Mapping the Information Environment

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Editorial Abstract: *A follow-on discussion from last issue's article, "A Theory Based View of IO," authors Robert Cordray and Marc Romanych present a methodology to "map" the information environment, much like a commander's J2 maps the physical characteristics of the area of operations. Giving clarity to the information environment, in turn, allows the commander to gain an understanding of its impact and importance, ultimately leading to a more effective information operation.*

If information operations (IO) are to be fully integrated and executed by the Joint Force, then the commander and staff's visualization of the area of operations must be expanded to include the information environment. However, graphic representation of the information environment remains a challenge for IO staffs. The problem confronting the staff is how to analyze and succinctly describe the character and effects of an operating environment that is largely non-physical and abstract.

This article presents a methodology that, as part of Joint Intelligence Preparation of the Battlespace (JIPB), can be used to "map" the information environment in a manner similar to how the J2 maps the physical characteristics of the area of operations.[1] The result is a product called the "combined information overlay;" a concise graphic that depicts where and how information flowing in and through a given geographic area will impact military operations.

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What is the Information Environment?

The information environment is a construct based upon the idea that the existence and proliferation of information and information systems creates a distinct operating dimension or environment. As a combination of tangible (physical information systems and networks) and intangible elements (information and decision-making), the information environment is both a resource for military operations and a medium in which armed forces operate.

For the practitioner of IO, the most intangible element of the information environment – information – is of supreme importance. This is because, in spite of its lack of physical existence, the content and flow of information within a specific geographic area produces real, tangible effects in the physical world and on military forces present in the operating environment. For these reasons, our understanding of the information environment must ultimately include how information content and flow affect the execution of military operations.[2]

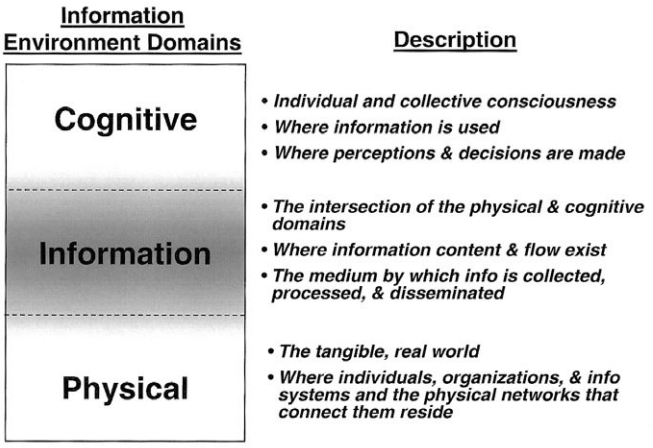
A Model of the Information Environment

To rationally analyze the information environment and the relationship between its constituent elements, a framework is needed to organize our view of the environment. For this purpose, a model – the three domains of conflict – developed by the Department of Defense Command and Control Research Program (DoD CCRP) is particularly appropriate.[3] The CCRP model describes three distinct, but closely interconnected domains – physical, information, and cognitive – that, in sum, explain the importance of information to military operations and, for the purposes of analysis, the character of the information environment. The three domains can be very briefly described as follows (see Figure 1).[4]

The physical domain is the real world environments of land, sea, air, and space. It is where maneuver and conventional combat operations occur. As part of the information environment, it is where individuals, organizations, information systems, and the physical networks that support them reside.

The cognitive domain is where individual and organizational collective consciousness exists. It is where information is used to form perceptions and attitudes and make decisions.

The information domain is formed by the intersection of the physical and cognitive domains, and is the abstract space where information exists. The domain consists of information and is where the functions of information systems (i.e., information collection, processing, and dissemination) create information content and flow. The information domain is the link between the reality of the physical domain and human perceptions and



Information Environment Construct

Associated Press

The cognitive aspects of media can have a dramatic impact on the influence of the civilian populace.

decision-making in cognitive domain. As such it is critical to the command and control of military forces.

It should be noted that the three domains overlap and, therefore, are closely interconnected.[5] Information systems in the physical domain create and direct the flow of information in the information domain which, in turn, affects human perceptions, attitudes, and ultimately decision-making in the cognitive domain. Furthermore, decisions made in the cognitive domain are transmitted as orders and intent through the information domain and executed as actions in the physical domain. Although discussion of the information environment is often segregated by domain, in truth, any domain boundaries are arbitrary due to interdependences between the domains. Consequently, an understanding of the information environment requires knowledge of all three domains and how they are linked to conventional military operations.

Application of the Model

JIPB products often dwell on the characteristics of the physical and cognitive domains while only briefly addressing the information domain. However, to have utility to the planning and execution of an information operation, analysis must explain how information affects military decision-making in the cognitive domain and actions in the physical domain. This "so what" of analysis can be developed only if the information domain is included in JIPB.

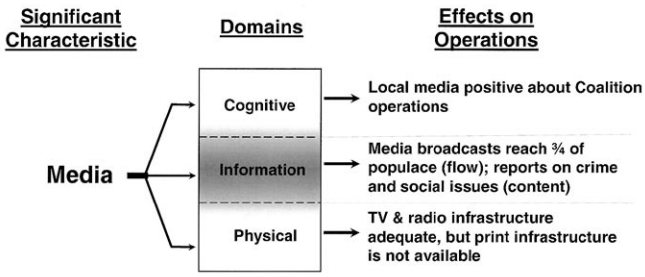
To ensure all three domains are adequately addressed during analysis, it is necessary to "visualize" the structure of the information environment and the relationship between its components. Doctrinally, the first two steps of JIPB result in a series of graphic products, such as a Modified Combined Obstacle Overlay (MCOO), that help the commander visualize the militarily significant aspects of the physical environment. Unfortunately, joint doctrine does not provide a ready example of a graphical product for the information environment, and therefore, information's importance to the joint force often goes unrecognized. A solution is a non-doctrinal intelligence product called a Combined Information Overlay, or CIO.

Define the Battlespace Environment. Visualization of the information environment begins with the identification of significant characteristics of the battlespace during Step 1 of JIPB. Significant characteristics are defined as "battlespace characteristics of possible significance or relevance to the joint force and its mission."[6] For IO, this equates to identifying existing and projected characteristics that are relevant to the content and flow of information in and through the operational area. Typically, these identified significant characteristics are broad elements the employment of information systems and networks (which, in turn, direct information content and flow).

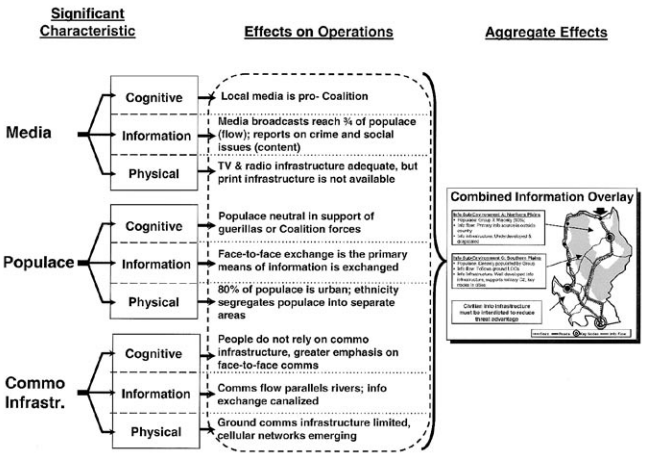
The information environment's militarily significant characteristics vary widely depending on the operational area. This is because, like terrain, the information environment is not uniform in its composition. Therefore, there is no single set of characteristics useful for analyzing every information environment. However, for the purposes of example, some broad characteristics that can serve as a starting point are: geography, populace, communications infrastructure, media, and societal organizations.

Describe the Battlespace's Effects. During Step 2 of JIPB the previously identified significant characteristics are evaluated using the three domain construct to determine specific impacts on operations in the information environment. To accomplish this task, the three domains are applied individually to each characteristic. The result is an understanding of how each characteristic affects the employment of physical information systems and networks (physical domain), the use of information for decision-making (cognitive domain), and information content and flow (information domain):

- Physical Domain. Applying the physical domain to the significant characteristics focuses on what information systems in the operational area collect, process, and disseminate information. Identification should include the tangible aspects of each significant characteristic such as technical information systems and networks (e.g., radio towers, fiber-optic networks, and telephone networks) and non-technical (human) information network nodes and links such as key leaders and face-to-face communications networks. Additionally, analysis should also show where those information systems and networks are located in the physical environment.
- Cognitive Domain. This analysis focuses on the values, beliefs, and perceptions of key individuals and organizations in the operational area that make decisions, as well as how those decisions are formulated. This analysis



Media's effect on operations.



Information environment characteristics, with their corresponding individual effects on operations, are analyzed to produce a comprehensive CIO which gives entire picture for the commander.

should show how this "human mental programming" affects the value of specific information to those key individuals and organizations in the battlespace.

- Information Domain. Analysis of this domain focuses on how information flows and the content of that information. Flow describes the exchange of information in terms of conduits, form, and speed. Content includes the major subjects or topics circulating in the area of operations.

As an example, the media can be easily analyzed using the three domains (see Figure 2). First, key physical features of the media, such as important radio and television broadcast towers, print production facilities, and other services associated with the production and dissemination of news reporting, are identified and located. Next, the cognitive aspects of each media outlet's influence on the civilian populace, third party organizations, and military forces' perceptions are ascertained. Finally, the information domain is evaluated in terms of media's range and distribution (information flow), as well as subject matter and bias (information content) of specific media sources. The aggregate of the analysis should show which media outlets can affect military operations, and therefore must be addressed to affect information content and flow in the area of operations.

Building the CIO

To understand the information environment, it is necessary to aggregate the effects of the physical, information, and cognitive domains on friendly and adversary forces. To help that visualization, analysts can build a graphic visualization tool – the CIO – that depicts the information environment's effects on military operations. It provides an overview of the information environment derived from analysis conducted during the first two steps of JIPB.

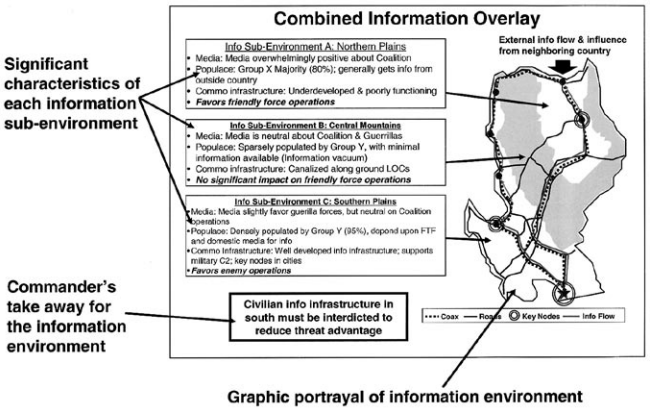
Building a CIO begins with a map of the operational area (ideally the same map used by the intelligence and operations staffs). The effects of the significant characteristics are combined and plotted on the map to show an aggregate of the effects in relation to the geography of the operational area (see Figure 3). Therefore, the information plotted on the CIO summarizes key aspects of the significant characteristics and the three domains. For example, a CIO may include physical components such as key information nodes and networks (both technological and human), the primary paths by which information flows in and through the operational area, information content generally disseminated along each path, and cognitive aspects such as beliefs and perceptions that are important to the mission.

The CIO is a guide, not a rigid template. The information included in the graphic can quickly become overwhelming if not presented in a concise manner. A refined and clearly presented CIO will usually have a greater effect on the commander than an overly complex graphic. One way to show more complex information in a relatively succinct manner is to break the operational area into sub-information environments.

Sub-Information Environments

Rarely will the composition of the information environment be uniform. The characteristics and impact of the information environment vary within a specific geographic area. Often, distinct sub-information environments are identified; that is, areas in which the information environment's significant characteristics and effects notably differ from adjacent areas. These sub-environments can be further analyzed to determine their composition and character. Ideally, analysis will identify those parts of the operational area that favor either friendly or adversary operations.

For example, sub-information environments may be based on the significant characteristics of ethnicity, media presence, and/or information access. One sub-environment may have a single ethnic group with wide-spread access to media and information, while another sub-information environment may have an entirely different populace group with limited or no access to outside media. Figure 4 shows an example CIO which breaks the operational area into three distinct sub-information environments, and then explains how each sub-environment is different by comparing each environment's significant characteristics.



An example of a Combined Information Overlay (CIO).

Whatever final form the CIO takes, it must present an operationally relevant overview of the information environment. Yet, every CIO will be unique because every information environment is different. Depending on the operational area, level of war, and assigned mission, the information environment's militarily significant characteristics will vary, as well as the relative importance of each domain to military operations.

"By providing a clear and succinct picture of the information environment, the commander can readily grasp the importance and impact of information on military operations."

Conclusion

The three domains of conflict provide a useful framework for analyzing and characterizing the information environment. Applying the structure of the domains to the operating environment's significant characteristics helps guide and organize analysis and provides a tool, the CIO, that graphically depicts where and how the information environment will impact military forces. Recent experiences during exercises and contingency operations demonstrate that this approach is readily understood by commanders and staffs.

Visualization of the information environment and its effects on military operations is essential to planning and executing an information operation. By providing a clear and succinct picture of the information environment, the commander can readily grasp the importance and impact of information on military operations. When the commander understands the information environment's importance, the IO staff is more likely to gain the support and guidance needed to develop an effective information operation.

Endnotes

[1] Emerging policy may exchange the term "battlespace" with "environment" (e.g., Intelligence Preparation of the Environment).

[2] The information and content aspects of the information environment originate from the two primary views of information – information-as-message and information-as-medium. For a further discussion see *In Athena's Camp: Preparing for Conflict in the Information Age* by John Arquilla and David Ronfeldt (Santa Monica, California: RAND, 1997).

[3] Further information about DoD CCRP's three domain model can be found in *Understanding Information Age Warfare*, by David S. Alberts., John J. Garstka, Richard E. Hayes, and David A. Signori (DoD Command and Control Research Program, Washington D.C., August 2001, pages 10-14).

[4] The text and diagram of the three domains is adapted from "Visualizing the Information Environment" by Marc J. Romanych (*Military Intelligence Professional Bulletin*, Volume 29, Number 3).

[5] Not mentioned in this discussion the idea of a fourth domain – that of culture. Culture is an elusive dynamic that affects the attributes of all three domains, from social structures in the physical domain to language in the information domain, to values and beliefs in the cognitive domain. More work is needed to determine the place of culture in the three domain model.

[6] JP 2-01.3, *Joint Tactics, Techniques and Procedures for Joint Intelligence Preparations of the Battlespace*, 24 May 2000.

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Joint Publication 2-01.3

Joint Intelligence Preparation of the Operational Environment

16 June 2009

EXECUTIVE SUMMARY
COMMANDER'S OVERVIEW

- **Provide an Overview of Joint Intelligence Preparation of the Operational Environment (JIPOE)**
- **Discuss the Process for JIPOE**
- **Discuss Support to Joint Operation Planning, Execution, and Assessment**
- **Discuss Special Considerations**
- **Provide Case Studies of Support to Major Operations, Campaigns, Stability Operations, and Irregular Warfare**
- **Describe Analyzing and Depicting a System and Specialized Products**

Overview

The purpose of joint intelligence preparation of the operational environment (JIPOE) is to support the joint force commander (JFC) by determining the adversary's probable intent and most likely courses of action (COAs) for countering the overall friendly joint mission.

Joint intelligence preparation of the operational environment (JIPOE) is the analytical process used by joint intelligence organizations to produce intelligence assessments, estimates, and other intelligence products in support of the joint force commander's (JFC's) decision-making process. It is a continuous process that involves four major steps: defining the total operational environment; describing the impact of the operational environment; evaluating the adversary; and determining and describing adversary potential courses of action (COAs), particularly the adversary's most likely COA and the COA most dangerous to friendly forces and mission accomplishment. The JIPOE process assists JFCs and their staffs in achieving information superiority by identifying adversary centers of gravity (COGs), focusing intelligence collection at the right time and place, and analyzing the impact of the operational environment on military operations.

The operational environment is the composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. Understanding the operational environment 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 actors, as well

as the local populace, on the commander's concept of operations (CONOPS) and progress toward attaining the military end state.

A holistic view of the operational environment helps create analytic synergy.

A holistic view of the operational environment encompasses **physical areas and factors,** and the **information environment**.

The **physical areas** include the assigned operational area and the associated areas of influence and interest necessary for the conduct of operations within the air, land, maritime, and space domains.

These domains include numerous **factors** the JFC and staff must consider. Some factors exert direct or indirect influence throughout all aspects of the operational environment. These other factors help compose a holistic view of the operational environment and include weather and climate, 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.

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 systems perspective helps identify potential sources for indications and warning; facilitates understanding friendly, adversary, and neutral system interactions; and facilitates identification and use of decisive points, lines of operations, and other design elements.

A systems perspective of the operational environment strives to provide an understanding of significant relationships within interrelated political, military, economic, social, information, infrastructure, and other systems relevant to a specific joint operation. 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. This *understanding* facilitates the identification and use of decisive points, lines of operations, and other design elements, and allows commanders and staffs to consider a broader set of options to focus limited resources, create desired effects, and achieve objectives.

This understanding of systems allows commanders and staffs to consider a broader set of options to focus limited resources, create desired effects, and achieve objectives.

JIPOE and intelligence preparation of the battlespace (IPB) products generally differ in terms of their relative purpose, focus, and level of detail. During operational-level, force-on-force confrontations, JIPOE utilizes a macro-analytic approach that seeks to identify an adversary's strategic vulnerabilities and COGs, whereas IPB generally requires microanalysis and a finer degree of detail in order to support component command operations. But in some situations both JIPOE and IPB will require the highest possible level of detail.

The JIPOE process emphasizes a ***holistic*** approach which that helps JIPOE analysts assess the adversary's diplomatic, informational, military, and economic options; provides a methodology for refining the assessment of the adversary's military option; for hypothesizing the adversary's most likely and most dangerous COAs; and identifying the adversary's most likely CONOPS.

JIPOE is a holistic and dynamic process that both supports and is supported by the 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.

In the category of **intelligence planning and direction,** the JIPOE process provides the basic data and assumptions regarding the adversary and other relevant aspects of the operational environment that help the JFC and staff identify intelligence requirements, information requirements, and collection requirements.

In **intelligence collection,** JIPOE provides the foundation for the development of an optimal intelligence collection strategy by enabling analysts to identify the time, location, and type of anticipated adversary activity corresponding to each potential adversary COA.

In **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.

In **analysis and production,** JIPOE products provide the foundation for the intelligence directorate of a joint staff's (J-2's) intelligence estimate.

In **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.

And in **evaluation and feedback,** the J-2 staff continuously evaluates JIPOE products to ensure that they achieve and maintain the highest possible standards of intelligence excellence**.**

Organizations across the Department of Defense and throughout each level of joint command contribute to training, equipping, tasking, standardizing, guiding, analyzing, producing, exploiting, managing, integrating, and synchronizing for JIPOE.

There are many organizations with roles and responsibility in JIPOE. The **Services** are responsible for training Service personnel in JIPOE and IPB techniques, equipping their forces with the materiel needed to conduct IPB and dissemination of IPB products. **The Defense Intelligence Agency Defense Intelligence Operations Coordination Center** is the focal point for tasking the production of baseline strategic intelligence analysis in support of current and planned joint operations. **Combatant commanders (CCDRs)** are responsible for ensuring the standardization of JIPOE products, establishing theater procedures for collection management, and the production and dissemination of intelligence products. The **J-2** has the primary staff responsibility for planning, coordinating, and conducting the overall JIPOE analysis and production effort at the joint force level. The combatant command **joint intelligence operations center (JIOC)** is the focal point for the overall JIPOE analysis and production effort within the combatant command, for managing collection requirements related to JIPOE and IPB efforts, and for producing intelligence products for the CCDR and subordinate commanders that support joint operations. The **subordinate JFCs** clearly state their objectives, CONOPS, and operation planning guidance to their staffs and ensure that the staff fully understands their intent. **Joint task force (JTF) joint intelligence support element or JTF joint intelligence operations center (JIOC)** is the intelligence organization at the JTF level responsible for complete air, space, ground, and maritime order of battle analysis; identification of adversary COGs; analysis of command and control (C2) and communications systems, targeting support; collection management; and maintenance of a 24-hour

watch in a full JIPOE effort. The JIOC must proactively seek out and exploit all possible assistance from interagency and multinational sources. The **joint geospatial intelligence cell** will manage the framework for accessing authoritative geospatial intelligence data. Intelligence staffs of **subordinate component commands** should ensure that appropriate IPB products are prepared for each domain in which the component command operates. The JFC may organize a "**JIPOE coordination cell**" (or similarly-named entity) to assist in integrating and synchronizing the JIPOE effort.

Multinational and interagency considerations will normally drive joint force expertise requirements in order to create a holistic view of the operational environment and to develop a systems perspective and understanding.

Due to the breadth of required subject matter expertise, a comprehensive JIPOE effort based on a holistic view of the operational environment will normally require expertise beyond the capabilities of the joint force JIOC and subordinate components. In particular, the development of a systems perspective will usually require assistance from, or collaboration with, national-level subject matter experts, both within and outside Department of Defense. Whenever possible within security guidelines, the JIPOE effort should include participation by the host nation (HN), allies, and coalition partners. A multinational JIPOE effort requires interoperable geospatial intelligence (GEOINT) data, applications, and data exchange capabilities. Information exchange throughout the operational area for the purpose of fostering mutual interests in resolving or deterring conflict or providing support is highly beneficial to all concerned parties.

Specific JIPOE planning considerations vary considerably in relationship to the levels of war and across the range of military operations.

Specific JIPOE planning considerations may vary considerably between strategic, operational, and tactical levels. Strategic-level JIPOE must examine the instruments of national power: diplomatic, informational, military, and economic. The operational level is concerned with analyzing the operational area, facilitating the flow of friendly forces in a timely manner, sustaining those forces, and then integrating tactical capabilities at the decisive time and place. Tactical operations generally require a greater level of detail over a smaller segment of the operational environment than is required at the strategic and operational levels. Under certain circumstances tactical operations can assume strategic importance and may constitute a critical part of joint operations.

Joint forces conduct JIPOE to develop a holistic view of the operational environment and assess adversary potential COAs. Since potential adversaries have access to US doctrine, they will probably attempt to exploit the JIPOE process, either through deception or by deliberately adopting a COA different than the one the JIPOE analyst might normally identify as "most likely." Operation planning based solely on countering the most likely COA will leave the joint force vulnerable to other less likely COAs that the adversary may choose to adopt in order to maximize surprise.

The Joint Intelligence Preparation of the Operational Environment Process

The JIPOE process - defining the operational environment, describing the impact of the operational environment, evaluating the adversary, and determining adversary COAs - provides a disciplined methodology for applying a holistic view of the operational environment to the analysis of adversary capability and intent.

The JIPOE process provides a disciplined methodology for applying a holistic view of the operational environment to the analysis of adversary capabilities and intentions. This process consists of four basic steps that ensure the systematic analysis of **all** relevant aspects of the operational environment. The basic process remains the same throughout the range of military operations.

In the ***first step*** of the JIPOE process, **defining the operational environment,** the joint force staff assists the JFC and component commanders in defining the operational environment by identifying those aspects and significant characteristics that may be relevant to the joint force's mission. Successfully defining the command's operational environment is critical to the outcome of the JIPOE process. Failure to focus on the *relevant* characteristics of the operational environment leads to wasted time and effort.

Successfully defining the command's operational environment is critical to the outcome of the JIPOE process.

To define the operational environment, there are seven elements. In the first, you **identify the joint force's operational area.** JFCs may define operational areas to assist in the coordination and deconfliction of joint action. Geographic combatant commanders (GCCs) may designate theaters of war and subordinate theaters of operation for each major threat when warranted. For operations somewhat limited in scope and duration, GCCs can designate operational areas such as joint operations areas, joint special operations areas, joint

security areas, amphibious objective areas, or areas of operations.

Element two is **analyze the mission and joint force commander's intent.** 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. The analyst must also consider the operational limitations levied upon the JFC by the national military leadership which would impact the conduct of operations.

Element three, **determine the significant characteristics of the operational environment,** consists of a *cursory* examination of each aspect of the operational environment in order to identify those characteristics of *possible* significance or relevance to the joint force and its mission.

Element four is **establish the limits of the joint force's areas of interest.** The JFC and J-2 should identify and establish limits for those physical areas and nonphysical aspects of the operational environment that are deemed relevant to the JIPOE effort.

Element five is **determine the level of detail required and feasible within the time available.** The J-2 plans, prioritizes, and structures the JIPOE effort by balancing the level of detail required with the amount of time available.

Element six is **determine intelligence and information gaps, shortfalls, and priorities.** 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. The J-2 will use the JFC's stated intent, commander's critical information requirements, and initial priority intelligence requirement to establish priorities for intelligence collection, processing, production, and dissemination.

And element seven is **collect material and submit requests for information to support further analysis.** The J-2 staff initiates collection operations

and issues requests for information to fill intelligence gaps to the level of detail required to support the JIPOE effort. If any assumptions are repudiated by new intelligence, the commander, the operations directorate of a joint staff (J-3), and other appropriate staff elements should reexamine any evaluations and decisions that were based on those assumptions.

Describing the impact of the operational environment enables evaluation of that environment from the adversary's perspective, and expresses it in terms of a prioritized set of likely adversary military COAs.

In the ***second step*** of the JIPOE process, **describe the impact of the operational environment,** the joint force evaluates the impact of the operational environment on adversary, friendly, and neutral military capabilities and broad COAs. All relevant physical and nonphysical aspects of the operational environment are analyzed by JIPOE analysts, combatant command personnel, and GEOINT analysts to produce a geospatial perspective and develop a systems perspective through the analysis of relevant sociocultural factors and system/subsystem nodes and links.

To describe the impact of the operational environment, there are three elements. First, **develop a geospatial perspective of the operational environment.** Each aspect of the operational environment is assessed to *analyze* its relevant characteristics and *evaluate* its potential impact on military operations in the land domain, the maritime domain, the air domain, the space domain, the information environment, and other relevant aspects (such as electromagnetic spectrum, weather, climate, sociocultural factors, and country/group characteristics).

Element two is **develop a systems perspective of the operational environment.** Understanding the operational environment's systems and their interaction can help visualize and describe how military actions can affect other partners as well as how those partners' actions can affect the JFC's operations, facilitate collaboration with counterparts from other agencies and organizations and help influence actions that are beyond the JFC's directive authority. JIPOE analysts develop a systems perspective through the identification and analysis of all major elements within friendly, adversary, or neutral systems and subsystems that are potentially relevant to the success of a joint

operation. Understanding the interaction of these systems with each other and how their relationships will change over time can help the JFC visualize how joint force actions on one system can affect other systems.

And element three is **describe the impact of the operational environment on adversary and friendly capabilities and broad courses of action.** Evaluations of all the individual aspects of the operational environment and the systems perspective are ultimately combined into a single integrated assessment designed to support the development and evaluation of friendly joint COAs. Likewise, the product enables the J-2 to evaluate the operational environment from the adversary's perspective, and to express this evaluation in terms of a prioritized set of adversary military COAs, based on how well each is supported by the overall impact of the operational environment to include any related diplomatic, informational, or economic options.

Understanding the relationship between adversary centers of gravity (COGs), critical capability, requirements, and vulnerability illuminates which decisive points offer opportunity to attack the adversary's COGs indirectly, extend friendly operational reach, or enable the application of friendly forces and capabilities.

The ***third step*** in the JIPOE process, **evaluating the adversary,** identifies and evaluates the adversary's capabilities and limitations, current situation, COGs, and the doctrine, patterns of operation, and tactics, techniques, and procedures employed by adversary forces, absent those constraints identified during step two. The JIPOE analyst must take care not to evaluate the adversary's joint capabilities by mirror-imaging US joint and Service doctrine. In many cases the joint doctrine of potential adversaries may be embryonic or nonexistent.

To evaluate the adversary, there are four elements. First, **update or create adversary models.** Adversary models can depict either an opponent's doctrinal way of operating or their observed patterns of operation under similar conditions. The models consist of three major parts: graphical depictions of adversary patterns of operations related to specific COAs; descriptions of the adversary's preferred tactics and options; and lists of high-value targets.

The second element is to **determine the current adversary situation.** All available intelligence

sources, methods, and databases should be continuously exploited in an effort to analyze and determine the current adversary situation. Current information pertaining to the composition and disposition of adversary forces is particularly important. The current adversary situation is based on assessments of these order-of-battle factors: composition, disposition strength, tactics-techniques-procedure, training status, logistics, effectiveness, electronic technical data, personalities, and information that contributes to knowledge.

The third element is to **identify adversary 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. Adversary capabilities are determined by comparing the current adversary situation with each of the adversary models already constructed. The J-2 should disseminate the evaluation of adversary capabilities, strengths, and weaknesses to the other joint force staff sections as soon as possible.

Finally, the fourth element is to **identify adversary COGs.** One of the most important tasks is the identification of adversary COGs or the source of power that provides moral or physical strength, freedom of action, and will to act. JIPOE analysts continuously assess the adversary's leadership, fielded forces, resources, 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. Understanding the relationship between a COG's critical capabilities, requirements, and vulnerabilities can illuminate 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. 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.

Determining adversary COAs develops a detailed understanding of the adversary's probable intent and future strategy so that joint forces can predict specific activities which, when observed, will reveal the COA the adversary has adopted.

The ***fourth step*** in the JIPOE process, **determining adversary COAs,** builds upon this holistic view to develop a detailed understanding of the adversary's probable intent and future strategy. The process provides a disciplined methodology for analyzing the set of potential adversary COAs in order to identify the COA the adversary is most likely to adopt, and the COA that would be most dangerous to the friendly force or to mission accomplishment.

In determining adversary COAs, there are five elements. First, **identify the adversary's likely objectives and desired end state.** The likely objectives and desired end state are identified by analyzing the current adversary military and political situation, strategic and operational capabilities, and the sociocultural characteristics of the adversary.

Element two is to **identify the full set of adversary COAs.** At a minimum this list will include all COAs that the adversary's doctrine or pattern of operations indicates are appropriate; all adversary COAs that could significantly influence the friendly mission; and all adversary COAs indicated by recent activities or events. Each identified COA should meet the five criteria of suitability, feasibility, acceptability, uniqueness, and consistency with adversary doctrine or patterns of operation.

Element three is to **evaluate and prioritize each COA.** The full set of identified adversary COAs are evaluated and ranked according to their likely order of adoption. 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. The JIPOE analyst must also be constantly on guard against possible adversary deception efforts.

Element four is to **develop each COA in the amount of detail time allows.** 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 objectives that make up the COA; the operation plan; and the objective or desired end state.

Element five is to **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.

Support To Joint Operation Planning, Execution, And Assessment

The purpose of JIPOE is to support the JFC by determining the adversary's probable intent and most likely COA for countering the overall friendly joint mission.

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 operational environment. JIPOE analysis assists the JFC and joint force staff to visualize and understand the full range of adversary capabilities and intentions.

JIPOE is both supported by and supports the joint operation planning process.

JIPOE supports joint operation planning by identifying significant facts and assumptions about the operational environment. 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. 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 the joint operation planning process (JOPP). The JIPOE effort should facilitate parallel planning by all strategic, operational, and tactical units involved in the operation.

JIPOE products facilitate operation planning by determining the idiosyncrasies and decision-making patterns of the adversary strategic leadership and field

commanders; the adversary's strategy, intention, or strategic concept of operations; the composition, dispositions, movements, strengths, doctrine, tactics, training, and combat effectiveness of major adversary forces; the adversary's principal strategic and operational objectives and lines of operation; the adversary's strategic and operational sustainment capabilities; COGs and decisive points throughout the adversary's operational and strategic depths; the adversary's ability to conduct information operations (IO) and use or access data from all systems; the adversary's regional strategic vulnerabilities; the adversary's capability to conduct asymmetric attacks against friendly global critical support nodes; the adversary's relationship with possible allies and the ability to enlist their support; the adversary's defensive and offensive vulnerabilities in depth; the adversary's capability to operate advanced warfighting systems in adverse meteorological and oceanographic conditions; and key nodes, links, and exploitable vulnerabilities within an adversary system.

JOPP begins when an appropriate authority recognizes a potential for military capability to be employed in response to a potential or actual crisis. A preliminary or abbreviated pertaining to potential should precede and inform the initiation phase of joint operation planning.

JIPOE supports initiation of joint operation planning by analysis of contingencies and the characteristics of the operational environment.

In order for the joint force staff to identify potential COAs, the JFC must formulate planning guidance based on an analysis of the friendly mission. JIPOE supports mission analysis by enabling the JFC and joint force staff to visualize the full extent of the operational environment, to distinguish the known from the unknown, and to establish working assumptions regarding how adversary and friendly forces will interact within the constraints of the operational environment. JIPOE assists JFCs in formulating their planning guidance by identifying significant adversary capabilities and by pointing out critical factors, such as the locations of key geography, attitudes of indigenous populations, and potential land, air, and sea avenues of approach.

JIPOE supports mission analysis by assisting JFCs

The J-3 and the plans directorate of a joint staff (J-5) develop friendly COAs designed to accomplish the

in formulating their planning guidance.

joint force's mission within the guidelines established by the JFC. The J-2 facilitates this process by ensuring that all adversary COAs are identified, evaluated, and prioritized (JIPOE step four) in sufficient time to be integrated into the friendly COA development effort. Additionally, the evaluation of the adversary (JIPOE step three) is used by the J-3 and J-5 to estimate force ratios. The J-3 also depends heavily on JIPOE products prepared during the analysis of the adversary situation and the evaluation of other relevant aspects of the operational environment in order to formulate initial friendly force dispositions and schemes of maneuver. Additionally, the JIPOE analysis of high-value targets is used by the J-3 and J-5 to identify targets whose loss to the adversary would significantly contribute to the success of a friendly COA. These targets are refined through wargaming and are designated as high-payoff targets. JIPOE also provides significant input to the formulation of deception plans by analyzing adversary intelligence collection capabilities and the perceptual biases of adversary decision makers.

JIPOE supports friendly COA development by determining adversary COAs, evaluating the adversary, analyzing the adversary situation, and evaluating other relevant aspects of the operational environment.

All joint force staff sections participate in an analysis of the friendly COAs to identify any aspects of a particular COA that would make it infeasible, and to determine which COA best accomplishes the joint force's mission. The best method of analyzing friendly COAs is through wargaming and the construction of a decision support template.

JIPOE supports analyzing friendly COAs through wargaming and construction of decision support templates.

Following wargaming, the staff compares friendly COAs to identify the one that has the highest probability of success against the full set of adversary COAs as depicted on the decision support template.

JIPOE supports COA comparison by assessing the overall capabilities of intelligence collection and production to support each friendly COA.

After comparing friendly COAs, each joint force staff element presents its findings to the remainder of the staff. Together they determine which friendly COA they will recommend to the JFC. The J-3 then briefs the COAs to the JFC using graphic aids, such as the decision support template and matrix. The JFC decides upon a COA and announces the CONOPS.

Using the results of wargaming associated with the selected COA, the joint force staff prepares plans and orders that implement the JFC's decision. The J-2 prioritizes intelligence requirements and synchronizes intelligence collection requirements to support the COA selected by the JFC.

JIPOE supports plan or order development by prioritizing intelligence requirements and synchronizing intelligence collection requirements.

Execution begins when the President decides to use a military option to resolve a crisis. 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. The purpose of phasing is to help the JFC organize operations by integrating and synchronizing subordinate operations. During execution, the JIPOE effort must stay at least one step ahead of operations by simultaneously supporting the current phase of the operation *and* laying the informational groundwork required for subsequent phases. JIPOE also supports operation order execution by continuously identifying and evaluating the adversary's strategic and operational COGs.

JIPOE supports operation order execution by continuously identifying and evaluating adversary strategic and operational COGs.

Before committing forces, JFCs are able to take actions to help shape the character of potential future operations. Intelligence activities conducted during the shaping phase help lay the groundwork for the JIPOE effort in all subsequent phases of the operation. Specifically, the JIPOE effort during the shaping phase should focus on initial target development resulting in target lists and target material production, identification of adversary COGs, vulnerabilities and susceptibilities to IO, key nodes, line of communications, and potential adversary COAs that would deny friendly access to bases and lodgment areas. Whenever possible, HN and multinational participation in the JIPOE effort should be encouraged.

JIPOE supports shaping in initial target development.

During the deter phase, the ongoing JIPOE effort is accelerated to focus on monitoring the current situation while simultaneously assessing adversary capabilities to affect subsequent phases of the operation. JIPOE efforts also concentrate on confirming adversary COGs and support the continuous refinement of estimates of adversary capabilities, dispositions, intentions, and

JIPOE supports the current phase of a joint operation while simultaneously laying the informational groundwork required for subsequent phases.

JIPOE supports the deter phase by monitoring the current situation and assessing adversary capabilities to affect subsequent phases of the operation.

probable COAs within the context of the current situation. JIPOE analysts must look ahead to prepare threat assessments that support planning for operations in subsequent phases.

JIPOE supports seizing the initiative with focus on adversary capabilities, intelligence collection planning, and the formulation of an optimal intelligence, surveillance, and reconnaissance strategy.

As operations commence, the JFC needs to exploit friendly asymmetric advantages and capabilities to shock, demoralize, and disrupt the enemy immediately. The JFC seeks decisive advantage through the use of all available elements of combat power to seize and maintain the initiative, deny the enemy the opportunity to achieve its objectives, and generate in the enemy a sense of inevitable failure and defeat. During this phase, JIPOE analysts focus on adversary capabilities that may impede friendly force deployment from bases to ports of embarkation to lodgment areas. The JIPOE effort is also crucial to intelligence collection planning and the formulation of an optimal intelligence, surveillance, and reconnaissance (ISR) strategy.

JIPOE supports the dominate phase with linear and nonlinear operations support and assessments of an enemy's capability, willingness, and intent to employ weapons of mass destruction.

During the dominate phase, JFCs conduct sustained combat operations by simultaneously employing conventional, special operations forces, and IO capabilities throughout the breadth and depth of the operational area. During this phase, the JIPOE effort must be equally prepared to support linear and nonlinear operations. JIPOE also provides JFCs and component commanders with assessments of an enemy's capability, willingness, and intent to employ weapons of mass destruction (WMD).

JIPOE supports the stabilization phase by focusing on actual or potential threats to the joint force.

Stabilization typically begins with significant military involvement to include some combat, then moves increasingly toward enabling civil authority as the threat wanes and civil infrastructures are reestablished. During the stabilize phase, the JIPOE effort transitions from supporting combat operations to focus on actual or potential threats to the joint force**.**

JIPOE supports the enable civil authority phase by collecting intelligence lessons learned and archiving its products.

Finally, the enable civil authority phase is characterized by the establishment of a legitimate civil authority that is enabled to manage the situation without further outside military assistance. Before the operation is terminated, it is important that all intelligence lessons learned are recorded in appropriate databases and are captured in joint doctrine. Likewise, the J-2 should

ensure that all JIPOE products are appropriately archived.

JIPOE supports assessment by helping decide what measures of performance and effectiveness in the operational environment determine progress toward setting the conditions necessary to achieve an objective.

Assessment is a continuous process that measures the overall effectiveness of employing joint force capabilities during military operations. Commanders continuously assess the operational environment and the progress of operations, and then compare them to their initial vision and intent. Assessment actions and measures help commanders adjust operations and resources as required, determine when to execute branches and sequels, and make other critical decisions to ensure current and future operations remain aligned with the mission and desired end state. Assessment occurs at all levels and across the entire range of military operations. The JIPOE process supports assessment by helping the commander and staff decide what aspects of the operational environment to measure and how to measure them to determine progress toward accomplishing tasks, and setting conditions necessary to achieve an objective.

The assessment process uses measures of performance to evaluate task performance at all levels of war, and measures of effectiveness (MOEs) to determine progress of operations toward achieving objectives. The assessment process and related measures should be relevant, measurable, responsive, and resourced so there is no false impression of accomplishment. JIPOE analysts help assess task accomplishment by supporting the battle damage assessment, munitions effectiveness assessment, and reattack recommendation. At the strategic and operational levels, JIPOE products provide much of the substantive baseline analysis and characterization of systems and functional capabilities required for target system analysis and task assessment. At the operational level, the JIPOE process supports target development by determining the anticipated times and locations where adversary targets are expected to appear. At the tactical level, JIPOE support may also include analysis of specific target composition and vulnerability.

JIPOE products, supplemented by the use of a red team to critically examine the MOE from the adversary's perspective, help ensure the JFC is measuring the

"important things." The JIPOE process is particularly valuable in identifying and developing indicators (which are the foundation of MOEs) to monitor changes in adversary system behavior, capabilities, or the operational environment. These indicators help JFCs, their staffs, and component commanders determine if the joint force is "doing the right things" to achieve objectives, not just "doing things right."

Special Considerations

Some types of missions, operations, and situations require a more tailored approach with greater emphasis on aspects of the operational environment.

In its most basic sense, the JIPOE process simply combines an understanding of the constraints and influences imposed by the operational environment with the normal *modus operandi* of an adversary in order to forecast that adversary's future actions. However, some types of missions, operations, and situations may require a more tailored JIPOE approach that places greater emphasis on specific aspects of the operational environment.

JIPOE supports each special situation, operation, and mission with the differing mindsets, techniques, collaboration, focus, detail, accuracy, and emphasis necessary to their success.

JIPOE support during operations that focus on the civil population as a COG requires a different mindset and different techniques than a JIPOE effort that focuses on defeating an adversary militarily.

JIPOE support during stability operations and irregular warfare (IW) requires a more detailed understanding of the relevant area's sociocultural factors than is normally the case during traditional war.

Infrastructure analysis takes on added importance as the focus of military operations shifts from target development during traditional war to the reconstruction of facilities and reestablishment of services during stability operations. From an infrastructure perspective, it is imperative to understand the current state of the previous and remaining government services, associated civilian expertise, transportation nodes, lines of communications, hospital and medical facilities and public utilities as well as what is projected to remain. An accurate portrayal of the infrastructure status will potentially prevent or help eliminate humanitarian crises.

Human intelligence (HUMINT) and GEOINT assume increased importance in stability operations. In combination, HUMINT, GEOINT, and other sources enable the creation of products invaluable during stability operations and IW. Stability operations require extremely accurate geospatial products and information with significantly greater detail. HUMINT assumes increased importance during stability operations and IW and often provides the most valuable sources of information.

During stability operations and IW, the joint force will usually operate in a complex international environment alongside other important actors that will have a need for JIPOE products. Therefore, a robust information sharing process will be required with individuals operating at multiple classification levels. Support to stability operations will require JIPOE planners to collaborate closely with intelligence community elements to obtain expertise and materials that do not exist at the JTF level.

The primary difference between the basic JIPOE process during traditional war and the JIPOE effort during stability operations and IW is one of focus; particularly in the high degree of detail required, and the strong emphasis placed on demographic analysis of the civil population. JIPOE products must be tailored to the situation and focus on analyzing the vulnerabilities of critical infrastructure, understanding the motivations of the adversary, and identifying any shared aspirations, values, or outlooks that link the adversary to the general population.

Adversaries are likely to use asymmetric approaches as a method of degrading or negating support for military operations or the military dominance of friendly forces. The adversary may use asymmetric means to counter friendly ISR capabilities and complicate friendly targeting efforts through military deception, camouflage and concealment, frequent repositioning of mobile infrastructure, and the selective use of air defense systems to force airborne ISR assets to less than optimum flight profiles. JIPOE support to ISR is designed to optimize the employment of ISR and target

acquisition assets by forecasting the times and locations of anticipated adversary activity.

An adversary is likely to use information-related approaches to counter US advantages in C2, information processing, and decision making, and to reduce public and international support for military operations. JIPOE supports IO and activities by identifying adversary capabilities, vulnerabilities, and strategies and influencing friendly public opinion and decision making.

Adversaries may commit terrorist acts against US Service members, civilian employees, family members, facilities, and equipment in an attempt to demoralize US forces and counter public support for military operations. JIPOE helps combat terrorism by supporting force protection measures, counterintelligence, and other security related activities.

In order to counter US advantages in conventional forces, an adversary may support insurgencies in other countries or in response to an occupation of their country. Due to the high level of physical and political risk involved, special operations require extremely detailed JIPOE products.

The actual or threatened development, proliferation, or employment of WMD by an adversary can impact friendly forces by causing those forces to prepare for or conduct WMD nonproliferation, counterproliferation, or consequence management operations. JIPOE analysts help mitigate this threat by assessing the adversary's potential proliferation or employment of WMD, characterizing the consequences of a WMD related activity, and supporting the joint force's WMD defense effort.

An adversary may use theater ballistic missiles, unmanned aircraft, and cruise missiles to directly threaten friendly forces or to provoke political situations that may have strategic ramifications. Theater ballistic missile defense and counterair operations help protect the force from these types of asymmetric threats.

Conclusion

This publication establishes joint doctrine for the conduct of JIPOE in relation to the levels of war and across the range of military operations.

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."

Machiavelli
Discourses, 1517

1. Introduction

Joint intelligence preparation of the operational environment (JIPOE) is the analytical process used by joint intelligence organizations to produce intelligence assessments, estimates, and other intelligence products in support of the joint force commander's (JFC's) decision-making process. It is a continuous process that involves four major steps: (1) defining the total operational environment; (2) describing the impact of the operational environment; (3) evaluating the adversary; and (4) determining and describing adversary potential courses of action (COAs), particularly the adversary's most likely COA and the COA most dangerous to friendly forces and mission accomplishment. The process is used to analyze the physical domains (air, land, maritime and space); the information environment (which includes cyberspace), political, military, economic, social, information, and infrastructure (PMESII) systems; and all other relevant aspects of the operational environment, and to determine an adversary's capabilities to operate within that environment. JIPOE products are used by joint force, component, and supporting command staffs in preparing their estimates and are also applied during the analysis and selection of friendly COAs.

a. The JIPOE process assists JFCs and their staffs in achieving information superiority by identifying adversary centers of gravity (COGs), focusing intelligence collection at the right time and place, and analyzing the impact of the operational environment on military operations. However, JIPOE's main focus is on providing predictive intelligence designed to help the JFC discern the adversary's probable intent and most likely future COA. Simply stated, JIPOE helps the JFC to stay inside the adversary's decision-making cycle in order to react faster and make better decisions than the adversary.

b. The intelligence directorates of a joint staff (J-2s) at all levels coordinate and supervise the JIPOE effort to support joint operation planning, enable commanders and other key personnel to visualize the full range of relevant aspects of the operational environment, identify adversary COGs, conduct assessment of friendly and enemy actions, and evaluate potential adversary and friendly COAs. The JIPOE effort must be fully 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 preparation of the environment (GPE) and medical intelligence preparation of the operational environment (MIPOE). All staff elements of the joint force and component commands 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 in planning and guiding 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 GPE and MIPOE refer to JP 2-03,* Geospatial Intelligence Support to Joint Operations*, and JP 4-02,* Health Service Support.

2. The Operational Environment – A Holistic View

The operational environment is the composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. Understanding this environment requires a holistic view that extends beyond the adversary's military forces and other combat capabilities within the operational area. A holistic view of the operational environment encompasses 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 and subsystems that are relevant to a specific joint operation. Understanding the operational environment 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 actors, as well 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 operational environment.

a. **Physical Areas and Factors.** The physical areas include the assigned operational area and the associated areas of influence and interest necessary for the conduct of operations within the air, land, maritime, and space domains. These domains include numerous factors the JFC and staff must consider such as terrain, topography, hydrology, 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.

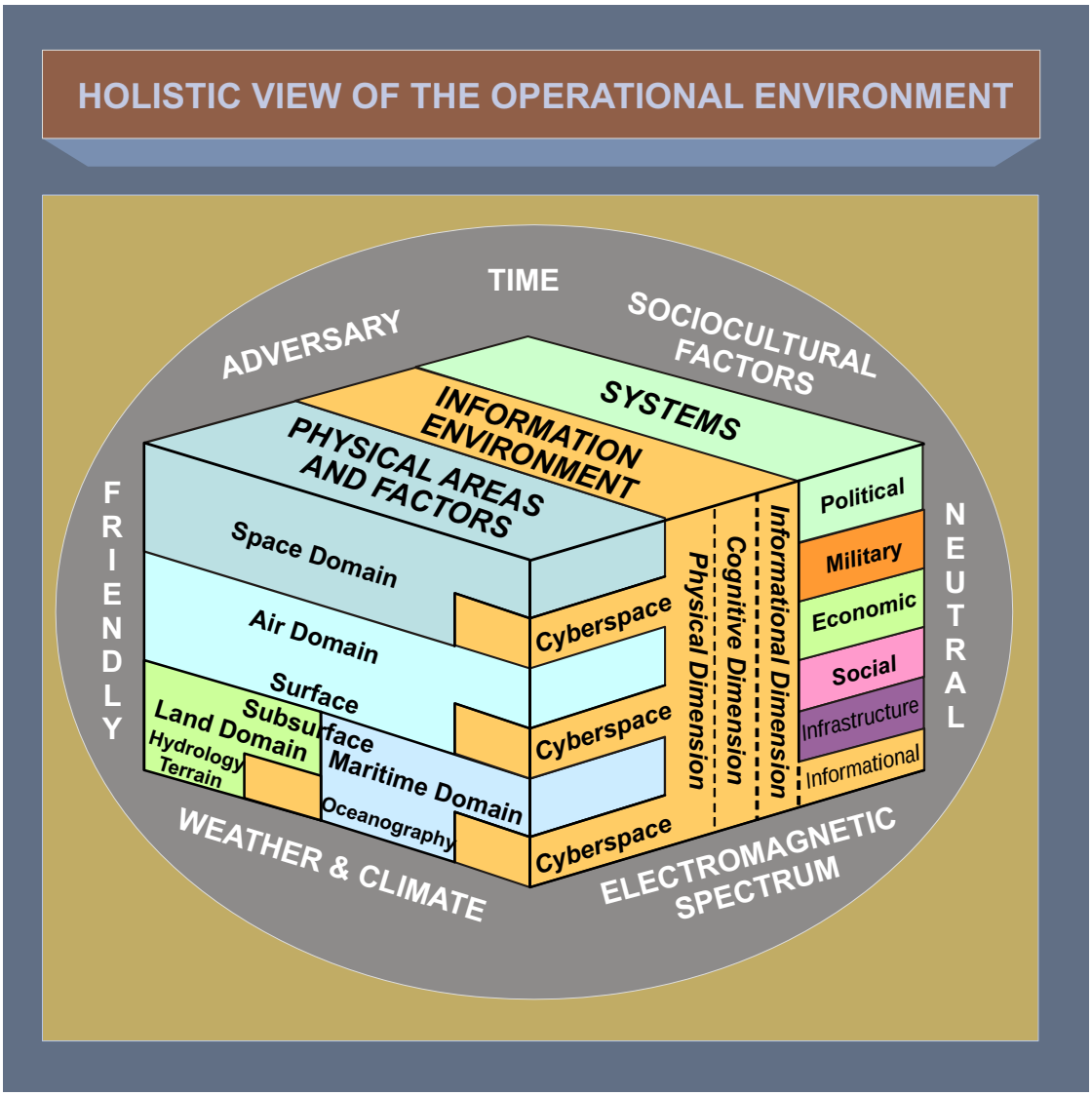

Figure I-1. Holistic View of the Operational Environment

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 aspect of the information environment is cyberspace, which overlaps the physical and informational dimensions of the information environment. It is critical that JIPOE analysis of the information environment include support to cyberspace operations and the identification of key individuals and groups having influence among 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.

c. **Systems Perspective.** A systems perspective of the operational environment strives to provide an understanding of significant relationships within interrelated

PMESII and other systems relevant to a specific joint operation, without regard to geographic boundaries, but which considers a focus area specified by the commander. This focus area usually will be based on an impending or potential contingency or on other factors of interest to the JFC. 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 operational environment is not, itself, an element of operational design, it supports most 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 operations, and other 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 II, "The Process for Joint Intelligence Preparation of the Operational Environment," 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 operational environment. These other factors help compose a holistic view of the operational environment and include weather and climate, 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.

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

a. JIPOE and IPB products generally differ in terms of their relative purpose, focus, and level of detail. The purpose of JIPOE is to support the JFC by determining the adversary's probable intent and most likely COA for countering the overall friendly joint mission, 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 seeks to identify an adversary's strategic vulnerabilities and COGs, whereas IPB generally requires microanalysis 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 are intended to support each other while avoiding a duplication of analytic effort.

b. The JIPOE process also emphasizes a ***holistic*** approach by analyzing and integrating a systems perspective and geospatial perspective 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.

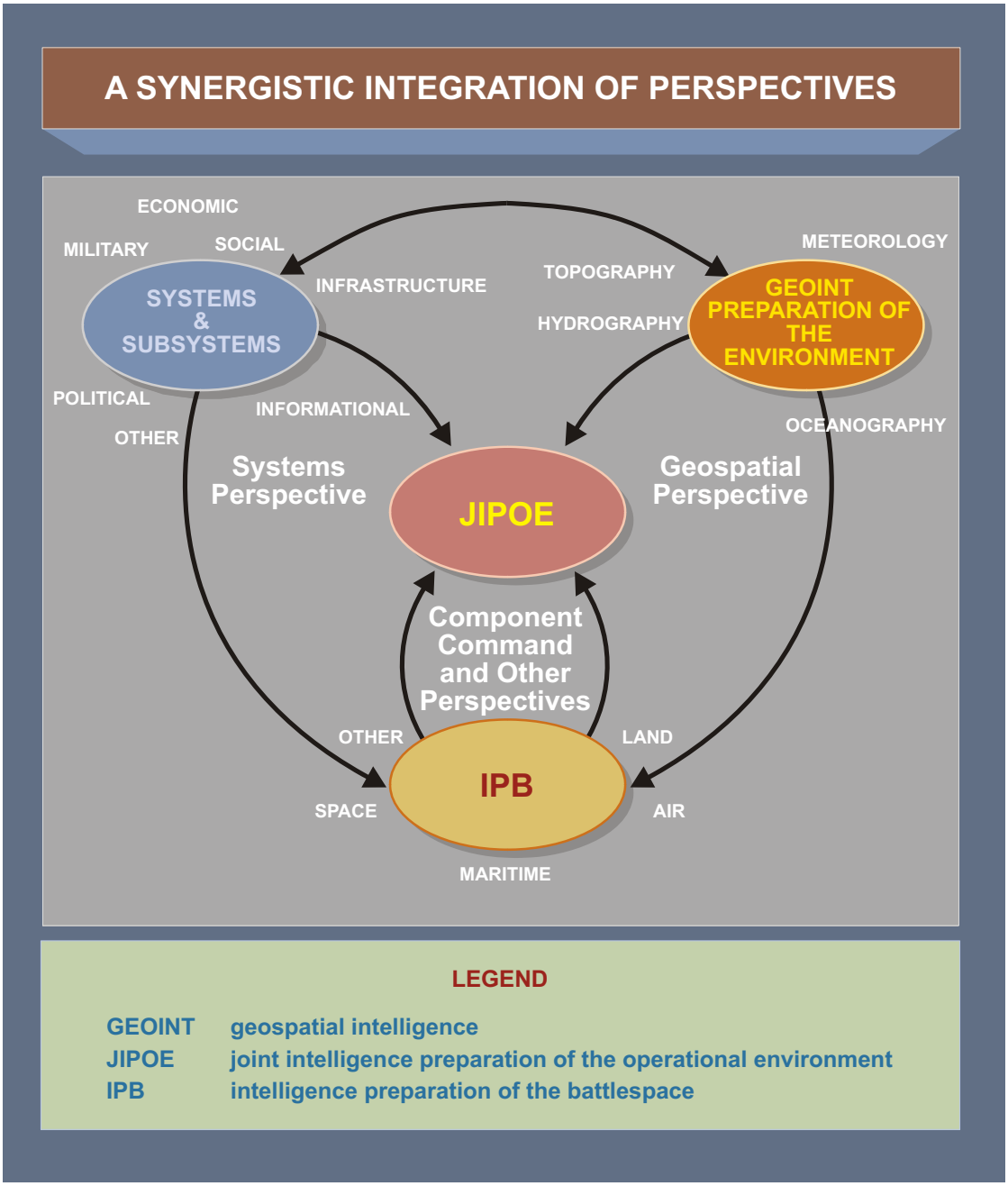

Figure I-2. A Synergistic Integration of Perspectives

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. Significance to 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).

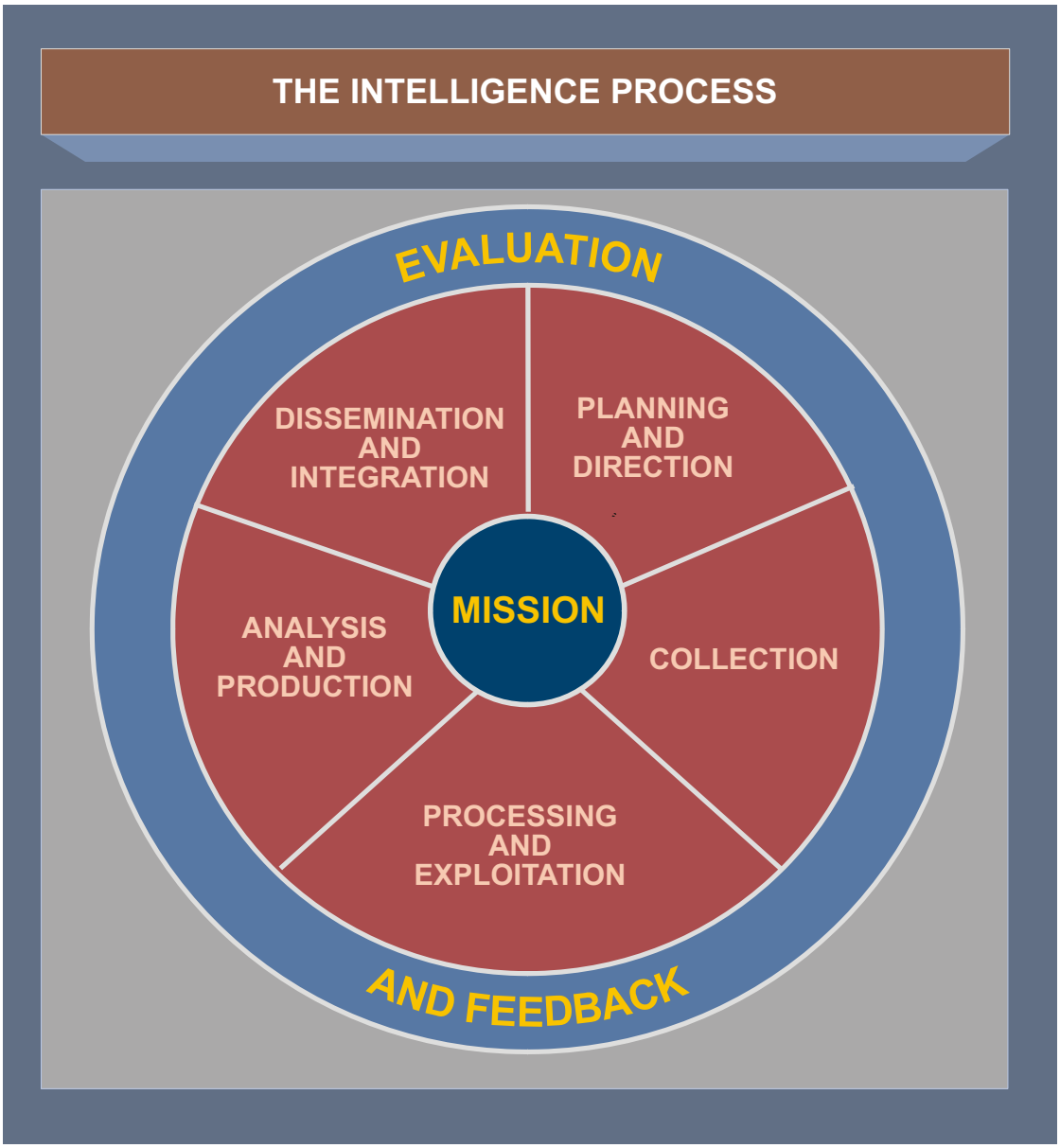

Figure I-3. The Intelligence Process

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 operational environment 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 operational environment, JIPOE provides the conceptual basis for the JFC to visualize and understand how the adversary might threaten the command or interfere with mission accomplishment. This analysis forms the basis for developing the commander's priority intelligence requirements (PIRs), which seek to answer 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

must make during execution and allows the J-2 to develop specific intelligence requirements to facilitate those decisions. JIPOE also identifies other critical information gaps regarding the adversary and other relevant aspects of the operational environment, which form the basis a collection strategy that synchronizes and prioritizes collection needs and utilization of resources within the phases of the operation.

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 guidance on the request for information (RFI) process.*

b. **JIPOE and Intelligence Collection.** JIPOE provides the foundation for the development of an optimal intelligence collection strategy by enabling analysts to identify the time, location, and type of anticipated adversary activity corresponding to each potential adversary COA. JIPOE products include several tools that facilitate the refinement of information requirements into specific collection requirements. 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, 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 operational environment, 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 (Figure I-4). 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 operational environment on friendly and adversary operations. The third step of the JIPOE process, an evaluation of the adversary, provides the data for the intelligence estimate's paragraphs 2.b, "Adversary Military 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.

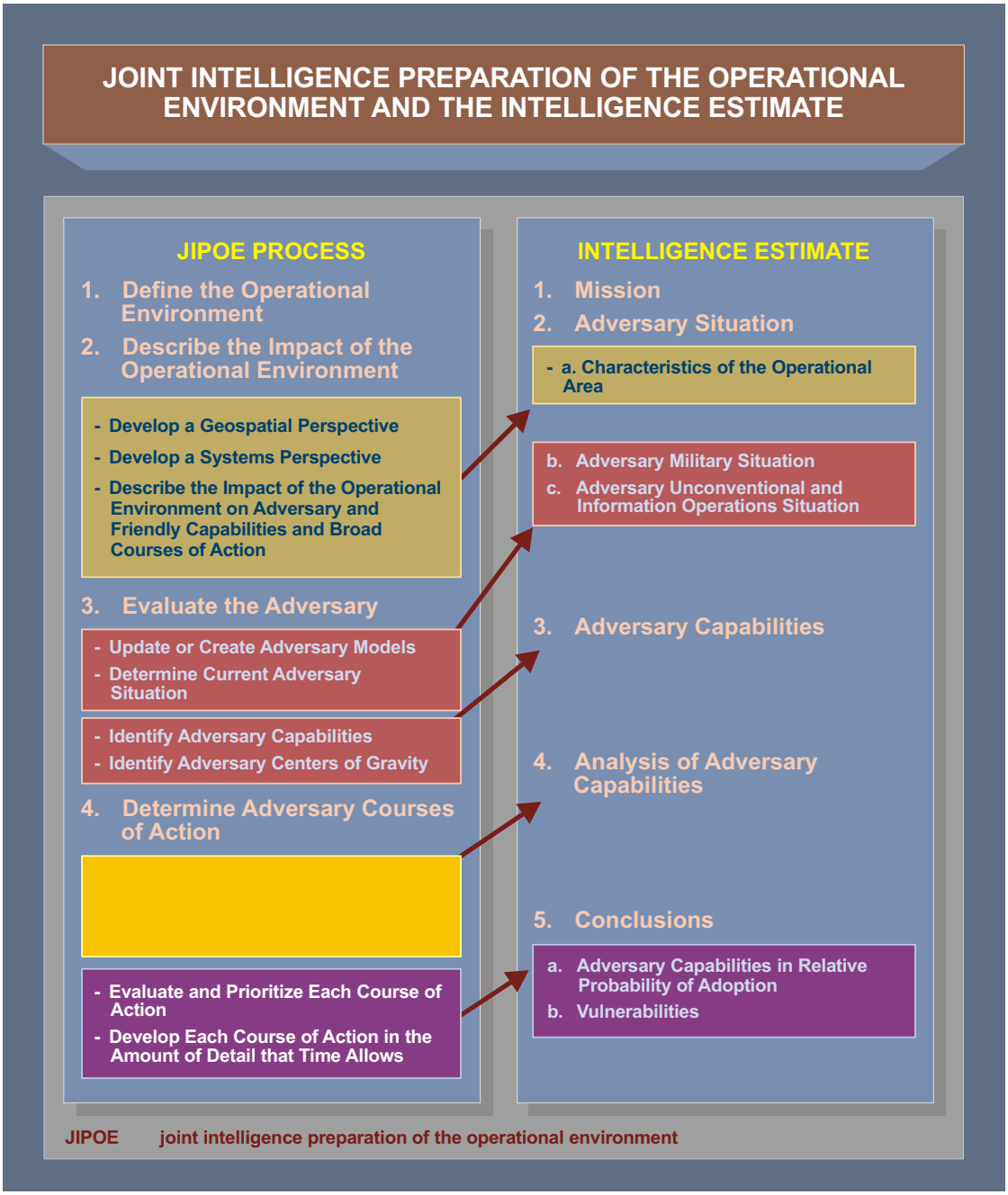

Figure I-4. Joint Intelligence Preparation of the Operational Environment and the Intelligence Estimate

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 written intelligence estimate, JIPOE templates, matrices, graphics, and other data sources can and should be disseminated to other joint force staff sections and component and supporting commands in order to facilitate their effective integration into operation

planning. JIPOE geospatial perspectives should also be provided to systems supporting the common operational picture.

f. **JIPOE and Evaluation and Feedback.** Consistent with the intelligence process, the J-2 staff continuously evaluates 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 immediate remedial 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.

5. Organizations, Roles, and Responsibilities

a. **Services.** The Services are responsible for training Service intelligence, meteorological and oceanographic (METOC), and geospatial information and services (GI&S) personnel in JIPOE and IPB techniques, equipping their forces with the materiel needed to conduct IPB during tactical operations, and for the production and dissemination of IPB products derived from specific databases located at the Service intelligence centers.

b. **The Defense Intelligence Agency (DIA) Defense Intelligence Operations Coordination Center (DIOCC).** The DIA DIOCC is the focal point for tasking the production of baseline strategic intelligence analysis in support of current and planned joint operations in accordance with established Defense Intelligence Analysis Program (DIAP) procedures. DIA manages the DIAP and provides direction and deconfliction for JIPOE intelligence production support by Service intelligence centers. During a crisis, the DIOCC is also responsible for facilitating a combatant commander's (CCDR's) request for federated intelligence support. The DIOCC receives and validates all RFIs submitted by the combatant commands and tasks national-level organizations for collection or production in response to intelligence requirements. Additionally, DIA initiates and produces all-source, finished intelligence production in support of JFC JIPOE processes consistent with its DIAP responsibilities.

For more detailed guidance, see JP 2-01, Joint and National Intelligence Support to Military Operations.

c. **Combatant Commander.** The CCDR is responsible for ensuring the standardization of JIPOE products within the command and subordinate joint forces, and for establishing theater procedures for collection management and the production and dissemination of intelligence products. The CCDR is also responsible for identifying requirements for federated intelligence support to the DIOCC, which will facilitate the establishment of a federated intelligence support architecture.

d. **J-2.** The J-2 has the primary staff responsibility for planning, coordinating, and conducting the overall JIPOE analysis and production effort at the joint force level.

Through the JIPOE process, the J-2 enhances the JFC's and other staff elements' ability to visualize all relevant aspects of the operational environment. The J-2 uses the JIPOE process to formulate and recommend PIRs for the JFC's approval, and develops information requirements that focus the intelligence effort (collection, processing, production, and dissemination) on questions crucial to joint force planning. To enhance the joint force's common operational picture, the J-2 should integrate component and supporting command IPB products with the joint force's JIPOE products in order to form a more complete and detailed picture of an adversary's capabilities, vulnerabilities, and potential COAs and promulgating these updated products as required. The J-2 staff should accomplish this in concert with the component command intelligence staffs, either directly or via any available secure electronic means that allows visualization of the JIPOE product, such as the Joint Worldwide Intelligence Communications System (JWICS) or the SECRET Internet Protocol Router Network (SIPRNET). The J-2 is also responsible for incorporating the available intelligence capabilities of supporting national agencies and joint commands into the JIPOE process, particularly in the areas of GI&S, METOC, sociocultural factors, and strategic targeting. Additionally, the J-2 disseminates JIPOE products in time to support planning by other joint force staff sections and component command staffs, and ensures such products are continuously updated. Due to lack of information, it may be necessary for the J-2 to formulate and propose to the JFC assumptions regarding adversary capabilities. In such cases, the J-2 should ensure that all assumptions are clearly understood by the JFC and the joint force staff to be only assumptions, while at the same time striving to collect the requisite intelligence needed to confirm or deny those assumptions. Most importantly, the J-2 should ensure that possible adversary COAs are not dismissed as "impossible" simply because of their relative degree of difficulty. On the other hand, if a combination of limiting factors associated with operational environment characteristics and adversary capabilities truly make a COA physically impossible to accomplish, then the J-2 must identify it as such.

e. **Combatant Command Joint Intelligence Operations Center (JIOC).** The JIOC is the focal point for the overall JIPOE analysis and production effort within the combatant command. It is responsible for managing collection requirements related to JIPOE and IPB efforts, and for producing intelligence products for the CCDR and subordinate commanders that support joint operation planning and ongoing operations. The JIOC ensures that the JIPOE production effort is accomplished in conjunction with all appropriate combatant command staff elements, particularly the geospatial intelligence (GEOINT), METOC, and information operations (IO) staff officers. The JIOC also ensures that its JIPOE analysis is fully integrated with all IPB and JIPOE products produced by subordinate commands and other organizations. With the assistance of all appropriate joint force staff elements, the JIOC identifies information gaps in existing intelligence databases and formulates collection requirements and RFIs to address these shortfalls. Additionally, the combatant command JIOC may be requested to support another CCDR's federated intelligence requirements, to include JIPOE requirements. As a federated partner, the JIOC must be prepared to integrate into the overall federated intelligence architecture identified by the supported CCDR. All combatant command JIOCs are eligible to participate in federated intelligence support operations.

f. **Subordinate Joint Force Commander.** The subordinate JFCs clearly state their objectives, CONOPS, and operation planning guidance to their staffs and ensure that the staff fully understands their intent. Based on wargaming and the joint force staff's recommendation, the JFC selects a friendly COA and issues implementing orders. The JFC also approves the list of intelligence requirements associated with that COA. The JFC then identifies those intelligence requirements most critical to the completion of the joint force's mission as PIRs.

g. **Joint Task Force (JTF) Joint Intelligence Support Element (JISE) or JIOC.** The intelligence organization at the JTF level is normally a JISE. However, the limited resources of a JISE will usually preclude a full JIPOE effort at the JTF level without substantial augmentation, reliance on reachback capability, and national-level assistance. To overcome this limitation, the CCDR may authorize the establishment of a JTF-level JIOC based on the scope, duration, and mission of the unit or JTF. A JTF JIOC is normally larger than a JISE and is responsible for complete air, space, ground, and maritime order of battle (OB) analysis; identification of adversary COGs; analysis of command and control (C2) and communications systems, targeting support; collection management; and maintenance of a 24-hour watch. Additionally, the JTF JIOC (if formed) serves as the focal point for planning, coordinating, and conducting JIPOE analysis and production at the subordinate joint force level. Most important, DIOCC forward element (DFE) personnel and liaison officers from Department of Defense (DOD) intelligence organizations provide the JTF JIOC with the means to obtain national support for the JIPOE effort. The JTF JIOC conducts its JIPOE analysis in conjunction with all other appropriate joint force and component command staff elements, particularly the GI&S and METOC staff officers.

h. **Joint Geospatial Intelligence Cell.** The JFC can designate a GEOINT officer and a GEOINT cell to manage the framework for accessing authoritative GEOINT data to enhance the joint force's common operational picture for situational awareness and decision making. GEOINT support includes imagery, imagery intelligence, and geospatial information across all functions and activities within the organization.

For more detailed guidance, see JP 2-03, Geospatial Intelligence Support to Joint Operations.

i. **Subordinate Component Commands.** The intelligence staffs of the subordinate component commands should ensure that appropriate IPB products are prepared for each domain in which the component command operates. Subordinate component commands should evaluate the specific factors in the operational environment that will affect friendly, neutral, and adversary COAs in and around their operational area and impact perceptions and support within their area of interest (AOI). More importantly, the analysis of the operational environment should better define those who are potentially friendly, potentially neutral, and potentially adversarial and the actions which would determine their orientation. These component command IPB products provide a level of detail and expertise that the J-2 should not attempt to duplicate, but must draw upon in order to form an integrated or "total" picture of an adversary's joint capabilities and

probable COAs. Accordingly, the component commands should coordinate their IPB effort with the J-2 and with other component commands that have overlapping IPB responsibilities. This will ensure their IPB products are coordinated and disseminated in time to support the joint force's JIPOE effort.

j. **JIPOE Coordination Cell.** The JFC may organize a "JIPOE coordination cell" (or similarly-named entity) to assist in integrating and synchronizing the JIPOE effort with various supporting organizations, related capabilities, and appropriate staff functions. The organizational relationships between the JIPOE coordination cell and the organizations that support the cell should be per JFC guidance. Normally, a J-2 representative will chair the JIPOE coordination cell. Organizations participating in the cell provide advice and assistance regarding the employment of their respective capabilities and activities. Figure I-5 is intended as a guide in determining possible cell participants that could help coordinate the JIPOE effort, provide input, or assist in obtaining external support. The JFC should tailor the composition of the cell as necessary to accomplish the mission. Organizational and functional representation in the JIPOE coordination cell may include, but is not limited to, the following personnel:

(1) **J-2 Representative.** Exercises primary staff oversight of the JIPOE effort and normally chairs the JIPOE coordination cell. Also acts as the subject matter expert for intelligence oversight issues.

(2) **The Operations Directorate of a Joint Staff (J-3) and/or the Plans Directorate of a Joint Staff (J-5) Representative.** The J-3 and/or J-5 ensure that all participants in the JIPOE effort are continuously updated on planning for both current and follow-on missions as well as on any anticipated change to the operational area. The J-3 and/or J-5 representative consolidates information on our own dispositions and provides the cell a clear understanding of friendly COGs, capabilities, and vulnerabilities. The J-3 and/or J-5 will conduct wargames that test friendly COAs against the complete set of adversary COAs developed during the JIPOE process. Based on the results of these wargames, the J-3 and/or J-5 will refine and determine the probability of success of each friendly COA against each adversary COA identified during the JIPOE process, and will make a recommendation to the JFC regarding which friendly COA best accomplishes the joint mission within the JFC's guidance and intent.

(3) **The Communications System Directorate of a Joint Staff (J-6) Representative.** The J-6 representative ensures the JIPOE cell has a clear understanding of our own communications capabilities, critical assets/nodes, and critical vulnerabilities. The J-6 representative and staff assists in analyzing the impact of potential adversary COAs and relevant aspects of the information environment and electromagnetic spectrum on military operations.

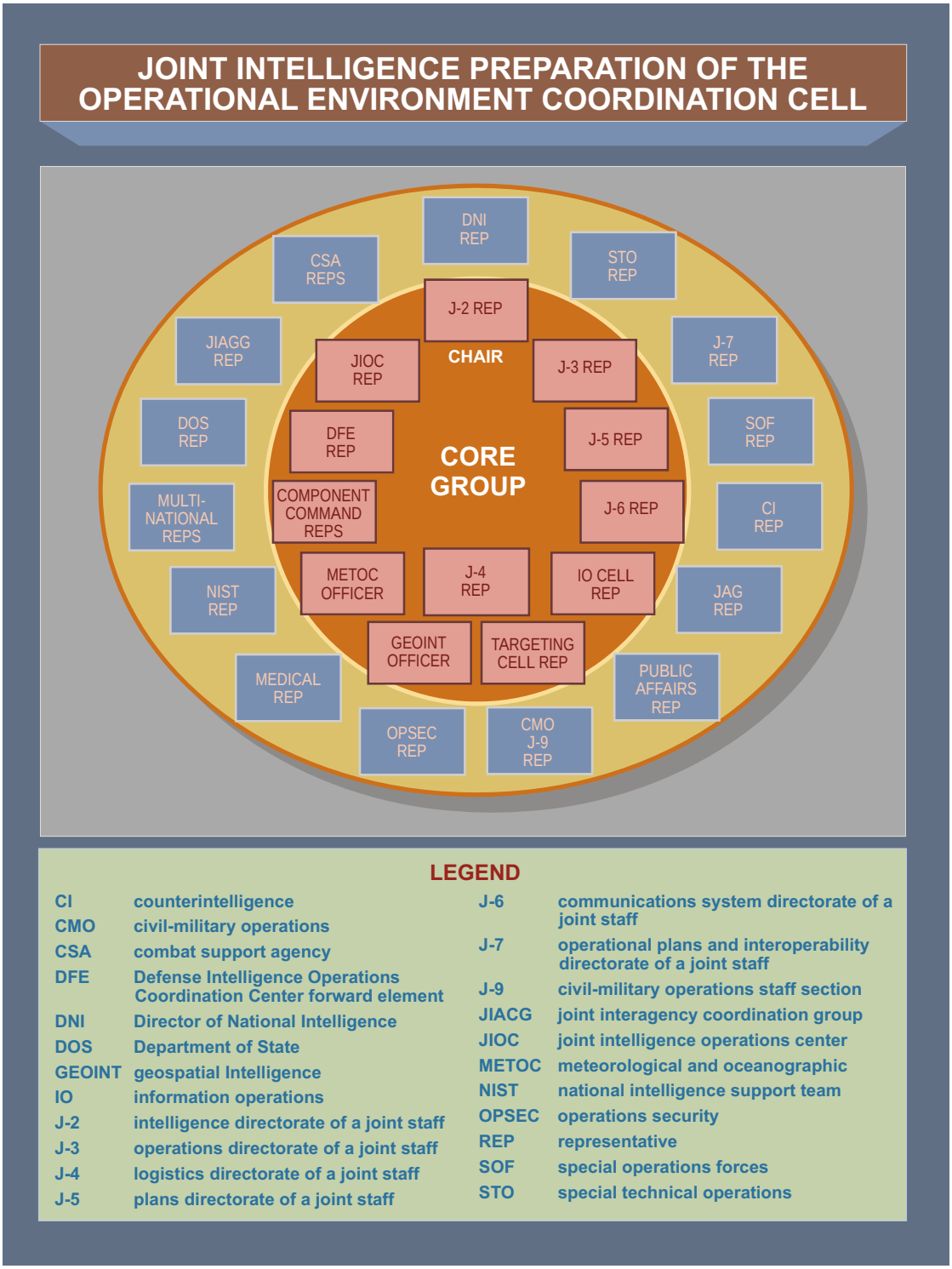

Figure I-5. Joint Intelligence Preparation of the Operational Environment Coordination Cell

(4) **Information Operations Cell Representative.** Provides advice and assistance in evaluating the information environment. IO personnel analyze adversary IO capabilities, decision making, and help determine adversary COAs. Additionally, the IO

Cell representative serves as a liaison with the IO cell and helps establish JIPOE requirements related to the integrated employment of the IO core capabilities of computer network operations (CNO), electronic warfare (EW), military deception (MILDEC), operations security (OPSEC), and psychological operations (PSYOP).

(5) **Targeting Cell Representative.** Serves as liaison with the joint force's targeting cell and coordinates JIPOE-derived targets with the joint targeting coordination board, if designated.

(6) **Geospatial Intelligence Officer.** Manages the GEOINT cell to ensure all information fusion, visualization, and analysis are geospatially enabled. Provides advice and assistance regarding geospatial issues including registering data to a common reference system. Assists JIPOE analysts with map backgrounds and data overlays.

(7) **METOC Staff Officer.** Advises the cell regarding the impact of weather and climate on the operational environment.

(8) **Service and Functional Component Representatives.** These officers provide liaison between the joint force and the component commands, and can help coordinate the JIPOE effort with the related IPB efforts of the components.

(9) **DFE Representative.** Facilitates and coordinates national-level support for the JIPOE effort from DOD intelligence community (IC) members.

(10) **JIOC Representative.** Updates the cell regarding the status of JIPOE requirements, production, and planning. Chairs the JIPOE coordination cell in the absence of the J-2 representative.

(11) **The Logistics Directorate of a Joint Staff (J-4) Representative.** The J-4 staff assists the JIPOE effort by analyzing specific factors that may affect both friendly and adversary sustainment capabilities, reinforcement, and intertheater and intratheater lines of communications (LOCs).

(12) **Public Affairs Representative.** Evaluates the impact of potential operational actions on the operational environment, assesses adversarial propaganda capabilities and potential actions and advises the JFC how best to counter them. Synchronizes public information activities with operations and articulates US military capabilities and United States Government (USG) actions and policy so audiences may develop informed perceptions of operations.

(13) **Special Technical Operations (STO) Representative.** Provides information critical to defining the operational environment (JIPOE step one) and describes the impact of the operational environment on joint operations (JIPOE step two). Helps focus the JIPOE effort on understanding STO-related requirements and ensures JIPOE products are fully integrated and coordinated in STO planning. STO read-ins are

conducted for appropriate JIPOE analysts based on mission requirements and governing security directives.

(14) **The Operational Plans and Interoperability Directorate of a Joint Staff (J-7) Representative.** Provides advice and assistance regarding JIPOE-related exercise planning, modeling and simulation, and ensures lessons learned are incorporated into the Joint Lessons Learned Program, as appropriate. (The J-7 is not typically a JTF-level staff directorate.)

(15) **Special Operations Forces (SOF) Representative.** Coordinates SOF-related JIPOE requirements and provides input to the JIPOE effort derived from SOF activities and sources.

(16) **J-2X (joint force counterintelligence and human intelligence staff element) Representative.** Coordinates JIPOE inputs to counterintelligence (CI) and human intelligence (HUMINT) activities which have significant roles in JIPOE. Provides input on adversary and neutral intelligence collection capabilities for OPSEC planning.

(17) **Judge Advocate/Legal Staff Representative.** Advises JIPOE planners regarding factors relevant to domestic and international law, such as status of forces agreements, rules of engagement (ROE) and rules for the use of force (RUF), legality of claimed territorial limits, exclusion zones, and other legal restrictions on military operations.

(18) **Civil-Military Operations (CMO) Staff Section (J-9) and/or Civil Affairs (CA) Representative.** Provides expert advice and assistance to the JIPOE coordination cell regarding civil considerations by evaluating the areas, structures, capabilities, organizations, people, and events of the operational environment. Also provides advice on rule of law, economic stability, governance, public health and welfare, infrastructure, and public education and information. The CMO and/or CA representative may also assist in obtaining support for the JIPOE effort from the host nation (HN), intergovernmental organizations (IGOs), nongovernmental organizations (NGOs), and the private sector.

(19) **Operations Security Representative.** Coordinates the joint force's OPSEC effort with the JIPOE effort. Uses JIPOE products to help identify existing threats and determine vulnerabilities of friendly forces, develops the critical information list, and implements OPSEC countermeasures.

(20) **Medical Representative.** Advises and assists the JIPOE effort regarding medical factors that may influence the operational environment (e.g., potential disease epidemics and vectors, existing health infrastructure, and environmental health risk factors).

(21) **National Intelligence Support Team Representative.** A deployable team that provides interface with national-level intelligence organizations and serves as a conduit for the transmittal of time-sensitive RFIs to the DIOCC for appropriate action.

(22) **Multinational Representatives.** Provide advice regarding their respective national intelligence capabilities and assist in obtaining support for the JIPOE effort.

(23) **Department of State (DOS) Representative.** The DOS representative to the joint force can coordinate DOS support to the JIPOE effort, particularly regarding political intelligence, diplomacy, and cultural factors.

(24) **Joint Interagency Coordination Group (JIACG) Representative.** Helps facilitate assistance for the JIPOE effort from USG agencies outside the national IC.

(25) **Combat Support Agency (CSA) Liaison Officers.** Facilitate national-level support for the JIPOE effort from their respective organizations.

(26) **Director of National Intelligence (DNI) Representative.** Facilitates and coordinates assistance for the JIPOE effort from members of the national IC.

6. Interagency and Multinational Considerations

Due to the breadth of required subject matter expertise, a comprehensive JIPOE effort based on a holistic view of the operational environment will normally require expertise beyond the capabilities of the joint force JIOC and subordinate components. The JIOC must therefore proactively seek out and exploit all possible assistance from interagency and multinational sources.

a. In particular, the development of a systems perspective will usually require assistance from, or collaboration with, national-level subject matter experts, both within and outside DOD. In this regard, the JIACG, joint force's DNI representative, CSA liaison officers, and DFE provide mechanisms for obtaining other government agency (OGA) support for the JIPOE effort.

b. Whenever possible within security guidelines, the JIPOE effort should include participation by the HN, allies, and coalition partners. Multinational partners may possess robust intelligence resources, or at least niche capabilities, that may provide invaluable insight regarding particular aspects of the operational environment. Many of these countries may have extensive regional expertise based on past history (e.g., colonial or trade relationships, past military occupation).

c. A multinational JIPOE effort requires interoperable GEOINT data, applications, and data exchange capabilities. Whenever possible, participants should agree to work on a standard datum and ensure that all JIPOE products utilize that datum. A multinational

GEOINT plan must coordinate all products for use by member forces, including access approval procedures and blending assets into a cohesive production program.

For further information regarding GEOINT support, see JP 2-03, Geospatial Intelligence Support to Joint Operations.

d. When conducting a multinational JIPOE effort it is important to consider the ramifications of labeling information about the operational environment as intelligence, especially when interacting with nonmilitary organizations. In many cultures, the perception of intelligence connotes information gathered on a nation's citizenry for exploitative or coercive purposes. Furthermore, attempts to exchange information with many NGOs and IGOs may prove difficult. Most NGOs and IGOs are eager to maintain political neutrality throughout the world and are unlikely to associate with US military organizations or participate in any overt or perceived ***intelligence*** gathering attempts. Nevertheless, ***information*** exchange throughout the operational area for the purpose of fostering mutual interests in resolving or deterring conflict or providing support is highly beneficial to all concerned parties. Information exchange should comply with limits based on terms of reference provided by the United States Institute for Peace/United Nations (UN) Office for Coordinating Humanitarian Assistance.

7. Joint Intelligence Preparation of the Operational Environment Relationship to the Levels of War

The basic JIPOE process remains the same across the range of military operations, regardless of the level of war. Nevertheless, specific JIPOE planning considerations may vary considerably between strategic, operational, and tactical levels due to obvious differences in mission, available resources, and size of the operational areas and AOIs. Strategic-level JIPOE must examine the instruments of national power: diplomatic, informational, military, and economic. JIPOE support to the operational level is concerned with analyzing the operational area, facilitating the flow of friendly forces in a timely manner, sustaining those forces, and then integrating tactical capabilities at the decisive time and place. JIPOE support to tactical operations generally requires a greater level of detail over a smaller segment of the operational environment than is required at the strategic and operational levels. However, under certain circumstances tactical operations can assume strategic importance and may constitute a critical part of joint operations, as during some types of crisis response and limited contingency operations or military engagement, security cooperation, and deterrence operations.

a**. Strategic-Level Considerations.** Activities at the strategic level establish national and multinational military objectives; develop global plans or theater war plans to achieve these objectives; sequence operations; define limits and assess risks for the use of military and other instruments of national security policy; and provide military forces and other capabilities in accordance with strategic plans. The strategic-level operational environment may encompass some aspects of the entire world due to global factors such as international law; the capability of adversary propaganda to influence world opinion and degrade US public support; adversary and friendly coalition structures; and the

capability and availability of national and commercial space-based systems and information technology. The strategic-level operational environment is analyzed in terms of geographic regions, nations, and climate rather than local geography and weather. Nonmilitary aspects of the operational environment assume increased importance at the strategic level. For example, the industrial and technological capabilities of a nation or region will influence the type of military force it fields. Similar factors may influence the ability of a nation to endure a protracted conflict without outside assistance. In some situations, political, economic, social, and information considerations may play a greater role than military factors in influencing adversary COAs. At this level, the analysis of the adversary's strategic capabilities will concentrate on considerations such as civil-military relations, national will and morale, ability of the economy to sustain warfare, mobilization of the strategic reserve, and possible intervention by third-party countries. COA models at the strategic level consider the entire range of resources available to the adversary. COA models identify both military and nonmilitary methods of power projection and influence, specify the theaters of main effort and the forces committed to each, and depict national as well as strategic- and theater-level objectives.

b. **Operational-Level Considerations.** At the operational level, the analysis of the operational environment depends on such varied factors as the location of adversary political and economic support structures, military support units, force generation capabilities, potential third-nation or third-party involvement, logistic and economic infrastructure, political treaties, press coverage, adversary propaganda, and the potential for IO. The size and scope of the analysis may also vary depending on particular aspects of the operational environment being considered. For example, if a landlocked adversary has the capability to conduct space-based intelligence collection or computer network attacks (CNAs), then the relevant portions of the space domain and the information environment would extend worldwide, while the maritime domain might be minimal. At the operational level, the JIPOE analysis should be tailored to the relevant characteristics in the JTF's operational environment. While most joint operations may encompass considerations and characteristics associated with many or all PMESII systems, the staff's focus and the balance of these considerations will vary according to the nature and phase of the operation.

(1) In major operations involving large-scale combat (particularly in early phases), the staff will typically focus on military and infrastructure systems. Relevant characteristics may include:

(a) the capability of road, rail, air, and sea transportation networks to support the movement of, and logistic support to, large military units, to include seasonal climatic impact;

(b) zones of entry into and through the operational area and AOI;

(c) the impact of large geographic features such as mountains, large forests, deserts, and archipelagos on military operations;

(d) the adversary's doctrine for C2, logistic support, release and use of weapons of mass destruction (WMD), theater ballistic missile forces, special operations, paramilitary forces; and

(e) adversary COAs described in terms of operational objectives, large-scale movements, LOCs, and the phasing of operations.

(2) In operations characteristic of stability operations and irregular warfare (IW), such as counterinsurgency and combating terrorism, the focus is on controlling, influencing and/or supporting the relevant population through political, economic, and psychological methods. Even when IW requires combat, additional characteristics from social, economic, diplomatic, and informational systems become relevant. Among many characteristics, these may include:

(a) an assessment of a society's ethnic breakdown and its relationship to the dislocated civilian (DC) problem, religious affiliations, historic grievances and conflict, loyalty to formal and informal leaders, points and dates of cultural significance, and language;

(b) an analysis of the relationship between the populace and the government that is designed to identify ways to gain the population's support for the government and reduce support for the insurgents;

(c) an analysis of the culture of the society as a whole and of each major group within the society; and,

(d) a determination of how formal and informal power is apportioned and used within a society.

c. **Tactical-Level Considerations.** At the tactical level, the analysis of the operational environment is focused on adversary land, air, maritime, space, and other forces as well as other relevant aspects of the operational environment that could pose a direct threat to the security of the friendly force or the success of its mission. The extent to which the operational environment is analyzed at the tactical level is largely dependent on the mission and planning time available. At a minimum, tactical-level forces should analyze the operational environment in terms of: military objectives; air, land, and maritime avenues of approach; and the impact of METOC and geographic conditions on personnel, military operations, weapons systems, and force mobility. The tactical-level evaluation of a military adversary should concentrate on standard OB factors, such as the composition, disposition, strength, tactics, techniques, and procedures (TTP), and training status of specific tactical units or factional groups that could interfere with mission accomplishment. JIPOE and IPB should emphasize a holistic approach, analyzing both military and nonmilitary aspects of the operational environment. JIPOE should also account for the relevant conditions in the operational environment that enable or restrict the actions of friendly, neutral, and hostile populations. At the tactical level, sociocultural dynamics that highlight how people achieve security, acquire/exchange

basic resources, and exchange information are critical to mission success, especially in phase four of a conventional fight or in all phases of IW and humanitarian operations. The development, analysis, and description of adversary COAs at the tactical level will be based on and result in a higher degree of detail than would be necessary at higher levels of military operations.

> *"Intel is traditionally order of battle-oriented. It doesn't fit here. There is no organized adversary, which may actually be starvation, anarchy and crime. The planning process is much different. We need a broader-based approach; much more flexible. A plus B does not always equal C."*
>
> **General Anthony Zinni, US Marine Corps (Ret)**
> **1994**

8. Considerations Across the Range of Military Operations

a. Joint forces conduct JIPOE to develop a holistic view of the operational environment and assess adversary potential COAs in a wide variety of situations across the range of military operations. Within the context of JIPOE, the JFC and J-2 must apply the term "adversary" broadly, to refer to those organizations, groups, decision makers, or even physical factors that can delay, degrade, or prevent the joint force from accomplishing its mission. For example, during some **crisis response and limited contingency operations**, such as homeland defense, disaster relief, and civil support, the JIPOE "adversary" may actually be a condition or situation, such as a hurricane with its related flooding, the outbreak of a disease pandemic with its associated vectors, or the starvation faced by famine-struck refugees. During **military engagement, security cooperation, and deterrence operations**, the "adversary" may range from smugglers and drug cartels to insurgents and terrorists. Identifying and conducting a JIPOE analysis of these types of nontraditional "adversaries" presents a far greater challenge than the analysis of the more conventional "force-on-force" adversary normally associated with **major operations and campaigns**. It is imperative, therefore, that JFCs be aware of the policy and legal ramifications of operating in nontraditional operations, as they often affect, and sometimes restrict, mission execution.

b. Since potential adversaries have access to US doctrine, they will probably attempt to exploit the JIPOE process, either through deception or by deliberately adopting a COA different than the one the JIPOE analyst might normally identify as "most likely." The JIPOE analyst needs to be aware of the relative importance a specific adversary may place on the principle of surprise. The JIPOE analyst should analyze the probability that the adversary may engage in deception by deliberately avoiding the most operationally efficient (and therefore most obvious) COA in order to achieve surprise. To accomplish the deception, the adversary will most likely deliberately provide or highlight expected "indicators" or information to reinforce what our intelligence analysts and forces expect for the "most likely" adversary COA. Additionally, an adversary may deceive the JIPOE analyst regarding the timing of an otherwise "obvious" COA, through asynchronous attack preparations and by psychologically conditioning the JIPOE analyst to accept unusual levels and types of activity as normal. For example, an adversary may choose to

prepare for an attack over a deliberately extended period of time. In this case the JIPOE analyst may be able to correctly identify the adversary's intent and most likely COA (i.e., attack), but will find it more difficult to estimate the actual time of the attack. Analysts may also use a "reverse JIPOE" process to assess their own forces from their opponent's perspective and thereby "reconstruct" their opponent's probable JIPOE assessment. This type of red team approach will help yield insight into an opponent's probable intelligence, surveillance, and reconnaissance (ISR) collection strategy and thereby assist planners in determining the best times and locations to plant deceptive information designed to mislead the opposing JIPOE analyst.

c. JIPOE is not a panacea for faulty strategic guidance or poor operation planning. JFCs and their staffs must understand that JIPOE is a useful methodology for analyzing the impact of the operational environment and adversary patterns of operation, and for formulating a hypothesis regarding the adversary's ***possible*** adoption of various COAs (i.e., what the enemy ***may*** do). It therefore provides a starting point for planning the intelligence collection effort and for formulating and wargaming friendly COAs. JIPOE should ***not*** be considered a "crystal ball" for determining with absolute certainty the adversary's ***actual*** intentions (i.e., what the enemy ***will*** do). JFCs and their staffs must understand that the JIPOE analyst ***estimates*** the most likely adversary COA based largely on factors and conditions in the operational environment that may change, and on assumptions about the adversary that may later prove invalid. Operation planning based solely on countering the most likely COA will leave the joint force vulnerable to other less likely COAs that the adversary may choose to adopt in order to maximize surprise.

AN EXAMPLE OF "DECEPTION AND JOINT INTELLIGENCE PREPARATION OF THE OPERATIONAL ENVIRONMENT"

"The commander must always meticulously think out how to mislead the enemy in regard to the true intentions of the troops. In order to achieve surprise [the commander] may consciously work out some problems of the battle plan in a way different from the obvious solutions demanded by the situation.

An example of skillful selection of the direction of the main strike can be found in the actions of the 65th Army in the Belorussian offensive operation. It was decided that the main attack should be made through a certain piece of marshy terrain because the enemy believed that this area was inaccessible to advancing troops and therefore few forces [were allowed] for its protection. Making use of the surprise factor, Soviet troops managed to quickly cross the marsh and attain the enemy's flank, which promoted the overall success of the offensive."

SOURCE: V.G. Reznichenko, ed., *Taktika*, Voyenizdat Press, 1987