effect, achieving an objective). This can greatly influence the outcome of an action. Decisive points can be physical in nature, such as a constricted sea lane, a hill, a town, WMD or CBRN capabilities, or an air base; but they could include other elements such as command posts, critical boundaries, airspace, or communications and/or intelligence nodes. In some cases, specific key events also may be decisive points, such as attainment of air or maritime superiority, commitment of the adversary's reserve, or opening a supply route during humanitarian operations. In still other cases, decisive points may have a larger systemic impact, such as a node or combination of nodes which, when acted on, can substantially affect the OE's systems. A decisive point could also be when a threat network's capabilities are diminished to the point that HN capability can now handle the threat with little or no outside assistance. The friendly HN military and security forces can competently act to provide a stable region and legitimize the HN government.

(1) The most important decisive points can be determined from analysis of critical factors. As part of the node-link network analysis associated with a systems perspective, understanding the relationship between a COG's critical capabilities, requirements, and vulnerabilities can illuminate decisive points.

(2) JIPOE analysts should identify and study potential decisive points and determine which of them offer the best opportunity to attack the adversary's COGs indirectly, extend friendly operational reach, or enable the application of friendly forces and capabilities.

Sub-step 4. Identify Adversary and Relevant Actors' Capabilities and Vulnerabilities

Adversary capabilities are expressed in terms of the broad COAs and supporting operations that the adversary can take to interfere with the accomplishment of the friendly mission. In conventional operations, these are generally defined as offense, defense, reinforcement, and retrograde. Each of these broad COAs can be divided into a variety of more specific COAs. For example, a retrograde might take the form of a delay or withdrawal, while an offensive operation might consist of an envelopment or penetration. Other significant capabilities may include the use of CBRN weapons, amphibious assaults, EW, and deception operations. CBRN weapons may be employed to cause casualties, limit movement (area denial), and/or force individuals to don protective equipment thereby potentially limiting their mission effectiveness. Deception can involve misinformation, disinformation, or propaganda targeting specific or general audiences. IO and public affairs staffs collaborate and synchronize their respective information activities to counter adversary information influence efforts. An example of this synchronization could include development and execution of an IO plan to counter adversary propaganda efforts that could prevent friendly use of technologies such as nonlethal weapons and directed energy systems. When appropriate, the techniques described in the following paragraphs should also be applied to relevant actors capable of influencing the friendly mission.

a. Adversary and relevant actor capabilities are determined by comparing the current situation with each of the models already constructed. Based on the current situation, the ability of the adversary and relevant actors to actually meet the criteria described by each model is evaluated. Usually, the adversary's and relevant actors' actual capabilities will vary from the ideal capabilities represented by a model. Adversary and relevant actors' capabilities that fall short of requirements reflected in previous patterns of operation or adversary doctrine should be identified as vulnerabilities, while capabilities that meet or exceed requirements are listed as strengths. When time or some other factor is assessed to be a critical element in an adversary or relevant actors' capability, it should be explicitly stated in the overall capability statement.

b. The J-2 should disseminate the evaluation of adversary capabilities, strengths, and weaknesses to the other joint force staff sections as soon as possible. The intelligence estimate is the traditional vehicle for disseminating this type of evaluation. However, in order to facilitate operational planning, the evaluation may be disseminated by any means and in any form deemed appropriate by the JFC.

CHAPTER V
DETERMINE ADVERSARY AND OTHER RELEVANT ACTOR COURSES OF ACTION—STEP 4

"Gentlemen, I notice that there are always three courses [of action] open to an enemy, and that he usually takes the fourth."

Field Marshal General Helmuth von Moltke the Elder
Chief of the German General Staff
(1857-1888)

Overview

The first three steps of the JIPOE process help to provide JFCs, subordinate commanders, and their staffs with a holistic view of the OE by analyzing the impact of the OE, assessing adversary doctrine and capabilities, and identifying adversary COGs and decisive points. The fourth step of the JIPOE process builds upon this holistic view to develop a detailed understanding of the adversary's and other relevant actors' probable intent and future strategy. The process for step 4 (see Figure V-1) provides a disciplined methodology to analyze the set of potential adversary COAs in order to identify the COA

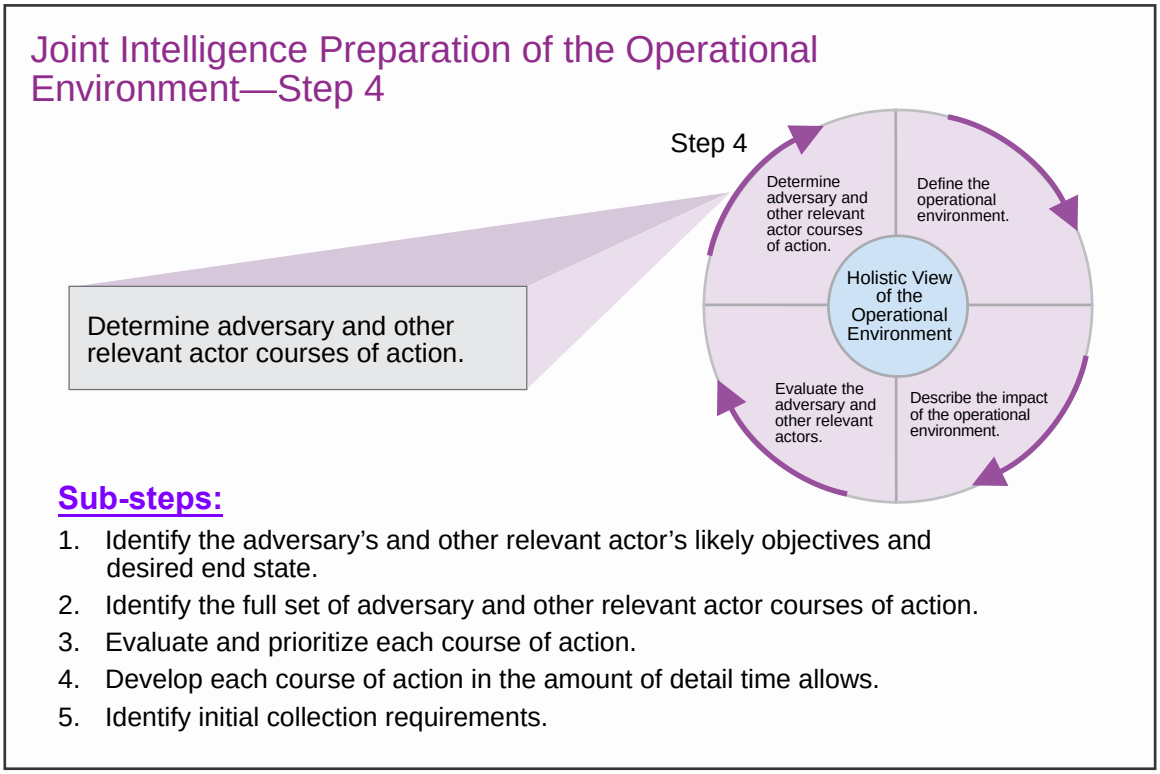

Figure V-1. Joint Intelligence Preparation of the Operational Environment—Step 4

the adversary is most likely to adopt, and the COA that would be most dangerous to the friendly force or to mission accomplishment.

Sub-step 1. Identify the Adversary's and Other Relevant Actors' Strategy, Likely Objectives, and Desired End State

The likely objectives and desired end state of the adversary and other relevant actors are identified by analyzing the current military and political situation, strategic and operational capabilities, and the sociocultural characteristics of the adversary and other actors. The JIPOE analyst should begin by identifying the overall strategic objectives of all relevant actors, which will form the basis for identifying likely objectives and desired end states. The J-2 should identify likely objectives for all major adversary military forces operating in the joint force's AOI and for all other actors capable of influencing friendly mission accomplishment. Usually there will not be sufficient information available to state adversary objectives as fact. In such cases, the J-2 will postulate likely adversary objectives and will identify them as assumptions. These assumptions should be coordinated with the JFC and J-3. Due to the importance of correctly identifying the adversary's strategy, likely objectives, and desired end state, command red teams should concurrently perform independent analysis of these subjects, and, when appropriate, propose alternatives for consideration by the JIPOE coordination cell. Adversary objectives may be expressed in terms of the echelon or type of military force to be decisively engaged (such as aircraft carriers, operational reserves, or lift capabilities) or as key geographic features to be seized or retained. Sometimes objectives will have dual purposes. During World War II, the Japanese attack against Midway was designed not only to seize key military geography, but also to force a situation in which US Pacific Fleet assets (especially aircraft carriers) could be decisively engaged and destroyed. At times, refined information regarding the adversary's OB and military situation may remain elusive. However, an understanding of the adversary's doctrine and mindset to include likely perceptions regarding the overall situation and environment, may provide a sufficient basis to make useful estimates regarding the range of options that the adversary believes are open. Appendix C, "Operation IRAQI FREEDOM—A Case Study in Determining Relevant Actor Courses of Action," illustrates the importance of analyzing relevant actors and their COAs.

Sub-step 2. Identify the Full Set of Adversary and Other Relevant Actor Courses of Action

During this step, a consolidated list of all potential adversary COAs is constructed. At a minimum this list will include all COAs that the adversary's doctrine or pattern of operations indicates are appropriate to the current situation and accomplishment of likely objectives; all adversary COAs that could significantly influence the friendly mission, even if the adversary's doctrine or pattern of operations indicates they are suboptimal under current conditions; and all adversary COAs indicated by recent activities or events.

a. Each identified COA should meet the following five criteria:

(1) **Suitability.** An adversary COA must have the potential to achieve the adversary's likely objective or attain the desired end state.

(2) **Feasibility.** The adversary must have sufficient time, space, and resources to successfully execute the COA. However, a COA should not be assessed as unfeasible until all actions the adversary may take to overcome resource shortfalls are considered. Actions and reactions between the adversary and all relevant actors in the OE may help to better determine feasibility. For example, an adversary may make up for insufficient force ratios by conducting an economy of force operation in another sector. Always try to anticipate innovative or seemingly radical measures the adversary may adopt.

(3) **Acceptability.** The amount of risk associated with the COA should not exceed the level of risk acceptable to the adversary. The JIPOE analyst should determine the adversary's level of risk acceptance by analyzing past adversary military activity, current OB factors, interactions amongst relevant actors, and the psychological profiles of adversary leaders. In some instances, however, an opponent may be willing to tolerate a higher level of risk than normal, particularly if a risky COA is the only means of accomplishing the objective. The increasing use of suicide attacks by terrorists and the proliferation of WMD and CBRN technology illustrate the increased levels of risk now acceptable to potential adversaries.

(4) **Uniqueness.** Each adversary COA must be significantly different from the others; otherwise it should be considered a variation rather than a distinct COA. Factors contributing to the uniqueness of a COA may include its effect on the friendly COA, use of reserves, location of the main effort, scheme of maneuver, or task organization.

(5) **Consistency with Adversary Doctrine or Actors' Patterns of Operation.** The COA should be consistent with the adversary's doctrine, TTP, and observed practices. However, caution should be taken to guard against an adversary's attempt to achieve surprise by deliberately deviating from known doctrine or previously observed practices. The JIPOE analyst must ensure agendas from all relevant actors are accounted for as those actors other than the adversary may interact with the adversaries and shape their doctrine or patterns of operation. Additionally, the availability of new technology or desperation may also drive an adversary and other actors to deviate from past doctrine or previous patterns of operation. The challenge to the JIPOE analyst is to anticipate such changes. Red cell threat emulation and command red team alternative assessments can help to accurately reflect adversary patterns of operation.

b. The consolidated list of adversary COAs is compared with the evaluation of adversary and relevant actor capabilities developed during step three of the JIPOE process. Any COA that the adversary is not capable of executing is eliminated from the list. However, caution must be taken when eliminating adversary COAs from consideration. The JIPOE analyst must have a high degree of confidence that the adversary truly lacks the means of adopting such COAs, and is incapable of innovation or a change in TTP that may make such a COA feasible.

c. The adversary templates (created during JIPOE step three) associated with each of the remaining COAs are analyzed relative to the impact of the OE (described during JIPOE step two). The JIPOE analyst will assess how the OE may constrain or modify the actual implementation of the adversary models for each COA. Usually the OE will either

help or hinder the application of an adversary's doctrine or previous patterns of operation, thereby further delimiting the number of "feasible" COAs.

d. Each of the remaining broad COAs is refined into more specific COAs by adding details such as the timing or phasing of operations and the location of the adversary's main and supporting efforts.

Sub-step 3. Evaluate and Prioritize Each Course of Action

The full set of identified adversary COAs is evaluated and ranked according to the likely order of adoption. The purpose of the prioritized list of adversary COAs is to provide JFCs and their staffs with a starting point for the development of a plan or order that takes into consideration the most likely adversary COA as well as the adversary COA most dangerous to the friendly force or mission accomplishment.

a. Caution should be exercised to remember that these COAs are only estimates of an adversary's intentions, not facts. It should also be kept in mind that actions associated with a friendly COA may cause the adversary to change to a different COA than the one originally adopted. Therefore, the adversary's reaction to changes in friendly force dispositions as well as relevant actors' actions should be continuously analyzed to determine if the adversary has changed to a different COA. This, in turn, may require a reprioritization of the initial list of adversary COAs and result in the joint force staff developing branch plans.

b. The JIPOE analyst must also be constantly on guard against possible adversary deception efforts. The adversary may deliberately adopt a less than optimum COA in order to maximize surprise. Additionally, the adversary may gradually increase preparations for a specific COA over a lengthy period of time, thereby "psychologically conditioning" the JIPOE analyst to accept a level and type of adversary activity, previously considered to be abnormal, as a new norm. Finally, the JIPOE analyst should understand that the adversary's intelligence capabilities may not present the same picture to adversary decision makers as JIPOE analysts perceive.

Sub-step 4. Develop Each Course of Action in the Amount of Detail that Time Allows

Subject to the amount of time available for analysis, each adversary COA is developed in sufficient detail to describe: the type of military operation; the earliest time military action could commence; the location of the action, and the objectives that make up the COA; the OPLAN to include scheme of maneuver and force dispositions; and the objective or desired end state. Each COA should be developed in the order of its probability of adoption, and should consist of a situation template, a description of the COA, and a listing of HVTs.

a. **Situation Template**. Situation templates are graphic depictions of expected adversary force dispositions at a specific time and place relative to an individual COA. As such, they represent "snapshots in time" of how the adversary will array and maneuver military forces and irregular forces based on doctrine and the characteristics of the OE. Depending on its complexity, an adversary COA may be depicted by a single situation template (usually depicting the most critical point of the adversary's operation) or a series of situation templates depicting points where the adversary might adopt branches or sequels to the main COA. A systems perspective situation template should be constructed by comparing the consolidated systems overlay with the modified association matrix that depicts anticipated network changes for specific COAs. Situation templates are designed to facilitate wargaming by the JFC and joint force staff. The following techniques (see Figure V-2) should be used when constructing situation templates:

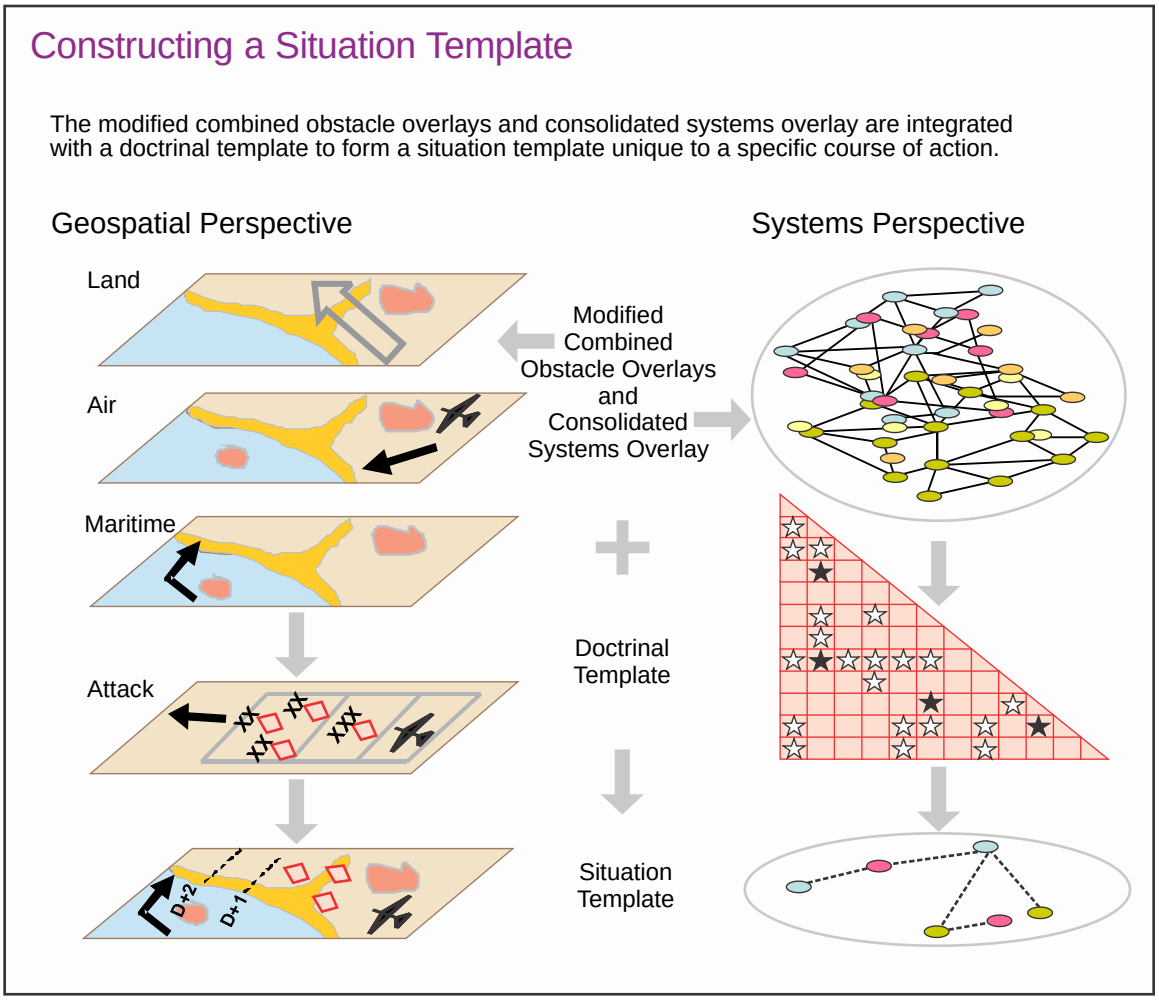

Figure V-2. Constructing a Situation Template

b. COA Description. Each COA includes a description of the expected activities of the adversary forces depicted on the situation template. This will usually consist of a narrative description that addresses the earliest time the COA can be executed, location of the main effort, supporting operations, and time and phase lines associated with the COA. The assumed critical decisions that the adversary commander will make during the implementation of the COA are described in terms of their location in time and space (decision points) and all relative decision-making criteria.

c. **HVTs**. The decisive points identified during COG analysis, and the HVTs listed on the doctrinal templates associated with each COA, should be refined and reevaluated. The relative worth of each HVT will vary with the specific situation under consideration and over the duration of the COA's execution. Each COA should be mentally wargamed to determine potential deployment locations for each HVT, and the point in time when each target is most valuable to the COA's success. Those areas where the adversary is most likely to deploy HVTs at the time when they are most crucial to the adversary's operation should be identified and passed to the joint force's targeting element. These areas should be designated as target areas of interest (TAIs) and can be annotated on the situation template or maintained on a separate list and overlay.

Sub-step 5. Identify Initial Collection Requirements

The identification of initial intelligence collection requirements depends on the prediction of specific activities and the areas in which they are expected to occur which, when observed, will reveal which COA the adversary has adopted. The areas in which these activities or indicators are expected to take place are designated as NAIs. The NAIs and their associated indicators are depicted on the event template and event matrix.

a. **The Event Template**. The event template is developed by comparing the analyses depicted on the situation templates for each of the COAs that the adversary is capable of executing. The purpose of this comparison is to identify those NAIs that are unique to the adoption of a specific adversary COA or a limited set of COAs. Conversely, those areas and activities that are common to all COAs are eliminated from consideration because they are not useful in differentiating the adoption of one COA over another. The NAIs for all the adversary's COAs are consolidated and depicted on the event template. An NAI can be a specific point, route, area, or network node or link and can match obvious geographic features or arbitrary features such as timed phase lines or engagement areas. They should be large enough to encompass the geospatial activity or network link that serves as the indicator of the adversary's COA.

b. **The Event Matrix**. The event matrix supports the event template by providing details on the type of activity expected in each NAI, the times the activity is expected to occur, and the COAs with which the activity is associated. Although the primary purpose of the event matrix is to facilitate intelligence collection planning, it can also serve as a useful aid in situation development and wargaming.

CHAPTER VI
SUPPORT TO JOINT OPERATION PLANNING, EXECUTION, AND ASSESSMENT

"A general should say to himself many times a day: 'If the hostile army were to make its appearance to my front, on my right, or on my left, what would I do?' And if he is embarrassed, his arrangements are bad; there is something wrong; he must rectify his mistake."

Napoleon Bonaparte
1769-1821

1. Introduction

The primary purpose of JIPOE is to support joint operation planning, execution, and assessment by identifying, analyzing, and assessing the adversary's COGs, critical vulnerabilities, capabilities, decisive points, limitations, intentions, COAs, and reactions to friendly operations based on a holistic view of the OE. JIPOE analysis assists the JFC and joint force staff to visualize and understand the full range of adversary capabilities and intentions. JIPOE analysts identify, describe, and compare the opposing advantages and disadvantages of all relevant aspects of the OE, and assist in determining how to gain strategic or operational advantage and initiative over the adversary. Although JIPOE support is both dynamic and continuous, it must also be "front loaded" in the sense that the bulk of JIPOE analysis must be completed early enough to be factored into the JFC's decision-making effort. Furthermore, prepared or "on the shelf" JIPOE products will provide the foundation on which JIPOE support in a time-constrained environment is based. JFCs and their staffs are responsible for ensuring that all JIPOE products and analyses are fully integrated into the joint force's operation planning, execution, and assessment efforts.

SECTION A. PLANNING

2. Overview

JIPOE supports joint operation planning by identifying significant facts and assumptions about the OE. This information includes details regarding adversary critical vulnerabilities, capabilities, decisive points, limitations, COGs, and potential COAs. JIPOE products are used by the JFC to produce the commander's estimate of the situation and CONOPS, and by the joint force staff to produce their respective staff estimates. Various intelligence products such as the DIA-produced dynamic threat assessment (DTA), baseline JIPOE products, and other locally produced assessments will contribute to developing and enhancing comprehensive intelligence estimates. JIPOE products also help to provide the framework used by the joint force staff to develop, wargame, and compare friendly COAs and provide a foundation for the JFC's decision regarding which friendly COA to adopt. JIPOE support is crucial throughout the steps of JOPP (see Figure VI-1).

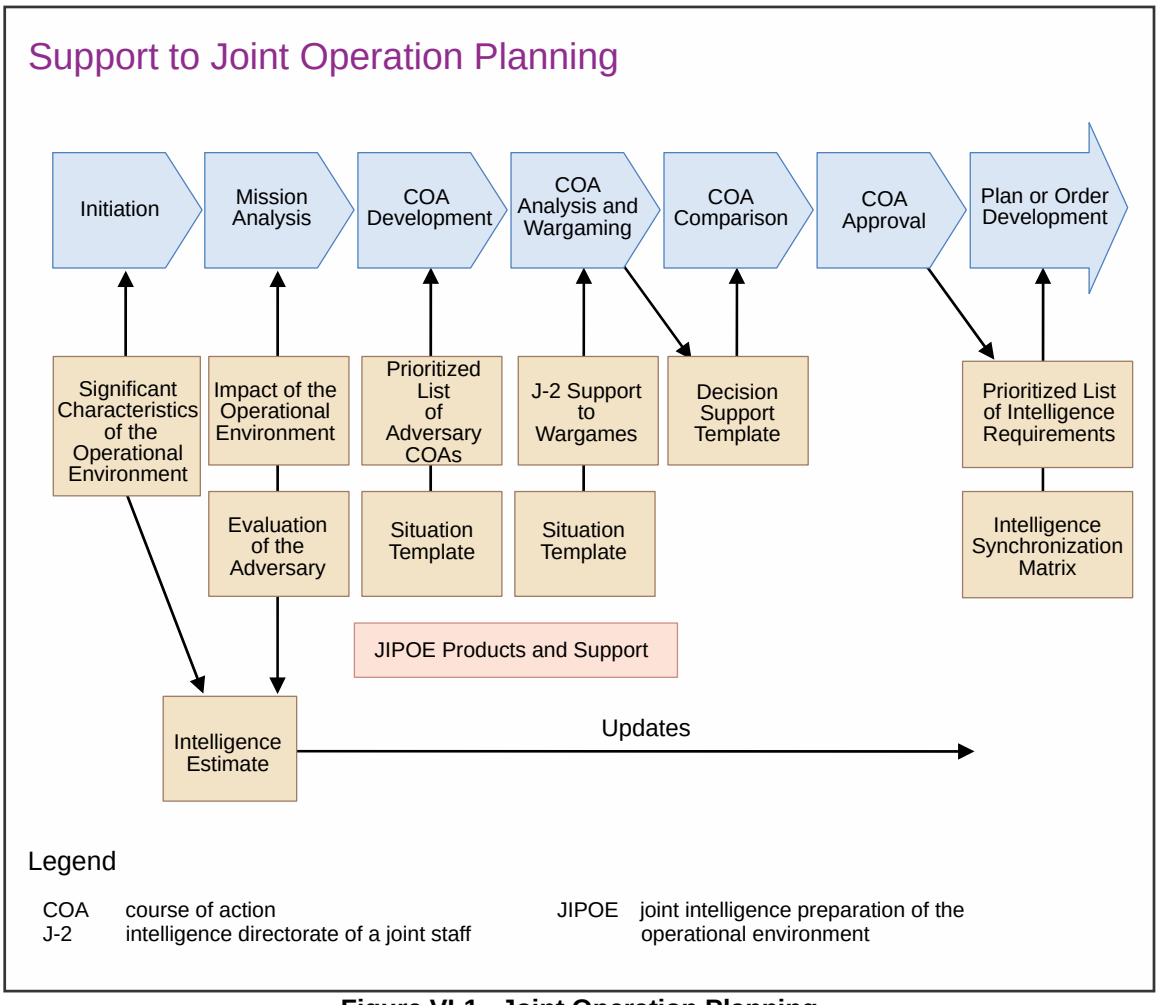

Figure VI-1. Joint Operation Planning

SECTION B. EXECUTION

10. Overview

Execution begins when the President decides to use a military option to resolve a crisis. Only the President or SecDef can authorize the CJCS to issue an execute order (EXORD). The EXORD directs the supported commander to initiate military operations, defines the time to initiate operations, and conveys guidance not provided earlier. The CJCS monitors the deployment and employment of forces and advises the SecDef on actions to resolve shortfalls and the actions needed to ensure successful completion of military operations. Execution continues until the operation is terminated or the mission is accomplished or revised. JIPOE support is a particularly important prerequisite for military success throughout all phases of a joint operation regardless of how the battle evolves (see Figure VI-4).

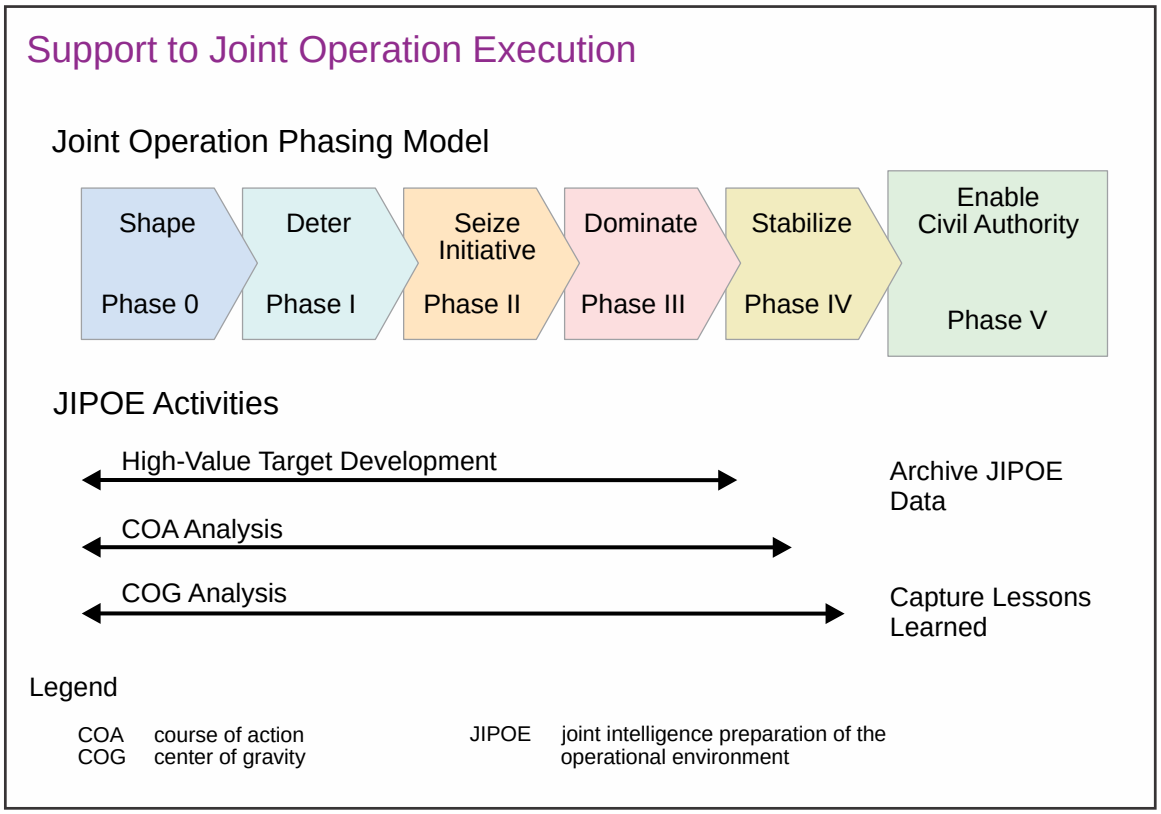

Figure VI-4. Support to Joint Operation Execution

SECTION C. ASSESSMENT

17. Overview

The JIPOE process supports assessment by helping the commander and staff decide what aspects of the OE to measure and how to measure them to determine progress toward accomplishing tasks, and setting conditions necessary to achieve an objective. Specifically, JIPOE supports assessment by establishing baselines, tracking key conditions related to measures of effectiveness (MOEs), analyzing COAs, identifying COGs and decisive points, nominating and monitoring HVTs, and establishing measures of adversary activities (indicators) associated with a specific COA or reaction to friendly operations related to MOEs (see Figure VI-5).

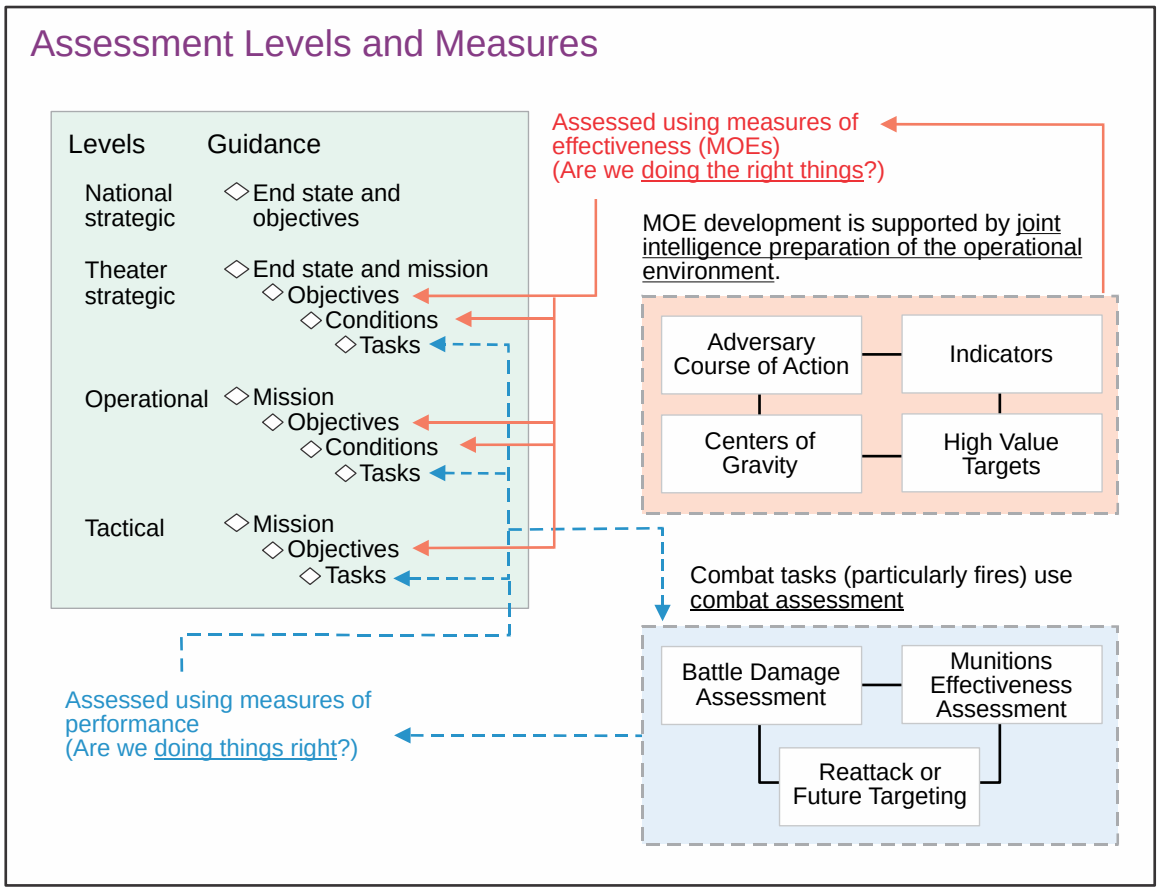

Figure VI-5. Assessment Levels and Measures