Joint Publication 3-60

Joint Targeting

31 January 2013

Intentionally Blank

PREFACE

1. Scope

This publication provides doctrine for the planning, coordination, and execution of joint targeting.

2. Purpose

This publication has been prepared under the direction of the Chairman of the Joint Chiefs of Staff (CJCS). It sets forth joint doctrine to govern the activities and performance of the Armed Forces of the United States in joint operations and provides the doctrinal basis for US military coordination with other US Government departments and agencies during operations and for US military involvement in multinational operations. It provides military guidance for the exercise of authority by combatant commanders and other joint force commanders (JFCs) and prescribes joint doctrine for operations, education, and training. It provides military guidance for use by the Armed Forces in preparing their appropriate plans. It is not the intent of this publication to restrict the authority of the JFC from organizing the force and executing the mission in a manner the JFC deems most appropriate to ensure unity of effort in the accomplishment of the overall objective.

3. Application

a. Joint doctrine established in this publication applies to the Joint Staff, commanders of combatant commands, subordinate unified commands, joint task forces, subordinate components of these commands, and the Services.

b. The guidance in this publication is authoritative; as such, this doctrine will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence unless the CJCS, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance. Commanders of forces operating as part of a multinational (alliance or coalition) military command should follow multinational doctrine and procedures ratified by the United States. For doctrine and procedures not ratified by the United States, commanders should evaluate and follow the multinational command's doctrine and procedures, where applicable and consistent with US law, regulations, and doctrine.

For the Chairman of the Joint Chiefs of Staff

CURTIS M. SCAPARROTTI
Lieutenant General, U.S. Army
Director, Joint Staff

Intentionally Blank

SUMMARY OF CHANGES
REVISION OF JOINT PUBLICATION 3-60
DATED 13 APRIL 2007

- **Reorganizes discussion of targets, targeting, the joint target cycle, and targeting duties and responsibilities for readability.**

- **Moves discussions on following from appendices into Chapters I, "Understanding Targets and Targeting," through Chapter III, "Joint Force Targeting Duties and Responsibilities": time-sensitive target considerations, intelligence support to target development, capabilities analysis and force assignment, and collateral damage estimation.**

- **Adds or updates the following terms and definitions in accordance with current directives and practices: target, active defense, critical element, damage criteria, damage estimation, entity, passive defense, physical characteristics, protected emblems, and targeteer.**

- **Adds discussion of component-critical targets as distinct from joint force commander-validated time-sensitive targets.**

- **Adds discussion on joint targeting working groups and describes their purpose.**

- **Clarifies roles and responsibilities during federated targeting support.**

- **Adds United States Cyber Command's role in support of joint targeting and discussion on integration of cyberspace operations in joint targeting.**

- **Adds detailed description of battle damage assessment and its role in the targeting process.**

Intentionally Blank

TABLE OF CONTENTS

GLOSSARY

FIGURE

EXECUTIVE SUMMARY
COMMANDER'S OVERVIEW

- **Provides an understanding of Targets and Targeting**
- **Explains the Joint Targeting Cycle**
- **Addresses Joint Force Targeting Duties and Responsibilities**

Understanding Targets and Targeting

Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities.

Joint targeting is a fundamental task of the fires function that encompasses many disciplines and requires participation from all joint force staff elements and components, along with various nonmilitary agencies. The primary purpose of joint targeting is to integrate and synchronize all weapon systems and capabilities.

Target Description

Targets should be logically and causally tied to objectives at all levels—strategic, operational, and tactical.

A target is an entity (person, place, or thing) considered for possible engagement or action to alter or neutralize the function it performs for the adversary. A target's operational importance is determined by conducting an assessment to determine if engaging the target is consistent with planned operations and will help achieve the commander's objective(s) and the end state.

Characteristics of Targets

Every target has distinct intrinsic or acquired characteristics that form the basis for target detection, location, identification, and classification for ongoing and future surveillance, analysis, engagement, and assessment. Physical, functional, cognitive, environmental, and temporal are broad categories that help define the characteristics of a target.

The purpose of targeting is to integrate and synchronize fires into joint operations by utilizing available capabilities to generate a specific lethal or nonlethal effect on a target.

Targeting systematically analyzes and prioritizes targets and matches appropriate lethal and nonlethal actions to those targets to create specific desired effects that achieve the joint force commander's (JFC's) objectives, accounting for operational requirements, capabilities, and the results of previous assessments. The emphasis of targeting is on identifying resources (targets) the enemy can

least afford to lose or that provide him with the greatest advantage (high-value target [HVT]), then further identifying the subset of those targets which must be acquired and engaged to achieve friendly success (high-payoff target [HPT]). Targeting links the desired effects to actions and tasks.

Principles of Targeting

Adherence to these four principles throughout the targeting cycle should create desired effects while diminishing undesired collateral effects.

Focused. The function of targeting is to efficiently achieve the JFC's objectives through target engagement within the parameters set by the concept of operations (CONOPS), the operational limitations within the plans and orders (to include fragmentary orders), the rules of engagement (ROE), the law of war, and agreements concerning the sovereignty of national territories. Every target nominated should contribute to attaining the JFC's objectives.

Effects-Based. The art of targeting seeks to create desired effects with the least risk and least expenditure of time and resources.

Interdisciplinary. Joint targeting entails participation from all elements of the JFC's staff, component commanders' staffs, other agencies, departments, organizations, and multinational partners.

Systematic. The joint targeting cycle is designed to create effects in a systematic manner. It is a rational and iterative process that methodically analyzes, prioritizes, and assigns assets against targets systematically.

Prioritization and Special Considerations

Planning and execution of all joint and component targeting should be in accordance with the priorities established by the JFC. The JFC's guidance should describe the objectives to be achieved and the relative priority of each. **Sensitive targets** refer to those targets for which planned actions warrant President or the Secretary of Defense review and approval. An **HVT** is a target that the enemy

Certain targets may require special care or caution in treatment because attacking them improperly could lead to adverse consequences.

commander requires for the successful completion of the mission. An **HPT** is one whose loss to the enemy will significantly contribute to the success of the friendly course of action (COA). A **time-sensitive target** (TST) is a JFC-validated target or set of targets of such high importance to the accomplishment of the JFC's mission and objectives, or that presents such a significant strategic or operational threat to friendly forces or allies, that the JFC dedicates intelligence collection and engagement assets, or is willing to divert assets away from other targets in order to find, fix, track, target, engage, and assess it. Component commanders may nominate targets to the JFC for consideration as TSTs. If they meet TST criteria, but are not approved as TSTs by the JFC, these **component-critical targets** may still require dynamic execution with cross-component coordination and assistance in a time-compressed fashion.

Targeting and Joint Operation Planning

Target development and selection are based on the JFC's desired end state rather than on the available ways and means to achieve them. In other words, the focus should be on creating the desired target effects that accomplish targeting-related tasks and objectives in support of the JFCs objectives, rather than simply servicing a list of targets or basing targeting decisions on the availability of particular weapons, platforms, or systems. Joint operation planning is the mechanism by which a JFC translates national military objectives into viable plans and orders for conducting military operations. The joint targeting process occurs within this context.

The Joint Targeting Cycle

General Activities

The joint targeting cycle supports the joint force commander's (JFC's) joint operation planning and execution with a comprehensive, iterative, and logical methodology for

Joint targeting is an integral part of joint operation planning and continues through publication of the campaign or contingency plan, operation order, or fragmentary order. Detailed joint intelligence preparation of the operational environment and country assessments, performed by JFCs within their operational areas (OAs), set the stage for detailed targeting within the joint targeting cycle.

employing the ways and means to create desired effects that support achievement of objectives.

Once actions are taken against targets, the commander and staff assess the effectiveness of the actions. If there is no evidence that the desired effects were created, reengagement of the target may be necessary, or another method selected to create the desired effects.

Categories of Targeting

The **targeting** process can be generally grouped into two categories: deliberate and dynamic.

Deliberate targeting normally supports the joint force's *future plans* effort, which is overseen by the plans directorate of a joint staff (J-5). (Normally, the future operations directorate focuses on 24 hours out to 72 hours. This is a critical linkage during targeting execution.)

Dynamic targeting is normally employed in *current operations planning* because the nature and time frame associated with current operations (usually the current 24-hour period) typically requires more immediate responsiveness than is achieved in deliberate targeting.

Categories of Targets

Targets may be described as two different categories: planned targets and targets of opportunity. Each has two separate subcategories:

Planned targets are known to exist in the operational environment with engagement actions scheduled against them. Planned targets may be further divided into scheduled targets and on-call targets. **Scheduled targets** are prosecuted at a specific time. **On-call targets** have actions planned, but not for a specific delivery time.

Targets of opportunity refer to targets that meet the criteria to achieve objectives but were not selected for action during the current joint targeting cycle. Targets of opportunity can be divided into two subgroups: unplanned targets and unanticipated targets. **Unplanned targets** are known targets and are included on a target list, but not selected for engagement because the target was not nominated, was nominated but did not make the joint integrated prioritized target list (JIPTL), or was not expected

to be available for engagement within the target cycle. However, changes to the target status (priority, access, permissions) could result in the need (or opportunity) to engage the target during the current cycle. **Unanticipated targets** are unknown or not expected to be present in the operational environment. These targets are not included on a target list and an evaluation of the target is needed to determine engagement requirements and timing.

The Joint Targeting Cycle

The joint targeting cycle is a six phase iterative process: end state and commander's objectives, target development and prioritization, capabilities analysis, commander's decision and force assignment, mission planning and force execution, and assessment.

Joint Targeting Cycle Phase 1—The End State and Commander's Objectives

Understanding the military end state and the commander's intent, centers of gravity, objectives, desired effects, and required tasks developed during operational planning provides the initial impetus for the targeting process. Understanding the JFC's guidance, CONOPS, and intent is the most important and first activity of joint targeting because they document the set of outcomes relevant to the present situation and set the course for all that follows. Objectives are the basis for developing the desired effects and scope of target development, and are coordinated among strategists, planners, and intelligence analysts for approval by the commander.

Joint Targeting Cycle Phase 2—Target Development and Prioritization

Target development is the analysis, assessment, and documentation processes to identify and characterize potential targets that, when successfully engaged, support the achievement of the commander's objectives. Phase 2 is comprised of three steps: target system analysis; entity-level target development; and target list management.

Joint Targeting Cycle Phase 3—Capabilities Analysis

This phase of the joint targeting cycle involves evaluating all available capabilities against targets' critical elements to determine the appropriate options available to the commander for target engagement while highlighting the best possible

solution under given circumstances. Capabilities analysis is comprised of four steps: target vulnerability analysis, capabilities assignment, feasibility assessment, and effects estimate.

Joint Targeting Cycle Phase 4—Commander's Decision and Force Assignment

The **force assignment** process integrates previous phases of joint targeting and fuses capabilities analysis with available forces, sensors, and weapons systems. The process of resourcing JIPTL targets with available forces or systems and intelligence, surveillance, and reconnaissance assets lies at the heart of force assignment. This process links theoretical planning to actual operations. Once the JFC has approved the JIPTL, either entirely or in part, tasking orders are prepared and released to the executing components and forces. The **commander's decision** in phase 4 is to either approve the draft JIPTL, approve targets to be added to or removed from the JIPTL, or approves a particular way or ways of engaging a particular target or targets.

Joint Targeting Cycle Phase 5—Mission Planning and Force Execution

Upon receipt of tasking orders, detailed planning must be performed for the execution of operations. During execution, the operational environment changes as a result of actions from the joint force, adversary, and other actors. The joint targeting process monitors these changes in order to allow commanders to decisively use joint force capabilities to seize and maintain the initiative.

Joint Targeting Cycle Phase 6—Targeting Assessment

The targeting assessment phase is a continuous process that assesses the effectiveness of the activities that occurred during the first five phases of the joint targeting cycle. The targeting assessment process helps the commander and staff determine if the ends, ways, and means of joint targeting have resulted in progress toward accomplishing a task, creating an effect, or achieving an objective.

Time-Sensitive Target (TST) Considerations

The JFC's objectives and guidance shape the basic procedural framework for components to expedite engagement of TSTs. Additionally, the JFC establishes guidance on procedures for coordination, deconfliction, and synchronization

Generally, TSTs are engaged using dynamic targeting, so the command and control arrangements should include the rapid identification and communication capabilities required for expedited decision making.

among components. Once this guidance is issued, the components establish planned and reactive procedures for engaging the prioritized TSTs. A critical aspect of successful TST engagement is to understand the level of risk acceptable to the JFC. Items to be considered in the risk assessment include risk to civilians, friendly forces, and noncombatants; possible collateral damage; and the disruption incurred by diverting assets from their deliberately planned missions.

The Relationship Between Targeting and Effects

It is important that desired and undesired effects be clearly communicated as far down as necessary to ensure these effects are created or avoided respectively.

From the targeting perspective, an effect is a change in the physical or behavioral state of a target system, a target system component, a target, or a target element that results from an action, a set of actions, or another effect. A desired effect can be thought of as a condition that can support achieving an associated objective, while an undesired effect is a condition that can inhibit progress toward an objective

Joint Force Targeting Duties and Responsibilities

Joint Targeting Integration and Oversight

The JFC's primary targeting responsibility lies in establishing the objectives that component commanders will achieve throughout the operational environment with their forces (assigned, attached, and supporting). With the advice of subordinate component commanders, JFCs set priorities, provide clear targeting guidance, and determine the weight of effort to be provided to various operations. Throughout the targeting process, JFC and component commanders should establish safeguards to reduce the possibility of friendly fire. Joint standards and methods for estimating collateral damage potential provide mitigation techniques and assist commanders with weighing collateral risk against military necessity and assessing proportionality within the framework of the military decision-making process.

Joint Force Targeting Responsibilities

The JFC has the responsibility to conduct planning, coordination, and deconfliction associated with joint targeting. Joint targeting coordination responsibilities for the JFC include:

- Establish parameters for successful targeting within the JFC's OA by promulgating intent, objectives, guidance, sequencing, and priorities.

- Direct the formation, composition, and specific responsibilities of a joint fires element (JFE) and joint targeting coordination board (JTCB) (if required).

- Approve or delegate approval of the JIPTL developed from component and staff nominations.

Joint Targeting Coordination Board

Targeting coordination tasks are normally accomplished through the JFC established JTCB or like body. The JFC normally appoints the deputy JFC or a component commander to chair the JTCB to provide the appropriate level of experience and focus. When a JTCB is not established and the JFC decides not to delegate targeting oversight authority to a deputy or subordinate commander, the JFC may perform this task at the joint force headquarters, with the assistance of the operations directorate of a joint staff (J-3). The JFC ensures that this is a joint effort involving applicable subordinate commands, other agencies, and multinational partners, as appropriate. The JTCB normally facilitates and coordinates joint force targeting activities with the components' schemes of maneuver to ensure that the JFC's priorities are met.

Joint Fires Element

The JFC may approve the formation of a JFE within the J-3. The JFE is an integrating staff element that synchronizes and coordinates fires planning and coordination on behalf of the JFC and should be physically located near the joint task force joint operations center, colocated with the information operations cell if possible.

Joint Targeting Working Group

The joint targeting working group (JTWG) supports the JTCB by conducting initial collection, consolidation, and prioritization of targets and synchronization of target planning and coordination on behalf of the JFC. The JTWG is an action officer level venue, chaired by the JFE chief, operations

directorate of a joint staff (J-2) (chief of targets), or similar representative, and meets as required to consolidate and prioritize the draft JIPTL and discuss targeting integration and synchronization issues raised by the JFC, staff, planning teams, and the JFC's major subordinate commands.

Joint Force Staff Responsibilities

Intelligence Directorate. The J-2 has the primary responsibility for prioritization of intelligence collection efforts, analysis, validation, and assessment for all joint operations. In addition, the J-2 provides a major input to the J-3 and J-5 in the form of adversary COA assessments critical to the joint target prioritization process and identification of HVTs and HPTs.

Operations Directorate. The J-3 assists the commander in the direction and control of operations, including the planning, monitoring, and completion of specific operations. In this capacity, the directorate is the lead for coordinating, integrating, and executing operations throughout the OA.

Staff Judge Advocate (SJA). The SJA advises the JFC and other staff members on applicable international and domestic laws, legal custom and practice, multilateral and bilateral agreements with host nations, law of war issues, compliance and interpretation of the ROE, and other pertinent issues involved in joint target recommendations and decisions.

Component Commander Responsibilities

With regard to joint targeting, the components' responsibilities normally include the following:

- Conduct target development.
- Nominate potential targets for inclusion in the joint target list and restricted target list.
- Nominate targets for inclusion on the JFC's TST list and maintain their own lists of HPTs.
- Provide timely and accurate reporting to the JFE in support of joint operations assessment.

- Coordinate components' deliberate and dynamic targeting via established procedures.

Federated Targeting Support

The Joint Staff intelligence directorate of a joint staff normally ensures that federated targeting support requirements are addressed in contingency plans and orders and will assist in the dissemination of targeting support-related information between the federated partners and the supported JFC.

A federated target development and assessment process can provide reachback support to the JFC and component commanders during the joint targeting cycle. Under a collaborative federated architecture, the supported JFC works in conjunction with the National Joint Operations and Intelligence Center and the Joint Staff J-2 using the intelligence planning process to establish federated targeting support partners and assessment reporting responsibilities between combatant commands in accordance with the supported combatant commander's requirements. Many organizations provide critical support to joint targeting. Federation establishes partnerships and leverages appropriate expertise, allowing access to more actionable information than would otherwise be available to JFCs and their staffs. It also provides for an efficient division of labor and maximizes resources. Federation provides commands conducting operations access to organizations and individuals that are experts in their respective analytic areas.

CONCLUSION

This publication provides doctrine for the planning, coordination, and execution of joint targeting.

CHAPTER I
UNDERSTANDING TARGETS AND TARGETING

"It is not the object of war to annihilate those who have given provocation for it, but to cause them to mend their ways."

***Histories* by the Greek historian Polybius (circa 200 to 118 B.C.)**

1. Introduction

Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. Joint targeting is a fundamental task of the fires function that encompasses many disciplines and requires participation from all joint force staff elements and components, along with various nonmilitary agencies. The primary purpose of joint targeting is to integrate and synchronize all weapon systems and capabilities. Targeting helps integrate and synchronize fires with other joint functions (command and control [C2], intelligence, movement and maneuver, protection, and sustainment) during the joint operation planning process (JOPP). While the focus of this publication is joint targeting, it should also be understood that not all military operations require fires based targeting as it is not the only joint function by which joint force commander's (JFC's) objectives are achieved. Careful analysis and understanding of the specific mission and the JFC's objectives will help determine if joint targeting is necessary to achieve the objectives.

SECTION A. TARGETS

2. Target Description

a. A target is an entity (person, place, or thing) considered for possible engagement or action to alter or neutralize the function it performs for the adversary. A target's importance derives from its potential contribution to achieving a commander's objective(s) or otherwise accomplishing assigned tasks. These objectives must be consistent with national strategic direction and selected to accomplish the assigned missions and tasks. Targets nominated for attack may include the following:

(1) Facility: a geographically located, defined physical structure, group of structures, or area that provides a function that contributes to a target system's capability.

(2) Individual(s): a person or persons who provide a function that contributes to a target system's capability.

(3) Virtual: an entity in cyberspace that provides a function that contributes to a target system's capability.

(4) Equipment: a device that provides a function that contributes to a target system's capability.

(5) Organization: a group or unit that provides a function that contributes to a target system's capability.

b. The JFC establishes objectives to focus and guide joint operation planning and execution to reach the end state linked to national strategic direction and goals. From these objectives, actions are planned and executed to create the desired effects (e.g., compelling an adversary to comply with specific requirements or modify their behavior) necessary to accomplish these objectives. A target's operational importance is determined by conducting an assessment to determine if engaging the target is consistent with planned operations and will help achieve the commander's objective(s) and the end state.

c. Targets should be logically and causally tied to objectives at all levels—strategic, operational, and tactical. From a commander's planning, execution, and assessment perspective, tactical actions should be ultimately tied to operational and strategic outcomes so that the whole operation, from the tactical engagements up to national objectives, forms a logical chain of cause and effect.

d. Joint forces conduct continuous target development and assessment in support of joint operation planning and execution to maintain viable and validated targets that reflect changes in the operational environment, the commander's concept of operations (CONOPS), or the approved end state and provides a range of options for commanders.

3. Characteristics of Targets

Every target has distinct intrinsic or acquired characteristics that form the basis for target detection, location, identification, and classification for ongoing and future surveillance, analysis, engagement, and assessment. *Physical, functional, cognitive, environmental, and temporal* are broad categories that help define the characteristics of a target. As an example, some typical target characteristics are listed below; however, the list is not exhaustive, and some characteristics may belong in more than one category.

a. **Physical Characteristics.** These characteristics or features help describe a target. These common physical characteristics are generally discernible to the five senses or through sensor-derived signatures and may shape or influence the selection of the type and number of weapons, the weapon systems, and the methods or tactics employed against the target.

(1) Location.

(2) Shape.

(3) Size or area covered.

(4) Appearance (outward form and features, including color).

(5) Number and nature of elements that make up the target as a whole.

(6) Dispersion or concentration of elements.

(7) Reflexivity (to heat, light, sound, radar energy, etc.).

(8) Structural composition.

(9) Degree of hardening.

(10) Electromagnetic signature (e.g., radar and radio transmissions).

(11) Mobility characteristics:

(a) Fixed (unable to move).

(b) Transportable (operate from fixed locations, but can be broken down and moved).

(c) Mobile (operate on the move or with very limited setup time).

b. **Functional Characteristics.** These characteristics describe what the target *does* and how it does it. They describe the target's function within a greater target system, how the target or target system operates, its level of activity, the status of its functionality, and in some cases, its significance. Functional characteristics are often difficult to discern. Assessing functional characteristics entails careful review of known facts and the use of deductive and inductive reasoning. Functional characteristics generally include:

(1) Target normal or reported activity.

(2) Target status (state or condition at a given point in time [e.g., operational, inoperative]).

(3) Degree, proportion, or percentage of functionality (e.g., function 50 percent degraded).

(4) Materials the target requires in order to perform its function(s).

(5) Functional redundancy (can the function be performed elsewhere in the target system or by a similar capability in an alternate target system?).

(6) Ability to reconstitute the target or its function.

(7) Self-defense capability.

(8) Target importance within the strategic structure, such as its role or its cultural importance.

(9) Necessary relationships (if the target is an individual or organization, what other individuals or organizations are necessary to enable it to function?). The nature of relationships (what is the nature of the connectivity between this individual/organization and others?).

(10) Target physical vulnerabilities (identification of potential aimpoints above ground, natural ventilation, exposure of critical infrastructure, dependence on above ground functions/facilities, etc.).

c. **Cognitive Characteristics.** These characteristics describe how targets process information or exercise control functions. In those cases where the entity is an individual, cognitive characteristics are focused on describing that person's reasoning patterns or how that person's decision making is influenced. Cognitive characteristics are particularly important to properly assess the critical nodes in a target system, since nearly every target system possesses some central controlling function. Neutralizing those controlling functions may be crucial to bringing about desired changes in behavior. As with functional characteristics, cognitive characteristics can be difficult to identify. Cognitive characteristics may relate to:

(1) How the target processes information.

(2) How the target's decision cycle works (if applicable).

(3) Process inputs the target requires to perform its function(s).

(4) Process outputs resulting from target functions.

(5) How much information the target can handle.

(6) How the target or system stores information.

(7) If the target is an individual or organization:

(a) How does the target think?

(b) What are its motivations?

(c) What behavior does the target exhibit?

(d) What are the target's rules, norms, and beliefs?

(e) What are its cognitive vulnerabilities?

(8) Cultural considerations (perceptions, attitudes, religious factions, tribal affiliations).

d. **Environmental Characteristics.** These characteristics describe the effect of the environment on the target. These characteristics may also affect the methods used to affect or observe them.

(1) Atmospheric conditions affecting the target (temperature and visibility, etc.).

(2) Terrain features (land form, vegetation, soil, and elevation, etc.).

(3) Denial and deception measures.

(4) Physical relationships (such as proximity to civilians, noncombatants, or friendly forces, etc.).

(5) Dependencies (raw materials, personnel, energy, water, and command/control, etc.).

e. **Temporal Characteristics.** Time, as a characteristic of a target, describes the target's vulnerability to detection, attack, or other engagement in relation to the time available. All potential targets and all targets nominated for attack continually change in priority due to the dynamic nature of the evolving operational environment. Many targets may be fleeting and some may be critical to friendly operations. Those that are both fleeting and critical present one of the biggest targeting challenges faced by the joint force. This characteristic can help determine when and how to find or engage a target. By comparing this characteristic to information latency and knowledge of friendly capabilities, the staff can make better recommendations to the commander regarding possible actions. Factors contributing to this include:

(1) **Time of Appearance.** The expected time the target will appear in the designated operational area (OA).

(2) **Dwell Time.** The length of time a target is expected to remain in one location (this can be directly related to the physical characteristic of target mobility). Generally, a target is more difficult to find or engage on the move.

(3) **Time to Target Functionality.** The length of time required for the target to become operational, to conduct its mission, or to repair or reconstitute.

(4) **Identifiable Time.** The length of time a target is identifiable as a threat before it then becomes indistinguishable from other objects in the operational environment.

SECTION B. TARGETING

4. The Purpose of Joint Targeting

a. Targeting systematically analyzes and prioritizes targets and matches appropriate lethal and nonlethal actions to those targets to create specific desired effects that achieve the JFC's objectives, accounting for operational requirements, capabilities, and the results of previous assessments. The emphasis of targeting is on identifying resources (targets) the enemy can least afford to lose or that provide him with the greatest advantage (high-value target [HVT]), then further identifying the subset of those targets which must be acquired and engaged to achieve friendly success (high-payoff target [HPT]). Targeting links the desired effects to actions and tasks. This contributes to creating the effects necessary to achieve the JFC's objectives.

b. Targeting links intelligence, plans, and operations across all levels of command and phases of operations. Targeting leverages the commander's guidance and operational end state from the Adaptive Planning and Execution system to translate and operationalize the intelligence from the joint intelligence preparation of the operational environment (JIPOE) and other outputs of the intelligence process. Capabilities are selected during the targeting process to create effects and achieve objectives developed in the planning process (see Figure I-1). Targeting encompasses many processes, all linked and logically guided by the joint targeting cycle, that continuously seek to analyze, identify, develop, validate, assess, and prioritize targets for engagement in order to create the effects needed to help achieve the commander's objectives.

c. The purpose of targeting is to integrate and synchronize fires into joint operations by utilizing available capabilities to generate a specific lethal or nonlethal effect on a target. The joint targeting cycle provides an iterative, logical methodology for the development, planning, execution, and assessment of targeting, weapons, and capabilities effectiveness. Principles of joint targeting can apply in multinational operations, and may involve participation from other agencies, departments, governments, and organizations throughout all phases of an operation.

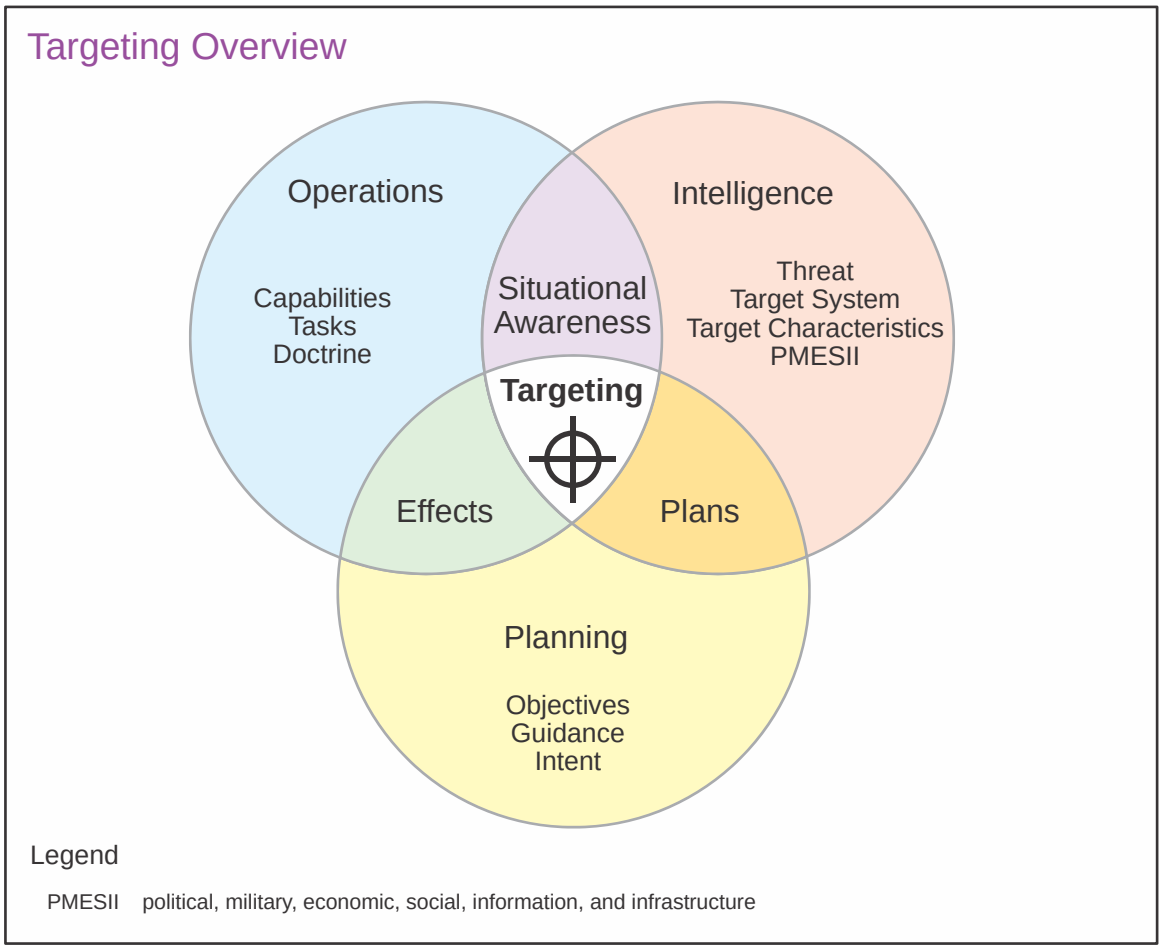


Figure I-1. Targeting Overview

d. Effective and disciplined joint targeting minimizes undesired effects, potential for collateral damage, and inefficient actions during military planning and operations. It supports the successful application of several fundamental principles of war (e.g., mass, maneuver, and economy of force). Joint targeting supports unity of effort by providing:

(1) Compliance with JFC objectives, guidance, and intent.

(2) Coordination, integration, synchronization, and deconfliction of target engagement.

(3) A common perspective on all targeting efforts performed in support of the commander.

(4) Reduced duplication of effort.

(5) Full integration of all available target engagement capabilities.

(6) Reduced chance of friendly fire and collateral damage.

(7) Focus on creating effects to achieve objectives in support of the commander's plan.

(8) Expeditious assessment of targeting effects.

5. Principles of Targeting

The joint targeting cycle provides the means to achieve the JFC's objectives through joint fires. Adherence to these four principles throughout the targeting cycle should create desired effects while diminishing undesired collateral effects.

a. **Focused.** The function of targeting is to efficiently achieve the JFC's objectives through target engagement within the parameters set by the CONOPS, the operational limitations within the plans and orders (to include fragmentary orders), the rules of engagement (ROE), the law of war, and agreements concerning the sovereignty of national territories. Every target nominated should contribute to attaining the JFC's objectives.

b. **Effects-Based.** To contribute to the achievement of the JFC's objectives, targeting is concerned with the creation of specific desired effects through target engagement. Target analysis considers all possible means to create desired effects, drawing from all available capabilities. The art of targeting seeks to create desired effects with the least risk and least expenditure of time and resources.

c. **Interdisciplinary.** Joint targeting is a command function that requires the participation of many disciplines. It entails participation from all elements of the JFC's staff, component commanders' staffs, other agencies, departments, organizations, and multinational partners.

d. **Systematic.** The joint targeting cycle is designed to create effects in a systematic manner. It is a rational and iterative process that methodically analyzes, prioritizes, and assigns assets against targets systematically. If the desired effects are not created, targets should be reconsidered for the targeting process.

6. Prioritization and Special Considerations

a. **JFC Guidance.** Planning and execution of all joint and component targeting should be in accordance with the priorities established by the JFC. The JFC's guidance should describe the objectives to be achieved and the relative priority of each.

b. Certain targets may require special care or caution in treatment because attacking them improperly could lead to adverse consequences. Examples include leadership targets that should be handled with sensitivity due to potential political and/or diplomatic repercussions; targets located in areas with a high risk of collateral damage; and weapons of mass destruction (WMD) facilities, where an attack could lead to increased collateral damage. The use of nonlethal capabilities in support of such operations may reduce the potential for unintended consequences that are detrimental to the JFC's strategic goals.

(1) Sensitive targets refer to those targets for which planned actions warrant President or the Secretary of Defense (SecDef) review and approval. Criteria normally are delineated in plans, orders, and/or ROE by combatant commanders (CCDRs). Sensitive targets exceed national-level thresholds such as high collateral damage or collateral effect (e.g., versus civilian population, property, infrastructure, facilities); adverse political or diplomatic ramifications (e.g., near the territory of surrounding states); environmental harm/hazard (water contamination, chemical/biological/radiological/nuclear plume hazards); or adverse public sentiment (local or international). See Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3122.06, *Sensitive Target Approval and Review (STAR) Process* (classified publication), for more information on sensitive targets.

(2) All potential targets and all targets nominated for engagement continually change in importance due to the dynamic nature of the evolving operational environment. When the importance of a target rises to such a level that it poses (or soon will pose) a danger to friendly forces, or it presents a highly lucrative, fleeting opportunity of tactical advantage, the JFC may validate it as requiring immediate engagement. Such "time-sensitive" targets may be fully anticipated and planned in advance during the target development phase in the joint targeting cycle for engagement by assigned forces. However, if their nature precludes detailed advanced mission and execution planning in phase 5 (e.g., a mobile ballistic missile threat), they may be pre-validated during the target development phase of the joint targeting process (with appropriate advance intelligence, surveillance, and reconnaissance [ISR] tasking) and once detected they may be prosecuted using the find, fix, track, target, engage, and assess (F2T2EA) during dynamic targeting in phase 5. "Time-sensitive" targets should not be confused with "sensitive" targets. A target may be both "time-sensitive" due to posing an immediate threat and "sensitive" depending on engagement option. An example of both is a ballistic missile threat planned for engagement with a collateral damage estimate that exceeds the cut-off value per the ROE.

c. **High-Value and High-Payoff Targets.** An HVT is a target that the enemy commander requires for the successful completion of the mission. HPTs are derived from the list of HVTs. The loss of HVTs would be expected to seriously degrade important enemy functions throughout the friendly commander's area of interest. An HPT is one whose loss to the enemy will significantly contribute to the success of the friendly course of action (COA). Time-sensitive and component-critical targets are usually special types of HPTs. Component and JFC target development and priorities will focus on these targets to support success of the mission.

d. **Time-Sensitive Target (TST).** A TST is a JFC-validated target or set of targets of such high importance to the accomplishment of the JFC's mission and objectives, or that presents such a significant strategic or operational threat to friendly forces or allies, that the JFC dedicates intelligence collection and engagement assets, or is willing to divert assets away from other targets in order to F2T2EA it.

(1) TSTs comprise a very small or limited number of targets due to the required investment of assets and potential disruption of planned execution, and are only those targets validated by the JFC and listed as such in the CONOPS.

(2) In most cases, TSTs require immediate response because they pose (or will soon pose) a direct danger to friendly forces and/or noncombatants, or are highly lucrative, fleeting targets of opportunity. TSTs are normally engaged dynamically; however, to be successful, they require considerable deliberate planning and preparation within the joint targeting cycle.

(3) The JFC provides specific guidance and priorities for TSTs within the OA. Examples might be a vessel carrying WMD that was just detected approaching the joint force; a sought-after enemy leader whose location was just identified; an enemy aircraft detected approaching friendly high-value assets; or launch of an intermediate-range ballistic missile. Only the JFC may validate a target or set of targets as a TST.

(4) A JFC validates targets or a set of targets based on criteria established during phase 1 of the joint targeting cycle. Targets or a set of targets that the JFC has not specifically named, but still satisfy TST characteristics, may be engaged through dynamic targeting. Although these targets or sets of targets may be critical to the components due to risk to mission or forces, they are not listed separately from guidance and priorities previously established for TSTs.

e. **Component-Critical Targets.** Component commanders may nominate targets to the JFC for consideration as TSTs. If they meet TST criteria, but are not approved as TSTs by the JFC, these component-critical targets may still require dynamic execution with cross-component coordination and assistance in a time-compressed fashion. The JFC and component commanders should identify these targets within the joint targeting cycle; provide clear guidance to develop and approve the appropriate priority of asset allocation (intelligence collection, exploitation, and attack assets); and provide ROE to facilitate rapid cross-component coordination in order to minimize confusion and facilitate prosecution.

For more information, refer to Army Tactical Publication (ATP) 3-60.1/Marine Corps Reference Publication (MCRP) 3-16D/Navy Tactics, Techniques, and Procedures (NTTP) 3-60.1/Air Force Tactics, Techniques, and Procedures (Instruction) (AFTTP[I]) 3-2.3, Multi-Service Tactics, Techniques, and Procedures for Dynamic Targeting.

7. The Joint Targeting Cycle

The joint targeting cycle supports the JFC's joint operation planning and execution with a comprehensive, iterative, and logical methodology for employing the ways and means to create desired effects that support achievement of objectives.

8. Targeting and Joint Operation Planning

a. Integrating and synchronizing planning, execution, and assessment is pivotal to the success of joint operations. Understanding the objectives, intentions, capabilities, and limitations of all actors within the operational environment enables the use of joint, interagency, and multinational means to accomplish tasks, create effects, and achieve objectives. Target development and selection are based on the JFC's desired end state rather than on the available ways and means to achieve them. In other words, the focus should be on creating the desired target effects that accomplish targeting-related tasks and objectives in support of the JFCs objectives, rather than simply servicing a list of targets or basing targeting decisions on the availability of particular weapons, platforms, or systems. Commanders and their staffs integrate lethal and nonlethal target engagements into the joint targeting cycle.

b. Joint operation planning is the mechanism by which a JFC translates national military objectives into viable plans and orders for conducting military operations. The JFC issues initial targeting guidance early in the planning effort. The joint targeting process occurs within this context.

c. Detailed JIPOE, country assessments, and target system analysis (TSA) set the stage for detailed target development.

For more information on JIPOE, see Joint Publication (JP) 2-01.3, Joint Intelligence Preparation of the Operational Environment.

d. Through the CONOPS the JFC provides fires and targeting guidance, operational objectives, desired effects, tasks, and targeting/fires priorities. The CONOPS provides more detail on what and where fires effects are desired by phase (e.g., deny, disrupt, delay, suppress, neutralize, destroy, corrupt, usurp, or influence). In addition, the JFC provides guidance on munitions usage and restrictions, restricted targets, and a no-strike list (NSL).

e. The operation plan (OPLAN), or operation order (OPORD), provides broad guidelines for prioritizing targets, making clear which sets or systems are most important to the operation. The OPLAN or OPORD should also provide guidance on the sequencing of targeting actions or effects, which is not the same thing as priority. Although creating parallel effects is generally best, some targets must be attacked sequentially to enable effects against other targets.

f. Targeting begins during pre-hostilities deliberate planning or crisis action planning and continues throughout execution. As the operation progresses, joint operation planning generally occurs in three distinct but overlapping timeframes: future plans, future operations, and current operations. The joint force battle rhythm and the JFC's decision cycle are two factors that affect planning in these timeframes, with the greatest potential impact on current operations planning. The joint targeting cycle and supporting component processes (such as the six-stage air tasking cycle) must adapt to the joint force battle rhythm and decision cycle.

g. Deliberate targeting typically supports all three planning horizons, while current operations planning (usually the current 24-hour period) typically requires the immediate responsiveness of dynamic targeting.

Refer to JP 5-0, Joint Operation Planning, *for more information on planning during execution.*

Chapter II, "The Joint Targeting Cycle," provides a detailed discussion of each phase in the joint targeting cycle.

Intentionally Blank

CHAPTER II
THE JOINT TARGETING CYCLE

"The general who wins a battle makes many calculations in his temple before the battle is fought. The general who loses a battle makes but a few calculations beforehand. Thus many calculations lead to victory and few calculations to defeat. It is by attention to this point that I can foresee who is likely to win or lose."

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

1. General Activities

a. Joint targeting is an integral part of joint operation planning and continues through publication of the campaign or contingency plan, OPORD, or fragmentary order. Detailed JIPOE and country assessments, performed by JFCs within their OAs, set the stage for detailed targeting within the joint targeting cycle. Many products used to support a contingency or military operation are developed, maintained, and continuously updated as foundational information for specific targets.

b. The consideration of effects during joint operation planning helps establish a coherent relationship between objectives and tasks. During development of COAs and the CONOPS, understanding desired and undesired effects can help the JFC and staff refine the mission statement and the joint force components' tasks. Once actions are taken against targets, the commander and staff assess the effectiveness of the actions. If there is no evidence that the desired effects were created, reengagement of the target may be necessary, or another method selected to create the desired effects.

2. Categories of Targeting and Targets

a. The targeting process can be generally grouped into two categories: deliberate and dynamic. Neither is indicative of the target to be engaged but is more closely aligned with the planning phase in which the target is identified and prosecuted. Timing is the primary factor that determines whether deliberate or dynamic targeting will support the JFC's targeting requirements (see Figure II-1).

(1) **Deliberate targeting** normally supports the joint force's *future plans* effort, which is overseen by the plans directorate of a joint staff (J-5). The timing of focus for this effort varies according to the level of command, type of operation, JFC's desires, and other factors. (Normally, the future operations directorate focuses on 24 hours out to 72 hours. This is a critical linkage during targeting execution.) Typically the emphasis of the future plans effort is on planning the next phase of operations (**sequels** to the current operation). In a campaign, this could be planning the next major operation.

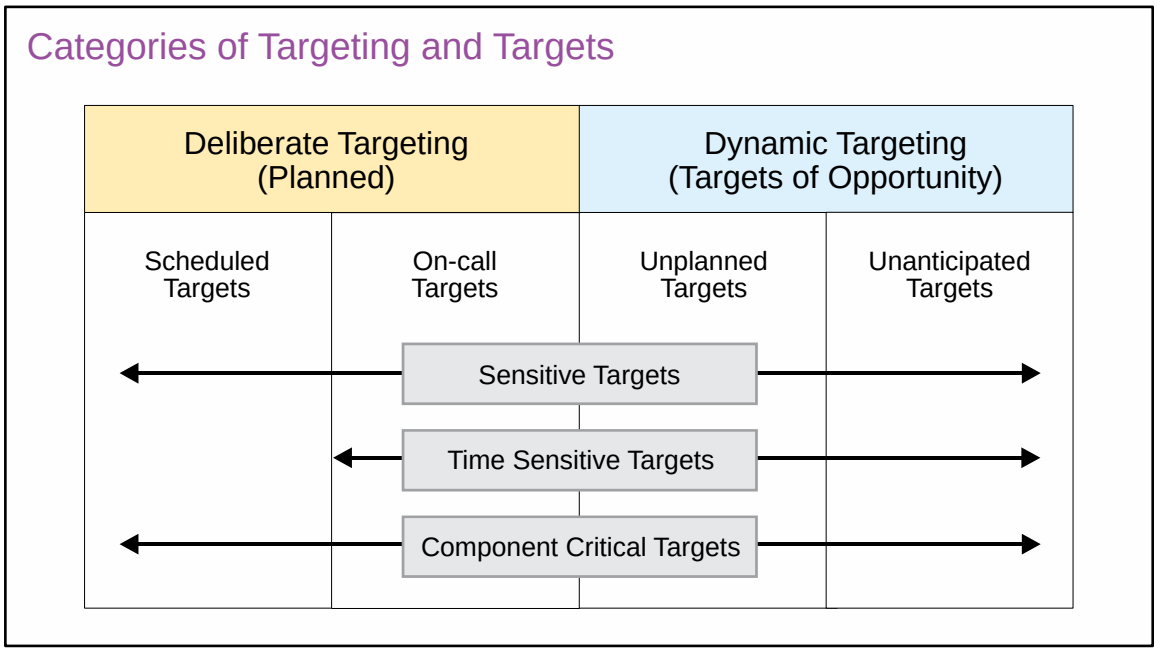


Figure II-1. Categories of Targeting and Targets

(2) **Dynamic targeting** is normally employed in *current operations planning* because the nature and time frame associated with current operations (usually the current 24-hour period) typically requires more immediate responsiveness than is achieved in deliberate targeting. ***Current operations planning*** addresses the immediate or very near-term planning issues associated with ongoing operations which usually occur in the joint operations center (JOC) under the operations directorate of a joint staff (J-3).

b. Targets may be described as two different categories: planned targets and targets of opportunity. Each has two separate subcategories:

(1) Planned targets are known to exist in the operational environment with engagement actions scheduled against them. Examples range from targets being engaged through ongoing shaping activities, targets on joint target lists (JTLs) in the applicable operations plan, to targets detected in sufficient time to list in an air tasking order (ATO), mission-type orders, attack guidance matrix, fragmentary orders, or fire support plans. Planned targets may be further divided into scheduled targets and on-call targets depending upon when they may be attacked. Scheduled targets are prosecuted at a specific time. On-call targets have actions planned, but not for a specific delivery time. The commander expects to locate these targets in sufficient time to execute planned actions. These targets are unique in that actions are planned against them using deliberate targeting but execution will normally be conducted using dynamic targeting.

(2) Targets of opportunity refer to targets that meet the criteria to achieve objectives but were not selected for action during the current joint targeting cycle. Targets of opportunity can be divided into two subgroups: unplanned targets and unanticipated targets. These targets often cause deliberate plans to change and are best managed using dynamic targeting.

(a) Unplanned targets are known targets and are included on a target list, but not selected for engagement because the target was not nominated, was nominated but did not make the joint integrated prioritized target list (JIPTL), or was not expected to be available for engagement within the target cycle. However, changes to the target status (priority, access, permissions) could result in the need (or opportunity) to engage the target during the current cycle.

(b) Unanticipated targets are unknown or not expected to be present in the operational environment. These targets are not included on a target list and an evaluation of the target is needed to determine engagement requirements and timing. In some cases the target will require engagement in the current targeting cycle and will require use of dynamic targeting. In other cases, the target will be identified and processed as a new target for inclusion on the appropriate targeting list through normal target development.

Refer to JP 5-0, Joint Operation Planning*, for more information on planning during execution. Refer to JP 3-33,* Joint Task Force Headquarters*, for information on joint task force battle rhythm, the commander's decision cycle, and other factors that can affect joint targeting and the synchronization of plans and operations.*

3. The Joint Targeting Cycle

a. The joint targeting cycle is a six phase iterative process (see Figure II-2):

(1) End state and commander's objectives.

(2) Target development and prioritization.

(3) Capabilities analysis.

(4) Commander's decision and force assignment.

(5) Mission planning and force execution.

(6) Assessment.

b. The process is not time-constrained nor rigidly sequential. Steps may occur concurrently, but it provides an essential framework to describe the steps that must be satisfied to conduct joint targeting successfully. The deliberate and dynamic nature of the joint targeting cycle supports joint operation planning and execution, providing the depth and flexibility required to support the CONOPS and commander's intent as opportunities arise and plans change.

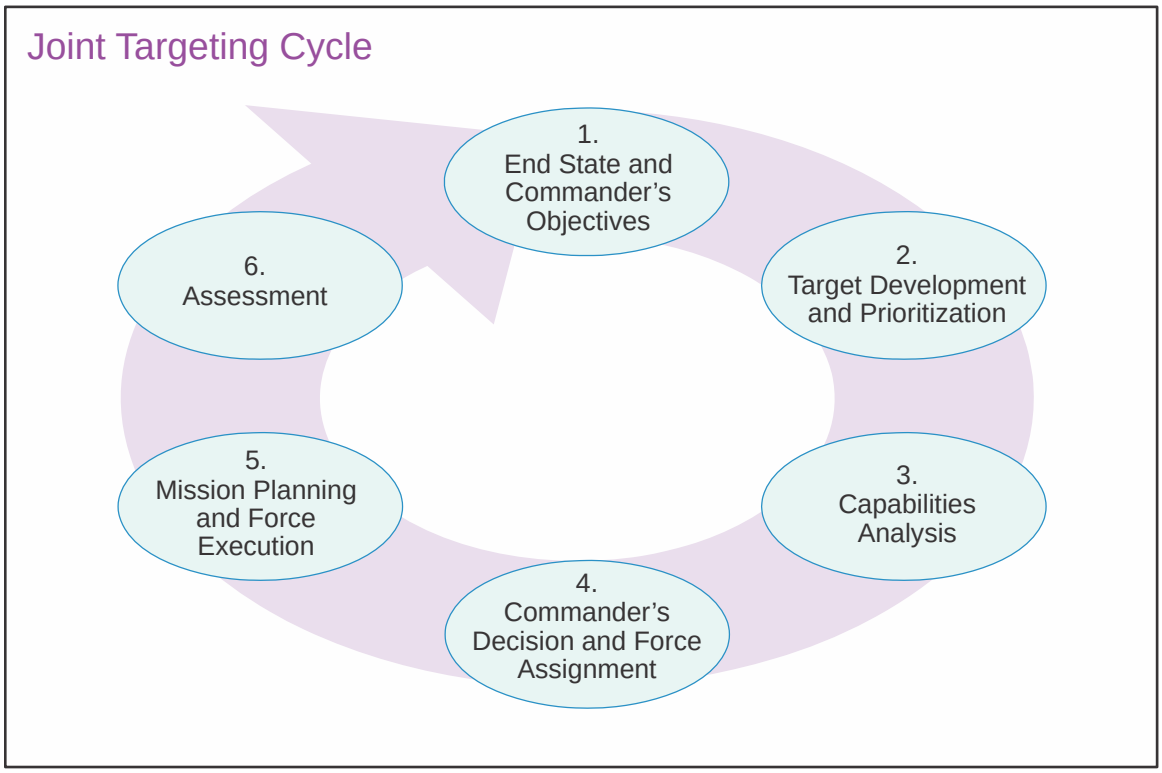


Figure II-2. Joint Targeting Cycle

c. **Phase 1—The End State and Commander's Objectives**

(1) Understanding the military end state and the commander's intent, centers of gravity (COGs), objectives, desired effects, and required tasks developed during operational planning provides the initial impetus for the targeting process. The military end state is the set of required conditions that defines achievement of all military objectives for the operation. The CCDR typically will be concerned with the military end state and related strategic military objectives, while a subordinate JFC will focus on military end state, operational objectives, and supporting tasks. The mission analysis step of JOPP facilitates the development of the commander's objectives. Theater-strategic and national guidance also shape the commander's objective(s). An important result of mission analysis is the commander's initial intent statement. This is a clear and concise expression of the purpose of the operation and the military end state. This statement, which the commander revises throughout the course of planning, deals primarily with the military conditions that lead to mission accomplishment, so the commander may highlight selected objectives, desired effects, and required tasks.

(2) Understanding the JFC's guidance, CONOPS, and intent is the most important and first activity of joint targeting because they document the set of outcomes relevant to the present situation and set the course for all that follows. Objectives are the basis for developing the desired effects and scope of target development, and are coordinated among strategists, planners, and intelligence analysts for approval by the commander. Attainment of clear, measurable, and achievable objectives is essential to the successful realization of the

desired end state. The ability to generate the type and extent of effects necessary to achieve the commander's objectives distinguishes effective targeting.

For more information on end state and commander's objectives see JP 5-0, Joint Operation Planning.

(3) Equally important is the development of observable, achievable, and reasonable measures (such as measures of effectiveness [MOEs] and measures of performance [MOPs]) and indicators to assess whether the effects and objectives are being or have been attained. Measures and indicators help focus target development within the joint targeting process and are critical to enabling assessment. Measures and indicators are coordinated between operations, plans, and intelligence for approval by the commander.

d. **Phase 2—Target Development and Prioritization**

(1) **Target development** is the analysis, assessment, and documentation processes to identify and characterize potential targets that, when successfully engaged, support the achievement of the commander's objectives. A fully developed target must comply with national and command guidance, law of war, and the applicable ROE to be engaged. Phase 2 is comprised of three steps:

(a) Target system analysis;

(b) Entity-level target development; and

(c) Target list management (TLM).

(2) Target developers systematically examine the enemy to the entities to the elements utilizing the targeting taxonomy, which hierarchically orders the adversary, its capabilities, and the targets which enable the capabilities into a clarifying framework (see Figure II-3).

For more information on the targeting taxonomy, see CJCSI 3370.01, Target Development Standards.

(a) Target systems are typically a broad set of interrelated functionally associated components that generally produce a common output or have a shared mission. Target development always approaches adversary capabilities from a target systems perspective. This includes physical, logical, and complex social systems, and the interaction among them. While a single target may be significant because of its own characteristics, **the target's real importance lies in its relationship to other targets within an operational system.** A target system is most often considered as a collection of assets directed to perform a specific function or series of functions (see Figure II-4). While target systems are intra-dependent to perform a specific function, they are also interdependent in support of adversary capabilities (e.g., the electric power system may provide energy to run the adversary's railroads that are a key component of their military logistic system). System-level target development links these multiple target systems and their components to reflect both their intra- and interdependency that, in aggregate, contribute to the adversary

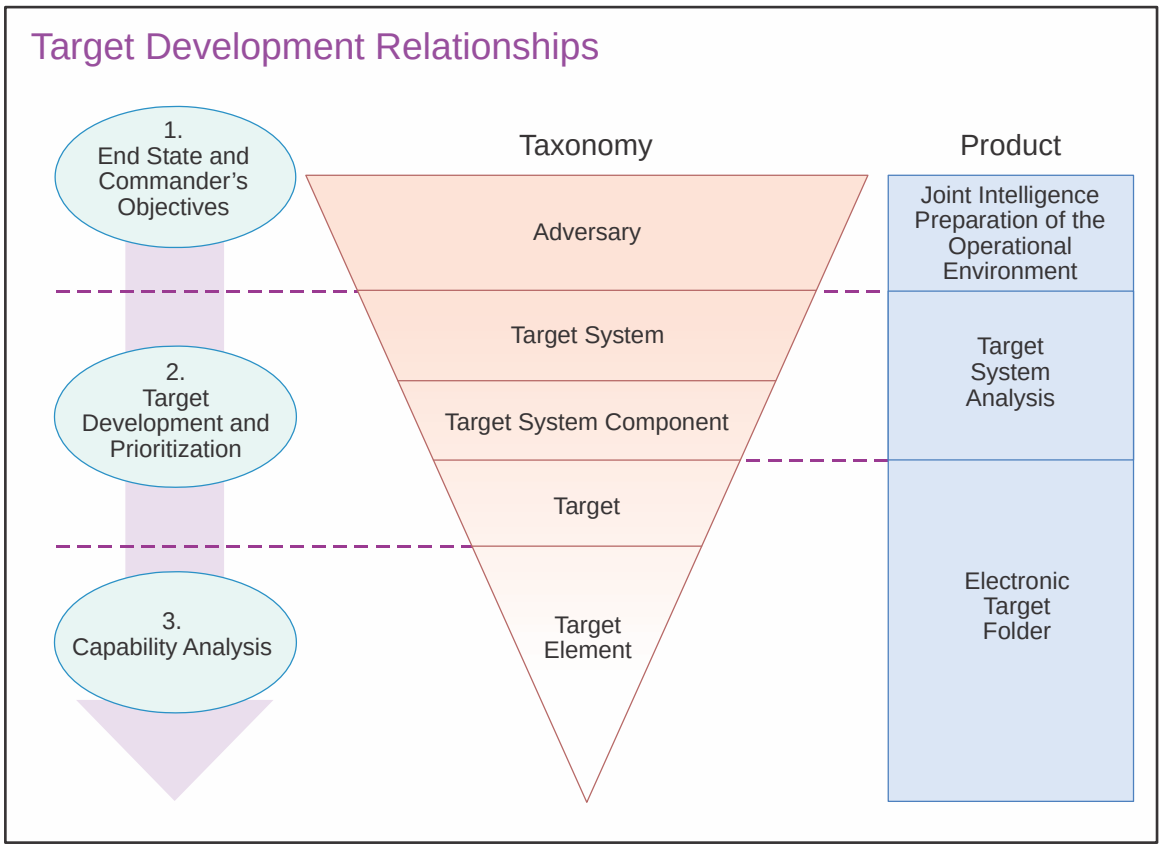


Figure II-3. Target Development Relationships

capabilities. JIPOE helps target developers prioritize an adversary's target systems based on how much each contributes to the adversary's ability to wage war.

(b) Establishing intelligence requirements is critical to the success of target development and to the entire targeting process. Targeteers should work closely with collection managers, intelligence analysts, and planners to develop, adjust, and integrate intelligence requirements for planning, execution, and assessment throughout the targeting cycle and integrate them into the collection plan. This iterative process should also quickly incorporate changes needed to adapt to a rapidly evolving operational environment.

(3) Joint Intelligence Preparation of the Operational Environment

(a) The JIPOE process is a fundamental step in the planning process and is important to target development. This is because JIPOE provides a disciplined methodology that provides an understanding of the relationship between adversary COGs. This baseline intelligence illuminates which decisive points offer opportunity to attack the adversary's COGs (directly and indirectly), extend friendly operational reach, or enable the application of friendly forces and capabilities. Targeteers and planners should resolve any misunderstanding or unclear objectives. Along with a dynamic threat assessment, JIPOE products provide much of the substantive identification, baseline analysis, characterization of systems, functional capabilities that inform target development, and target systems analysis.

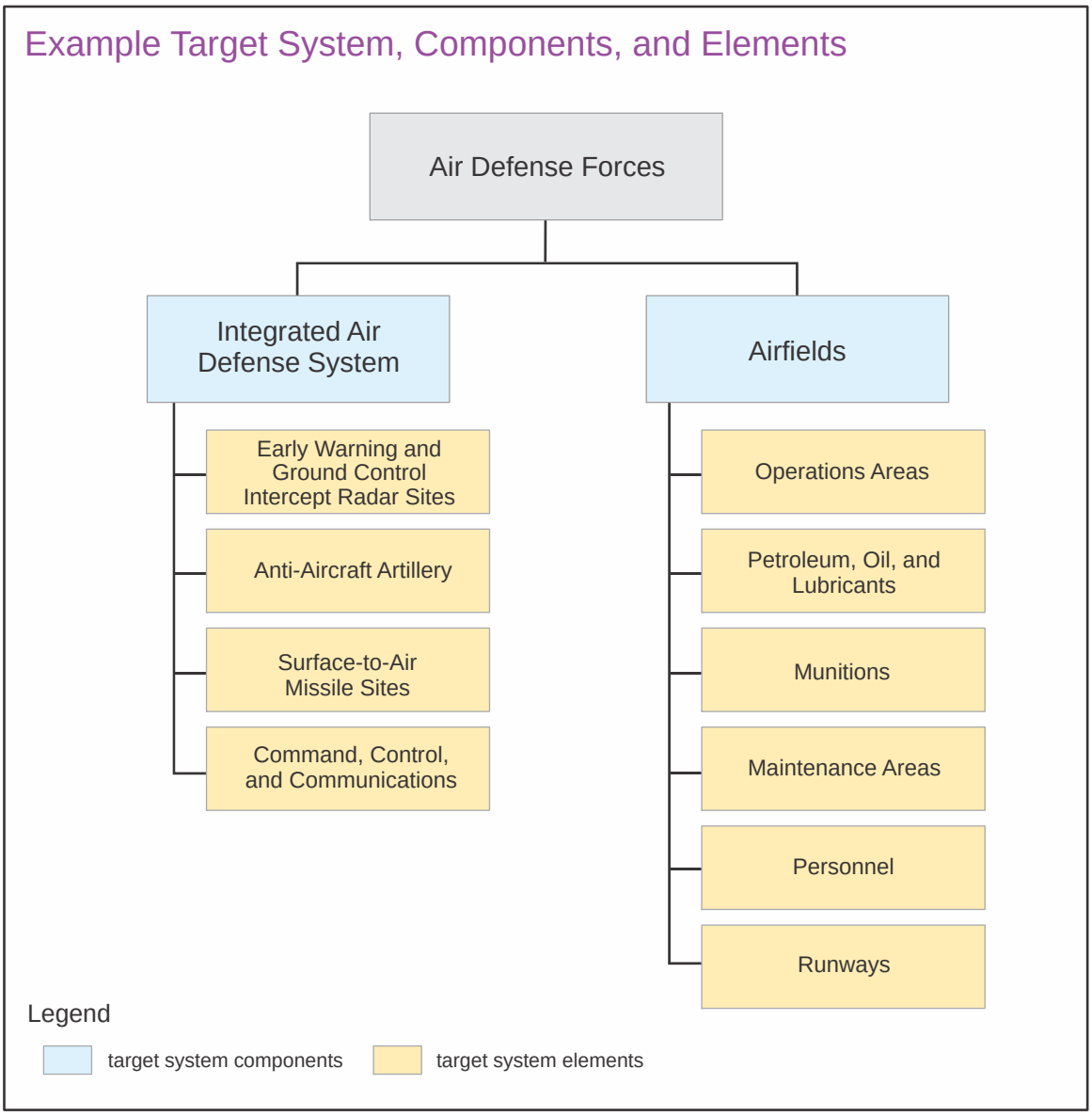


Figure II-4. Example Target System, Components, and Elements

(b) During planning, targeteers will evaluate the objectives and the adversary COGs as described in JIPOE for selection of target systems. The purpose is to characterize the function, criticality, and vulnerabilities of each potential target. It is essential to link targets back to targeting objectives and MOEs developed during the end state and commanders objectives phase of the joint targeting cycle to weigh resources toward the most relevant and valuable target systems.

(4) **Target System Analysis.** TSA is the foundational process of system-level target development. TSA is equally applicable to systems and capabilities associated with both nation-state and non-state actors. The TSA process enables additional, more detailed stages of target development. Note: While crisis action planning may necessitate a truncated TSA process, targeteers will still be required to compile enough intelligence to support the

target's vetting and the operational and legal requirements necessary for executing operations against the target in a dynamic environment.

(a) The first step is evaluating which target systems are relevant to the planning effort. Examples of target systems are an adversary's C2 structure, ground forces and facilities, and the petroleum, oils, and lubricants (POL) industry (see Figure II-5).

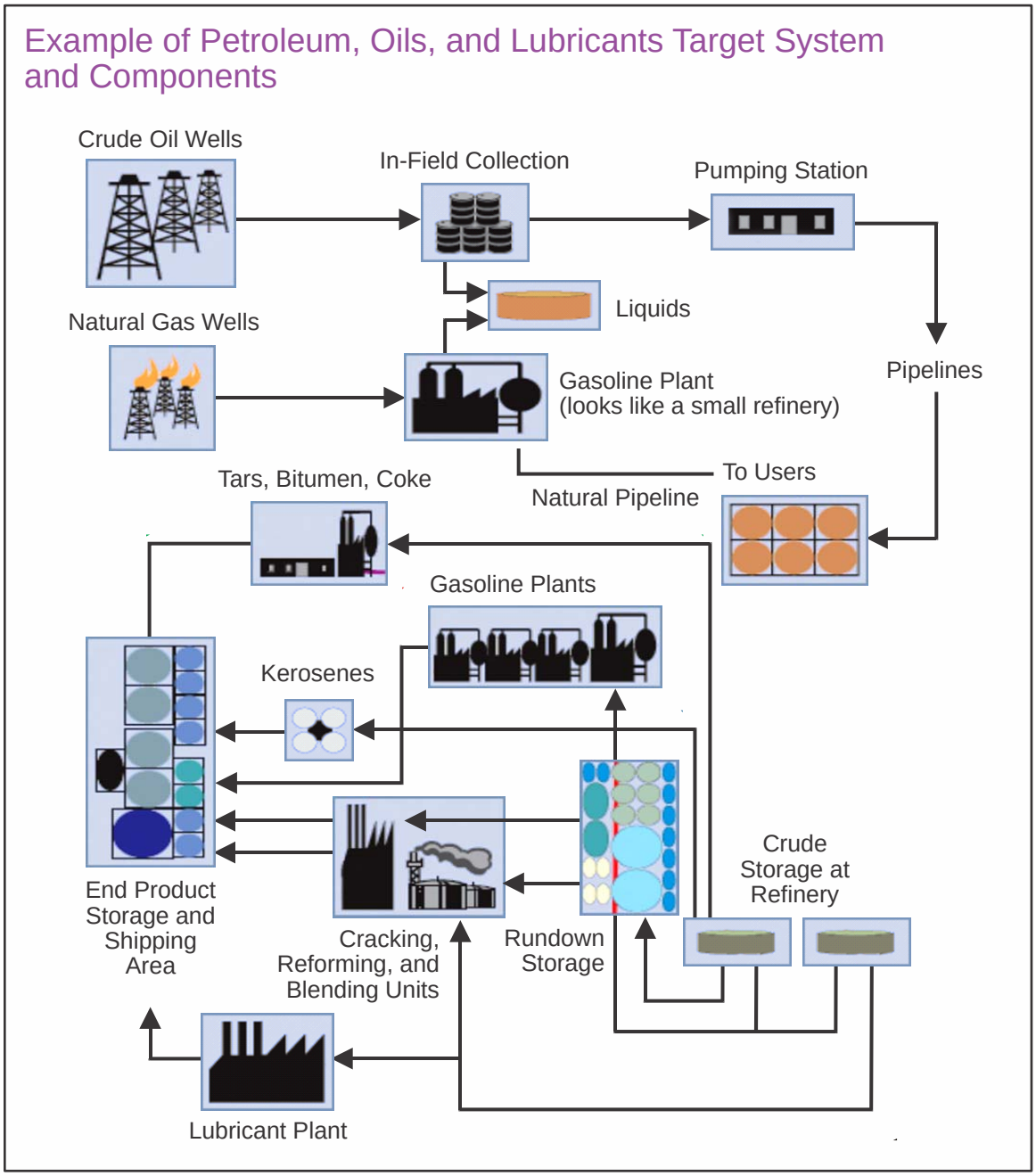


Figure II-5. Example of Petroleum, Oils, and Lubricants Target System and Components

(b) Target system components are a related group of entities within a target system that performs or contributes toward a similar function. The emphasis in component identification shifts from the system to the specific activities, such as industries and basic utilities involved in producing parts of an end product. The same general analytic process applies for nonindustrial target systems. For example, the components of a ballistic missile target system might include missile transporter erector launchers, resupply vehicles, C2 links and nodes, meteorological radars, missile fuel storage sites and/or shelters, deployment areas, and the supporting road transportation network; while an insurgency's components may include its core leadership, its military and political arms, its international political and financial network, and the active or passive support of the population. The purpose of a TSA is to identify targeting strategies that enable a JFC to use targeting to accomplish objectives and to identify high value and high payoff targets that underpin those strategies. Targeteers should consider a target's criticality and vulnerability when evaluating its value or payoff, and how much its engagement will contribute to the targeting strategy (see Figure II-6).

1. **Criticality.** Criticality measures a target's contribution to a target system's larger function and its relative importance within the target system. Target development focuses on identifying critical nodes within key target systems to achieve objectives and conform to JFC guidance. There are four factors that measure a targets criticality:

a. **Value.** Value measures the target's importance to the adversary's target system and to a friendly force's ability to accomplish a mission or achieve an objective. Significance is the degree of concern in excess of the value assigned to its normal performance. This value measurement may reflect relative military, economic, political, psychological, informational, environmental, cultural, or geographic importance. Psychological significance assigned to a target reflects the thought processes of the adversary. For example, the birthplace of a political, religious, or cultural leader may hold greater psychological significance than its military value merits.

b. **Depth** is a measure of the time between the disruption of a target's activity and its measurable impact on system output. Average depth is a time construct designed to measure the average interval between the time the production of an item begins and the time the finished product appears in use by a tactical unit. Understanding the target's depth provides the targeteer with an important measure of the time available for the

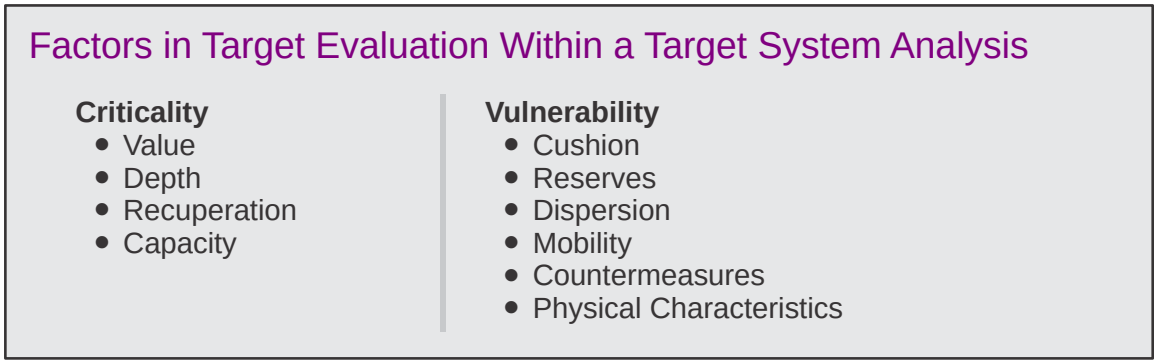


Figure II-6. Factors in Target Evaluation Within a Target System Analysis

adversary to organize substitute consumption, alternate production, or procurement before the system is functionally degraded.

c. **Recuperation** is a measurement of the time and cost required for a target to regain its functional capability after being disrupted. By assigning each target a reconstitution or recuperation time factor, such as days required to rebuild the facility or perform the original function again, the amount of target value restored each day can be estimated. The target analyst can then determine the timing or necessity for a reattack.

d. **Capacity** is measured in two ways: current output and maximum output. Current output may be represented by such things as plant production based on the present labor force, economy of the country, current demand for the product, and demonstrated production over the past two or three years. Maximum output is an assessment of full-capacity production based upon existing equipment and continuous operation over a 24-hour day.

2. **Vulnerability.** A target's vulnerability refers to the physical susceptibility to damage, disruption, intrusion, interference, or other desired effect. Vulnerability affects the size and types of action required to damage, disrupt, or otherwise affect a target, in addition to such factors as munitions and fuzing requirements. There are six characteristics that contribute to a target's vulnerability:

a. **Cushion** is a measure of the extent to which a single target can absorb a disruptive influence and continue to function. Viewed another way, cushion is that portion of the target that must be affected in order to reach desired outcomes. Determining this point for an industry or a military target requires detailed analysis of a target's operation, including idle plant capacity, replacement substitution and expansion capacity, civilian production use, the production of nonessential military items or services, and production or provision of substitute materials or services.

b. **Reserves** provide a quantity of stored resources that may be used when the normal supply of the resource is disrupted. Assessment of reserves depends upon the estimation of the system use or flow rate. The measure of reserves is the percentage of the products used versus the total products available.

c. **Dispersion** is the geographic distribution of the targets in a target system and/or target elements within a target. A target with a large number of dispersed target elements presents a more difficult target engagement problem than does a tightly concentrated target. Alternatively, dispersion may degrade the efficiency of an adversary's capabilities by making his own operations more complex.

d. **Mobility** is a measure of the time required to shift a target's function from one location to another. Mobility affects both the perishability of the information about the location of the target and friendly system's ability to detect, locate, identify, and take action against the target.

e. **Countermeasures** mean the ability to counteract the potential disruptive activity of the friendly system through active and passive means. This can involve

the use of terrain, camouflage, emission controls, passive, and active defenses to negate friendly efforts to affect adversary activity.

f. **Physical characteristics** are analyzed to determine the target's susceptibility to damage, disruption, or other effect. They include such elements as weight, shape, volume, construction, and sturdiness.

(5) **Entity-Level Target Development.** Entity-level target development builds on TSA and generally occurs in three stages: basic, intermediate, and advanced. Each stage is defined by a minimum set of essential data required to progress a target from initial identification and functional characterization to execution-level detail. A target is considered fully developed when the three stages are complete (i.e., when the target is characterized enough to be engaged effectively).

(a) Once an entity has been identified as a potential target (known as a target development nomination [TDN]), an electronic target folder (ETF) should be started. ETFs are used to store entity-level target intelligence, operational, planning, and legal information. They are catalogued by an entity identification (alphanumeric string in approved national databases). Target materials (TM) may be presentations of target intelligence and are stored in ETFs.

(b) TDNs are further developed and, when intermediate target development and command quality control standards are met, the entity is placed on a candidate target list (CTL). The CTL subsequently drives further target development and TLM.

(6) **Target List Management.** TLM is the third step of the joint targeting cycle phase 2 and begins when a target is nominated for target development and ends with the creation and maintenance of a prioritized target list. TLM includes target vetting, validation, listing, nomination, and prioritization.

(a) Target vetting assesses the accuracy of the supporting intelligence. This includes verifying the candidate target's functional characterization, expectation statement, and target significance, as well as analyzing the target elements. Although an entity may have multiple functions, for effective and efficient vetting, only one description and the primary functional characterization of the entity should be presented to the intelligence community (IC); however, there is utility in listing the other functions. This description and functional characterization should be coordinated between functional, supported, supporting, and geographic combatant commands/designated authorities. Target vetting session votes are recorded in the ETF. In a dynamic targeting environment, well-organized, and inclusive target vetting sessions are critically important due to compressed timelines.

(b) Once vetted, candidate targets then go through validation. Validation is a part of target development that ensures all vetted candidate targets meet the objectives and criteria outlined in the commander's guidance and ensures compliance with the law of war and ROE. Candidate targets go through a target validation board or similar body to be validated, then are added to a JTL or restricted target list (RTL).

(7) **Target List Development.** Various target lists may be identified for use by the JFC. It is imperative that procedures be in place for additions or deletions to the lists and that those procedures are responsive and verifiable. Commanders should be aware of the larger impact when removing targets from the target list. The removal of one seemingly isolated target may cause an entire target list to be ineffective and require a different set of targets to create the same effect.

(a) Joint targeting has established the following target lists:

1. Candidate target list - A list of entities which have met intermediate target development criteria and are being vetted and validated;

2. Joint target list - A list of validated targets upon which there are no target engagement restrictions;

3. Restricted target list - A list of validated targets upon which there are target engagement restrictions;

4. Target nomination list (TNL) - A list of targets from the JTL and RTL which are nominated by an organization;

5. Joint integrated prioritized target list - A list of targets from the TNLs which are prioritized according to JFC objectives.

For more information on target lists and TLM, see CJCSI 3370.01, Target Development Standards.

(b) The draft JIPTL usually contains more targets than there are resources available to take action on during a given time period. Thus, a draft JIPTL cut line is usually established. This cut line should reflect which targets will most likely have action taken against them.

(c) It should be clearly understood that the cut line simply reflects an estimate of resources available to take action against targets in priority order and does not guarantee that a specific target will be engaged or that additional targets may not be engaged. Other variables like TSTs, evolving JFC priorities, extreme situations, and changing resource availability will determine which targets are ultimately prosecuted. The JIPTL provides components as well as the JFC with the proper feedback on how their specific target nominations fit into creating the effects desired.

1. No-strike entities are protected from the effects of military operations under international law and/or the ROE. Attacking these may violate the laws of war (e.g., cultural and religious sites, embassies belonging to noncombatant countries, hospitals, schools) or interfere with friendly relations with other nations, indigenous populations, or governments. NSLs are not target lists, since the entities on the NSLs are not targets. NSLs are continuously updated with the latest information from the operational environment. For more information on no-strike entities and NSLs, see CJCSI 3160.01, *No Strike and the Collateral Damage Estimation Methodology*.

2. **Restricted.** A restricted target is a valid target that has specific restrictions placed on the actions authorized against it due to operational considerations. Actions that exceed specified restrictions are prohibited until coordinated and approved by the establishing headquarters. Attacking restricted targets may interfere with projected friendly operations. Targets may have certain specific restrictions associated with them that should be clearly documented in the ETF (for example, do not strike during daytime, strike only with a certain weapon). When targets are restricted from lethal attacks, commanders should consider nonlethal capabilities as a means to achieve or support the commander's objectives. However, use of nonlethal capabilities in targeting should not be limited to the case where lethal capability use is restricted. For additional information, see Appendix A, "Legal Considerations in Targeting," and CJCSI 3370.01, *Target Development Standards.*

(8) **Target Nomination for Prioritization, Synchronization, and Action.** Once potential targets are identified, researched, developed, vetted, and validated, they are nominated by component commanders, national agencies, supporting commands, and the JFC's staff and placed onto TNLs. The TNLs are compiled into a draft JIPTL, coordinated with the components, and submitted to the JFC for approval. Once approved, the list is transmitted to all components and appropriate agencies as the JFC's JIPTL, which focuses targeting efforts for a designated time period.

For more detailed guidance and discussion on target development, see CJCSI 3370.01, Target Development Standards.

e. **Phase 3—Capabilities Analysis**

(1) This phase of the joint targeting cycle involves evaluating all available capabilities against targets' critical elements to determine the appropriate options available to the commander for target engagement while highlighting the best possible solution under given circumstances. Its purpose is to weigh the relative effectiveness and efficiency of the available forces as an aid to achieving the objectives set forth by the JFC and subordinate commanders through target engagement. Commanders also consider risks to the force and no-strike entities in evaluating available capabilities. Estimates of required weapons or capabilities shape other planning considerations within the joint force. For example, weapons requirements will drive significant portions of theater logistics planning efforts. The capabilities analysis and force assignment phases of the joint targeting cycle are closely related. The primary purpose of capabilities analysis is to maximize the employment efficiency of forces through application of enough force to create the desired effects while minimizing collateral damage and waste of resources. Estimates of the effectiveness of available forces and/or systems against various proposed targeting options assist in the apportionment process and in subordinate component commanders force assignment decisions. Capabilities analysis is comprised of four steps:

(a) **Target Vulnerability Analysis.** Building on the critical target elements identified in phase 2, target vulnerability analysis reveals all aspects of the target that, if engaged, would result in a reduction in the target's ability to perform its function for the adversary.

(b) **Capabilities Assignment.** Once a target's vulnerabilities are known, appropriate target engagement capabilities are assigned. Target engagement capabilities may be either lethal or nonlethal weapons or capabilities. All target engagement types must be accounted for in capabilities analysis. Weaponeering is accomplished in this step for all lethal capabilities and some nonlethal capabilities from other mission areas (i.e., technical capabilities such as space, electronic warfare, and cyberspace). Once capabilities are assigned to vulnerabilities, a list of these asset target interactions (ATIs) is created and evaluated in the next step.

(c) **Feasibility Assessment.** Each of the ATIs must be evaluated for feasibility. For example, a lethal weapon might be able to neutralize a particular target's function, but because the target is located in a country for which we have no (and would not receive approval for) lethal authorities, this ATI would be "unfeasible."

(d) **Effects Estimate.** Each feasible ATI should have first, second, and higher order effects identified. Sometimes this is done by a command's red team. Collateral damage is a second order effect. Collateral damage estimation (CDE) is a process normally performed by trained and certified personnel at various echelons. CDE is intended to characterize the level and extent of collateral damage risk for a commander. Higher order effects may include such actions as diplomatic and public relations consequences arising from collateral damage or the potential for post-hostility economic costs to restore damaged adversary infrastructure. Attrition calculations may be included in this step. These effects estimates are essential in gaining the JFC's approval in phase 4, commander's decision and force assignment.

(2) Capabilities analysis focuses at the target element level on matching specific capabilities against identified target vulnerabilities and estimating the effects. This process builds upon the analysis performed in target development, both for information that characterizes the physical, functional, and behavioral vulnerability of the target and for a connecting thread of logic to the JFC's objectives and guidance. During the capabilities analysis phase, the weaponeer estimates the most likely outcome resulting from employing selected capabilities against a specific target element to create a specific effect. Its purpose is to weigh the relative efficacy of the available forces and systems or processes and agents. These estimates may be generated using probabilistic mathematical models (e.g., Joint Munitions Effectiveness Manual [JMEM]) that take into account the target's critical vulnerabilities, performance data on the assets considered for application against the target, and means of delivery. Capabilities analysis may also inform the JFC's choice of COA and other decision-making processes. The weaponeer focuses on the target's physical, functional, cognitive, and environmental characteristics to determine how to leverage vulnerabilities. This analysis should consider nonlethal capabilities. Effects estimates should also take into account estimated repair and recuperation times when matching capabilities with vulnerabilities and account for reuse and reconstruction during later plan phases to avoid negatively affecting the end state. The IC and federated partners provide TM, which include estimative analyses essential to assessing how a specific method can affect the target. Any intelligence gaps highlighted during this phase will also refine collection requirements.

(3) All estimates generated during this phase are situation-specific, reflecting the pairing of forces against targets under particular conditions of employment. As such, users of this information must use caution in assuming that the estimated effectiveness of a force capability under one set of circumstances is broadly applicable to other circumstances. Relatively minor targeting variations may have an unintended impact on effects estimates. It is equally important to stress that these estimates of performance are not designed to take into account considerations outside of the realm of ATI (e.g., they do not address whether or not the delivery system will survive to reach the target). Estimates of consequences only consider the first order effects of ATI and do not model higher-order desired effects or unintended collateral effects.

(4) Weaponeering is conducted in the third phase of the joint targeting cycle during which appropriate weapons or other capabilities are matched with target elements to create the desired effects on the target(s). It is the process of determining the quantity of a specific type of lethal or nonlethal means required to create a desired effect on a given target.

(a) Weaponeering is part of advanced target development. Since not all targets will require advanced target development, only prioritized targets (i.e., targets within TNLs and JIPTLs) should require the extra effort necessary to weaponeer.

(b) Planners and weaponeers should not arbitrarily exclude any capability that can create the desired effect(s). For example, inclusion of interagency capabilities may be leveraged to create more powerful, comprehensive, and enduring results. At present, weaponeering is more developed to support munitions than nonlethal actions. The Services, as well as the Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME), Defense Intelligence Agency (DIA), Joint Warfare Analysis Center (JWAC), and the Defense Threat Reduction Agency (DTRA), have developed a number of quantitative techniques used to estimate weapon effectiveness and collateral damage risk. The JTCG/ME develops operational and analytical models used to measure and predict munitions effectiveness. These models produce a large body of scientifically valid data, which enable weaponeers to predict the effectiveness of weapons against most selected targets. Inputs to these calculations include target characteristics (e.g., size, shape, and hardness), desired damage criteria or probability of damage (PD) calculations, and delivery parameters (e.g., altitudes, speeds, dive angles). Model outputs include the predicted effectiveness of selected weapons and target pairings or the number of assets required to create desired effects using specified weapons and/or delivery systems.

(c) Considering both nonlethal capabilities and nonlethal effects should be a part of this analysis. Though highly effective for their intended purpose, lethal capabilities may not always be suitable. For example, during stability operations, military engagement, security cooperation, and deterrence operations, the application of lethal fires is normally greatly restricted, making nonlethal capability use the dominant feasible option. The considerations for use of nonlethal capabilities in targeting should not pertain to only specific phases or missions, but should be integrated throughout the operation.

(d) The JFC may also need to address concerns about inflicting unintended casualties among noncombatants and civilians and producing collateral damage to

infrastructure and facilities that may be required during later phases of the campaign or major operation. For example, the JFC may require targeteers to prevent enemy flight operations while safeguarding the airfield's capability to support blue force operations once captured. The employment of nonlethal capabilities, such as public affairs, key leader engagement, civil-military operations, and military information support operations can help address these concerns. Nonlethal capability use can also influence adversary decision maker's choice of actions, local public condemnation of adversary actions, and directly impact domestic and international support of the adversary. Nonlethal target engagement provides the JFC a range of flexible target engagement options. The scalability, selectability, and responsiveness of nonlethal capabilities provide the JFC the means to engage all target types: facilities (e.g., to clear a facility of personnel, thus stopping its function), individuals (e.g., detaining an individual), virtual targets (through cyberspace), equipment (e.g., through seizure), and organizations (e.g., revoking a license to engage in commerce).

(e) The use of nonlethal capabilities may be particularly desirable when restraints on friendly weaponry, tactics, and levels of violence characterize the operational environment. In some cases, even carefully applied force with lethal weapons can result in negative public perceptions that could adversely affect efforts to gain or maintain legitimacy and impede the attainment of both short and long-term goals. Escalation of force guidance in the form of ROE/rules for the use of force, coupled with appropriate nonlethal capabilities, can help avoid raising the level of conflict unnecessarily.

(5) CDE is a critical part of the effects estimate step in the joint targeting process phase 3 (or in the "track" step of phase 5 during dynamic targeting) when munitions are used on facilities. CJCSI 3160.01, *No-Strike and the Collateral Damage Estimation Methodology* details a specific CDE process followed Department of Defense (DOD)-wide. Targets with associated collateral damage concerns expected to exceed theater (combatant command) thresholds are referred either to SecDef or the President using the sensitive target approval and review (STAR) process, detailed in CJCSI 3122.06, *Sensitive Target Approval and Review (STAR) Process*.

f. **Phase 4—Commander's Decision and Force Assignment**

(1) The force assignment process integrates previous phases of joint targeting and fuses capabilities analysis with available forces, sensors, and weapons systems. Figure II-7 provides a graphic illustration of the flow of this step. It is primarily an operations function, but requires considerable intelligence support to ensure ISR assets are properly integrated into the plan. The process of resourcing JIPTL targets with available forces or systems and ISR assets lies at the heart of force assignment. This process links theoretical planning to actual operations. Once the JFC has approved the JIPTL, either entirely or in part, tasking orders are prepared and released to the executing components and forces. The joint targeting cycle facilitates the publication of tasking orders by providing amplifying information necessary for detailed tactical-level planning of operations.

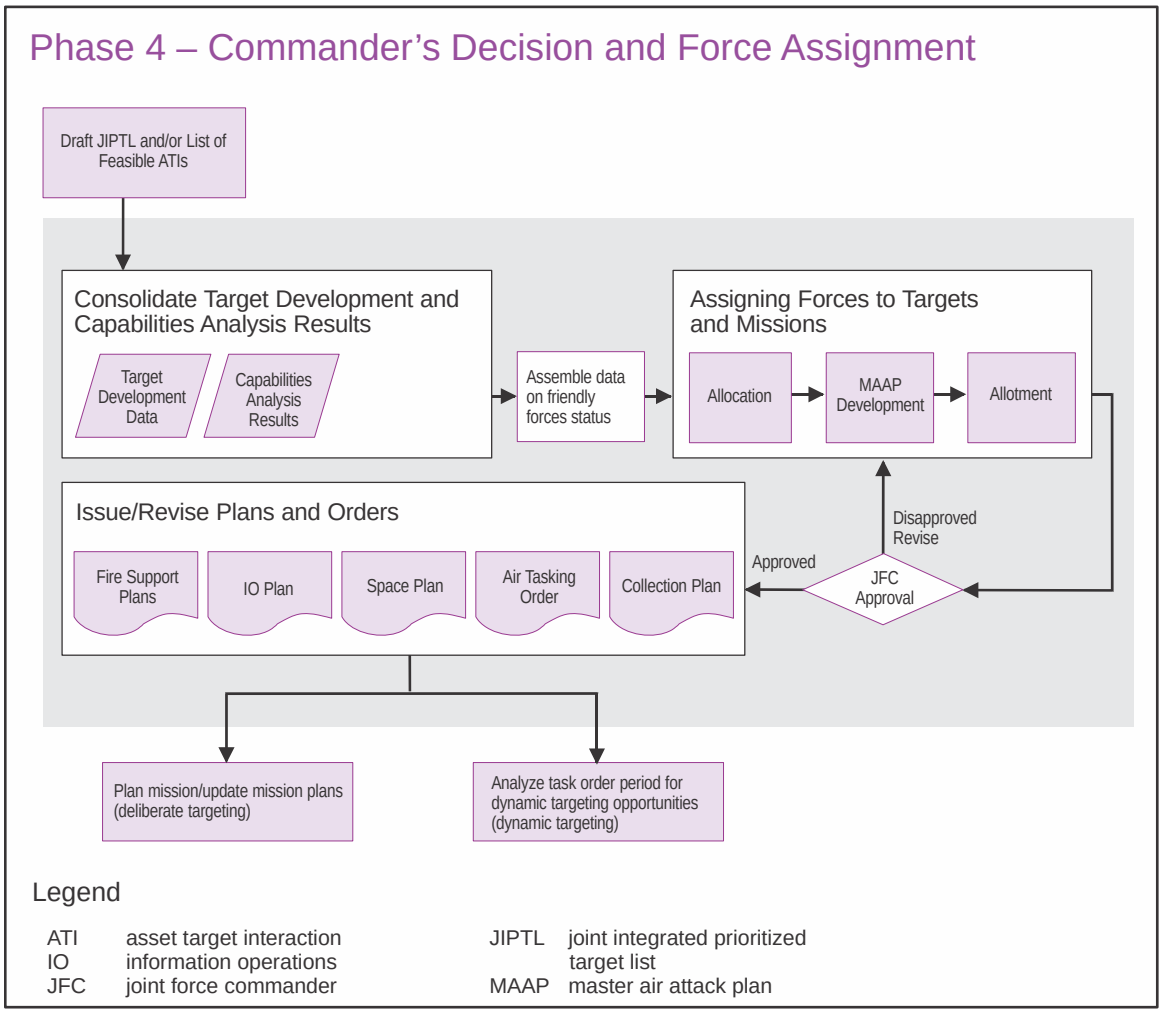


Figure II-7. Commander's Decision and Force Assignment

(2) During any current operation, the joint targeting process also documents the logical linkage between tasks, effects, objectives, and guidance. This documentation traces the analytical reasoning that supported the nominated targets and the details of the capability effectiveness estimates. The work of mission planners is significantly enhanced when they are furnished with detailed insights into the reasoning that resulted in their unit tasking. Furthermore, because the pairings of capabilities against targets are made using nominal weapon and weapon system performance data, there may be divergences with more current and/or specific data used by unit-level planners. Making the factors used in joint force assignment available to the mission planners, and providing them real-time collaboration capability with other targeting specialists, enables adjustment and fine-tuning of mission planning. It also provides a channel to discuss mitigation of risk for the attacking force, since variations in tactics may be required that could affect the results created at the target; the joint targeting process must account for these variations and adjust expectations accordingly. This is a critical path of information flow during execution that reduces the likelihood of confusion between joint force assignment expectations and actual achievement. Ultimately, the exchange of information during phase 4 and the reconciliation of a common

operational picture (COP) are critical elements during phase 6 of the joint targeting cycle where outcomes are analyzed and future actions are determined.

(3) Targeteers work closely with planners to balance the available employment options with their expected effects. The targeteers' recommendations should reflect an objective assessment of the most appropriate capability to create the effect required to meet the commander's objective, no matter the source. During force assignment, targeteers also provide updated target status, effectiveness analysis, and collateral damage estimates.

(4) **Five General Steps in Force Assignment**

(a) **Consolidate Target Development and Capabilities Analysis Results.** In this step, targeting personnel assemble the necessary data from the work done in phases 2 and 3. To make this complex data more useful to their planning counterparts, targeting personnel should prepare summary files and worksheets distilling the pertinent information collected on each potential target. Target files should contain four types of information: target development data, capabilities analysis or number of assets required, CDE, and attrition calculations.

1. **Target Development Data.** The process of target development produces extensive, detailed target folders and supporting products for each target on the JIPTL. While crucial for the overall joint targeting cycle, this mass of detail may very quickly overwhelm the force assignment team unless distilled down into a summary containing only the essential information needed to perform this function. To condense this material, targeteers prepare target briefs summarizing the contents of the target folder. Mandatory information includes all information necessary for the JFC to decide how the target's engagement contributes to the JFC's objectives.

2. **Capabilities Analysis.** During capabilities analysis, estimates of weapons effects and damage criteria are typically arrayed using the following factors: forces, delivery systems, weapons fuzing/reliability, and delivery parameters/arrival conditions. The results from the capabilities analysis provide multiple calculations, which estimate the physical damage resulting from planned actions against the target. Targeting personnel may also provide the projected effects of nonlethal applications on the target. The force assignment team will normally require several possible weaponeering solutions for each joint desired point of impact (JDPI) or on each target, arranged in order of effectiveness.

3. **Collateral Damage Estimation.** Every target where a weaponeering solution was determined should also have an estimate of the projected collateral damage resulting from each anticipated weapon type. Estimates should reflect the collateral damage projected to occur from the use of the weapons required to create the desired effects. When presented alongside weaponeering results, a CDE informs the commander's application of the law of war principle of proportionality to assess the risk to mission and strategic risk due to collateral damage.

4. **Attrition Calculations.** Intelligence analysts provide data on the enemy defensive posture, capabilities, and intentions. Working with planners, weaponeers

run attrition models to estimate the probability of the weapon system arriving at the target, and include probability of release or probability of arrival (PA). Other factors include maintenance failure, defenses, and weather. Weaponeering personnel should factor this attrition analysis and PA data into their PD calculations.

(b) **Assemble Data on Friendly Force Status, Factoring in Operational Limitations and Apportionment Guidance.** Planners and their logistics counterparts assemble data on the current status and availability of friendly forces and munitions. The JFC approves specific apportionment guidance describing the division of military effort among the different missions. Apportionment affects how the force assignment team tasks dual or multi-role platforms, sequences force activities, and directs force packages to operate in different parts of the OA. Other issues affecting force assignment include the maintenance status of combat and support assets, battle damage to equipment from previous missions, operator and munitions availability, and location of stockpiles relative to combat assets. However, simply knowing what forces are available does not give the complete operational picture. Planners should consider weather, adversary operations, force protection concerns, operational environment management issues, law of war, ROE, and special instructions constraints. Packaging, timing issues, OAs, required support assets (e.g., availability of air refueling aircraft for aerial missions), and other considerations also affect which targets can be acted against.

(c) **Assign Forces to Specific Targets and Supporting Missions.** In this step, planners assign forces, munitions, nonlethal capabilities and ISR assets to specific targets and aimpoints. They develop force packages, assign supporting assets, and resolve timing, sequencing, and deconfliction issues. Operational limitations may require modification to targeteers' initial recommendations. Timing, event sequencing, and interaction of combat forces with supporting assets become crucial in crafting an effective and actionable CONOPS and fire support plan. The operational characteristics of a particular weapon system when tasked against a specific target may require adjustments to the overall plan or order. Often, targets are not attacked in the same priority order as they appear on the JIPTL. Targeting personnel must be ready to assist in evaluating the impact of these changes upon the entire targeting effort. As changes are made due to operational and special limitations (such as collateral damage restrictions) it is important to ensure that achieving the commander's objective does not result in inadvertently violating existing constraints or restraints.

(d) **Present Joint Targeting Recommendations to the JFC for Approval.** The commander's decision in phase 4 is to either approve the draft JIPTL, approve targets to be added to or removed from the JIPTL, or approves a particular way or ways of engaging a particular target or targets. In any case, the force assignment team will prepare a comprehensive briefing on the recommended plan explaining the rationale behind the operational decisions and target selections. The planners inform the affected component commander(s) if high priority targets cannot be attacked, targeting effect cannot be created, or targeting objectives cannot be met. The component commander may modify the targeting effect, seek different means to achieve the objective, or accept the fact the targeting objective will not be met during this cycle. It may be necessary to ask the JFC to modify the objective, guidance, or prioritization via the joint targeting coordination board (JTCB) process.

Normally, a summary of the plan resulting from the force assignment process, once approved by the component commander, is briefed to the JFC. Generally, operations and intelligence staffs work together to produce and brief the recommended plan. At the conclusion of this phase, the stage is set for the planning and execution of operations that perform discrete tasks in synergistic support of the JFC's over-arching objectives.

(e) **Issue Tasking Orders to Forces.** Once the plan developed by the force assignment team is approved, tasking orders to the assigned combat and support forces are prepared and issued. Intelligence assets and organizations, which support mission planning and assessment, are also tasked during this phase.

(5) At the conclusion of this phase, the stage is set for the planning and execution of operations that perform discrete tasks in synergistic support of the JFC's overarching objectives.

g. **Phase 5—Mission Planning and Force Execution**

(1) Upon receipt of tasking orders, detailed planning must be performed for the execution of operations. Figure II-8 illustrates the typical process flow of this phase. The joint targeting process supports this planning by providing planners with direct access to detailed information on the targets, supported by the nominating component's analytical reasoning that linked the target with the desired effect (phase 2). This will provide the background information necessary for the warfighter to focus on the JFC's objectives as the operation unfolds.

(2) Combat operations are dynamic. During execution, the operational environment changes as a result of actions from the joint force, adversary, and other actors.

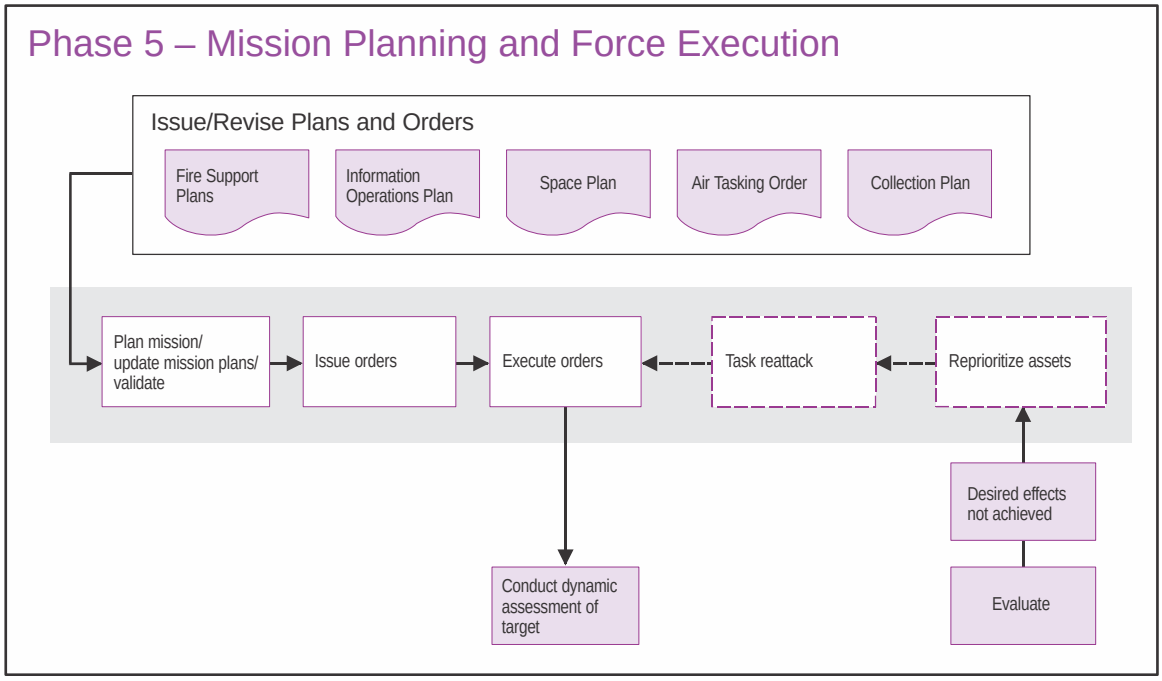


Figure II-8. Phase 5—Mission Planning and Force Execution

The joint targeting process monitors these changes in order to allow commanders to decisively use joint force capabilities to seize and maintain the initiative. These dynamic changes require particular attention to positive identification (PID), combat identification (CID), and target validation.

(a) PID is an identification derived from observation and analysis of target characteristics including visual recognition, electronic support systems, non-cooperative target recognition techniques, identification friend or foe systems, or other physics-based identification techniques. PID is acquired during step 2 (Fix) during F2T2EA. CID is the process of attaining an accurate characterization of detected objects in the operational environment sufficient to support an engagement decision. CID is acquired prior to engagement.

(b) Target validation is a critical function during this phase. Validation during execution includes analysis of the situation to determine if planned targets still contribute to objectives (including changes to plans and objectives), if targets are accurately located, and how planned actions will impact other friendly operations.

(3) Lessons learned from recent operations have demonstrated the need for a distinct focus on dynamic targeting during phase 5. Phases 1 through 4 of the joint targeting cycle collectively produce targeting tasks, products, and the commander's guidance for all targeting, whether deliberate or dynamic. In coordination with joint components and other agencies, the JFC and staff develop dynamic targeting guidance, which should include as a minimum priorities and guidance for dynamic targeting and identification of requirements by components; prioritization of targets, including TST criteria and procedures and component-critical targets; guidance for acquisition; and action against the targets. (See Figure II-9 for a comparison between deliberate and dynamic targeting during phase 5.) The JFC should articulate risk tolerance sufficiently to let on-scene commanders understand his intent when dynamic targeting requires accelerated coordination.

(4) Dynamic targeting has often been called F2T2EA or the "kill chain" and has also been used for specifically engaging TSTs (see Figure II-10). Its applicability extends to all targets whether developed during deliberate targeting or dynamic targeting. Targets of opportunity have been the traditional focus of dynamic targeting because decisions on whether and how to engage must be made quickly. However, planned targets are also covered during this phase but the steps simply confirm, verify, and validate previous decisions (in some cases requiring changes or cancellation). The steps of dynamic targeting may be accomplished iteratively and in parallel. The find, fix, track, and assess steps tend to be ISR-intensive, while the target and engage steps are typically labor-, force-, and decision making- intensive. Whether dynamic or deliberate targeting is used the next phase is assessment.

(a) Step 1—Find (Figure II-11)

1. During this step, emerging targets are detected and characterized for further prosecution.

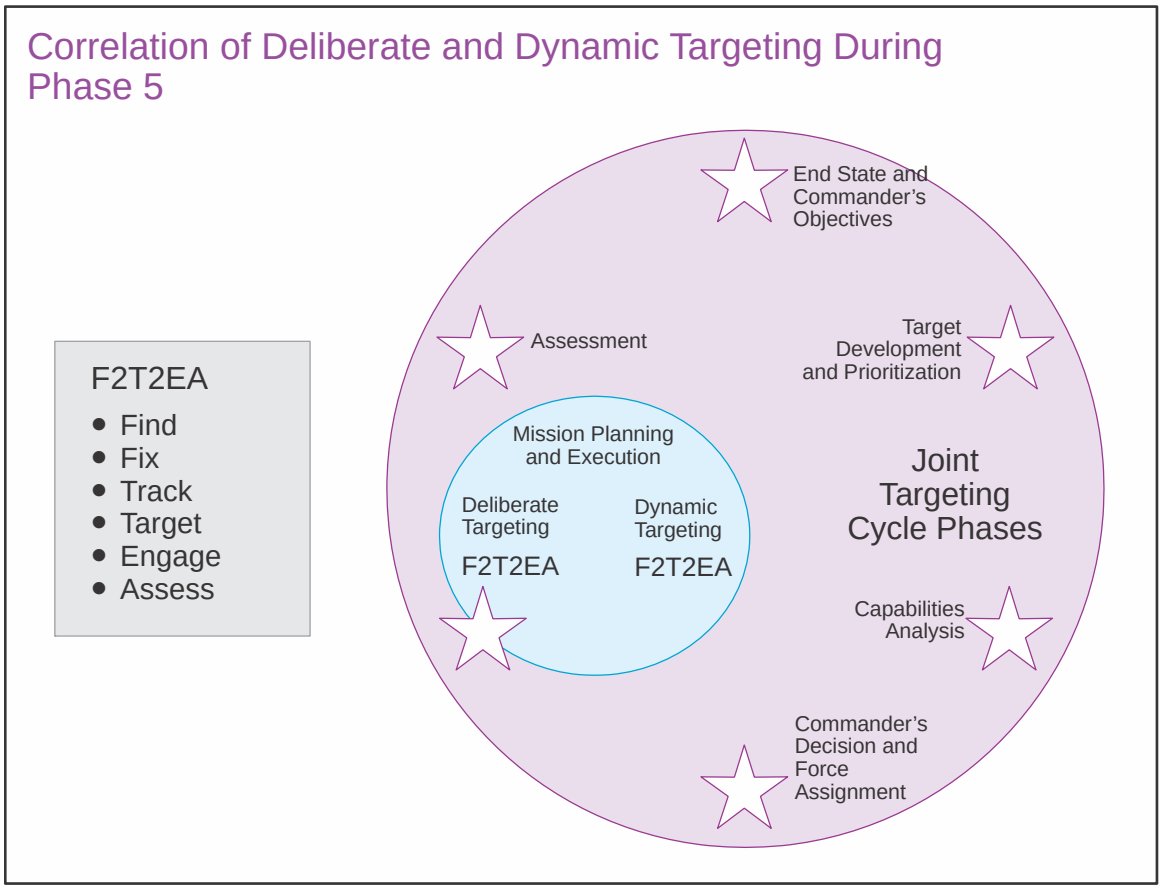


Figure II-9. Correlation of Deliberate and Dynamic Targeting During Phase 5

2. Inputs to the find step:

a. Clearly delineated JFC dynamic targeting guidance and priorities.

b. Focused JIPOE, to include identified named areas of interest, target areas of interest, and cross cueing of intelligence disciplines to identify potential target deployment sites or operational environments.

c. Collection plans based on the JIPOE.

3. The find step involves intelligence collection based on JIPOE. Traditional ISR, nontraditional ISR such as aircraft targeting pods and radar warning receiver indications, and special operations forces (SOF) may provide initial detection of a potential target for both deliberate and dynamic targeting. In this section, the term "sensor" refers both to traditional and nontraditional ISR means.

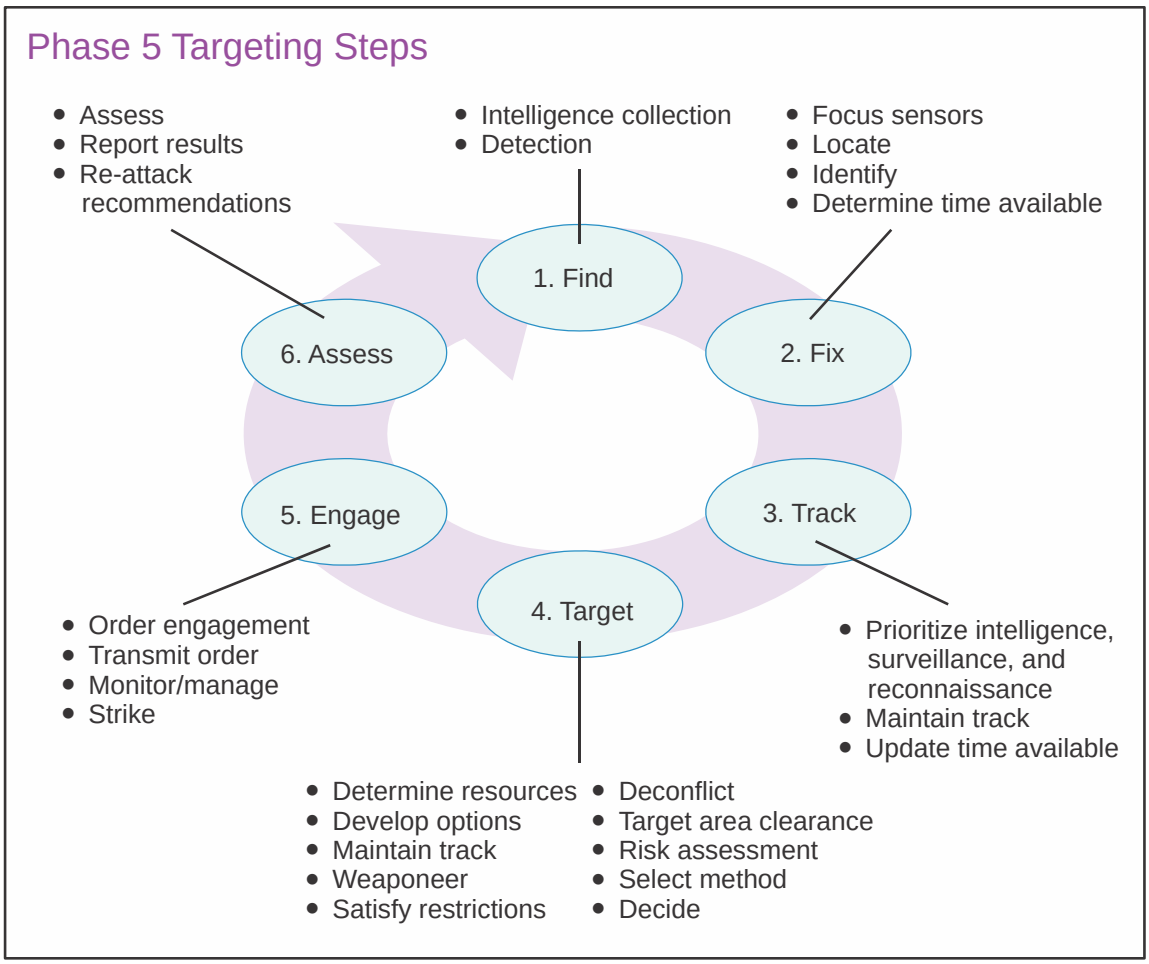


Figure II-10. Phase 5 Targeting Steps

4. The term "emerging target" is used to describe a detection that meets sufficient criteria to be evaluated as a potential target. The criticality and time-sensitivity of an emerging target, and its probability of being a potential target, is initially undetermined. Emerging targets normally require further ISR and/or analysis to develop, confirm, and continue the targeting process. During the find step (see Figure II-12), an emerging target will be:

a. Validated, confirming planned actions; continue the mission, retarget, divert, re-role, or cancel.

b. Designated a potential target or TST; continuing dynamic targeting.

c. Designated a potential target not requiring dynamic targeting and passed to deliberate targeting.

d. Continued to be examined or analyzed by sensors as a potential target (that is, continuing the find step).

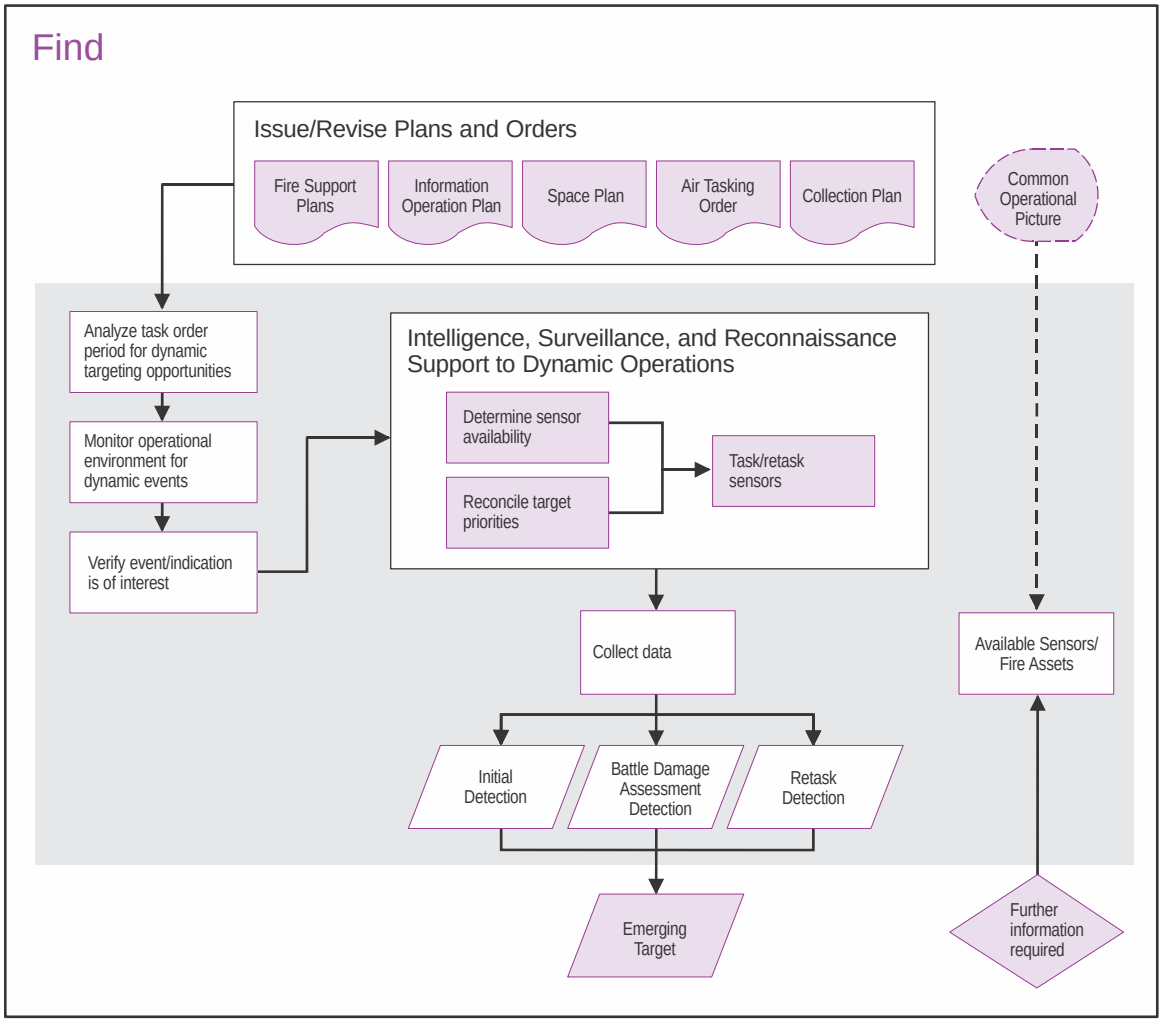


Figure II-11. Find

e. Discarded completely or entered on the NSL.

5. If an emerging target is detected, identified, and determined to be a potential target by a system capable of engaging it, this may result in the find and fix steps being completed nearly simultaneously without the need for traditional ISR, and the target and engage phases being completed with a much abbreviated coordination and approval process. For example, use of aircraft systems that carry ISR and weapons capability may enable accomplishment of steps 1-5 and assessment using a single platform.

6. Output of the find step: potential targets detected and nominated for further development.

(b) Step 2—Fix

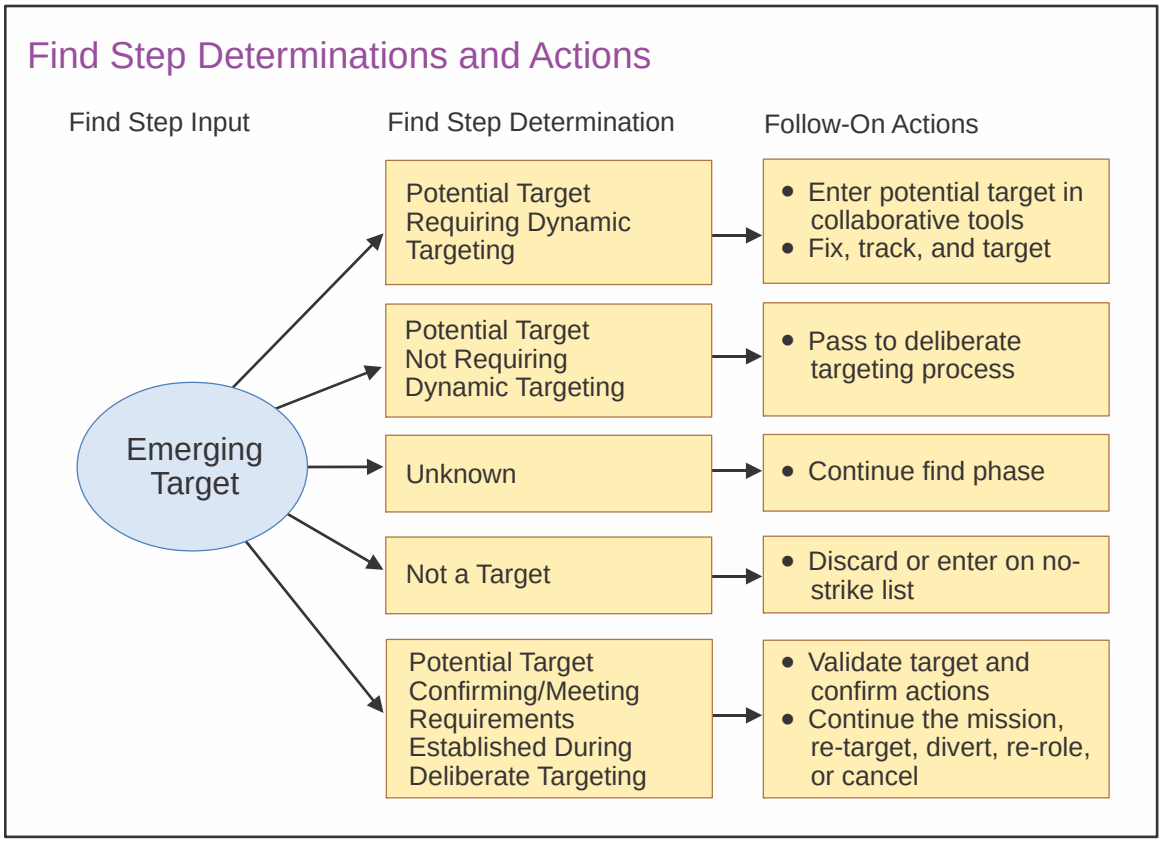


Figure II-12. Find Step Determinations and Actions

1. A "fix" is a position determined from terrestrial, electronic, or astronomical data. The fix step of this phase includes actions to determine the location (fix) of the potential target for dynamic targeting and on-call target for deliberate targeting (see Figure II-13).

2. Inputs to the fix step:

   a. Potential targets requiring dynamic targeting.

   b. Sensor information on the target.

   c. On-call targets for deliberate targeting.

3. The fix step begins after potential targets requiring dynamic targeting or on-call targets for deliberate targeting are detected. When a potential target is identified, sensors are focused to confirm target identification and its precise location. The correlation and fusing of data confirms, identifies, and locates the target and it may then be characterized as a TST or other target requiring dynamic or deliberate targeting. TSTs receive the highest priority in dynamic targeting.

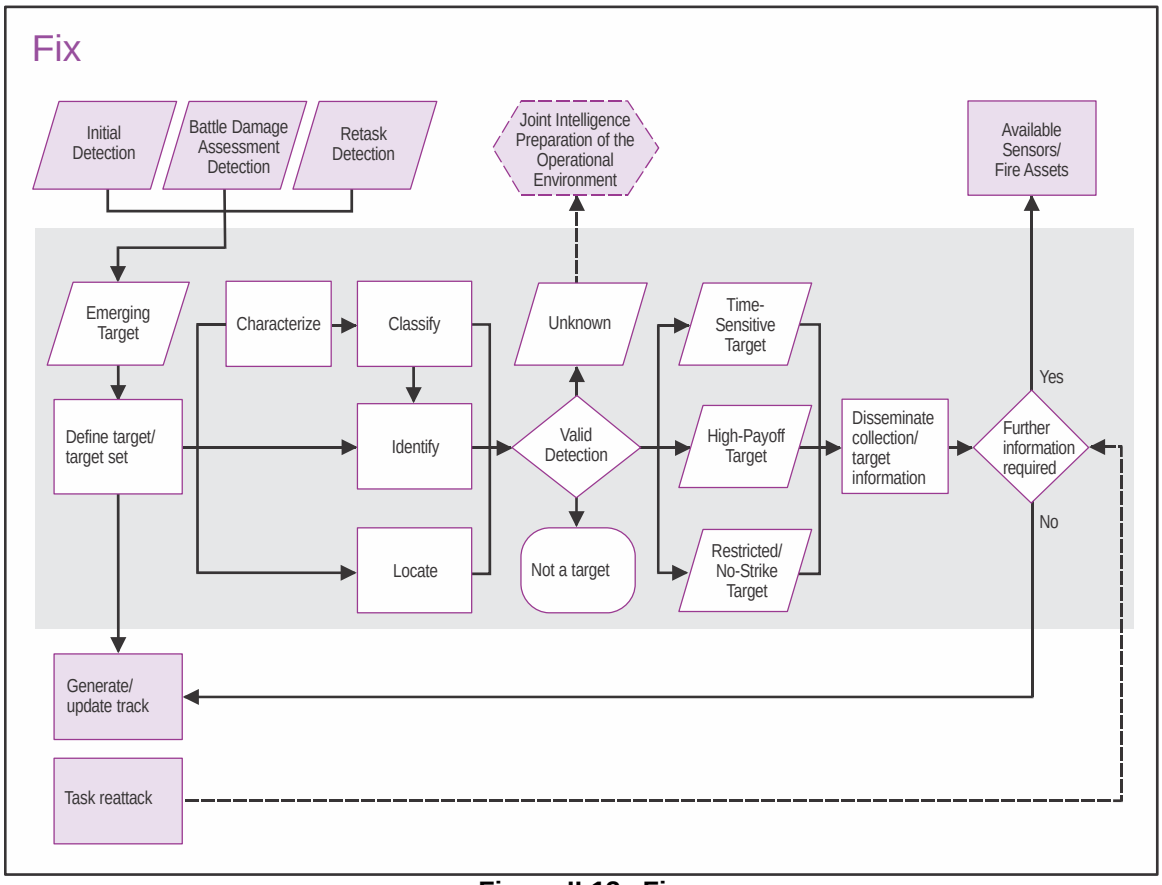


Figure II-13. Fix

4. A determination or estimation of the target's window of vulnerability frames the timeliness required for prosecution and affects the required prioritization of assets and risk assessment.

5. Output of the fix step:

a. Positive identification.

b. Target location accuracy refined to level required for target engagement.

c. Determination or estimation of target time characteristics.

(c) Step 3—Track

1. During this step, the target is observed, and its activity and movement are monitored (see Figure II-14).

2. Input to the track step:

a. Positively identified target.

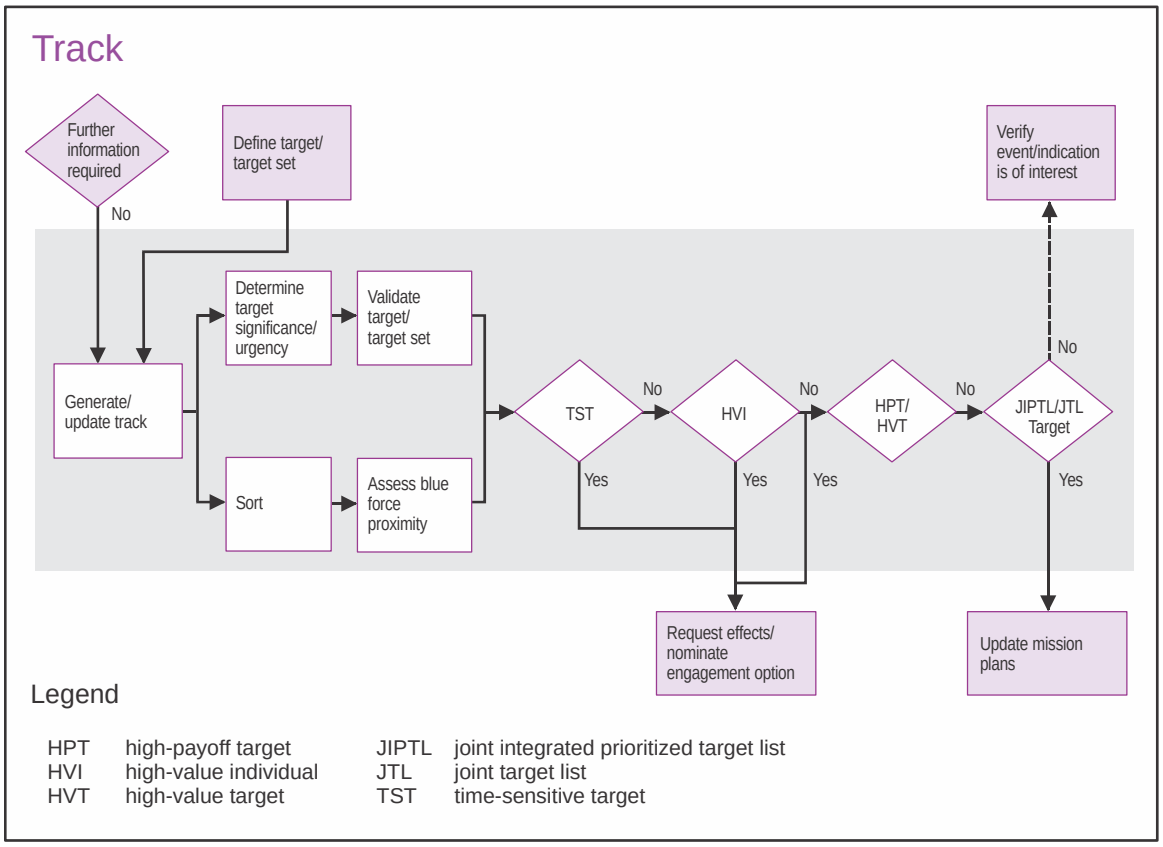


Figure II-14. Track

b. Target location and plot of movement (if applicable).

3. The track step begins once a definite fix is obtained on the target and ends when the engagement's desired effect upon the target is determined. Note that some targets may require continuous tracking upon initial detection as an emerging target. Sensors may be coordinated to maintain situational awareness (SA) or track continuity. Target windows of vulnerability should be updated when warranted. Relative priorities for ISR requirements are based on JFC guidance and objectives. TSTs generally receive the highest priority. If track continuity is lost, the fix step will likely have to be repeated (and potentially the find step as well).

4. Output of the track step:

a. Track continuity maintained on a target by appropriate sensor or combination of sensors.

b. Sensor prioritization scheme.

c. Updates to target window of vulnerability.

(d) Step 4—Target

1. During this step the decision is made to engage the target in some manner to create desired effects and the means to do so are selected and coordinated (see Figure II-15).

2. Input to the target step:

a. Identified, characterized, located, and prioritized target.

b. Restrictions: CDE guidance, WMD consequences of execution, law of war, ROE, NSL, and RTL, component boundaries, and fire support coordination measures (FSCMs).

c. SA on available assets from all components.

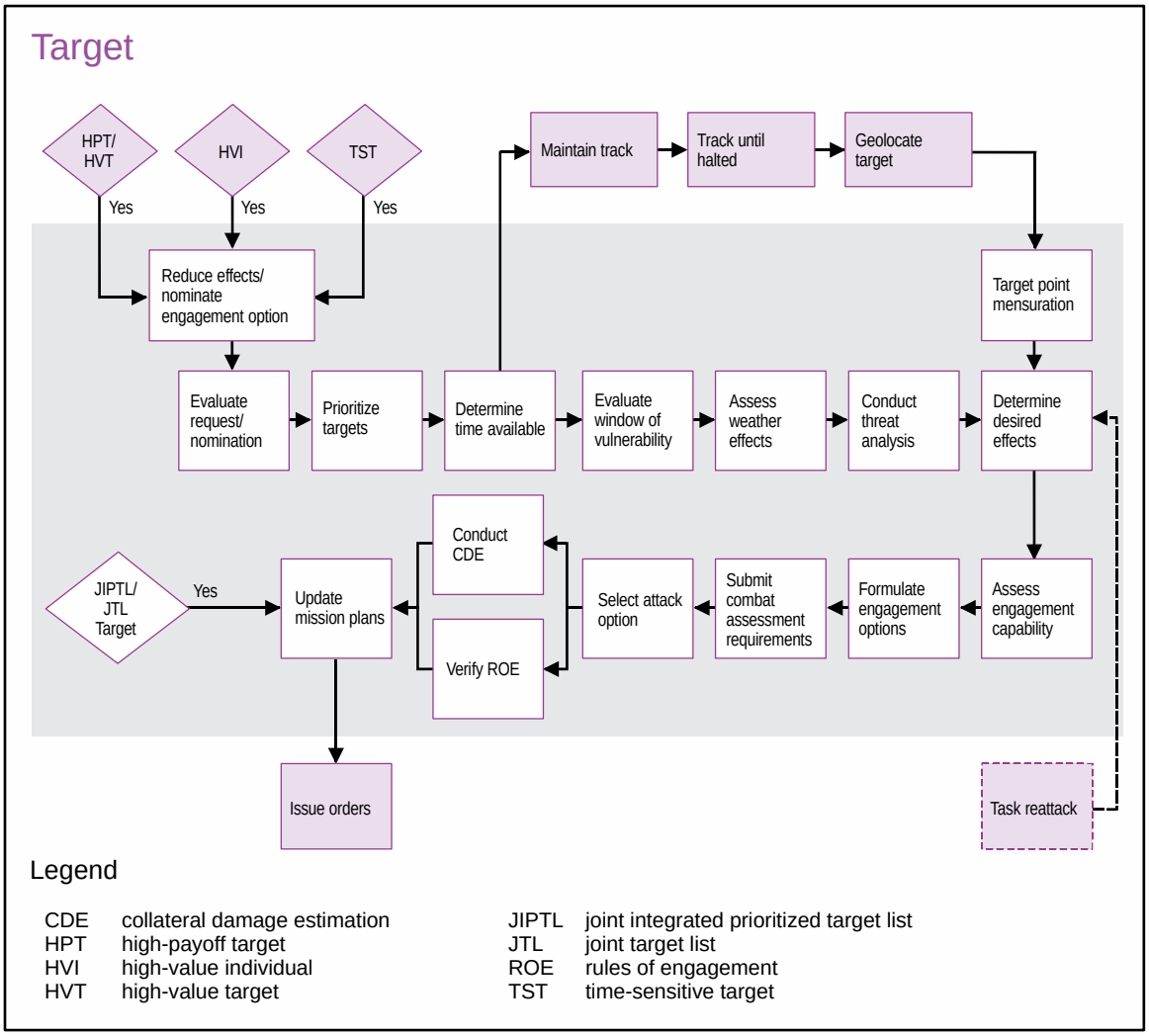


Figure II-15. Target

3. The target step begins with target validation. That is, operations personnel ensure that all vetted targets meet the objectives and criteria outlined in the commander's guidance. Additionally, validation reviews the target's compliance with law of war and ROE and ensures that it is not otherwise restricted. The target phase matches available engagement and sensor assets against the desired effect. Restrictions are resolved, the actions against the target are coordinated and deconflicted, and a risk assessment is performed. The target is weaponeered, engagement options are formulated, a recommendation is nominated, an option is selected to affect the target, and assessment requirements are submitted. The target phase can be time-consuming due to the large number of requirements to satisfy. Target step actions can be initiated and/or completed in parallel with previous phases to enable timely decisions.

4. Output of the target step:

a. The target is validated.

b. Target data information or intelligence products finalized in a format useable by the system that will engage it.

c. Asset deconfliction and target area clearance considerations (to include interagency and multinational partner deconfliction) are resolved.

d. Target execution approved (decision) in accordance with JFC and component commander guidance is validated.

e. Assessment collection requirements are submitted.

f. Collateral damage estimates are performed.

g. Collateral effects estimates for chemical, biological, or radiological targets and environmental concerns are performed.

(e) Step 5—Engage

1. In this step, action is taken against the target (see Figure II-16).

2. Input to the engage step: target approval decision and selected engagement option.

3. During the engage step, the engagement is ordered and transmitted to the selected asset. Engagement orders must be transmitted to, received by, and understood by those engaging the target. The engaging component manages and monitors the actual target engagement. The CID process is conducted prior to target engagement, and continues throughout the engagement, in coordination with the controlling agency for any changes to the operational environment that may affect the engagement decision.

4. Output of the engage step:

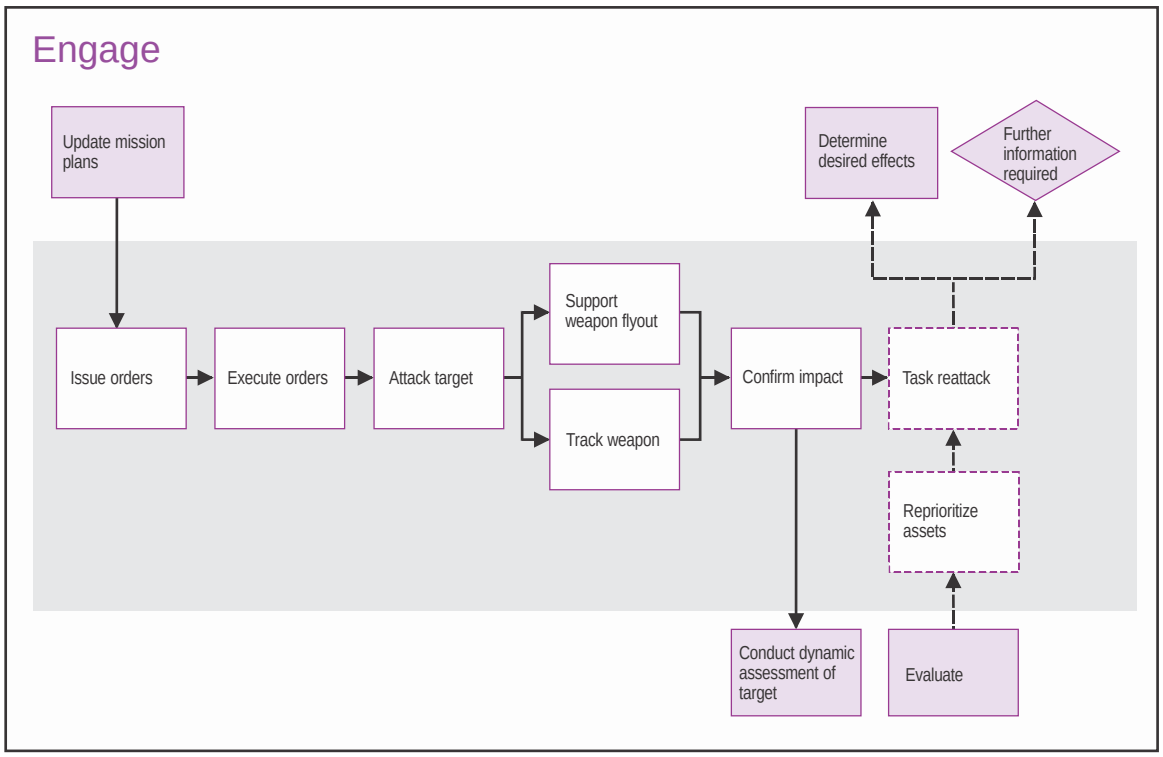


Figure II-16. Engage

a. Issuing and passing of the engagement order.

b. Target engagement via lethal or nonlethal means.

c. Engagement direction and control.

(f) Step 6—Assess

1. In this step, initial assessment of action against the target is performed.

2. Input to the assess step is target engagement (step 5).

3. During the assess step, initial assessment of the physical or functional status of the target takes place. For attacks in the physical environment, the assessment confirms impact of the weapon on the target and makes an initial estimate of the damage. For nonlethal weapons, the initial assessment attempts to detect changes in functionality indicating a successful engagement.

4. For both lethal and nonlethal weapons, this initial assessment is part of battle damage assessment (BDA), phase I. Attack recommendations are generally not made using BDA phase I information. However, in cases of a confirmed miss, a reattack may be authorized based on target priority and weapon availability.

5. Further, assessment takes place in phase 6, targeting assessment.

h. **Phase 6—Targeting Assessment**

(1) The targeting assessment phase is a continuous process that assesses the effectiveness of the activities that occurred during the first five phases of the joint targeting cycle. The targeting assessment process helps the commander and staff determine if the ends, ways, and means of joint targeting have resulted in progress toward accomplishing a task, creating an effect, or achieving an objective. Targeting assessment occurs at the tactical, operational, and strategic levels of war. The assessment of target engagement results must be integrated to provide the overall joint targeting assessment. Paragraph 4, "Time-Sensitive Target Considerations," and Appendix D, "The Targeting Assessment Process," discuss assessment in more detail.

(2) The targeting assessment phase is common to both deliberate and dynamic targeting of the joint targeting process and examines the results of the target engagement. Effective assessments in phase 6 require detailed, continuous inputs from the first five phases of the joint targeting process to include:

(a) Phase 1: End states, objectives, tasks, effects, MOEs, and MOPs.

(b) Phase 2: TM, to include characteristics, critical elements, and functional linkages.

(c) Phase 3: Target vulnerability, weaponeering solutions, and collateral damage estimates.

(d) Phase 4: Tasking orders, weapon/delivery platform, and delivery tactics.

(e) Phase 5: Intelligence collection supporting the commander's critical information requirements, mission details, and mission reporting.

(3) The outputs from phase 6 are: BDA, munitions effectiveness assessment (MEA), collateral damage assessment (CDA), and reattack recommendations.

For additional information on targeting assessment, see Appendix D, "The Targeting Assessment Process." Also refer to DIA publications DI-2820-4-03, Battle Damage Assessment (BDA) Quick Guide, *and DI 2800-2-YR,* Critical Elements of Selected Generic Installations (Critical Elements Handbook).

4. Time-Sensitive Target Considerations

a. **Objectives and Guidance for TSTs.** The JFC's objectives and guidance shape the basic procedural framework for components to expedite engagement of TSTs. Additionally, the JFC establishes guidance on procedures for coordination, deconfliction, and synchronization among components. Once this guidance is issued, the components establish planned and reactive procedures for engaging the prioritized TSTs. JFC guidance on TSTs to component commanders supports different phases of both deliberate and dynamic targeting and includes the following:

(1) Establishing planned FSCMs against specific TSTs.

(2) Defining TST engagement authority based on a JFC's OA, assigned functional mission, or a combination thereof. The JFC should normally define those situations, if any, where immediate destruction of the imminent TST threat outweighs the potential for duplication of effort. The JFC should carefully balance the risk between the TST threat and the potential for friendly fire and collateral damage.

(3) Identifying specific communication requirements between component C2 elements of the joint force to conduct rapid TST engagement. This normally includes authorizing direct liaison and coordinating authority.

(4) For those targets that component commanders consider the component equivalent of a TST, the applicable component commanders should coordinate relative priorities and establish guidance at the JTCB, through the joint fires element (JFE), or via other appropriate means.

b. **Risk Assessment Considerations for TSTs**

(1) A critical aspect of successful TST engagement is to understand the level of risk acceptable to the JFC. This is a complex task. Items to be considered in the risk assessment include risk to civilians, friendly forces, and noncombatants; possible collateral damage; and the disruption incurred by diverting assets from their deliberately planned missions. These base considerations must be balanced against the danger of not engaging the TST, risk of mission failure, or harm to friendly forces.

(2) Successful prosecution of TSTs requires a well organized and well rehearsed process for sharing sensor data and targeting information, identifying suitable strike assets, obtaining mission approval, and rapidly deconflicting weapon employment. The key for success is performing as much coordination and decision making as possible in advance.

(3) The on-scene commander's knowledge of JFC guidance and intent can greatly accelerate decision making and reduce the reaction time between detection and engagement. This is critical when time compression precludes thoroughly coordinating all decisions and actions. For this to occur, the JFC must articulate objectives, guidance, priorities, and intent for TSTs before target identification.

(4) The appropriate response for each TST is often dependent on the level of conflict, the clarity of the desired effect, and ROE. For example, during a major combat operation the JFC may be able to accept a higher level of risk to civilians, friendly forces, and noncombatants when attacking adversary WMD to ensure a quicker response. But during a limited contingency operation, the risk of collateral damage may require more detailed and time-consuming coordination.

c. **C2 for TST Operations**

(1) **Focused Operations.** The JFC has several options with which to structure C2 operations for engaging TSTs. Generally, TSTs are engaged using dynamic targeting, so the

C2 arrangements should include the rapid identification and communication capabilities required for expedited decision making. Overall responsibility for mission execution remains with the components in order to accomplish coordination and deconfliction. The C2 node that has the best information or SA to execute the mission and direct communications (e.g., hotlines, radio net) to the operators and crews of the chosen engagement systems should have the authority to plan and engage the TST. Placing the appropriate level of authority at subordinate C2 nodes can streamline the C2 process and facilitate timely engagement. Decentralized C2 nodes can exchange sensor, status, and target information with a fidelity that permits them to operate as a single, integrated C2 entity. Tied together by wide area networks and common interactive displays, they can effectively perform decentralized and coordinated execution of TST engagement. Coordination and deconfliction of multinational forces may lead to additional challenges and should be addressed during planning through liaison officers and/or representatives of the respective nations.

(2) **Compressed Decision Cycle.** Successful engagement of TSTs may require a very compressed decision cycle, even when compared with prosecution of non-TSTs via dynamic targeting. To compress the decision cycle successfully, the joint force and component staffs must be thoroughly familiar with the details of each step of the joint targeting cycle and with the specific nodes or cells in the joint force and components responsible for each portion of the process. Conducting detailed prior planning and coordination between joint forces, a thorough JIPOE, employment of interoperable communications systems, and clear guidance on what constitutes a TST saves valuable time. Undefined, ambiguous TSTs can redirect assets away from executing the JFC's overall plan. Mission planning and execution activities must take place simultaneously or on a compressed time line.

d. **Engaging TSTs.** TSTs are engaged using either deliberate or dynamic targeting. Since TSTs are time-sensitive, and often fleeting, or emerging, they tend to be engaged via dynamic targeting, but guidance, validation, relative prioritization, assessment criteria, collection requirements, and many other aspects of developing TSTs can be accomplished during pre-operation planning and/or as part of deliberate targeting.

5. The Relationship Between Targeting and Effects

a. From the targeting perspective, an effect is a change in the physical or behavioral state of a target system, a target system component, a target, or a target element that results from an action, a set of actions, or another effect. A desired effect can be thought of as a condition that can support achieving an associated objective, while an undesired effect is a condition that can inhibit progress toward an objective.

b. The joint force can create effects across the levels of war. Strategic and operational effects focus on larger aspects of various systems, while tactical-level effects typically are associated with results of offensive, defensive, and stability operations tactical actions, often involving weapons employment. Many of the ways and means associated with targeting result in tactical-level effects relative to the selected targets. However, the cumulative results of these target engagements can contribute to the JFC's desired operational-level and theater-

strategic effects. Specifically, the term "effects" relates to targeting in two phases of the joint targeting cycle:

(1) **Phase 3—Capabilities Analysis.** Step 4 of phase 3 is "effects estimate." As stated earlier, during this step the desired effect of engaging the target at the target element level is defined and the undesired effects (e.g., collateral damage) of that particular target engagement method are estimated.

(2) **Phase 6—Targeting Assessment.** BDA measures the effect of target engagements at three levels: the target element level (commonly called phase 1 BDA), the target level (phase 2 BDA), and the target system level (phase 3 BDA). MEA measures the effectiveness of any munitions used. Any post-engagement assessment of collateral damage also occurs in phase 6. All other higher-order post-engagement effects are outside the scope of phase 6.

c. The JFC and staff must consider undesired effects in COA and CONOPS development. In some cases, operational limitations can be adjusted to prevent undesired effects.

d. It is important that desired and undesired effects be clearly communicated as far down as necessary to ensure these effects are created or avoided respectively. An improperly or incompletely stated effect, that does not clearly link the effect to be created with the objective that is to be achieved, can result in a successful mission that hits the designated target at the designated time, but still does not achieve the objective.

For example, during operations defending a hypothetical friendly country, the joint force commander (JFC) might approve the following desired operational-level effect relative to the adversary's air force:

Joint force air component commander (JFACC) Objective 1: Joint air forces will achieve air superiority over the theater of operations by D+5.

Measure of effectiveness (MOE) 1.1: Destruction of 60 percent of enemy aircraft by D+4.

MOE 1.2: 70 percent degradation of enemy air command and control capability by D+4.

MOE 1.3: Enemy air forces evacuate 30 percent of its aircraft to a safe haven by D+5.

The cumulative results of the JFACC's tactical target engagements create the JFC's desired operational-level effect, since the enemy's air system would be virtually inoperable by D+4. In turn, this desired effect is one of several conditions that support the JFC's objective—integrity of the friendly country's borders would be restored by D+19. This example shows that understanding desired effects helps link joint force components' tasks to the JFC's objectives.

In the previous example, the joint force air component commander (JFACC) needs to preserve certain enemy airfields for friendly use after eliminating the enemy air threat, because current friendly forward air bases are not near enough for the desired level of support of impending ground operations. An undesired effect of friendly's offensive counterair operations would be the destruction of runways at selected enemy airfields. In response to this, either the joint force commander's (JFC's) or JFACC's operational limitations could include the constraint, enemy *airfields A, B, and D must be able to support friendly air operations by D+10*. Refer to Joint Publication 5-0, *Joint Operation Planning*, for more information on the use of operational limitations during planning.

e. The commander should be focused on the purpose of the fires with regard to creating effects against chosen targets. Effects are more than the results of the fires. Effects are the cumulative results of target engagements by lethal and nonlethal means. Once the target is engaged, the commander must assess the effectiveness of the engagement. If the desired effect was not created, the target may need to be reengaged or another method selected to create the effect. There are many different ways to categorize effects. One important distinction is between direct and indirect effects.

(1) **Direct effects** are the immediate, first-order consequences of a military action (weapons employment results, etc.), unaltered by intervening events or mechanisms. They

In the following example, the joint force land component commander (JFLCC) designates two bridges that span Red River in the JFLCC's area of operations as high-priority targets for attack in the next 24 hours (by D+8). The JFC approves the targets. The joint air operations center (JAOC) analyzes the targets, selects aimpoints, munitions, and platforms, and includes the missions on the air tasking order (ATO) for execution.

Missions are flown the following day, and battle damage assessment indicates the bridges are damaged sufficiently to prevent foot and vehicle traffic, the typical desired effect for this type of target. 12 hours later the joint fires element (JFE) at the joint force headquarters tasks the JAOC to hit the targets again. When JAOC ATO planners ask for clarifications, the JFE explains that Red River—an interior line of communication for enemy forces—is a main supply route. Apparently enemy forces use river barges extensively for most classes of supply, including fuel and ammunition. The JFLCC had established the desired effect: enemy *forces cannot resupply along Red River beginning D+8*. But friendly ground forces are still conducting entry operations 100 kilometers from Red River, and are not in position to create this effect. JFLCC planners have determined that completely dropping all spans of the two bridges will result in an obstacle impassable to the river barges, thus creating the JFLCC's desired effect. With this understanding, JAOC planners adjust the aimpoints and munitions to drop the spans of the two bridges, the target effect necessary to create the JFLCC's desired effect, although 36 hours later than expected.

are usually immediate and easily recognizable. (For example, an enemy C2 center is destroyed by friendly artillery or a terrorist network courier is captured by a direct action mission.)

(2) **Indirect effects** are the delayed and/or displaced second-, third-, and higher-order consequences of action, created through intermediate events or mechanisms. These outcomes may be physical or behavioral in nature. Indirect effects may be difficult to recognize due to subtle changes in system behavior that may make them difficult to observe. For example, an indirect effect of destroying a communications node or capturing a terrorist cell courier may degrade the effectiveness of the fielded enemy force's C2 structure. Effects such as this have real benefits, but may be more difficult to assess and measure individually or in the short-term. Although a factor for consideration, difficulty of assessment should not be the primary factor for choosing to create direct or indirect effects.

(3) Direct and indirect effects possess many characteristics that can qualitatively shape the operational environment. Several of these are discussed below.

(a) **Cumulative Effects.** Effects tend to compound, such that the ultimate result of a number of direct and/or indirect effects often combine to produce greater outcomes than the sum of their individual impacts.

(b) **Cascading Effects.** Effects can ripple through a targeted system, often influencing other systems. This most typically occurs through nodes and links that are common and critical to related systems. The cascading of direct and indirect effects, as the name implies, usually flows from higher to lower levels. As an example, destruction of a headquarters element or capture of a terrorist senior leader will result in the loss of C2 and thus degrade the effectiveness of subordinate organizations.

(c) **Unintended Effects.** Effects often spill over to create unintended consequences, which may be counterproductive or may create opportunities. An example of a counterproductive consequence entails injury or collateral damage to persons or objects unrelated to the intended target. Conversely, some unforeseen effects may create opportunities that the joint force can exploit to help accomplish objectives. Unintended effects may also occur if the pre-strike analysis was incorrect and the enemy's reaction differs from what we expected, complicates operations, or causes a change to operations (e.g., we expected enemy withdrawal, but they counterattacked with their strategic reserve instead). The pre-strike analysis may also have miscalculated the local civilian population perceptions/reactions and international public opinion, ultimately resulting in more restrictions on target selection or engagement timing. Planners and targeteers should consider second-, third-, and higher-order effects, especially political-military effects, during planning and assessment. While estimating outcomes is rarely an exact process, estimation becomes increasingly difficult as effects continue to compound and cascade through targets and target systems. In addition, the impact of a single event can often be magnified over time and distance that greatly exceeds the span of the direct effect associated with that one event.

CHAPTER III
JOINT FORCE TARGETING DUTIES AND RESPONSIBILITIES

"Four brave men who do not know each other will not dare to attack a lion. Four less brave, but knowing each other well, sure of their reliability and consequently of their mutual aid, will attack resolutely."

Colonel Charles Ardant du Picq, 1880

1. Joint Targeting Integration and Oversight

a. The JFC's primary targeting responsibility lies in establishing the objectives that component commanders will achieve throughout the operational environment with their forces (assigned, attached, and supporting). With the advice of subordinate component commanders, JFCs set priorities, provide clear targeting guidance, and determine the weight of effort to be provided to various operations. Joint force and component commanders identify HVTs and HPTs for acquisition, collection, and attack or influence, employing their forces in accordance with the JFC's guidance.

b. **Friendly Fire Prevention.** Throughout the targeting process, JFC and component commanders should establish safeguards to reduce the possibility of friendly fire. Knowledge of friendly forces position and intended scheme of maneuver in relation to select targets aids in friendly fire prevention. Friendly fire prevention is a key consideration of risk assessment throughout the entire spectrum of anticipated targeting timelines from long-term to rapidly changing time-sensitive situations. Although the JFC may justifiably elect to accept additional risk during time sensitive targeting, particularly for HVTs or HPTs, appropriate friendly fire prevention measures must still be in-place and followed.

c. **Collateral Damage Prevention.** The United States of America places a high value on preserving civilian and noncombatant lives and property and seeks to accomplish its mission through the discriminate application of force with minimal collateral damage. Joint standards and methods for estimating collateral damage potential provide mitigation techniques and assist commanders with weighing collateral risk against military necessity and assessing proportionality within the framework of the military decision-making process. Joint standards and methods for conducting CDE are stipulated in CJCSI 3160.01, *No-Strike and the Collateral Damage Estimation Methodology.*

d. **Targeting Organizational Structure.** The joint targeting process crosses traditional functional and organizational boundaries. Operations, plans, and intelligence personnel are the primary participants, but other functional area (e.g., logistics, weather, legal, and communications) subject matter experts (SMEs) also support the joint targeting cycle. Therefore, the organizational structure established by the JFC should be functionally inclusive, responsive, and flexible enough to adapt to a range of situations. In addition, JFCs should arrange their joint targeting organizational structure based upon assigned, attached, and supporting forces, as well as the threat, mission, and OA. Ultimately, the organizational

design must be able to identify adversary critical vulnerabilities and execute all phases of joint targeting efficiently and continuously.

e. **Other Considerations.** Offensive military activities (e.g., electronic attack, offensive cyberspace operations, and information-related capabilities) should be coordinated and deconflicted with the joint targeting process.

f. **Targeting Integration via Joint and Component Operations Centers.** The joint intelligence operations center (JIOC), JOC, and/or component command centers plan for and conduct operations. Targeting mechanisms should exist at multiple levels. Joint force components identify requirements, nominate targets that are outside their boundaries or exceed the capabilities of organic or supporting assets (based on the JFC's apportionment decision), and conduct execution planning. After the JFC makes the targeting and apportionment decisions, components plan and execute assigned missions through their respective operations centers. The theater air ground system is normally the C2 structure through which targeting should be integrated.

For additional information, see JP 3-05, Special Operations, *JP 3-09,* Joint Fire Support, *JP 3-30,* Command and Control for Joint Air Operations, *JP 3-31,* Command and Control for Joint Land Operations, *JP 3-32,* Command and Control for Joint Maritime Operations, *JP 3-33,* Joint Task Force Headquarters, *and Field Manual (FM) 3-52.2/NTTP 3-56.2/AFTTP(I) 2.17,* Multi- Service Tactics, Techniques, and Procedures for the Theater Air Ground System.

2. Joint Force Targeting Responsibilities

a. JFC Responsibilities

(1) The JFC has the responsibility to conduct planning, coordination, and deconfliction associated with joint targeting. Joint targeting coordination responsibilities for the JFC include:

(a) Establish parameters for successful targeting within the JFC's OA by promulgating intent, objectives, guidance, sequencing, and priorities.

(b) The JFC assigned as the supported commander will provide early, broad, and clear targeting guidance to components and supporting commands and DOD agencies consistent with the operation's end state.

(c) Maintain currency of mission planning guidance, intent, and priority intelligence requirements (PIRs) throughout the operation.

(d) Direct the formation, composition, and specific responsibilities of a JFE and JTCB (if required).

(e) Approve or delegate approval of the JIPTL developed from component and staff nominations.

(f) Define criteria for identification of TSTs in the OA. These coordination tasks are normally accomplished through the JFC established JTCB or like body.

(2) **Joint Targeting Coordination Board.** Targeting coordination tasks are normally accomplished through the JFC established JTCB or like body. The JFC normally appoints the deputy JFC or a component commander to chair the JTCB to provide the appropriate level of experience and focus. Component and JFC staff representation on the JTCB should also possess the necessary rank, experience, and knowledge to speak authoritatively for their respective components and staff elements. When a JTCB is not established and the JFC decides not to delegate targeting oversight authority to a deputy or subordinate commander, the JFC may perform this task at the joint force headquarters, with the assistance of the J-3. The JFC ensures that this is a joint effort involving applicable subordinate commands, other agencies, and multinational partners, as appropriate. Joint targeting is a highly iterative process that needs close coordination during operations. If the JFC delegates authority for joint target planning, coordination, and deconfliction to a subordinate commander, that commander should possess or have access to a sufficient C2 infrastructure, adequate facilities, and joint planning expertise to effectively manage and lead the JFC's joint targeting operations. Should a specific agency be charged with joint functional command responsibilities, a joint targeting mechanism might also be needed to facilitate this task at the component level. All components are normally involved in targeting and should establish procedures and mechanisms to manage their part in joint targeting.

(a) The JTCB may be an integrating center for targeting oversight efforts or a JFC-level review mechanism. It should be comprised of representatives from the joint force staff, all components and, if deemed necessary, other agencies, multinational partners, and/or subordinate units (Figure III-1).

(b) Membership of the JTCB should include SMEs in both lethal and nonlethal capabilities. The relative importance of lethal versus nonlethal capabilities in targeting may shift as the focus of the operation shifts from direct combat to stability operations. The JTCB should be flexible enough to consider both types of capabilities for appropriate targeting. This represents the integrated functional staff effort, anchored by the joint targeting working group (JTWG), leading up to the JTCB. There is typically a parallel lethal/nonlethal effort at the working group level, due to time and SME availability. In some cases, an additional JTWG may be required to process, deconflict, and prioritize all nominated targets.

(c) The JFC defines the role of the JTCB. The JTCB provides a forum in which all components can articulate strategies and priorities for future target engagements so that they may be synchronized and integrated. The JTCB normally facilitates and coordinates joint force targeting activities with the components' schemes of maneuver to ensure that the JFC's priorities are met. Targeting issues are generally resolved below the level of the JTCB, by direct coordination between elements of the joint force, but the JTCB and/or JFC may address specific target issues not previously resolved.

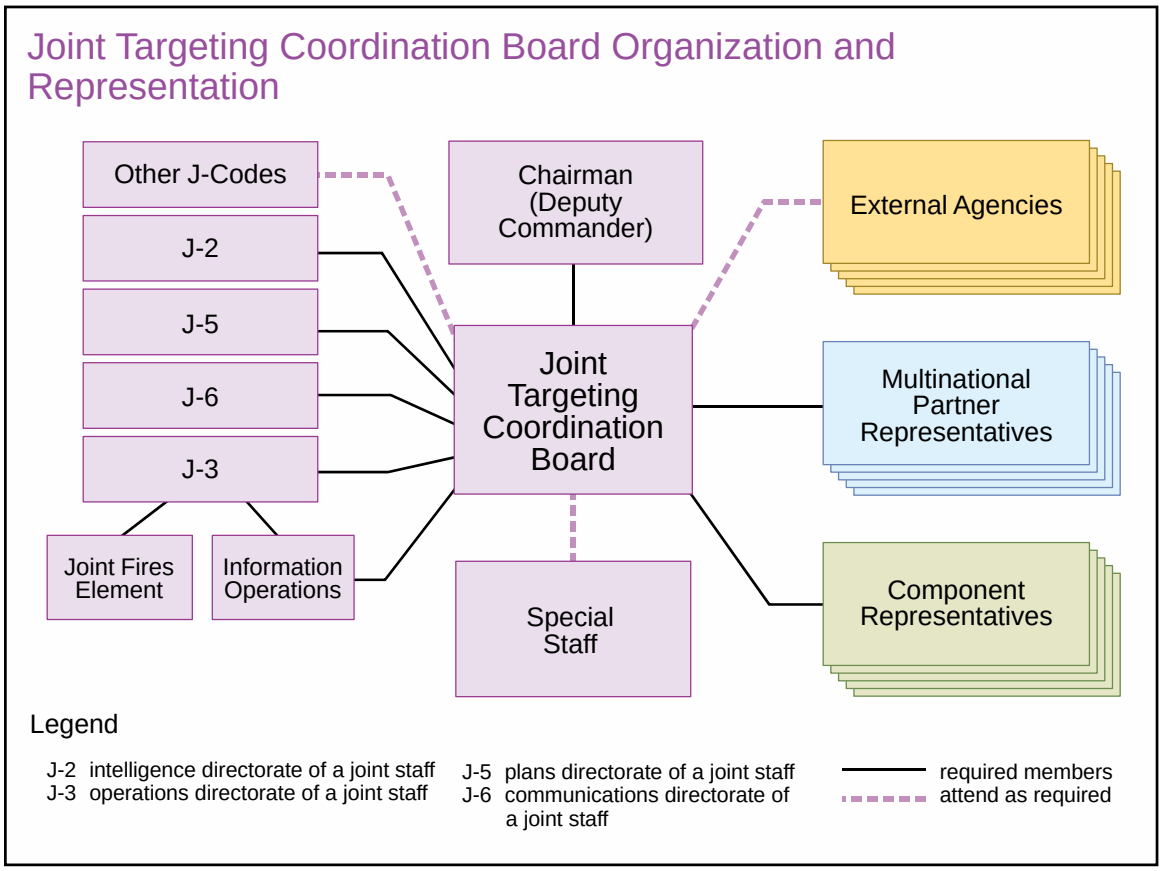


Figure III-1. Joint Targeting Coordination Board Organization and Representation

(d) In multinational operations, the JTCB may be subordinate to a multinational targeting coordination board, with JFCs or their agents representing the joint force on the multinational board.

(e) The JTCB is typically responsible for the following:

1. Reviewing operational-level assessment to guide the JFC's decision making.

2. Maintaining a macro-level view of the operational environment.

3. Reviewing components' schemes of maneuver and broad targeting guidance for compliance with the JFC's intent.

4. Integrating, when appropriate, component plans according to the JFC's CONOPS.

5. Developing and refining broad component targeting guidance and priorities.

6. Reviewing and refining ISR collection requirements and joint ISR assessment guidance based on JFC priorities and intent, to include refinement of MOPs and MOEs, as appropriate.

7. Reviewing and submitting the coordinated JIPTL for JFC approval or serving as approving authority for JIPTL when designated by the JFC.

8. Ensuring the JTL, NSL, RTL, and other relevant target lists are maintained and updated based on JFC guidance.

9. Reviewing, validating, and approving targets to the JTL and RTL when such authorities are delegated to the JTCB by the JFC.

(f) **JTCB Scope and Focus.** The JTCB's focus is to develop broad targeting priorities and other targeting guidance in accordance with the JFC's objectives as they relate operationally. The JTCB must be flexible to address targeting issues, but should not become over-involved in tactical-level decision making. In order to function as effectively and efficiently as possible, the JTCB requires a focused agenda to guide the daily conduct of business. A notional JTCB agenda is outlined in Figure III-2. In breaking the meeting into four parts, the JTCB may address at least four planning horizons.

1. **Assessment.** The first session is a review of completed operation (for example, the last 24 hours), focusing on the operational level and progress toward the JFC's objectives. It should include an intelligence forecast of anticipated adversary action for future operations planning considerations.

2. **JFC Intent.** The second portion of the board should consist of broad guidance for future plans, given by the JTCB's chairman.

3. **Component Schemes of Maneuver.** The third portion should review components' detailed operational-level schemes of maneuver for the future operations. Broad targeting guidance and priorities should be refined as appropriate in this portion of the meeting.

4. **Joint Maneuver and Fires.** The final portion of the board should review the next 24 hours plan for maneuver, fires, and targeting. More specific targeting issues may be addressed here if not previously resolved as part of deliberate targeting. Such issues may include TSTs, target restrictions, dynamic targeting priorities, priorities for certain weapons (e.g., cruise missiles), and collection and assessment issues. This is the final review of the next day's plan to ensure it is still valid. This is the JTCB's final chance to recommend modification to targeting priorities before execution.

(g) JFC (or designated representative) approval for the next day's JIPTL and related products is usually sought immediately upon adjournment of the JTCB and then promulgated in message format throughout the joint force.

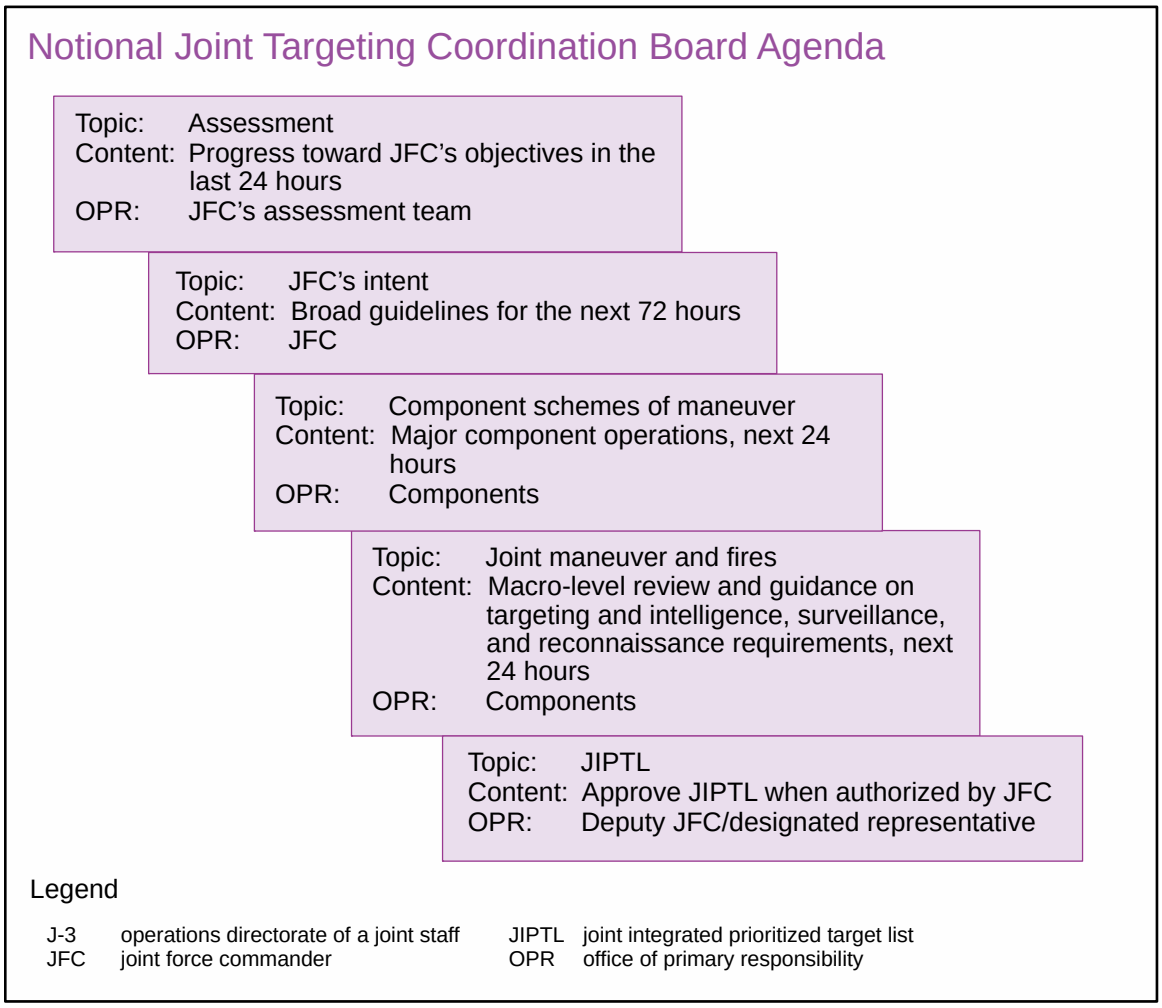


Figure III-2. Notional Joint Targeting Coordination Board Agenda

(h) The JTCB is concerned with future operations, not the current battle. Operators already have the current day's targeting plan(s) in hand and are preparing to execute. Changing priorities on the day of execution is possible, but will normally be handled through the J-3 (or their equivalents at the component level) rather than the JTCB. Moreover, component commanders are normally authorized to make execution day changes compelled by current conditions, consistent with the JFC's guidance and intent.

(3) **Joint Fires Element.** The JFC may approve the formation of a JFE within the J-3. The JFE is an optional staff element comprised of representatives from the J-3, the components, and other elements of the JFC's staff, to include the intelligence directorate of a joint staff (J-2) targeting staff, logistics directorate of a joint staff (J-4), J-5, and others as required. The JFE is an integrating staff element that synchronizes and coordinates fires planning and coordination on behalf of the JFC and should be physically located near the joint task force JOC, colocated with the information operations (IO) cell if possible. The JFE assists the J-3 in accomplishing responsibilities and tasks as a staff advisor to the JFC. JFE key functions and tasks generally include the following:

(a) Develops OA-wide joint targeting guidance, objectives, and priorities (normally accomplished in conjunction with component planners as part of the joint planning group [JPG]).

(b) Coordinates, deconflicts, and validates target nominations at the JFC level and higher.

(c) Coordinates component input to the JIPTL. Prioritizes and forwards the JIPTL to the JTCB for review and approval and then manages the approved JIPTL.

(d) Coordinates, maintains, and disseminates a complete list of FSCMs within the OA to avoid friendly fire and deconflicts with other current or future operations, to include managing the RTL and NSL.

(e) Develops the roles, functions, and agenda of the JTCB for JFC approval.

(f) Organizes a strategy team to address intermediate targeting efforts to bridge the gap between current and future operations.

(g) Recommends ISR collection requirements to include assisting the joint intelligence support element (JISE) in developing targets.

(h) Develops the joint fires estimate and COAs.

(i) Monitors TST and component-critical target operations for the J-3. Recommends procedures for engaging TSTs and component-critical targets.

(j) Recommends HPTs to the JPG.

(k) Coordinates joint fires and targeting ROE issues.

(l) Develops collateral damage prevention procedures based on commanders' guidance and higher level directives.

(m) Conducts assessments of joint fires and targeting in coordination with higher headquarters and components.

(4) **Joint Targeting Working Group**

(a) To assist in the coordination and integration throughout the joint targeting process, the JFC may approve the formation of a JTWG. The JTWG supports the JTCB by conducting initial collection, consolidation, and prioritization of targets and synchronization of target planning and coordination on behalf of the JFC. The JTWG is an action officer level venue, chaired by the JFE chief, J-2 (chief of targets), or similar representative, and meets as required to consolidate and prioritize the draft JIPTL and discuss targeting integration and synchronization issues raised by the JFC, staff, planning teams, and the JFC's major subordinate commands (see Figure III-3).

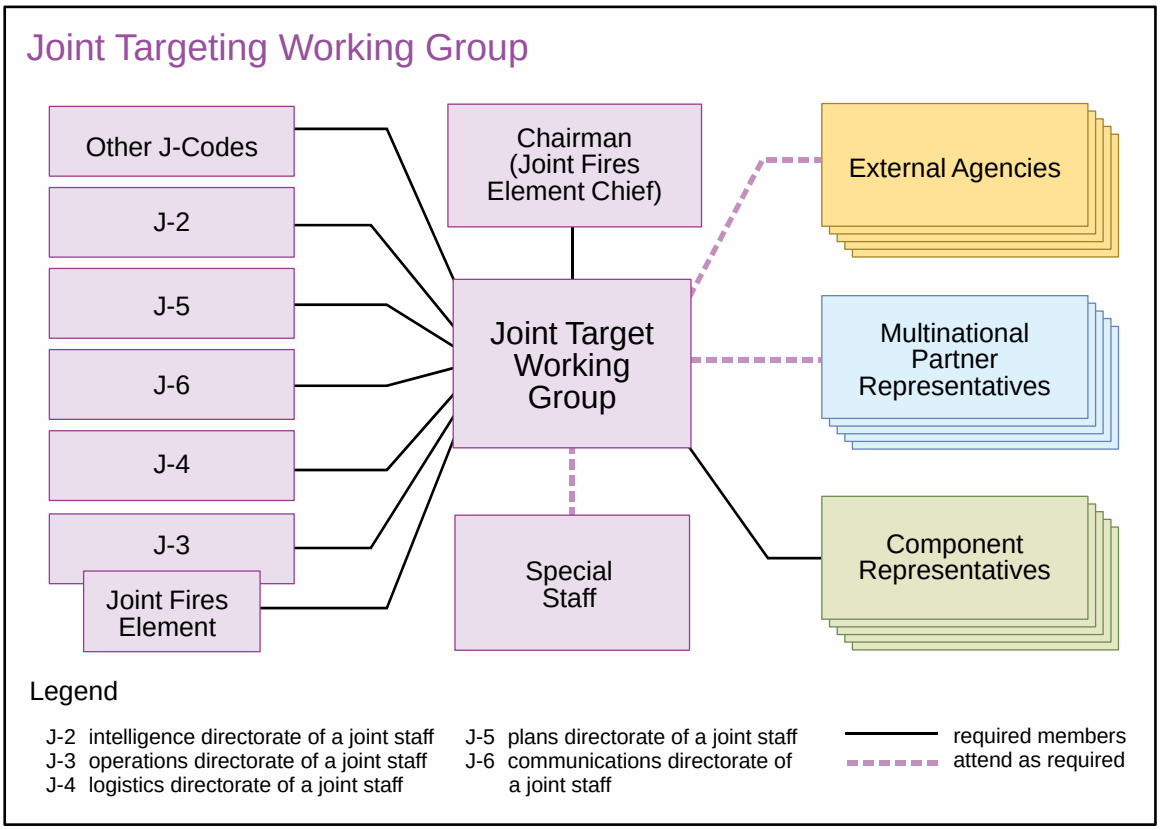


Figure III-3. Joint Targeting Working Group

(b) The purpose of the JTWG:

1. Consolidate, deconflict, and prioritize target nominations from components, supporting and supported commands, joint force directorates and agencies, and interagency and multinational partners, higher headquarters, and national level offices and organizations submitted through the JFE.

2. Synchronize the lethal and nonlethal targeting effort in order to ensure target engagements remain nested with JFC objectives; synchronize detection and collection requirements in conjunction with the collection management authority or team; identify delivery capabilities; and review assessments to determine reattack requirements and future targeting.

3. Disseminate revised or new targeting guidance.

4. Identify and integrate lethal and nonlethal opportunities and engagements.

(c) JTWG responsibilities include:

1. Reviewing the JFC's broad targeting guidance and components proposed schemes of maneuver and to ensure compliance with the JFC's intent and CONOPS.

2. Disseminating the JFC's targeting guidance and priorities to components and JFC staff.

3. Reviewing and refining ISR collection requirements and joint ISR assessment guidance based on JFC priorities, intent, and CONOPS, to include refinement of MOPs and MOEs, as appropriate.

4. Submitting the draft JIPTL for JTCB review.

5. Maintaining and updating the JTL, NSL, RTL, and other relevant target-related lists.

(d) Inputs to the JTWG may include commander's guidance, current target-related lists (JTL and RTL) including TSTs, TNLs, the NSL, and estimated availability of resources/capabilities.

(e) Some of the products the JTWG should produce are recommended JIPTL and apportionment, changes to target lists (particularly any targets nominated from the RTL), and changes to TSTs collection requirements and recommended priorities.

b. **Joint Force Staff Responsibilities.** The JFC should determine the relative burden sharing for the joint targeting cycle between the JFC staff and those of the component commanders. The JFC develops guidance that directs and focuses planning and targeting to support the CONOPS. Collaboration between joint force staff and component targeteers and planners is a critical element of the execution of the joint targeting cycle. Supporting and subordinate commanders, functional and Service, will have their own targeting processes that will complement and support the supported JFC's targeting process. The supported JFC is responsible for coordinating these various targeting processes and delineating the responsibilities of each supporting and subordinate commander to support the JFC's targeting cycle. Interaction between the joint force and component planners occurs throughout the phases of the joint targeting cycle, but is especially important during phase 4 as forces are assigned. Figure III-4 provides a notional model for the division of functional responsibility between the JFC and the components throughout the joint targeting cycle. Although the JFC establishes the joint targeting cycle, all subordinate commanders must have the ability to nominate targets for joint targeting consideration. The supported JFC is responsible for providing opportunities for coordination between these various targeting processes and delineating the responsibilities of each supporting and subordinate commander to support the JFC's targeting process.

(1) **Intelligence Directorate.** The J-2 has the primary responsibility for prioritization of intelligence collection efforts, analysis, validation, and assessment for all joint operations. In addition, the J-2 provides a major input to the J-3 and J-5 in the form of adversary COA assessments critical to the joint target prioritization process and identification of HVTs and HPTs. Joint targeting related duties that are normally performed by the J-2 are as follows:

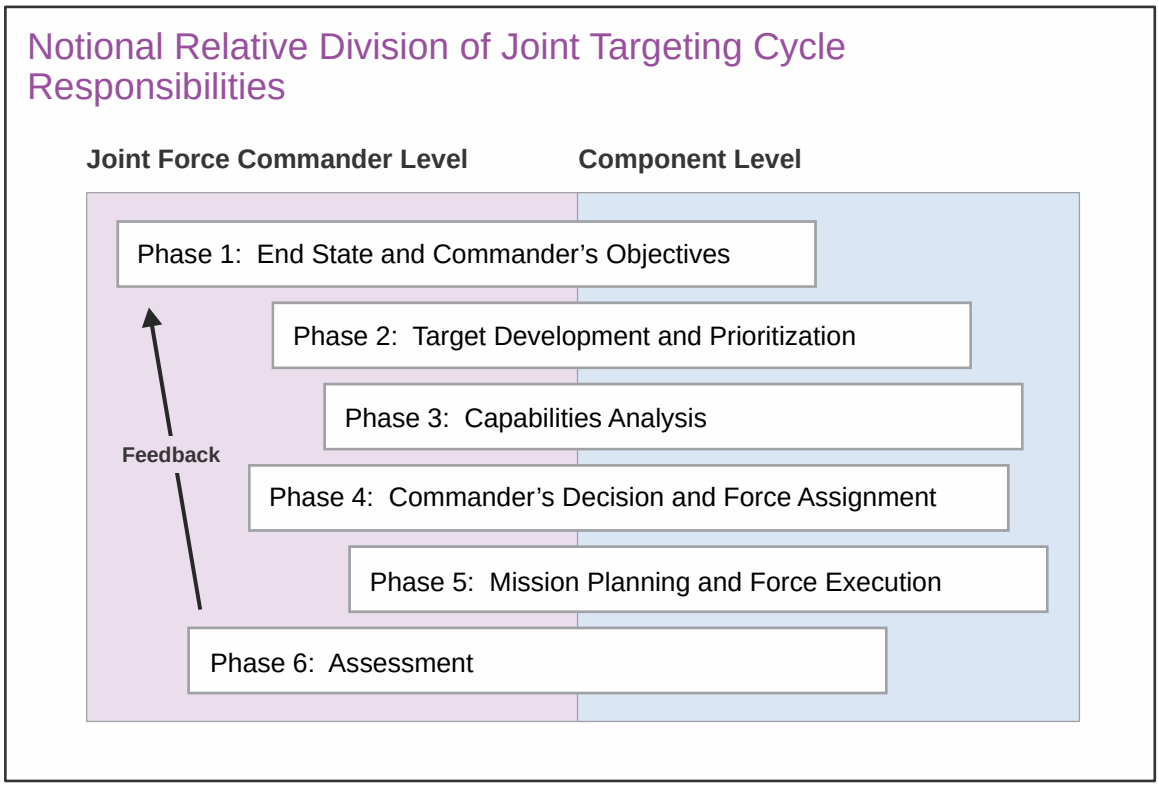


Figure III-4. Notional Relative Division of Joint Targeting Cycle Responsibilities

(a) Work closely with J-3 and J-5 in developing targeting guidance, priorities, and objectives for inclusion in the JFC's planning guidance, planning directives, and daily guidance letter.

(b) Conduct JIPOE in support of planning and execution. For further information on JIPOE, see JP 2-01.3, *Joint Intelligence Preparation of the Operational Environment.*

(c) Produce and maintain target intelligence products: TSAs, ETFs, target lists, and target intelligence assessments.

See CJCSI 3370.01, Target Development Standards, *and JP 2-0,* Joint Intelligence, *for more details on target intelligence.*

(d) Conduct target development including analysis, assessment, and documentation.

(e) Manage the CTL, and coordinate target vetting with the national IC.

(f) Nominate targets for engagement based on all-source fusion analysis in the JIOC and/or JISE, component intelligence organizations, and federated partners.

(g) Recommend targets for inclusion in the JIPTL in coordination with the JFE.

(h) Develop and maintain the JFC's NSL in coordination with the JFE, if established.

(i) Manage theater collection priorities via the joint collection management board and maintain appropriate collection operations management liaison with the components and national IC during execution. Coordinate collection in support of BDA, in accordance with collection priorities established by JFC.

(j) Manage PIRs.

(k) Serve as lead agent for overall coordination and management of target intelligence assessment within the JIOC or JISE in support of the JFE's assessment. Coordinate target intelligence assessment with the national IC.

(l) Provide target intelligence support to operations (e.g., target intelligence briefs, TM, BDA, and re-strike/future targeting recommendations).

(2) **Operations Directorate.** The J-3 assists the commander in the direction and control of operations, including the planning, monitoring, and completion of specific operations. In this capacity, the directorate is the lead for coordinating, integrating, and executing operations throughout the OA. The directorate also leads planning efforts for current and future operations. The flexibility and range of forces require close coordination and integration for effective unity of effort. When a JFE is established by the JFC, the J-3 will normally organize it and serve as a member. Operations directorate key functions and tasks generally include the following:

(a) Coordinate assessment activities at the JFC level, if directed.

(b) At the joint force level, the JOC is the focal point for synchronizing and integrating joint operations at the macro level. Joint targeting related duties are as follows:

1. Provide current operational assessment.

2. Develop and maintain operational ROE in coordination with other staff elements, including the staff judge advocate (SJA), agencies, and components.

3. Publish JFC's daily guidance, including objectives and targeting guidance.

4. In coordination with the component commanders, develop proposed placement of land and maritime force boundaries.

5. Provide targeting options, revised boundaries, and FSCM changes for future operations.

6. Nominate targets for inclusion in the JIPTL.

7. Deconflict and validate target nominations at the JFC level and higher, then prioritize and forward to the JFC for review, approval, and inclusion in the JIPTL, if the JFE has been formed.

8. Manage the JTL and RTL.

9. Nominate targets to the JFC based on the JTL and RTL.

10. Conduct CDE and post-engagement CDA.

11. Conduct MEA.

12. Initiate and coordinate the sensitive target approval and review process. See CJCSI 3122.06, *Sensitive Target Approval and Review (STAR) Process (classified instruction)*, for more information on STAR.

(c) Additionally, if directed by the JFC, the J-3 may act as lead agent for the JTCB or any similar group established to provide broad targeting oversight.

(3) **Logistics Directorate.** The J-4 identifies logistic issues unique or specific to targeting. Of particular interest, the J-4 compares the operational logistic plans to developing target lists to identify infrastructure and supplies required to support current and future operations and recommendations for the RTL or the desired degree of functionality required to support future operations.

(4) **Plans Directorate.** The J-5 performs the long-range or future joint planning responsibilities. Planning is conducted by various organizations in conjunction with appropriate staff elements. Specific joint targeting related duties normally performed by the J-5 are as follows:

(a) Publish JFC's planning guidance and planning directives.

(b) Identify possible branches and sequels.

(c) Develop, analyze, compare, and recommend COAs for JFC approval.

(d) Ensure overflight agreements or arrangements are in place with en route nations prior to commencement of operations.

(5) **SJA Responsibilities.** The SJA advises the JFC and other staff members on applicable international and domestic laws, legal custom and practice, multilateral and bilateral agreements with host nations, law of war issues, compliance and interpretation of the ROE, and other pertinent issues involved in joint target recommendations and decisions. SJA also reviews target selection and force assignment for legal compliance. The SJA also highlights potential associated issues, such as harmful environmental impacts or other consequences that should be considered in the targeting process. For additional information see Appendix A, "Legal Considerations in Targeting."

c. **Component Commander Responsibilities**

(1) With regard to joint targeting, the components' responsibilities normally include the following:

(a) Conduct target development.

(b) Nominate potential targets for inclusion in the JTL and RTL.

(c) Nominate targets for inclusion on the JFC's TST list and maintain their own lists of HPTs.

(d) Identify and nominate component-critical targets for JFC approval. Typically these are component nominations not approved as TSTs by the JFC.

(e) Provide appropriate representation to the JFE, JTWG, and JTCB, as well as other associated staff organizations when established.

(f) Consolidate and nominate deconflicted and prioritized targets for inclusion in the JIPTL.

(g) Provide timely and accurate reporting to the JFE in support of joint operations assessment.

(h) Provide tactical and operational assessment to the JFE for incorporation into the JFC's overall assessment efforts.

(i) Coordinate components' deliberate and dynamic targeting via established procedures. Examples include the liaison elements to the joint air operations center (JAOC)—battlefield coordination detachment, Marine liaison element, naval and amphibious liaison element, Air Force liaison element, tactical air planners, and the special operations liaison element. Direct cross-component coordination provides a means to rapidly coordinate dynamic targeting and avoid delays or possible miscommunication through liaison elements. Decentralized execution during dynamic operations (e.g., counterinsurgency and certain stability operations) is facilitated by conducting tactical air planning within lower, tactical-level units and commands. This level of integration will enable more flexible employment of airpower and also improve the fidelity of the joint force air component commander's (JFACC's) overall COP.

3. Federated Targeting Support

a. A federated target development and assessment process can provide reachback support to the JFC and component commanders during the joint targeting cycle. Under a collaborative federated architecture, the supported JFC works in conjunction with the National Joint Operations and Intelligence Center (NJOIC) and the Joint Staff (JS) J-2 using the intelligence planning process to establish federated targeting support partners and assessment reporting responsibilities between combatant commands in accordance with the supported CCDR's requirements. The supported CCDR may request that the JS facilitate in

identifying targeting support and assessment partners or work directly with other combatant commands to provide information to the JS regarding any inter-command targeting coordination. The JS J-2 normally ensures that federated targeting support requirements are addressed in contingency plans and orders and will assist in the dissemination of targeting support-related information between the federated partners and the supported JFC.

b. Many organizations provide critical support to joint targeting. Federation establishes partnerships and leverages appropriate expertise, allowing access to more actionable information than would otherwise be available to JFCs and their staffs. It also provides for an efficient division of labor and maximizes resources. Federation provides commands conducting operations access to organizations and individuals that are experts in their respective analytic areas. Federation allows supported commanders to request assistance from outside the theater in such areas as:

(1) **Target Development.** TSA, target analysis, and production of ETFs, to include supporting TM (e.g., graphics and specific data such as JDPIs).

(2) **Capability Analysis.** Weaponeering solutions, CDEs, and modeling and simulation products.

(3) **Assessment.** Physical damage/change, functional damage/change, and target system assessments.

c. **Roles and Responsibilities**

(1) Federated production planning takes place as part of the JFC's deliberate and crisis action planning. The J-2 conducts the intelligence planning process and develops the intelligence plan as annex B (Intelligence) to the contingency plan or OPORD. The J-2 assesses the joint force organic tasking, collection, processing, exploitation, and dissemination capabilities to support the JFC's selected operations through all phases of conflict. The joint force J-2 determines intelligence shortfalls and, working with the JS J-2 and combatant command (if required), begins to establish federated partnerships with other intelligence organizations to address these shortfalls. Federated partnerships are formal agreements between other theater JIOCs, Service intelligence centers, DOD intelligence agencies, reserve intelligence elements, or other non-DOD intelligence agencies to assist with the joint force J-2's intelligence responsibilities. These agreements form the basis for national intelligence functional support plans to appendix 4 (Targeting) to annex B (Intelligence) for contingency plans and OPORDs, as well as all-source intelligence analysis and production (e.g., linguistics and translation services, document and material exploitation, counterintelligence, human intelligence [HUMINT], geospatial intelligence [GEOINT], and signals intelligence [SIGINT] operations). Federation agreements and intelligence tasking lists are formalized during intelligence plan development. The NJOIC and the JS J-2 assist the joint force J-2 in establishing a federated targeting and assessment plan.

(2) Under the Defense Intelligence Analysis Program, there are designated responsible organizations that are the experts for production and maintenance of analysis relating to functional and topical capabilities and activities that typically concern planners,

such as counterterrorism, WMD, infrastructure capabilities, and orders of battle. This may also include social networks, national communication means, or other key information networks. Responsible organizations conducting target development should also be responsible for performing assessments on the same capabilities and targets.

(3) TSA, ETF, and JDPI production, weaponeering, CDEs, and physical and functional assessments are typically conducted in theater to the maximum extent possible. However, if federation is required, it should leverage the array of national agency, command, and service centers that are resourced and proficient in these areas. Specific targeting federation requirements are identified in command intelligence plans and supporting responsible organizations specified within related functional support plans. For both deliberate and crisis action planning, the NJOIC and the JS J-2 will work with the supported command, national agencies, and supporting service centers to form federated partnerships to synchronize use of available resources and capabilities.

d. **Intelligence Organizations and Supporting Agencies**

(1) In a federated environment, especially during crisis action planning, control is essential. The supported commander should establish a single point of contact for records and accountability. Careful administration of records can maximize the usage of analytical and productive resources available to support targeting. The following list of organizations includes potential partners in the production of target intelligence. It is neither all-inclusive, nor will all of these organizations necessarily support every combat operation.

(2) **DOD Organizations.** The primary organizations within DOD include the JS, NJOIC, DIA, National Security Agency (NSA), National Geospatial-Intelligence Agency (NGA), and the National Reconnaissance Office (NRO), as well as the combatant commands. Other organizations within the DOD that provide unique capabilities to joint targeting efforts include DTRA, Joint Information Operations Warfare Center (JIOWC), United States Cyber Command (USCYBERCOM), and JWAC. The JS J-2 leads the national IC for target vetting. The community of interest for target vetting should include, as a minimum, JS J-2 and J-3, NJOIC, DIA, NSA, NGA, DTRA, Central Intelligence Agency (CIA), and NRO.

(a) **Joint Staff J-2.** The JS J-2 is a unique organization in that it is a major component of DIA, which is a combat support agency, as well as a fully integrated element of the JS. The JS J-2 is the primary coordination element for national-level intelligence support to joint targeting. The JS J-2 functions as the lead agent for providing and coordinating national-level intelligence support to joint targeting. Specific JS J-2 targeting responsibilities include:

1. Providing Chairman of the Joint Chiefs of Staff (CJCS) and the JS J-3 with targeting, assessment, and technical support during deliberate and crisis action planning.

2. Providing target development and/or assessment federation through the JS Targeting and BDA Cell, if required.

3. Assisting the joint force in establishing, coordinating, and/or supporting federated intelligence operations, to include target development and assessment.

4. Assisting the joint force with coordination of IC target vetting.

5. Providing functional expertise on targeting and targeting-related issues undergoing JS, SecDef, and Presidential review. This includes, but is not limited to, command target lists, planning orders, warning orders, and STAR products.

6. Identifying targeting automation gaps for the targeting intelligence enterprise architecture.

For additional details, see JP 2-0, Joint Intelligence, *and JP 2-01,* Joint and National Intelligence Support to Military Operations.

(b) **Defense Intelligence Agency.** DIA provides significant all-source intelligence resources on a broad array of targeting issues. The Director of DIA is the Commander, Joint Functional Component Command for Intelligence, Surveillance, and Reconnaissance (JFCC-ISR) under United States Strategic Command (USSTRATCOM). DIA provides finished target intelligence to the President, SecDef, and JFCs, providing worldwide support to military operations. Analysts across the agency directly support targeting efforts by performing all-source target development, material production, TSA, and assessment.

For additional details, see JP 2-01, Joint and National Intelligence Support to Military Operations.

(c) **National Joint Operations and Intelligence Center.** The NJOIC is the primary conduit through which national-level target intelligence support is provided to the combatant commands and subordinate joint forces. The NJOIC and combatant command JIOCs leverage national intelligence assets and determine requirements through the Director of National Intelligence and IC representatives to combatant commands.

For more information on the NJOIC, see JP 2-01, Joint and National Intelligence Support to Military Operations.

(d) **National Security Agency.** NSA provides critical intelligence support to all phases of joint targeting. This support includes analysis of communications networks or other aspects of the information infrastructure, as well as operational SIGINT. Along with other affected members of the IC, NSA is responsible for providing the combatant command, JS J-2, and NJOIC with the intelligence gain or loss assessment, which is an evaluation of the quantity and quality of intelligence data lost if desired effects are created on a target. The NSA will keep the NJOIC, combatant command JIOCs, and other interested commands and agencies informed of agency activities that take place in each respective geographic CCDR's area of responsibility and/or JFC's OA.

(e) **National Geospatial-Intelligence Agency.** NGA is a combat support agency as well as a national intelligence organization. NGA is the primary source for

GEOINT analysis and products at the national level. In addition to the GEOINT support identified in JP 2-01, *Joint and National Intelligence Support to Military Operations*, and JP 2-03, *Geospatial Intelligence Support to Joint Operations*, NGA's mission supports national and homeland security, and advanced weapons and systems development.

1. NGA works with commercial imagery vendors to procure diverse, unclassified imagery.

2. NGA can provide GEOINT support to combatant commands via an NGA support team or as part of a national intelligence support team (NIST). NISTs are established at each combatant command headquarters. The NIST provides the full spectrum of NGA's GEOINT capabilities and is composed of a core cadre that includes geospatial analysts, imagery analysts, and staff officers. The NIST also has full connectivity with NGA to ensure reachback capability into NGA's total support effort.

3. Targeting support products use advanced geospatial-intelligence analytical techniques and technologies, geodetically-controlled source material, and refined mensuration techniques and data. NGA is a major contributor to the success of the military operations in supplying needed intelligence, mission specific data sets, and foundational data to support the targeting effort. NGA assists in providing foundational data for national and international contingency planning and post disaster event analysis.

4. NGA's imagery analysts play a critical role in federated target development and assessment. NGA informs the NJOIC, combatant command JIOCs, and other interested commands and agencies as analysis affecting targets of interest occur in each respective OA.

5. CJCSI 3505.01, *Target Coordinate Mensuration Certification and Program Accreditation*, establishes NGA as the accreditation authority for mensuration certification training programs under this instruction.

For additional information, see JP 2-03, Geospatial Intelligence Support to Joint Operations.

(f) **Defense Threat Reduction Agency.** DTRA provides special tools and expertise on WMD and helps safeguard the US and its allies by providing capabilities to eliminate, reduce, and/or counter these threats and/or mitigate their effects. DTRA's work covers a broad spectrum of activities, but is directly involved in the targeting process by making collateral damage and casualty estimations when employing weapons against facilities that may contain WMD. DTRA also provides target characterization and high fidelity weapons effects modeling to support physical and functional defeat of hardened and deeply buried targets. DTRA also verifies existing foreign controls of stockpiles of nuclear-related equipment and materials.

(g) **Joint Information Operations Warfare Center.** The JIOWC, a CJCS controlled activity under the JS J-3, assists JS in improving DOD ability to meet combatant command information-related requirements, improve development of information-related capabilities, and ensure operational integration and coherence across combatant commands and other DOD activities in accordance with CJCSI 5125.10, *Charter of the Joint*

Information Operations Warfare Center. The JIOWC provides federated support, including intelligence, to CCDRs, and can be tasked through the JS J-3. The JIOWC provides full spectrum IO to include human influence targeting support that can be tailored for integration into TSAs. JIOWC personnel often work directly with the supported command's targeting personnel from the earliest stages of the targeting process to ensure that IO considerations are fully integrated into targeting efforts.

For additional details, see JP 3-13, Information Operations.

(h) **United States Strategic Command.** Commander, United States Strategic Command (CDRUSSTRATCOM) supports joint targeting with assigned forces and capabilities including:

1. **United States Cyber Command.** USCYBERCOM (a subunified command under USSTRATCOM) plans, coordinates, integrates, synchronizes, and conducts activities to direct the operations and defense of specified DOD information networks and prepares to, when directed, conduct full-spectrum military cyberspace operations in order to enable actions throughout the operational environment, and facilitates US/Allied freedom of action in cyberspace while denying the same to our adversaries.

2. **Joint Functional Component Command for Intelligence, Surveillance, and Reconnaissance.** The JFCC-ISR provides oversight and management of DOD ISR and associated processing, exploitation, and dissemination (PED) capabilities by developing and synchronizing sourcing solutions to integrate national and theater ISR capabilities in support of combatant commands' requirements.

3. **Joint Functional Component Command for Space (JFCC-Space)** optimizes planning, execution, and force management (as directed by CDRUSSTRATCOM) of the assigned missions of coordinating, planning, and conducting space operations via the Joint Space Operations Center. Commander, JFCC-Space, will serve as the single point of contact for military space operational matters to plan, task, direct, and execute space operations, giving JFCs and subordinate commanders access to information and space capabilities beyond organic command resources.

For additional details, see JP 3-14, Space Operations.

4. **Joint Functional Component Command for Global Strike (JFCC-GS)** integrates all elements of military power in support of CDRUSSTRATCOM's global missions; synchronizes USSTRATCOM global deterrence capabilities and DOD capabilities to combat adversary WMD worldwide; provides integrated global strike capabilities to deter and dissuade threats and when directed, defeat adversaries through decisive joint global combat operations. JFCC-GS optimizes planning, execution, and force management for the assigned missions of deterring attacks against the US, its territories, and installations.

5. United States Strategic Command Center for Combating Weapons of Mass Destruction (SCC-WMD). The CDRUSSTRATCOM established the SCC-WMD to support CDRUSSTRATCOM as the lead combatant command for integrating and synchronizing DOD efforts to dissuade, deter, and prevent the acquisition, development,

transfer, or use of WMD and related materials and precursors by adversaries (i.e., to combat WMD). The SCC-WMD director is dual-hatted as the director of DTRA, enabling the SCC-WMD to leverage DTRA capabilities and assist DOD with preventing, deterring, detecting, locating, tracking, targeting, and mitigating the effects of WMD systems or threats.

For additional details, see JP 3-40, Combating Weapons of Mass Destruction.

6. **Joint Warfare Analysis Center.** JWAC provides the JS, combatant commands, JFCs, and other DOD and non-DOD agencies with precision targeting and deterrent options for selected networks and nodes. JWAC conducts engineering and modeling analysis, fused with scientific and intelligence data, to produce optimized target sets that support the JFC's objectives. As such, JWAC is a key provider of information supporting target development and assessment. It may also be a key provider of unique weaponeering cases and CDE analysis.

(i) Supporting combatant commands have valuable resources that may be brought to bear to support federated targeting. Supporting combatant commands may construct ETFs and TM, assist in JIPOE, derive mensurated coordinates, support federated assessments, or provide other federated targeting support as coordinated during deliberate or crisis action planning. Combatant command JIOCs support component command intelligence requirements and work within the joint component command structure to ensure a common solution to satisfy mission objectives.

e. **Non-DOD Organizations Supporting Joint Targeting.** Non-DOD organizations provide significant intelligence and operational support to joint targeting. The principal non-DOD organizations supporting joint targeting are the CIA, Department of State (DOS), and Department of Energy (DOE). The Departments of Justice, Treasury, Homeland Security, Transportation, Health and Human Services also provide peripheral support and intelligence to targeting efforts, but this section concentrates on the three that have the most direct bearing on joint targeting:

(1) **Central Intelligence Agency.** The CIA, through its target coordination group within its Associate Directorate of Military Affairs, works with the DOD on many issues relating to the targeting cycle.

(2) **Department of State.** Because of the DOS's worldwide network of diplomatic missions and posts staffed with representatives of numerous national agencies, the DOS is a key source of information during war or crises. The central point of contact within the DOS for intelligence, analysis, and research is the Bureau of Intelligence and Research (INR). INR produces intelligence studies and analyses, which have provided valuable information in support of targeting. Additionally, all-source reporting via Foreign Service channels at American embassies or consular posts is useful, particularly during the end state and commander's objectives, target development, and assessment phases of the joint targeting cycle.

(3) **Department of Energy.** DOE, through its national laboratories, provides significant chemical, biological, radiological, and nuclear process analysis data related to

counterproliferation facilities and installations. Additionally, DOE has resources to assist in consequence analysis prediction.

APPENDIX A
LEGAL CONSIDERATIONS IN TARGETING

1. Introduction

It is DOD policy that members of DOD comply with law of war during all armed conflicts, however such conflicts are characterized, and in all other military operations. International law considerations may directly affect all phases of the joint targeting cycle. Targeteers and planners must understand and be able to apply the basic principles of international law as they relate to targeting. This appendix supports the joint targeting cycle by providing a discussion of those aspects of international law that impact targeting decisions. In particular, this appendix discusses issues related to the basic principles of the law of war, ROE, general restrictions, precautions in attack, separation of military activities, special protections, national sovereignty, and environmental considerations.

2. International Law and the Law of War

Law of war is that part of international law that regulates the conduct of armed hostilities. It encompasses all international law for the conduct of hostilities binding on the US or its individual citizens, including treaties and international agreements to which the US is a party, and applicable customary international law. The law of war rests on fundamental principles of military necessity, unnecessary suffering, proportionality, and distinction (discrimination), which will apply to targeting decisions. It is DOD policy that law of war principles govern actions to be taken by military personnel in defense of US personnel, selected host nation personnel, and property and equipment. This applies to both lethal and nonlethal weapons. Some of the law of war principles to be considered during the planning process are military necessity, unnecessary suffering, distinction, and proportionality.

For detailed discussion, see JP 1-04, Legal Support to Military Operations.

3. Rules of Engagement

a. ROE are directives issued by competent military authority that delineate the circumstances and limitations under which US forces will initiate and/or continue combat engagement with other forces encountered.

b. ROE are the means by which the President, SecDef, and operational commanders regulate the use of armed force in the context of applicable political and military policy, and domestic and international law. ROE provides a framework that encompasses national policy goals, mission requirements, and the rule of law. All targeting decisions must be made in light of the applicable ROE. Supplemental measures enable a commander to obtain or grant those additional authorities necessary to accomplish an assigned mission.

c. **Standing Rules of Engagement (SROE).** The SROE establishes fundamental policies and procedures for US commanders and their forces during military operations and contingencies outside the US and its territories and outside US territorial seas and airspace. SROE also apply to air and maritime homeland defense missions conducted within the US

and its territories, or territorial seas, unless otherwise directed by SecDef. See CJCSI 3121.01, *Standing Rules of Engagement/Standing Rules for the Use of Force for US Forces*, for further discussion on SROE.

4. General Restrictions on Targeting

a. **Protection of the Civilian Population and Civilian/Protected Objects.** Civilian populations and civilian/protected objects may not be intentionally targeted, although there are exceptions to this rule. Civilian objects consist of all civilian property and activities other than those used to support or sustain warfighting capability. Acts of violence solely intended to spread fear among the civilian population are prohibited.

(1) **Direct Participation in Hostilities.** The protection offered civilians carries a strict obligation on the part of civilians not to take direct part in armed combat, become combatants, or engage in acts of war. Civilians engaging in combat or otherwise taking a direct part in combat operations, singularly or as a group, lose their protection against direct attack. Consult the servicing SJA when civilians are intermingled in the target are or used as human shields. For additional information on NSLs and CDE methodology reference CJCSI 3160.01, *No Strike and the Collateral Damage Estimation Methodology*. Joint force targeting during such situations is driven by the principle of proportionality, so that otherwise lawful targets involuntarily shielded with protected civilians may be attacked, and the protected civilians may be considered as collateral damage, provided that the collateral damage is not excessive compared to the concrete and direct military advantage anticipated by the attack. In cases where civilians voluntarily act as human shields, those civilians may be taking a direct part in hostilities and lose protection from attack. Such civilians need not be taken into account when assessing collateral damage under the law, though there may be diplomatic or strategic concerns that affect targeting decisions.

(2) **Requirement to Distinguish Between Military Targets and Civilian/Protected Objects.** It is necessary to distinguish between military targets and civilian/protected objects regardless of the legal status of the territory on or over which combat occurs. Purely civilian/protected objects or locations may not be intentionally targeted. However, due consideration under the principle of proportionality must be taken where such objects or locations are colocated with or are in close proximity to military targets. Further, the adversary's use of a civilian/protected object or location for military or combat purposes may result in the loss of protected status, rendering it subject to attack.

b. **Lawful Military Attacks.** Military attacks will be directed only at military objectives. In the law of war, military objective is a treaty term: "those objects which by their nature, location, purpose, or use make an effective contribution to military action and whose total or partial destruction, capture, or neutralization, under the circumstances ruling at that time, offers a definite military advantage."

(1) If the objective is not enemy military forces and equipment, the second part of the definition (that is, that the destruction of a target offers a definite military advantage) limits the first part (that is, it contributes to military action). Both parts must apply before an object that is normally a civilian object can be considered a military objective. In addition,

the definition deals only with intentional attack and not with damage to civilian objects incidental to the lawful attack of military objectives.

(2) **Nature.** Nature refers to the type of object, for example, equipment used as military transports, and facilities used as C2 centers or communication stations.

(3) **Location.** Location includes areas that are militarily important because they must be captured from or denied to an enemy, or because the enemy must be made to retreat from them. An area of land, such as a mountain pass, or a like route through or around a natural or man-made obstacle, may be a military objective. A town, village, or city may become a military objective, even if it does not contain military objectives, if its seizure is necessary (e.g., to protect a vital line of communications) or for other legitimate military reasons.

(4) **Purpose or Use.** Purpose means the future intended or possible use, while use refers to its present function. The potential dual use of a civilian object, such as a civilian airport, also may make it a military objective because of its future intended or potential military use. The connection of some objects to an enemy's war-fighting, war-supporting, or war-sustaining effort may be direct, indirect, or even discrete. A decision as to classification of an object as a military objective and allocation of resources for its attack is dependent upon its value to an enemy states war-supporting or war-sustaining effort (including its ability to be converted to a more direct connection), and is not solely reliant on its overt or present connection or use.

(5) **Nature, Location, Purpose, or Use.** The words nature, location, purpose, or use allow wide discretion, but are subject to qualifications stated later in the definition of effective contribution to military action and the offering of a definite military advantage through its seizure or destruction. There does not have to be a geographical connection between effective contribution and military advantage. Attacks on military objectives in the enemy rear, or diversionary attacks, away from the area of military operations as such (the contact zone), are lawful.

(6) **Military Action.** Military action is used in the ordinary sense of the words, and is not intended to encompass a limited or specific military operation.

(7) **Circumstances Ruling at the Time.** The phrase in the circumstances ruling at the time is essential. If, for example, enemy military forces have taken up position in a building that otherwise would be regarded as a civilian object, such as a school, retail store, or museum, the building has become a military objective. The circumstances ruling at the time that is, the military use of the building permits its attack, if attacking the building would offer a definite military advantage. If enemy military forces abandon the building, however, the change of circumstances may preclude its treatment as a military objective.

(8) **Definite.** Definite means a concrete and perceptible military advantage, rather than one that is merely hypothetical or speculative. A military commander may regard this requirement as met in seeking to seize or destroy objects with a common purpose in order to deny their use to the enemy. An example is the attack of all bridges on lines of

communication the enemy is using, or may use as alternate lines of communication, in order to reinforce or resupply his or her forces.

(9) **Military Advantage.** Military advantage refers to the advantage anticipated from an attack when considered as a whole, and not only from its isolated or particular parts. The advantage need not be immediate. For example, the military advantage in the attack of an individual bridge may not be seen immediately (particularly if, at the time of the attack, there is no military traffic in the area), but can be established by the overall effort against bridges in order to isolate enemy military forces on the battlefield. Similarly, military advantage is not restricted to tactical gains, but is linked to the full context of war strategy. It may involve a variety of considerations, including the security of the attacking force.

5. Separation of Military Activities

a. **General Information.** The law of war gives civilians protection from attack during armed conflict. Civilians may lose this protection based upon specific warlike acts. Once civilians take a direct part in hostilities, they become lawful targets for such time as they directly participate in the hostilities.

(1) The parties to a conflict are obligated to remove their own civilian population, individual civilians, and civilian objects from areas or locations where military objects are located.

(2) Under the law of war, safety zones or demilitarized zones may be created by or between the warring parties. While the creation of such zones rarely occurs, if created, they must only be used for their intended purposes. Examples are open cities, civilians, prisoner of war (POW) camps, hospitals, etc.

(3) Similarly, the law of war requires that combatants wear uniforms, insignia, or other clearly identifiable markings. Facilities such as hospitals and POW camps must be clearly marked as required by the Geneva Conventions. To the maximum extent feasible, the law of war requires combatants to locate their military facilities away from protected civilian objects, such as hospitals and schools.

b. **Result of Failure to Separate Military Activities.** When an adversary places military objectives in or near a populated area, this failure will weaken effective protection of their nearby civilian population and constitutes a violation of the law of war.

6. Precautions in Attack

a. When conducting military operations, positive steps and precautions must be taken to avoid excessive incidental civilian casualties and damage to civilian property. The extent of danger to the civilian population varies with the type of military target attacked, terrain, weapons used, weather, and civilian proximity.

b. Threats to civilians depend on engagement techniques, weapons used, nature of conflict, commingling of civilian and military objects, and armed resistance encountered. Precautions include the following:

(1) **Military Objectives.** Planners should ensure that military objectives, and not civilian objects, are prosecuted. Sound target intelligence enhances military effectiveness and target validity.

(2) **Minimization of Civilian Casualties.** Unless otherwise prohibited by ROE, attacks are not prohibited against military targets even if they might cause incidental injury or damage to civilians or civilian objects. In spite of precautions, such incidental casualties are inevitable during armed conflict.

(a) Collateral damage to civilian objects or persons must not be excessive in relation to the concrete and direct military advantage expected to be gained. If the attack is directed against dual-use objects that are legitimate military targets but also serve a legitimate civilian need (e.g., electrical power or telecommunications), then this factor must be carefully balanced against the military benefits when making a proportionality determination.

(b) Required precautionary measures are reinforced by traditional tenets of military doctrine, such as surprise, economy of force, and concentration of effort. Warnings must be given when circumstances permit (e.g., any degradation in attack effectiveness is outweighed by the reduction in collateral damage because advanced warning allowed the adversary to get civilians out of the target area).

(3) **Cancellation or Suspension of Attacks.** Target intelligence may be found to be faulty before an attack is started or completed. If it becomes apparent that a target is no longer a lawful military objective, the attack must be cancelled or suspended.

7. Special Protection

a. Intentional and direct attacks on civilians or civilian objects are prohibited. However, the incidental injury or death of civilian personnel or damage to civilian objects at or near a military target is not an automatic cause for redress. Special protections are discussed below.

b. **Wounded and Sick Personnel, Medical Units, Hospitals, and Medical Transport.** Under the law of war, the following are protected:

(1) Fixed hospitals and mobile medical establishments.

(2) Medical personnel and chaplains.

(3) Ambulances and clearly marked medical transport vehicles.

(4) Air ambulances and clearly marked medical aircraft.

(5) Hospital ships and, where possible, sick bays of warships.

(6) Wounded, sick, and shipwrecked persons, military or civilian.

c. **Distinctive Medical Emblems.** The Red Cross, Red Crescent, and Red Crystal Emblem are the three internationally recognized protected emblems or symbols for designating protected medical activities and clearly marked ambulances and medical vehicles. Some countries use other distinctive emblems, such as a Red Cedar tree by Lebanon and the Red Star of David by Israel. Although not recognized in the Geneva Conventions, when parties to the conflict are placed on notice that another party is using a unique emblem to mark its medical facilities, such facilities must be given due respect as such. The key purpose of the Geneva Conventions is not the emblem, but rather the notice that a facility is a protected medical installation. Governments and combatants have a duty to identify these places with distinctive and visible signs.

(1) These emblems may be used to mark civilian and military medical personnel, ambulances and medical transport vehicles, and hospitals. The International Committee of the Red Cross and national Red Cross societies also use these symbols.

(2) The Geneva Convention Relative to the Protection of Civilian Persons in Time of War authorizes use of symbols to mark zones established for the wounded and sick. Safety zones for wounded, sick, aged, expectant mothers, children under 15, and mothers with children under 7 are to be marked with an oblique red band on a white background.

d. **Religious, Cultural, and Charitable Buildings and Monuments.** As long as buildings and monuments devoted to religion, art, charitable purposes, or historical sites are not used for military purposes, they may not be targets. Governments and combatants have a duty to identify such places with distinctive and visible signs. When these buildings are used for military purposes, they may qualify as military objectives. Lawful military targets located near protected buildings are not immune from attack, but the principle of proportionality must be carefully applied. The Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict (1954) established a royal blue and white shield as the distinctive emblem for protected cultural property in war.

e. **Prisoner of War Camps.** POWs may not be targets, be kept in a combat zone, or be used to render an area immune from military operations. When military considerations permit, the letters "PW" or "PG" clearly visible from the air identifies POW camps. The use of POW camp markings for any other purpose is prohibited.

8. Environmental Considerations

a. Joint operations have the potential to adversely affect natural and cultural resources. Consistent with operational requirements, action should be taken to identify these resources and develop plans to prevent or mitigate adverse effects. These include historic, archeological, and other natural resources in the OA. Attacks against installations containing dangerous natural forces—including dams, dikes, and nuclear power facilities—must be carefully considered for potentially catastrophic collateral damage.

b. It is generally lawful under the laws of war to cause collateral damage to the environment during an attack on a legitimate military target. However, the commander has an affirmative obligation to avoid unnecessary damage to the environment to the extent that

it is practical to do so consistent with mission accomplishment. To that end and as far as military requirements dictate, methods and means of attack should be employed with due regard to the protection and preservation of the natural environment. Destruction of the environment not required by military necessity and carried out wantonly is prohibited.

9. Role of the Staff Judge Advocate

Due to the complexity and extent of international law considerations involved in the joint targeting cycle, the SJA or their representative must be immediately available and should be consulted at all levels of command to provide advice about law of war compliance during planning and execution of exercises and operations. Early involvement by the SJA will improve the targeting process and can prevent possible violations of international or domestic law.

For additional details, see JP 1-04, Legal Support to Military Operations.

Intentionally Blank

APPENDIX B
TARGETING AUTOMATION

1. Overview

a. Targeting automation is the use of computer systems, applications, and database technologies to speed the accurate development, recording, dissemination, and usage of information that systematically links objectives and guidance with targeting and its assessment. Targeting automation is decision support technology. To optimize support to the joint force, commanders should work to automate the steps in the targeting cycle, where possible, in support of deliberate and dynamic targeting while continuing to emphasize due diligence in analysis. This appendix addresses current targeting automation capabilities necessary for contingency and crisis action planning. It details how targeting automation occurs within the joint targeting cycle and concludes with a summary discussion of implications for targeting automation.

b. Automating targeting has historically been a challenge. The definition of what is considered a target by automation systems and databases has evolved from only fixed facilities to include equipment, individuals, organizations, and cyberspace targets. Similarly, requirements for targeting automation have been redefined by a need to accommodate a variety of weapon and capability options, ranging across a variety of means to create lethal or nonlethal effects.

c. At the same time, computer science has rapidly advanced through multiple generations of operating systems and an exponential increase in computing capacity, storage, and network bandwidth. Moreover, the business processes of targeting have adapted to incorporate the lessons learned from numerous operations and exercises as well as the evolution of targeting doctrine and the national use of military power.

d. The challenges of targeting automation are twofold: to ensure automation occurs in a standardized manner, allowing communications between targeting entities to remain clear, and to avoid the temptation to rely on automation for targeting expertise. Although automation provides speed of function, it is still incumbent on the targeteer to fully comprehend foundational targeting concepts.

2. Automating the Joint Targeting Process

a. The essence of targeting automation is its ability to assist a targeteer in developing, saving, and disseminating the details of targeting decisions. Targeting automation underpins the orderly accumulation and flow of information that ‘connects the dots’ of the joint targeting process. Joint targeting is a series of phased activities that plan, execute, monitor, and assess the application of targeting to achieve military objectives. It is applied in numerous contexts ranging from contingency planning through tactical execution.

b. Intelligence, operations, and plans must work together as a cohesive team in a collaborative environment to establish a common targeting capability. The J-2, J-3, J-5, force structure, resource, and assessment directorate of a JS, interagency and multinational

communities each present unique challenges to establishing a common targeting capability that can serve the needs of all these communities and their "customers." Currently, many parts of the targeting process are automated, although no one single tool automates the entire process. The process of targeting occurs on many levels and in many locations simultaneously, yet no single interoperable solution has emerged or been established. To serve such a diverse and distributed client base, targeting automation must conduct efficient bidirectional data flow among intelligence centers, users of both classified and unclassified computer systems, multinational partners, targeting tools, and, most significantly, support data exchange and interoperability. To extend the targeting enterprise to the edge user base, targeting automation must also be able to accommodate producers and consumers of information on low bandwidth, message-based environments. The following sections detail considerations associated with automating elements of joint targeting:

(1) **End State and Commander's Objectives.** During contingency planning, combatant commands typically provide objectives, guidance, desired effects, and intent to their staff and subordinate forces. Targeteers and intelligence analysts then select the appropriate target sets and map them electronically to the supported objective(s). In this phase, targeteers search for targets in databases (e.g., the modernized integrated database [MIDB]) and portals via manual and automated searches.

(2) **Entity Identifiers.** Entity identifiers are a unique alphanumeric convention that can be assigned to entities for the purposes of unique identification. One example of an entity identifier is the widely recognized basic encyclopedia (BE) numbering system. Currently, many C2 systems can accommodate current standards for target numbering (BEs, unit identifiers, candidate target identifiers, etc.) as defined by DIA and the IC.

(3) **Target Development and Prioritization.** To fully develop targets, targeteers access web-based intelligence repositories to perform in-depth research and target development. Where sufficient information is not already available, intelligence analysts submit requests for information and collection requirements to fill these gaps in non-TST situations.

(a) **Target Systems Analysis.** In order to understand the roles particular targets play within a system, targeteers conduct TSA to model the existence of broader, functionally-related target systems. Automation is often used to record the structure of target systems and model various functional impacts on them. Automated models are also used to study the cascading effects and coupling of target systems to show how they could affect one another (e.g., the effect of dropping the electrical grid on POL production).

(b) **Electronic Target Folders.** Targeteers normally use web-based services to create an ETF for each target. The ETF web-service acts as both a production interface to intelligence databases (e.g., MIDB) and as a means for users to query for produced ETFs. It is important to ensure that ETF data is duplicated across networks to ensure widest dissemination. Using the electronic identification as a query input, consumers request ETFs, which are compiled dynamically via the ETF web-service employing data pulls from community databases, and image repositories. Standardized metadata recognized across the intelligence and joint fires community should be used to facilitate the automated exchange of

whole or partial ETFs. ETFs should be shared with targeting intelligence systems as well as targeting C2 systems and with the J-3.

(c) **Target Materials.** TM are standardized products that capture graphic and textual presentations of target intelligence and other information. Target graphics are softcopy or hardcopy imagery annotated with pertinent information, titling, and other reference data. TM can also take the form of textual descriptions of target information (e.g., collateral damage concerns, target significance) and geospatial features that outline or depict key aspects of a target. TM are an integral part of the ETFs and are normally produced by joint forces or their assigned, attached, and supporting forces during target development and target engagement. Automation assists with the generation, storage, and presentation of TM.

(d) **Modernized Integrated Database.** The MIDB Data Services Environment is the DOD's authoritative, all-source repository of worldwide general military and targeting intelligence. MIDB information is maintained in support of the combatant commands, Services, combat support agencies, United States Government departments and agencies, and international intergovernmental organizations. The MIDB's architecture consists of a group of component databases that continuously replicate worldwide between hundreds of nodes on a variety of networks and between different security levels. This architecture provides the infrastructure for data exchange between intelligence and operational consumers from the national to tactical levels. MIDB provides a baseline source of intelligence on installations, facilities, military forces, population concentrations, C2 structures, and equipment in addition to target details. Because of MIDB's replication architecture and business rules designed to protect data integrity, MIDB is the national database for all target lists, NSLs, and textual data in ETFs.

(4) **Capabilities Analysis.** For target-weapon pairings covered by JMEM or other weaponeering programs, during capabilities analysis, weaponeering information for a particular target is entered into an automated weaponeering system. Automated weaponeering programs utilize approved weapons data, delivery parameters, and accuracies to provide optimal weapon and platform (or capability) pairings to minimize forces required to meet the commander's objectives. This data is then automatically tagged and linked to associated ETFs. Weaponeering data is stored in MIDB weapons tables. The data is replicated out to other MIDB servers and is thus available to the wider targeting community.

(5) **Mission Execution**

(a) Once the targets are approved for action, targeteers pass the approved target list electronically to C2 systems within the joint force and to multinational partners as specified by the multinational architecture. Prior to execution, the tasking orders are disseminated electronically to the appropriate planning cells.

(b) **Dynamic Targeting.** During execution, some targets will be identified as emerging or fleeting targets and will require expedited development to prepare for execution in time. These targets must be prosecuted more quickly than those prosecuted using deliberate targeting. Consequently, automating and expediting the flow of information, from

nomination, through development and execution, and then back to the targeteers, becomes even more critical in these instances.

(6) **Combat Assessment (CA).** At the tactical and operational levels, assessment cells develop a task list assigning specific targets or target sets to federated assessment partners. Assessment analysts responsible for specific target sets will draft assessment reports. All operational reports are imported and parsed electronically to populate prescribed assessment report formats. When the assessment reports are approved by the supported command, they are disseminated via machine-readable message format or free text reports. Machine readable dissemination enables the automatic update of databases. Changes in databases may then be reflected dynamically in the ETFs and various operating pictures. Updates and changes in the automated databases enable the next phases of the joint targeting cycle.

3. Implications for Targeting Automation

a. Authoritative, national target intelligence data is stored in MIDB. In addition, the entire joint targeting enterprise should seamlessly share well-understood, standardized representations of target intelligence and data and not rely on local databases. Using national databases as a foundation, targeteers also rely on automation tools and processes to facilitate rapid exchange of target intelligence and data among various echelons and organizations. Automation assists in transforming targeting information into a variety of forms to support warfighters, building cases for target engagement, or collecting information on observed damage. To provide value, targeting automation tools and processes must be responsive to multiple organizations and aggressive timelines, as well as provide accurate and consistently repeatable presentations of data.

b. In summary, automation is a critical enabler allowing targeteers to be more accurate and efficient in all phases of the joint targeting process with reliable target intelligence, but automation is not a replacement for human thinking or proactive communications. Stand-alone systems create a break in the flow of intelligence or targeting data and sub-optimize the enterprise and waste resources. Ideally, targeting automation should facilitate real-time, virtual, collaborative, and multilayered security analysis and planning. The key components to targeting automation are **common target data standards** and **data interoperability.** These components, in turn, enhance **information sharing** while providing for the **worldwide replication of targeting information** between all users, to include multinational partners.

APPENDIX C
COMPONENT TARGETING PROCESSES

1. Component Commander Inputs to Joint Targeting Cycle

Component commanders are instrumental to the joint targeting cycle by assisting the JFC in formulating guidance, controlling many of the collection assets, engaging targets, and providing feedback as part of the assessment process. These functions remain constant regardless of how the joint force is organized (functional or Service components). Coordination and communication between components, theater analysts, and federation partners can be especially critical in regard to TSTs.

2. Four-Phase Targeting Process: Land and Maritime Components

a. Land and maritime force commanders normally use an interrelated process to enhance joint fire support planning and interface with the joint targeting cycle known as the decide, detect, deliver, and assess (D3A) methodology. D3A incorporates the same fundamental functions of the joint targeting cycle as the F2T2EA process and functions within phase 5 of the joint targeting cycle. The D3A methodology facilitates synchronizing maneuver, intelligence, and fire support.

b. Through JIPOE, the commander builds a picture of the adversary, or threat model, and the operational environment, which may include neutral and multinational partners. The threat model includes an order of battle, COP, and other products. Through these efforts, the commander, staff, and components identify what threat capabilities the adversary may possess.

c. The commander decides upon a scheme of maneuver, organizes available collection and fire support assets, and promulgates command guidance. Upon execution of the collections plan, ISR assets detect HPTs and firing units deliver fires on them in accordance with the commander's guidance. Assessment reporting allows the staff to continually assess adversary and friendly capabilities.

(1) In the **decide phase**, target categories are identified for engagement. Fire support, intelligence, and operations personnel decide what targets to look for, where the targets can be found in the operational environment, who can locate those targets, and how the targets should be attacked based on the commander's intent and the desired end state. Integrating component targeting processes, especially in terms of component coordination and communication, is critical for all targeting. Together, they determine the available assets to be allocated and additional assets required. They also identify channels needed to provide acquisition information on a real-time basis.

(2) The **detect phase** is designed to acquire the targets selected in the decide phase. In this phase, target acquisition assets and agencies execute the intelligence collection plan and focus on specific areas of interest. Targets must be monitored after detection (especially mobile targets). Tracking is an essential element of the detect function. Tracking priorities

are based on the commander's concept of the operation and targeting priorities. Detection and tracking are executed through use of a collection plan.

(3) The **deliver phase** involves engaging specific targets to create effects in accordance with the commander's guidance.

(4) The **assess phase** is the estimate of damage or other effects resulting from the use of military force, either lethal or nonlethal, against a target. Assessment requires extensive coordination between operational and intelligence elements to be effective, timely, and accurate. A key element of the assess function is to decide whether or not the target requires reattack in order to achieve results specified by the commander.

d. Not all operations are targeting, and not all targeting is conducted within operations. Fire support planning and joint operation planning, which the commander and staff use to arrive at and to execute tactical decisions, are related. JOPP is designed to direct staff functions to produce a coordinated plan or OPORD to accomplish the mission in accordance with the commander's concept of the operation, intent, and scheme of maneuver. Fire support planning within the decision-making process includes the decide phase in the four-phase surface targeting cycle.

See JP 5-0, Joint Operation Planning*, for more details on JOPP.*

3. Six-Stage Joint Air Tasking Cycle

a. For targeting in general, the JFACC uses both deliberate and dynamic targeting. To integrate targeting into the ongoing battle rhythm, the JFACC normally uses the joint air tasking cycle (see Figures C-1 and C-2). An example of an effective battle rhythm to support the planning process can be seen in Figure C-3.

b. A joint air tasking cycle is used to provide for the efficient and effective employment of the available joint air capabilities. The cycle provides an iterative process for the planning, coordination, allocation, and tasking of joint air missions, within the JFC's intent. It accommodates changing tactical situations and JFC guidance, as well as requests for support from other component commanders. A timely joint ATO is critical, as other joint force components conduct their planning and operations based on a prompt, executable joint ATO, and they are dependent on its information. There are usually at least five joint ATOs at any given time: one (or more) being assessed for future action, one in execution (today's plan), one in production (tomorrow's plan), one in the master air attack planning and target development (the day after tomorrow's plan), and one in strategy development (examining objective and guidance for 72 hours and beyond). The joint air tasking cycle begins with the JFC's air apportionment process and culminates with the assessment of previous missions.

For additional details on the joint air tasking process, refer to JP 3-30, Command and Control for Joint Air Operations.

c. The joint air tasking cycle stages are related to deliberate targeting. The approach is similar: a systematic process that matches available capabilities with targets to achieve operational objectives. However, they are not the same since joint targeting may be executed

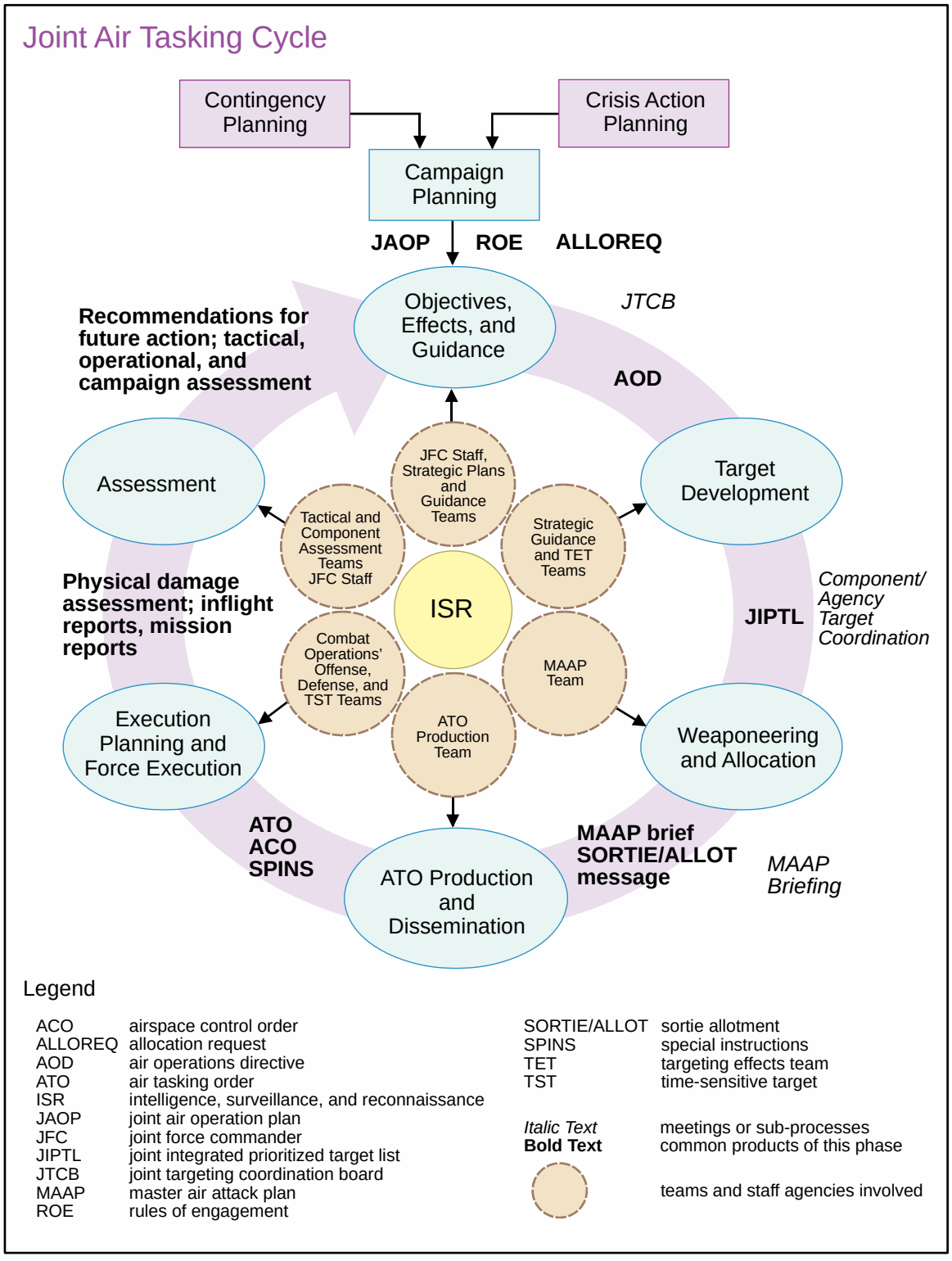


Figure C-1. Joint Air Tasking Cycle

apart from the joint air tasking cycle and contains functions, processes, and procedures that are performed in peacetime, both before and after conflicts.

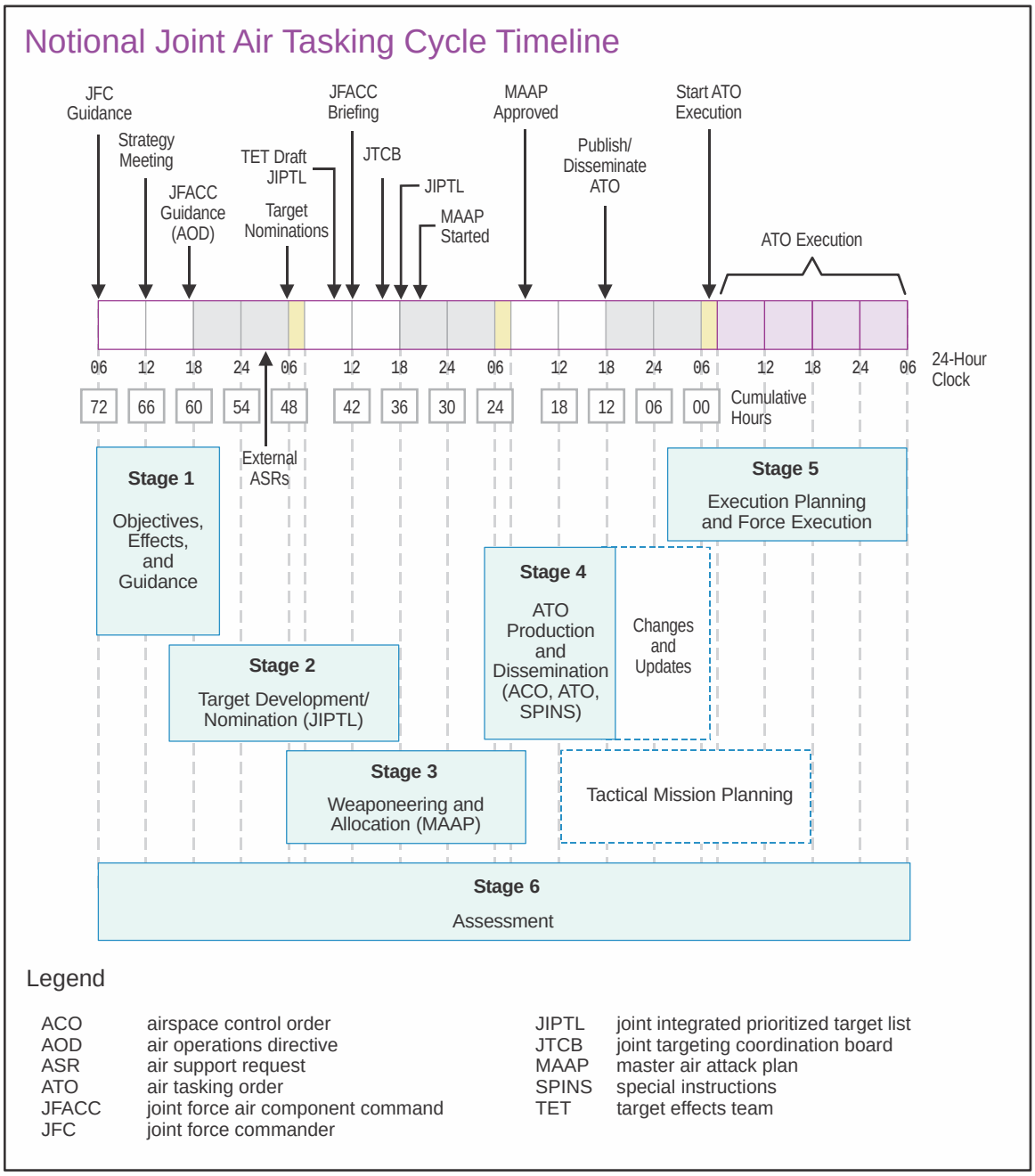


Figure C-2. Notional Joint Air Tasking Cycle Timeline

(1) Stage 1, objectives, effects, and guidance, requires JFC and component commanders to collaborate about the use of joint air assets to establish guidance for the duration of that air battle plan. The JFACC provides the strategy division of the JAOC with broad guidance based on the JFC's priorities and intent, coordination with other component commanders, and the JFACC's own objectives. This is normally transmitted in an air operations directive (AOD) and guides the planning for the duration of that joint air tasking cycle. The AOD includes prioritized tactical tasks that support objectives and must be distributed to other components since it affects prioritizing targets. Components should influence the writing of the AOD and with selecting and prioritizing the tactical tasks. It is

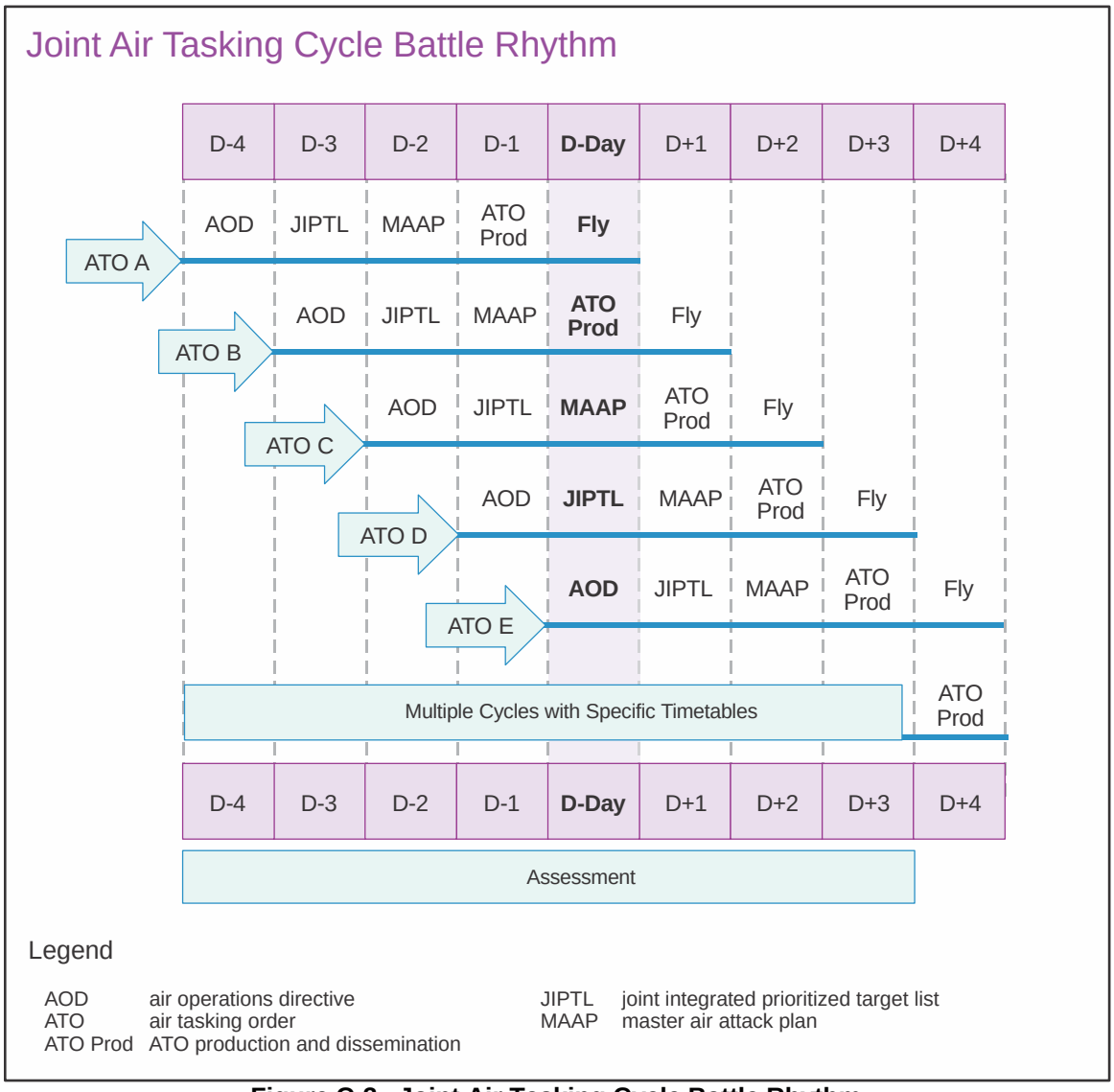


Figure C-3. Joint Air Tasking Cycle Battle Rhythm

also essential that other components provide inputs to the JFACC's air apportionment recommendation to the JFC because it influences the strategy to task methodology used during the joint air tasking cycle. If a JFACC is not used, this process will be conducted for each Service component performing air operations.

(2) Stage 2 is target development. The specific objectives received during stage 1 are used to focus this effort. Targets are nominated to support the objectives and priorities provided by the JFC. In accordance with the JFC's objectives and component targeting requirements, the JFACC (or Service component commander if a JFACC is not used) conducts daily joint air planning for the employment of available capabilities and/or forces. If the JFC designates an air component to merge other joint forces TNLs and develop the draft JIPTL, the end product of the target development stage is the draft JIPTL that supports the JFC's prioritized objectives and conforms to guidance. In any case, the air component uses this process to develop the air component's TNL for inclusion in the draft JIPTL.

(3) Stage 3 is weaponeering and allocation. Targeting personnel quantify the expected results of lethal and nonlethal actions against prioritized targets. The JIPTL constructed during the previous phase, and approved by the JFC, provides the basis for weaponeering assessment activities. The final prioritized targets are then included in the master air attack plan (MAAP). The resulting MAAP is the plan of employment that forms the foundation of the joint ATO.

(4) Stage 4 is ATO production and dissemination. After the MAAP is approved by the JFACC, detailed preparations continue by the JAOC combat plans. The joint air tasking cycle applies targeting to air-specific operations. Products include the ATO, special instructions, and the airspace control order. The airspace control authority's and area air defense commander's instructions must be provided in sufficient detail to allow components to plan and execute all missions tasked in the joint ATO.

(5) Stage 5 is execution planning and force execution. The JFACC (or Service component commander if a JFACC is not used) directs the execution or deconfliction of all capabilities or forces made available for a given joint ATO. The JFACC has the authority to redirect those forces for which the JFACC has operational or tactical control. For all others, the affected component commander must approve all requests for redirection of direct support air assets. Affected component commanders will be notified by the JFACC upon redirection of joint sorties previously allocated in the joint ATO for support of component operations. Aircraft or other capabilities or forces not apportioned for tasking, but included in the joint ATO for coordination purposes, will be redirected only with the approval of the respective component commander. Components execute the joint ATO, as tasked, and recommend changes to the JAOC as appropriate, given emerging JFC and component requirements.

(6) Stage 6 is assessment. Assessment is conducted at all levels of the joint force. The JFC should establish a dynamic system, including an assessments cell, to support assessment for all components. Normally, the joint force operations officer will be responsible for coordinating assessment, assisted by the joint force intelligence officer. The assessment cell evaluates the effectiveness of operations to achieve command objectives, answering the questions: "Are we doing things right?" and "Are we doing the right things?"

4. Special Operations Component Targeting

Special operations targeting and mission planning are interrelated functions and processes; neither is accomplished in isolation of the other. The targeting process supports planning by providing commanders and planners with a methodology, direct access, and detailed information concerning targets as expressed within the commander's objectives, guidance, and intent. Special operations targeting is accomplished in both deliberate and crisis action planning. It is founded in joint targeting principles but has many unique and SOF-specific products and processes.

For additional information, see JP 3-05, Special Operations.

5. Nuclear Targeting

Nuclear targeting and mission planning are interrelated functions and processes; neither is accomplished in isolation of the other. The targeting process supports planning by providing commanders and planners with a methodology, direct access, and detailed information concerning targets as expressed within the commander's objectives, guidance, and intent. Nuclear targeting is accomplished in both deliberate and crisis action planning.

6. Integration of Electronic Warfare in Joint Targeting

Electronic warfare activities conducted in joint operations should be coordinated through JFC's electronic warfare staff or joint electronic warfare cell (if established). These staffs should integrate their efforts into the JFC's targeting cycle to coordinate nonlethal and lethal fires in strike operations.

For more information, see JP 3-13.1, Electronic Warfare.

7. Integration of Cyberspace Operations in Joint Targeting

Cyberspace targeting is conducted by JFCs with the mission and authority to create offensive effects in or through cyberspace after having deconflicted them with the commander, USCYBERCOM in accordance with current policy. Targeting for cyberspace generally follows the processes and procedures used for traditional targeting but must account for the unique nature of cyberspace as compared to the traditional physical domains and the unique requirements for matching cyberspace capabilities to targets in cyberspace. USCYBERCOM does much of this targeting work and develops targets in support of its organic planning efforts and as recommendations for the integration of cyberspace targeting efforts with the combatant commands.

For more information, see JP 3-12, Cyberspace Operations.

8. Integration of Information Operations in Joint Targeting

a. IO is the integrated employment during military operations of information-related capabilities in concert with other lines of operation to influence, disrupt, corrupt, or usurp the decision making of adversaries and potential adversaries while protecting our own. IO can be employed as a means of target engagement and may be conducted at all levels from tactical through national strategic. IO planners consider all instruments of the adversary's national power to determine how best to achieve stated objectives by affecting information and information systems. Successful integration of information-related capabilities into the targeting process is fundamental to the success of the campaign. IO may call for targeting adversary human decision processes (human factors), information, and information systems used to support decision making or adversary morale with a variety of lethal and nonlethal means. The selection of IO actions should be consistent with national objectives, applicable international conventions, ROE, and other guidance.

b. The joint force IO cell is another source for target requirements and should be closely integrated to deconflict redundant targeting, consider intelligence gain versus loss

assessments, and provide inputs to the RTL and NSL. IO planners will coordinate and integrate IO at all levels. Most destructive IO attacks will either support or be considered strategic attacks or interdiction operations. Therefore, planners, operators, and targeteers should carefully consider prospective IO target nominations when making apportionment decisions.

For further information, see JP 3-13, Information Operations.

9. Joint Targeting Process within Deliberate and Crisis Action Planning

Deliberate and crisis action planning are the mechanisms with which a JFC translates national military objectives into a viable COA that is supported by detailed planning. This is the context within which the joint targeting process occurs. Despite the outward differences, deliberate and crisis action planning are essentially the same processes completed under different circumstances. Joint targeting remains the same within these processes, with shifting emphasis based upon the situation.

For further information, see JP 5-0, Joint Operations Planning.

10. Monitoring and Coordinating Target Execution

a. **Target Awareness.** The operation center director, located at JIOC, JOC, and/or component command centers, monitors the execution of current operations and maintains SA of planned, executed, and emerging (especially time-sensitive) targets.

(1) Starting with the current OPORD and the JIPTL (or other prioritized target list), the operation center director must have knowledge of each target, its importance, when it is scheduled for engagement, the responsible component, the asset, and the desired outcome. The operation center director should also have knowledge of target vulnerability and susceptibility to various joint force capabilities.

(2) The knowledge required above enables the operation center director to better understand the significance of a report indicating that an engagement on a particular target has been unsuccessful or of a report of a newly located priority target. In the latter situation, the operation center director should recommend to the commander whether the new target would require actions at the expense of another one already scheduled for engagement. This advice should also analyze the impact on friendly operations (including consequences for taking no action versus the impact on ongoing and planned joint force actions). Decisions to modify missions or direct attacks that deviate from the OPORD should be based on the commander's guidance, the theater strategy, and the campaign objectives to be accomplished. These decisions normally can only be made with an understanding of priorities of each component's targeting efforts throughout the operation.

b. **Emerging Targets.** The operation center director should know what forces are available for tasking, as well as their capabilities to engage an emerging target (e.g., on-call target, target of opportunity, or TST). They should also understand joint fires and how joint fire support and joint operations are integrated. As shortfalls develop, component commanders normally prioritize the weight of effort, reconsider the adequacy of the

CONOPS or, if the new target or mission is of sufficient priority, request or direct diversion of committed assets. During this process, the commanders normally depend upon the operation center director to provide recommendations as to the most appropriate force and/or weapon system as well as the best targets to defer. For example, when the current operations center becomes aware of a newly located tactical surface-to-air threat in the vicinity of a close air support mission, the operation center director may determine that an available Army tactical missile system is the most effective and responsive asset to engage that target. To provide these inputs to the commanders, the operation center director must be familiar with weapons effects and specific weapons support requirements, as well as deconfliction requirements between systems to prevent friendly fire.

(1) **Weapons System Capabilities.** The operation center director monitors ongoing operations and normally selects the best available joint force capability to apply against emerging targets. The operation center director must also have an understanding of the weapons capabilities of all joint force components, to include nonlethal assets. The operation center director should normally understand the capabilities of delivery platforms. For example, the B-52 may be the most capable aerial platform for delivering land and sea mines, while the Tomahawk land attack missile may be the best weapon for engaging early warning sites.

(2) **Support Requirements.** In addition to knowing what constitutes the best available weapons to apply against an emerging target, the operation center director should understand the support requirements to deliver the fires of choice on the target. Support requirements include not only such joint force capabilities as suppression of enemy air defenses and refueling, but also how much time is required to change a direct fire mission or ordnance load.

Intentionally Blank

APPENDIX D
THE TARGETING ASSESSMENT PROCESS

1. The Purpose of Assessment

a. Assessment is used to measure progress of the joint force toward mission accomplishment. Commanders continuously assess the operational environment and the progress of operations, and compare them to their initial vision and intent. Commanders adjust operations based on their assessment to ensure tasks are completed, effects created, objectives achieved, and the desired end state reached. The assessment process is continuous and directly tied to the commander's decisions throughout planning, preparation, and execution of operations. Staffs monitor key factors that can influence operations and provide the commander timely information needed for decisions. The assessment process helps the commander and staff decide what and how to measure to determine progress toward accomplishing a task, creating an effect, or achieving an objective. Commanders and their staffs determine relevant assessment actions and measures during planning. They consider assessment measures as early as mission analysis, and include assessment measures and related guidance in commander and staff estimates. They use assessment considerations to help guide operational design because these considerations can affect the sequence and type of actions along lines of operations. Phase 6 (Targeting Assessment) is a continuous process that measures the overall effectiveness of employing joint force targeting capabilities during military operations. It supports the commander's decisions within the joint targeting cycle and contributes to the overall operation or campaign assessment process.

b. During execution, commanders continually monitor progress toward accomplishing tasks, creating effects, and achieving objectives. Assessment actions and measures help commanders adjust operations and resources as required and make other decisions to ensure current and future operations remain aligned with the mission and desired end state. Normally, the joint force J-3, assisted by the J-2, is responsible for coordinating assessment activities at the JFC's level. Various elements of the JFC's staff use assessment results to adjust both current operations and future planning.

c. During conflict, the US will use all instruments of its national power against the full spectrum of adversary systems—political, military, economic, social, infrastructure, information, and others. Organizationally diverse, yet operationally interconnected, instruments of national power must be synchronized to achieve the desired objectives. Assessment must parallel this multidimensional approach. Friendly, adversary, and neutral diplomatic, informational, and economic actions applied in the operational environment can impact military actions and objectives. Conversely, military actions will influence the employment and effects of diplomatic, informational, and economic instruments of national power in the operational environment (see Figure D-1). The commander should plan to assess the results of these actions. This typically requires collaboration with other agencies such as elements from DOS or the Department of Homeland Security, national intelligence agencies, multinational partners, intelligence sources, and other combatant commands to generate a complete and accurate assessment.

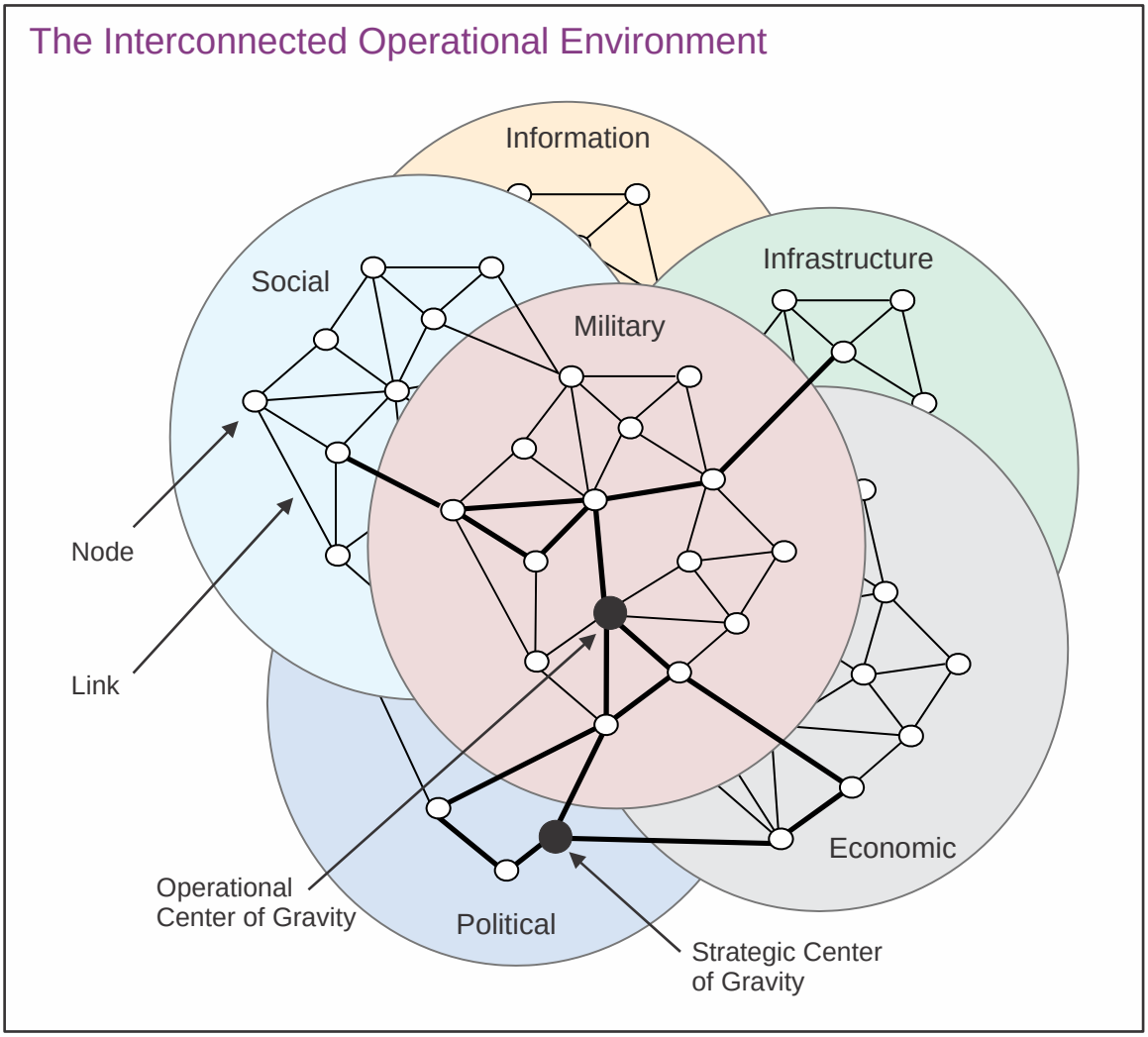


Figure D-1. The Interconnected Operational Environment

d. **Continual Reassessment.** Commanders and staffs derive relevant assessment measures during the planning process and reevaluate them continuously throughout preparation and execution. They consider assessment measures during mission analysis, refine these measures in the JFC's initial planning guidance and in commander and staff's estimates, wargame the measures during COA development, and include MOEs and MOPs in the approved plan or order.

2. Assessment and the Levels of War

a. **Assessment occurs at all levels and across the range of military operations.** Even in operations that do not include combat, assessment of progress is just as important and can be more complex than traditional CAs. As a general rule, the level at which a specific operation, task, or action is directed should be the level at which such activity is assessed and the appropriate level commander should be responsible for assessing it, if possible. To do this, JFCs and their staffs consider assessment ways, means, and measures during planning, preparation, and execution. This properly focuses assessment and collection at each level,

reduces redundancy, and enhances the efficiency of the overall assessment process (see Figure D-2).

b. **Operational and Strategic-Level Assessment.** Assessment at the operational and strategic levels typically is broader than at the tactical level (e.g., CA) and uses MOEs that support strategic and operational mission accomplishment. Strategic- and operational-level assessment efforts concentrate on broader tasks, effects, objectives, and progress toward the end state. In general, assessments should answer two questions: "Is the joint force doing things right?" "Is the joint force doing the right things?" The JFC also can use MOEs to determine progress toward success in those operations for which tactical-level CA ways, means, and measures do not apply. Strategic- and operational-level assessment helps the JFC adjust planning and execution as necessary, and also provides the President and SecDef a way to measure progress toward national-strategic objectives.

c. **Tactical-Level Assessment.** Tactical-level assessment typically uses MOPs to measure task accomplishment. The results of tactical tasks are often physical in nature, but also can reflect the impact on specific functions and systems. Tactical-level assessment may include assessing progress by phase lines; destruction of enemy forces; control of key terrain, people, or resources; and security or reconstruction tasks. Assessment of results at the tactical level helps commanders determine operational and strategic progress, so JFCs must have a comprehensive, integrated assessment plan that links assessment activities and measures at all levels.

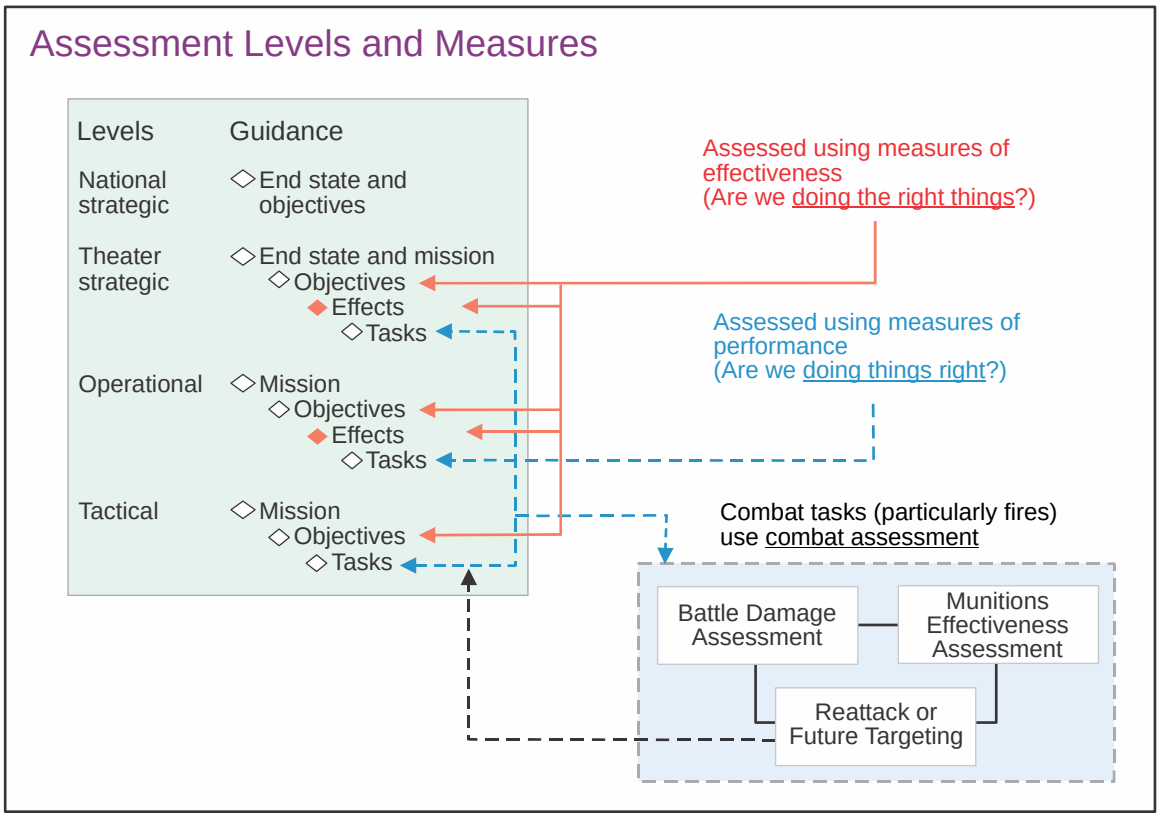


Figure D-2. Assessment Levels and Measures

d. **Combat Assessment.** Within the assessment phase is a subcomponent called CA that is focused on determining the results of engaging a target with lethal or nonlethal capabilities or weapons, and thus, is an important component of joint fires and the joint targeting process. To conduct CA, it is important to fully understand the linkages between the targets and the JFC's objectives, guidance, and desired effects. **CA is composed of three related elements: BDA, MEA, and reattack recommendations or future targeting.**

(1) **Battle Damage Assessment.** BDA is an element of CA and is the estimate of target damage or effect which is based on physical damage assessment, change assessment, and functional damage assessment, as well as target system assessment, resulting from the application of lethal and nonlethal capabilities. BDA must be treated as an integral component of the joint targeting process and must not be conducted as a separate, post-attack activity. BDA planning should occur early in the joint targeting cycle to improve effectiveness and timeliness of BDA. Effective BDA requires a coordinated and integrated effort between joint force intelligence and operations functions. BDA is composed of physical damage/change assessment, functional damage/change assessment, and target system assessment, typically taking a three-phased approach to proceed from a micro-level examination of the damage or effect inflicted on a specific target element, to ultimately arriving at macro-level conclusions regarding the functional outcomes created in the target system. The three-step analytical process (physical damage/change assessment, functional damage assessment, target system assessment) is reported via a three-phased BDA reporting process: phase 1, BDA Initial Target Assessment; phase 2, BDA Supplemental Target Assessment; and phase 3, BDA Target System Assessment.

(a) **BDA Phase I, Physical Damage/Change Assessment**

1. A physical damage assessment is an estimate of the quantitative extent of physical damage (through munitions blast, fragmentation, or fire damage) to a target element based on observed or interpreted damage. Physical damage assessment is the physical damage equivalent to change assessment. This post-attack target analysis should be a coordinated effort among combat units, component commands, the subordinate joint force, the combatant command, primary theater BDA cell, national agencies, supporting commands, and the JIOC. Some representative sources for data necessary to make a physical damage assessment include the ATO or MAAP, mission reports (MISREPs), aircraft cockpit video, weapon systems video (WSV), visual/verbal reports from ground spotters or combat troops, controllers or observers, artillery target surveillance reports, SIGINT, HUMINT, GEOINT, measurement and signature intelligence (MASINT), technical intelligence, or open-source intelligence.

2. Key factors in determining the extent of physical damage are target type and size: Was the attacked target/element a piece of equipment or a building or bunker? How hard is the target? How big is the target?

3. To quantify physical damage, the assessment is conducted against one or more specific aimpoints, usually containing a critical element. Destruction of an entire building may not be required if the stated objective is to destroy a specific portion of the building based on the function (critical element) conducted within that section of the

building. Assessments of NO DAMAGE or DESTROYED are easily defined and understandable. The difficulty comes in subjective judgment specifying the level of damage between these two extremes. Intermediate damage definitions are dependent on target type and the ease of assessing damage. For example, in buildings, LIGHT, MODERATE, and SEVERE damage is determined by the percent of the target area (building) damaged. In contrast, when assessing armored vehicles, only the DAMAGED category is used. Likewise, runways have more specific categories that include CRATERED, CUT, and INTERDICTED. In assessing physical damage, consider whether the enemy may have used camouflage, concealment, and deception techniques to either minimize or amplify the apparent extent of physical damage, obviously distorting the assessment.

4. In determining the level of physical damage, a confidence level is assigned to the assessment. The three terms used to identify confidence are CONFIRMED, PROBABLE, and POSSIBLE. Detailed information and definitions of these confidence levels, along with physical damage definitions for specific target elements, may be found in the DIA *Battle Damage Assessment (BDA) Quick Guide*.

5. Collateral damage is also assessed and reported during BDA. Collateral damage is unintentional or incidental injury or damage to persons or objects that would not be lawful military targets in the circumstances ruling at the time. Such damage is not unlawful so long as it is not excessive in light of the overall military advantage anticipated from the attack.

6. Initial reports that contribute to physical damage assessment are often based primarily on visual observation of the target and usually derived from a single source. Further analysis continues with all-source reporting resulting in further supplemental reports. Inputs come from aircrew MISREPs and debriefs, WSV, imagery, and other sources. The unit controlling the weapons system, as well as intelligence collection units that can see the damage, develop bomb damage assessment reports (BDAREPs). The command designated BDA cell is responsible for collating reports and making the final assessment.

(b) **BDA Phase II, Functional Damage/Change Assessment**

1. Functional damage assessment is an estimate of the degradation or destruction of the functional/operational capability of a target to perform its intended mission. Functional assessments are inferred from the assessed physical damage and all-source intelligence information. This assessment must include an estimation of the time required for recuperation or replacement of the target's function. BDA analysts need to compare the desired effect for the attack with the current status of the target to determine if the targeting effect was created.

2. Functional damage assessment reviews all physical damage assessments and amplifies the initial analysis. A key step in functional damage assessment is identifying and establishing the installation's or target's critical elements and their interconnectivity. If destroyed, a critical element will preclude an installation or system from functioning. Additionally, the targets normal level of operation must be quantified. If it is an industrial target, what does it produce? If it is a military installation, what basic

purpose does it serve? Without these pre-attack assessments, wartime functional damage assessments may be inadequately stated. Ideally, BDA will be performed by, or with, the input of the targeteer who originally targeted the facility/equipment.

3. An estimate of the recuperation time required for the enemy to repair or reconstitute should always be part of a BDAREP. This time (expressed in hours, days, etc.) is an estimate based upon type, degree, and location of the physical damage. Factors used to calculate recuperation times include the availability of spares, backup or alternate replacement functions, operational tempo, expected duration of hostilities, and the enemy's determination to repair or replace. This requires the integration of theater and national source information. The theater JIOC has access to these sources and provides significant support. SIGINT, GEOINT, and MASINT sources are also useful.

4. Often, BDA analysts have relatively little information by which to make a functional damage assessment. Therefore, it is important for analysts to verify that the target critical elements were properly identified, that weapons effects were reasonably predicted beforehand, and that all available and relevant intelligence information is considered in the assessment. It is also important to document the referenced information sources and provide a confidence level associated with the assessment.

5. Developing appropriate indicators and collection plans ahead of time is crucial to timely assessments, especially if the damage cannot be directly observed. These indicators allow analysts to rapidly identify the critical elements, what sources are capable of collecting the required information, best collection time, what specific change in activity the sensor should collect, and how this change in activity determines the target's functional status. This facilitates BDA collection planning since optimal collection times are more easily determined well in advance. Examples of such indicators and collections plans may be found in various DOD agency products, such as the JWAC's functional damage assessment guides for electric power industry, lines of communications, POL industry, and telecommunications networks.

(c) **BDA Phase III, Functional Assessment of the Higher-Level Target System**

1. Functional assessment of the higher-level target system is a broad assessment of the overall impact on an adversary target system relative to the targeting objectives established. These assessments may be conducted at the combatant command or national-level by fusing all phases I and II BDA reporting on targets within a target system.

2. BDA phase III produces a target system assessment for the theater of operations. SMEs compile the functional damage assessments of the individual targets within a system and apply it to the current system analysis or enemy order of battle. Although different weapons are involved, the process described above applies to BDA of targets attacked with nonlethal fires as well. SIGINT will often be the most capable collection asset for determining the actual functional damage to the target in these cases.

(d) **Federated BDA.** Federated BDA allows the supported CCDR to establish preplanned partnerships to share responsibilities and leverage appropriate expertise from outside the theater. The CCDR may request federated BDA support from multiple commands and agencies through JS J-2. Upon approval, each agency in the partnership will be assigned specific targets, either by individual target sets/categories or by geographic region. JS J-2 will work with the requesting command to form the best federated partnership based on available resources and capabilities.

(e) **BDA Reports.** The results of the BDA process are provided in three phases of BDAREPs:

1. Phase I reporting contains an initial physical damage assessment of hit or miss based usually upon single source data. Reporting timeline: 1-2 hours after receipt of information. Reporting format: structured free text, United States message text format (USMTF), or voice report during system connectivity problems.

2. Phase II reporting builds upon the phase I initial report and is a fused, all-source product addressing a more detailed description of physical damage, an assessment of the functional damage, inputs to target system assessment (phase III), and any applicable MEA comments. When appropriate, a reattack recommendation is also included. Reporting timeline: 4-6 hours after receipt of information. Reporting format: USMTF.

3. Phase III reporting contains an in-depth assessment of the higher-level target system. When appropriate, a reattack recommendation or targeting nomination is also included. This report combines the analyses from the phases I and II reports, plus all-source information. Reporting timeline: daily. Reporting format: structured free text (if sent via USMTF, use the general free text narrative format).

(2) **Munitions Effectiveness Assessment.** MEA is an element of CA as the assessment of the military force applied in terms of the weapons system and munitions effectiveness to determine and recommend any required changes to the methodology, tactics, weapon system, munitions, fusing, and/or weapon delivery parameters to increase force effectiveness. The purpose of MEA is to compare the actual effectiveness of the task to the anticipated effectiveness calculated during phase 3 capability analysis of the joint targeting cycle. MEA is conducted concurrently and interactively with BDA. MEA is primarily the responsibility of operations with required inputs and coordination from the IC. The purpose of MEA is to compare the actual effectiveness of the means employed to their anticipated effectiveness calculated during the capability analysis phase of the joint targeting cycle. MEA may be completed rapidly for the purpose of providing recommendations for a weapon or tactic change or may continue for years following the cessation of hostilities for development of updated/improved weaponeering methodologies. The sources that contribute to effective BDA also contribute to effective MEA.

(3) **Future Targeting and Reattack Recommendations.** Future target nominations and reattack recommendations merge the picture of what was done (BDA) with how it was done (MEA) and compares the result with predetermined MOEs that were developed at the start of the joint targeting cycle. The purposes of this phase in the process

are to determine degree of success in achieving objectives and to formulate any required follow-up actions, or to indicate readiness to move on to new tasks in the path to achieving the overall JFC objectives.

(4) BDA requires more than post-strike imagery. Although in some situations a single data source may be adequate to perform BDA, in most cases, the use of "all-source" information is critical to providing accurate BDA. The following sources assist in conducting comprehensive BDA:

(a) GEOINT, including tactical and/or unmanned aerial vehicle platforms.

(b) In-flight reports and MISREPs containing both executed ATO and pilot BDA.

(c) Aircraft/weapon system video and/or data.

(d) SIGINT.

(e) HUMINT, to include direct reporting by forward air/ground observers, tactical air control parties, SOF, etc.

(f) MASINT.

(g) Open source intelligence.

(h) End of MISREPs for surface-to-surface fires.

(i) Indigo reports for cruise missiles.

(j) Technical intelligence.

(k) Counterintelligence.

For additional information on the BDA process, see DIA publications DI-2820-4-03, Battle Damage Assessment (BDA) Quick Guide, *and DI 2800-2-YR,* Critical Elements of Selected Generic Installations (Critical Elements Handbook).

e. **Estimated Assessments.** The current CA process relies on phased BDA analysis to assess combat effectiveness. If no data is available for a target, the assessment is usually left blank or unknown. Based on the BDA scenario and commander's guidance, analysts may try to provide a prediction of the estimated damage for both individual targets and target systems based on the initial predictions as place holders for the probabilities of success, a process facilitated by the precision and reliability of many modern weapon systems. As the operation is executed, the predictions for individual target elements are updated continually with the latest available information on the action taken. Such updates might be final, definitive BDA or it may be information, which, while not definitive, helps refine the estimate (e.g., confirmation that a joint direct attack munitions successfully dropped through the clouds on the programmed coordinates). Combining latest information on individual

target elements means an assessment cell can provide an estimate of success refined with the latest available information. As more definitive data becomes available, the assessment becomes less of an estimate and more of an actual assessment of what was or was not achieved.

(1) The overall goal of this approach is to provide the JFC with the best estimated assessment of the progress of the joint operation at any given time, using all information available at that time. For lethal strikes, this means using assessed effects where BDA is available. It then predicts the effects for strikes where BDA is not yet available. Such predictions should be based on historical data on strike performance and analyses of likely success given the specific planned weapon/target pairings (e.g., JMEM data). Finally, assessors should continuously refine effects predictions based on the success of intermediate steps in the execution chain. This means, even where final BDA is not available for a given strike, assessors should update the prediction of likely strike success as soon as it is known whether the planned task was actually performed, update again as soon as it is known whether the weapon successfully released or launched, and update again as soon as it is known whether the weapon successfully guided to or engaged the target.

(2) A key aspect of this approach is that it suggests a need for a smooth transition between assessing a plan prior to execution, when only predictions are available, to assessing a plan in the midst of execution, when partial BDA information is available, through assessing success at the end of an operation approaching full BDA availability. Estimation can also facilitate undertaking higher level assessments of more complicated, interdependent systems.

(3) Estimating higher level effects based on estimates of what happens at specific target elements has advantages and limitations. A key advantage is that, by using the approach discussed earlier, assessors will have a basis for estimating what happens at specific target elements. This estimate will be based on a combination of prediction and, when available, execution data. These estimated effects on specific target elements can then serve as the input to the model of the target system in estimating system level effects. A key limitation is that the fidelity of the estimate diminishes the further one gets from the initial, direct effects of the action or task accomplishment.

3. Assessment Metrics and Measurements

a. **Assessment Metrics.** The staff should develop metrics to determine if operations are properly linked to the JFC's overall strategy and the larger hierarchy of operational and national objectives. These metrics evaluate the results achieved during joint operations. During target development, personnel should develop metrics for each specific target. These metrics should indicate the intended effects(s) on the target as a result of actions(s) against it. Example: Destruction of Critical Node 1 will degrade Target A by at least 50 percent. These metrics may be refined during the weaponeering process, as the choice of weapons, fuzes, and delivery tactics may further influence effects. These metrics should be posted in an ETF or provided in another format to the assessment team prior to post-strike assessment, so they can measure the intended performance against the target. Metrics can either be objective (using sensors or personnel to directly observe damage inflicted) or subjective (using indirect

means to ascertain results), depending on the metric applied to either the objective or task. Both qualitative and quantitative metrics should be used to avoid unsound or distorted results. Metrics can either be inductive (directly observing the operational environment and building SA cumulatively) or deductive (extrapolated from what was previously known of the adversary and operational environment). Success is measured by indications that the effects created are influencing enemy, friendly, and/or neutral activity in desired ways among various target systems.

b. **Measurement Types.** The assessment process uses MOPs and MOEs to evaluate progress toward task accomplishment, effects creation, and objective achievement. Well-devised measures can help the commanders and staffs understand the causal relationship between specific tasks and desired effects.

For more information on MOEs and MOPs, see Appendix D, "Assessment," of JP 5-0, Joint Operation Planning.

4. Post-Combat Assessment

a. The joint targeting cycle does not end when combat operations cease. Following combat operations, the JFC should collect all available information that feeds both BDA and MEA analysis. This data collection effort is essential to:

(1) Evaluate the full extent of target physical and functional damage.

(2) Determine the true effectiveness of employed delivery systems and munitions.

(3) Critique and improve the assessment analysis and reporting process.

b. Although there are many different types of data to collect for follow-on analyses, generally they can be grouped into the areas of operational data, intelligence information, and MEA exploitation. Collection of operational or mission-specific data includes all executed mission type orders (to include all executed ATOs), all MISREPs, and copies of aircraft or WSV at a minimum. Information to collect includes both national and tactical intelligence gathered during the operations, as well as continued post-conflict damage assessment and analysis of reconstruction activities.

c. The optimal method to analyze munitions effects is to deploy MEA exploitation teams (engineers, tacticians, and intelligence analysts) to conduct on-site analyses of damage from the ground-level perspective. The goal of these operations is to bridge the knowledge gap existing between the levels of damage/change observed through sensors and the actual physical and functional damage/change accomplished to the adversary targets and target systems. Due to the perishable nature of critical data at targeted sites, planning for ground truth exploitation needs to be fully integrated in OPLANs and in OPLANs in concept format for immediate execution following combat operations. If feasible, initial exploitation could be accomplished during operations by ground forces.

APPENDIX E
REFERENCES

The development of JP 3-60 is based upon the following primary sources.

1. General

Geneva Conventions.

2. Chairman of the Joint Chiefs of Staff Publications

a. CJCSI 3121.01B, *Standing Rules of Engagement/Standing Rules for the Use of Force for US Forces (U).*

b. CJCSI 3122.06C, *Sensitive Target Approval and Review (STAR) Process (U).*

c. CJCSI 3160.01, *No Strike and the Collateral Damage Estimation Methodology (U).*

d. CJCSI 3370.01, *Target Development Standards (U).*

e. CJCSI 3505.01A, *Target Coordinate Mensuration Certification and Program Accreditation (U).*

f. JP 1, *Doctrine for the Armed Forces of the United States*.

g. JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*.

h. JP 1-04, *Legal Support to Military Operations*.

i. JP 2-0, *Joint Intelligence*.

j. JP 2-01, *Joint and National Intelligence Support to Military Operations.*

k. JP 2-01.3, *Joint Intelligence Preparation of the Operational Environment*.

l. JP 2-03, *Geospatial Intelligence Support to Joint Operations*.

m. JP 3-0, *Joint Operations*.

n. JP 3-01, *Countering Air and Missile Threats*.

o. JP 3-02, *Amphibious Operations*.

p. JP 3-03, *Joint Interdiction*.

q. JP 3-05, *Special Operations*.

r. JP 3-05.1, *Joint Special Operations Task Force Operations.*

s. JP 3-09, *Joint Fire Support.*

t. JP 3-09.3, *Close Air Support.*

u. JP 3-12, *Cyberspace Operations.*

v. JP 3-13, *Information Operations.*

w. JP 3-13.1, *Electronic Warfare.*

x. JP 3-13.2, *Military Information Support Operations.*

y. JP 3-13.4, *Military Deception.*

z. JP 3-14, *Space Operations.*

aa. JP 3-30, *Command and Control for Joint Air Operations.*

bb. JP 3-31, *Command and Control for Joint Land Operations.*

cc. JP 3-32, *Command and Control for Joint Maritime Operations.*

dd. JP 3-33, *Joint Task Force Headquarters.*

ee. JP 3-40, *Combating Weapons of Mass Destruction.*

ff. JP 3-52, *Joint Airspace Control.*

gg. JP 4-0, *Joint Logistics.*

hh. JP 5-0, *Joint Operation Planning.*

3. Multi-Service Publications

a. FM 3-09.34/MCRP 3-25H/NTTP 3-09.2.1/AFTTP(I) 3-2.59, *Multi-Service Procedures for Killbox Employment.*

b. ATP-3-60.1/MCRP 3-16D/NTTP 3-60.1/AFTTP 3-2.3, *Multi-Service Tactics, Techniques, and Procedures for Dynamic Targeting.*

4. Service Publications

a. Army Doctrine Publication 3-0, *Unified Land Operations.*

b. FM 3-09, *Doctrine for Fire Support.*

c. ATP 3-60.1, *Dynamic Targeting.*

d. FM 3-93, *Theater Army Operations.*

e. NTTP 3-03.1, *Volume 1, Tomahawk Land Attack Missile (TLAM-C/D/E) Employment Manual.*

f. NTTP 3-03.1, *Volume 2, Tomahawk Land Attack Missile (TLAM) Launch Platform Weapons Systems and Tactics.*

g. NTTP 3-13.1, *Theater and Campaign Information Operations.*

h. Navy Warfare Publication (NWP) 3-03.4, *Naval Strike and Air Warfare.*

i. NWP 3-01.1, *Naval Strike and Fires Support.*

j. Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine, Organization and Command.*

k. AFDD 3-03, *Counterland.*

l. AFDD 3-1, *Air Warfare.*

m. AFDD 3-60, *Targeting.*

n. AFDD 3-70, *Strategic Attack.*

o. Air Force Instruction 13-1AOC, Vol. 3, *Operational Procedures—Air Operations Center.*

p. AFTTP 3-3 AOC, *Operational Employment of Air Operations Center.*

q. Naval Warfare Development Command Technical Manual 3-03.1-11, *Maritime Dynamic Targeting.*

Intentionally Blank

APPENDIX F
ADMINISTRATIVE INSTRUCTIONS

1. User Comments

Users in the field are highly encouraged to submit comments on this publication to: Joint Staff J-7, Deputy Director, Joint and Coalition Warfighting, Joint and Coalition Warfighting Center, ATTN: Joint Doctrine Support Division, 116 Lake View Parkway, Suffolk, VA 23435-2697. These comments should address content (accuracy, usefulness, consistency, and organization), writing, and appearance.

2. Authorship

The lead agent for this publication is the US Air Force. The JS doctrine sponsor for this publication is the J-3.

3. Supersession

This publication supersedes JP 3-60, 13 April 2007, *Joint Targeting*.

4. Change Recommendations

a. Recommendations for urgent changes to this publication should be submitted:

TO: JOINT STAFF WASHINGTON DC//J7-JEDD//

b. Routine changes should be submitted electronically to the Deputy Director, Joint and Coalition Warfighting, Joint and Coalition Warfighting Center, Joint Doctrine Support Division, and info the lead agent and the Director for Joint Force Development, J-7/JEDD.

c. When a JS directorate submits a proposal to the CJCS that would change source document information reflected in this publication, that directorate will include a proposed change to this publication as an enclosure to its proposal. The Services and other organizations are requested to notify the JS J-7 when changes to source documents reflected in this publication are initiated.

5. Distribution of Publications

Local reproduction is authorized, and access to unclassified publications is unrestricted. However, access to and reproduction authorization for classified JPs must be IAW DOD Manual 5200.01, Volume 1, *DOD Information Security Program: Overview, Classification, and Declassification,* and DOD Manual 5200.01, Volume 3, *DOD Information Security Program: Protection of Classified Information.*

6. Distribution of Electronic Publications

a. JS J-7 will not print copies of JPs for distribution. Electronic versions are available on JDEIS at https://jdeis.js.mil (NIPRNET) and http://jdeis.js.smil.mil (SIPRNET), and on the JEL at http://www.dtic.mil/doctrine (NIPRNET).

b. Only approved JPs and joint test publications are releasable outside the combatant commands, Services, and JS. Release of any classified JP to foreign governments or foreign nationals must be requested through the local embassy (Defense Attaché Office) to DIA, Defense Foreign Liaison/IE-3, 200 MacDill Blvd., Joint Base Anacostia-Bolling, Washington, DC 20340-5100.

c. JEL CD-ROM. Upon request of a joint doctrine development community member, the JS J-7 will produce and deliver one CD-ROM with current JPs. This JEL CD-ROM will be updated not less than semi-annually and when received can be locally reproduced for use within the combatant commands and Services.

GLOSSARY

PART I—ABBREVIATIONS AND ACRONYMS

AFDD	Air Force doctrine document
AFTTP(I)	Air Force tactics, techniques, and procedures (instruction)
AOD	air operations directive
ATI	asset target interaction
ATO	air tasking order
ATP	Army tactical publication
BDA	battle damage assessment
BDAREP	bomb damage assessment report
BE	basic encyclopedia
C2	command and control
CA	combat assessment
CCDR	combatant commander
CDE	collateral damage estimation
CDRUSSTRATCOM	Commander, United States Strategic Command
CIA	Central Intelligence Agency
CID	combat identification
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff instruction
COA	course of action
COG	center of gravity
CONOPS	concept of operations
COP	common operational picture
CTL	candidate target list
D3A	decide, detect, deliver, and assess
DIA	Defense Intelligence Agency
DOD	Department of Defense
DOE	Department of Energy
DOS	Department of State
DTRA	Defense Threat Reduction Agency
ETF	electronic target folder
F2T2EA	find, fix, track, target, engage, and assess
FM	field manual (Army)
FSCM	fire support coordination measure
GEOINT	geospatial intelligence
HPT	high-payoff target
HUMINT	human intelligence
HVT	high-value target

IC	intelligence community
INR	Bureau of Intelligence and Research (DOS)
IO	information operations
ISR	intelligence, surveillance, and reconnaissance
J-2	intelligence directorate of a joint staff
J-3	operations directorate of a joint staff
J-4	logistics directorate of a joint staff
J-5	plans directorate of a joint staff
JAOC	joint air operations center
JDPI	joint desired point of impact
JFACC	joint force air component commander
JFC	joint force commander
JFCC-GS	Joint Functional Component Command for Global Strike
JFCC-ISR	Joint Functional Component Command for Intelligence, Surveillance, and Reconnaissance (USSTRATCOM)
JFCC-Space	Joint Functional Component Command for Space (USSTRATCOM)
JFE	joint fires element
JIOC	joint intelligence operations center
JIOWC	Joint Information Operations Warfare Center
JIPOE	joint intelligence preparation of the operational environment
JIPTL	joint integrated prioritized target list
JISE	joint intelligence support element
JMEM	Joint Munitions Effectiveness Manual
JOC	joint operations center
JOPP	joint operation planning process
JP	joint publication
JPG	joint planning group
JS	the Joint Staff
JTCB	joint targeting coordination board
JTCG/ME	Joint Technical Coordinating Group for Munitions Effectiveness
JTL	joint target list
JTWG	joint targeting working group
JWAC	Joint Warfare Analysis Center
MAAP	master air attack plan
MASINT	measurement and signature intelligence
MCRP	Marine Corps reference publication
MEA	munitions effectiveness assessment
MIDB	modernized integrated database
MISREP	mission report
MOE	measure of effectiveness
MOP	measure of performance

NGA	National Geospatial-Intelligence Agency
NIST	national intelligence support team
NJOIC	National Joint Operations and Intelligence Center
NRO	National Reconnaissance Office
NSA	National Security Agency
NSL	no-strike list
NTTP	Navy tactics, techniques, and procedures
NWP	Navy warfare publication
OA	operational area
OPLAN	operation plan
OPORD	operation order
PA	probability of arrival
PD	probability of damage
PID	positive identification
PIR	priority intelligence requirement
POL	petroleum, oils, and lubricants
POW	prisoner of war
ROE	rules of engagement
RTL	restricted target list
SA	situational awareness
SCC-WMD	United States Strategic Command Center for Combating Weapons of Mass Destruction
SecDef	Secretary of Defense
SIGINT	signals intelligence
SJA	staff judge advocate
SME	subject matter expert
SOF	special operations forces
SROE	standing rules of engagement
STAR	sensitive target approval and review
TDN	target development nomination
TLM	target list management
TM	target materials
TNL	target nomination list
TSA	target system analysis
TST	time-sensitive target
USCYBERCOM	United States Cyber Command
USMTF	United States message text format
USSTRATCOM	United States Strategic Command
WMD	weapons of mass destruction
WSV	weapons system video

PART II—TERMS AND DEFINITIONS

active defense. The employment of limited offensive action and counterattacks to deny a contested area or position to the enemy. (Approved for incorporation into JP 1-02 with JP 3-60 as the source JP.)

aimpoint. 1. A point associated with a target and assigned for a specific weapon impact. 2. A prominent radar-significant feature used to assist an aircrew in navigating and delivering their weapons. (Approved for incorporation into JP 1-02.)

area target. None. (Approved for removal from JP 1-02.)

attack pattern. None. (Approved for removal from JP 1-02.)

attack timing. None. (Approved for removal from JP 1-02.)

bomb impact plot. None. (Approved for removal from JP 1-02.)

bullseye. None. (Approved for removal from JP 1-02.)

candidate target list. A list of objects or entities submitted by component commanders, appropriate agencies, or the joint force commander's staff for further development and inclusion on the joint target list and/or restricted target list, or moved to the no-strike list. Also called **CTL.** (JP 1-02. SOURCE: JP 3-60)

center of burst. None. (Approved for removal from JP 1-02.)

circular error probable. None. (Approved for removal from JP 1-02.)

collateral damage. Unintentional or incidental injury or damage to persons or objects that would not be lawful military targets in the circumstances ruling at the time. (Approved for incorporation into JP 1-02.)

combat assessment. The determination of the overall effectiveness of force employment during military operations. Combat assessment is composed of three major components: (a) battle damage assessment; (b) munitions effectiveness assessment; and (c) reattack recommendation. Also called **CA.** (JP 1-02. SOURCE: JP 3-60)

complete round. None. (Approved for removal from JP 1-02.)

converge. None. (Approved for removal from JP 1-02.)

crater. None. (Approved for removal from JP 1-02.)

critical element. 1. An element of an entity or object that enables it to perform its primary function. 2. An element of a target, which if effectively engaged, will serve to support the achievement of an operational objective and/or mission task. Also called **CE.** (Approved for inclusion in JP 1-02.)

cross-targeting (nuclear). None. (Approved for removal from JP 1-02.)

damage assessment. 1. The determination of the effect of attacks on targets. 2. A determination of the effect of a compromise of classified information on national security. (JP 1-02. SOURCE: JP 3-60)

damage criteria. The critical levels of various weapons effects required to create specified levels of damage. (Approved for incorporation into JP 1-02.)

damage estimation. A preliminary appraisal of the potential effects of an attack. (Approved for incorporation into JP 1-02 with JP 3-60 as the source JP.)

damage expectancy (nuclear). None. (Approved for removal from JP 1-02.)

desired mean point of impact. None. (Approved for removal from JP 1-02.)

desired point of impact. A precise point, associated with a target and assigned as the impact point for a single unitary weapon to create a desired effect. Also called **DPI.** (Approved for incorporation into JP 1-02.)

direct laying. None. (Approved for removal from JP 1-02.)

dwell time. 1. The length of time a target is expected to remain in one location. (JP 3-60) 2. The period of time between the release from involuntary active and the reporting date for a subsequent tour of active duty pursuant to Title 10, United States Code, Section 12302. Such time includes any voluntary active duty performed between two periods of involuntary active duty pursuant to Title 10, United States Code, Section 12302. (DODD 1235.10) (Approved for incorporation into JP 1-02.)

dynamic targeting. Targeting that prosecutes targets identified too late, or not selected for action in time to be included in deliberate targeting. (JP 1-02. SOURCE: JP 3-60)

effective damage. None. (Approved for removal from JP 1-02.)

end of mission. None. (Approved for removal from JP 1-02.)

entity. Within the context of targeting, a term used to describe facilities, organizations, individuals, equipment, or virtual (nontangible) things. (Approved for inclusion in JP 1-02.)

extent of damage. None. (Approved for removal from JP 1-02.)

field of view. None. (Approved for removal from JP 1-02.)

functional damage assessment. The estimate of the effect of military force to degrade or destroy the functional or operational capability of the target to perform its intended mission and on the level of success in achieving operational objectives established against the target. (Approved for incorporation into JP 1-02.)

glide bomb. None. (Approved for removal from JP 1-02.)

ground fire. None. (Approved for removal from JP 1-02.)

group of targets. None. (Approved for removal from JP 1-02.)

gun. None. (Approved for removal from JP 1-02.)

high-payoff target. A target whose loss to the enemy will significantly contribute to the success of the friendly course of action. Also called **HPT.** (Approved for incorporation into JP 1-02.)

high-payoff target list. None. (Approved for removal from JP 1-02.)

high-value target. A target the enemy commander requires for the successful completion of the mission. Also called **HVT.** (Approved for incorporation into JP 1-02.)

impact area. None. (Approved for removal from JP 1-02.)

indirect fire. None. (Approved for removal from JP 1-02.)

joint desired point of impact. A unique, alpha-numeric coded precise aimpoint associated with a target to achieve an explicit weaponeering objective, and identified by a three dimensional (latitude, longitude, elevation) mensurated coordinate. Also called a **JDPI.** (Approved for incorporation into JP 1-02.)

joint fires element. An optional staff element that provides recommendations to the operations directorate to accomplish fires planning and synchronization. Also called **JFE.** (JP 1-02. SOURCE: JP 3-60)

joint integrated prioritized target list. A prioritized list of targets approved and maintained by the joint force commander. Also called **JIPTL.** (Approved for incorporation into JP 1-02.)

joint targeting coordination board. A group formed by the joint force commander to accomplish broad targeting oversight functions that may include but are not limited to coordinating targeting information, providing targeting guidance, synchronization, and priorities, and refining the joint integrated prioritized target list. Also called **JTCB.** (Approved for incorporation into JP 1-02.)

joint targeting steering group. None. (Approved for removal from JP 1-02.)

joint target list. A consolidated list of selected targets, upon which there are no restrictions placed, considered to have military significance in the joint force commander's operational area. Also called **JTL.** (JP 1-02. SOURCE: JP 3-60)

laser illuminator. None. (Approved for removal from JP 1-02.)

laser-target line. None. (Approved for removal from JP 1-02.)

lay. None. (Approved for removal from JP 1-02.)

loft bombing. None. (Approved for removal from JP 1-02.)

master air attack plan. A plan that contains key information that forms the foundation of the joint air tasking order. Also called **MAAP.** (Approved for incorporation into JP 1-02.)

maximum effective range. None. (Approved for removal from JP 1-02.)

mean point of burst. None. (Approved for removal from JP 1-02.)

mean point of impact. None. (Approved for removal from JP 1-02.)

mensuration. The process of measurement of a feature or location on the earth to determine an absolute latitude, longitude, and elevation. (Approved for incorporation into JP 1-02.)

minimum range. None. (Approved for removal from JP 1-02.)

mortar. None. (Approved for removal from JP 1-02.)

napalm. None. (Approved for removal from JP 1-02.)

naval gunfire spotting team. None. (Approved for removal from JP 1-02.)

neutralization fire. None. (Approved for removal from JP 1-02.)

no-strike list. A list of objects or entities characterized as protected from the effects of military operations under international law and/or rules of engagement. Also called **NSL.** (Approved for incorporation into JP 1-02.)

observer-target range. None. (Approved for removal from JP 1-02.)

on-call target. Planned target upon which fires or other actions are determined using deliberate targeting and triggered, when detected or located, using dynamic targeting. (JP 1-02. SOURCE: JP 3-60)

passive defense. Measures taken to reduce the probability of and to minimize the effects of damage caused by hostile action without the intention of taking the initiative. (Approved for incorporation into JP 1-02 with JP 3-60 as the source JP.)

physical characteristics. Those military characteristics of equipment that are primarily physical in nature. (Approved for incorporation into JP 1-02.)

physical damage assessment. The estimate of the quantitative extent of physical damage to a target resulting from the application of military force. (Approved for incorporation into JP 1-02.)

planned target. Target that is known to exist in the operational environment, upon which actions are planned using deliberate targeting, creating effects which support commander's objectives. There are two subcategories of planned targets: scheduled and on-call. (Approved for incorporation into JP 1-02.)

precision bombing. None. (Approved for removal from JP 1-02.)

preparation fire. None. (Approved for removal from JP 1-02.)

probability of damage. The probability that damage will occur to a target expressed as a percentage or as a decimal. Also called **PD.** (Approved for incorporation into JP 1-02 with JP 3-60 as the source JP.)

protected emblems. The red cross, red crescent, and other symbols that designate that persons, places, or equipment so marked have a protected status under the law of war. (Approved for incorporation into JP 1-02 with JP 3-60 as the source JP.)

reattack recommendation. An assessment, derived from the results of battle damage assessment and munitions effectiveness assessment, providing the commander systematic advice on reattack of a target. Also called **RR.** (Approved for incorporation into JP 1-02.)

restricted target. A valid target that has specific restrictions placed on the actions authorized against it due to operational considerations. (JP 1-02. SOURCE: JP 3-60)

restricted target list. A list of restricted targets nominated by elements of the joint force and approved by the joint force commander or directed by higher authorities. Also called **RTL.** (Approved for incorporation into JP 1-02.)

scheduled target. Planned target upon which fires or other actions are scheduled for prosecution at a specified time. (JP 1-02. SOURCE: JP 3-60)

schedule of targets. None. (Approved for removal from JP 1-02.)

strategic mission. None. (Approved for removal from JP 1-02.)

suppression mission. None. (Approved for removal from JP 1-02.)

suppressive fire. None. (Approved for removal from JP 1-02.)

target. 1. An entity or object that performs a function for the adversary considered for possible engagement or other action. 2. In intelligence usage, a country, area, installation, agency, or person against which intelligence operations are directed. 3. An area designated and numbered for future firing. 4. In gunfire support usage, an impact burst that hits the target. (Approved for incorporation into JP 1-02.)

target acquisition. The detection, identification, and location of a target in sufficient detail to permit the effective employment of weapons. Also called **TA.** (JP 1-02. SOURCE: JP 3-60)

target analysis. An examination of potential targets to determine military importance, priority of attack, and weapons required to obtain a desired level of damage or casualties. (JP 1-02. SOURCE: JP 3-60)

target array. None. (Approved for removal from JP 1-02.)

target bearing. None. (Approved for removal from JP 1-02.)

target complex. A geographically integrated series of target concentrations. (JP 1-02. SOURCE: JP 3-60)

target component. A set of targets within a target system performing a similar function. (JP 1-02. SOURCE: JP 3-60)

target concentration. None. (Approved for removal from JP 1-02.)

target development. The systematic examination of potential target systems—and their components, individual targets, and even elements of targets—to determine the necessary type and duration of the action that must be exerted on each target to create an effect that is consistent with the commander's specific objectives. (JP 1-02. SOURCE: JP 3-60)

targeteer. An individual who has completed formal targeting training in an established Service or joint school and participates in the joint targeting cycle in their current duties. (Approved for inclusion in JP 1-02.)

target folder. A folder, hardcopy or electronic, containing target intelligence and related materials prepared for planning and executing action against a specific target. (JP 1-02. SOURCE: JP 3-60)

target intelligence. Intelligence that portrays and locates the components of a target or target complex and indicates its vulnerability and relative importance. (JP 1-02. SOURCE: JP 3-60)

target materials. Graphic, textual, tabular, digital, video, or other presentations of target intelligence, primarily designed to support operations against designated targets by one or more weapon(s) systems. (Approved for incorporation into JP 1-02.)

target nomination list. A prioritized list of targets drawn from the joint target list and nominated by component commanders, appropriate agencies, or the joint force commander's staff for inclusion on the joint integrated prioritized target list. Also called **TNL.** (Approved for incorporation into JP 1-02.)

target of opportunity. 1. A target identified too late, or not selected for action in time, to be included in deliberate targeting that, when detected or located, meets criteria specific to achieving objectives and is processed using dynamic targeting. 2. A target visible to a surface or air sensor or observer, which is within range of available weapons and against which fire has not been scheduled or requested. (Approved for incorporation into JP 1-02.)

target overlay. None. (Approved for removal from JP 1-02.)

target priority. None. (Approved for removal from JP 1-02.)

target signature. None. (Approved for removal from JP 1-02.)

target system. 1. All the targets situated in a particular geographic area and functionally related. 2. A group of targets that are so related that their destruction will produce some particular effect desired by the attacker. (JP 1-02. SOURCE: JP 3-60)

target system analysis. An all-source examination of potential target systems to determine relevance to stated objectives, military importance, and priority of attack. Also called **TSA.** (Approved for incorporation into JP 1-02.)

target system assessment. The broad assessment of the overall impact and effectiveness of the full spectrum of military force applied against the operation of an enemy target system, significant subdivisions of the system, or total combat effectiveness relative to the operational objectives established. (Approved for incorporation into JP 1-02.)

target system component. A set of targets belonging to one or more groups of industries and basic utilities required to produce component parts of an end product, or one type of a series of interrelated commodities. (JP 1-02. SOURCE: JP 3-60)

time-sensitive target. A joint force commander validated target or set of targets requiring immediate response because it is a highly lucrative, fleeting target of opportunity or it poses (or will soon pose) a danger to friendly forces. Also called **TST.** (Approved for incorporation into JP 1-02.)

toss bombing. None. (Approved for removal from JP 1-02.)

unanticipated target. A target of opportunity that was unknown or not expected to exist in the operational environment. (JP 1-02. SOURCE: JP 3-60)

unplanned target. A target of opportunity that is known to exist in the operational environment. (JP 1-02. SOURCE: JP 3-60)

validation. 1. A process associated with the collection and production of intelligence that confirms that an intelligence collection or production requirement is sufficiently important to justify the dedication of intelligence resources, does not duplicate an existing requirement, and has not been previously satisfied. (JP 2-01) 2. A part of target development that ensures all vetted targets meet the objectives and criteria

outlined in the commander's guidance and ensures compliance with the law of war and rules of engagement. (JP 3-60) 3. In computer modeling and simulation, the process of determining the degree to which a model or simulation is an accurate representation of the real world from the perspective of the intended uses of the model or simulation. (JP 3-35) 4. Execution procedure whereby all the information records in a time-phased force and deployment data are confirmed error free and accurately reflect the current status, attributes, and availability of units and requirements. (JP 3-35) (Approved for incorporation into JP 1-02.)

vetting. A part of target development that assesses the accuracy of the supporting intelligence to targeting. (JP 1-02. SOURCE: JP 3-60)

vulnerability. 1. The susceptibility of a nation or military force to any action by any means through which its war potential or combat effectiveness may be reduced or its will to fight diminished. (JP 3-01) 2. The characteristics of a system that cause it to suffer a definite degradation (incapability to perform the designated mission) as a result of having been subjected to a certain level of effects in an unnatural (man-made) hostile environment. (JP 3-60) 3. In information operations, a weakness in information system security design, procedures, implementation, or internal controls that could be exploited to gain unauthorized access to information or an information system. (JP 1-02. SOURCE: JP 3-13)

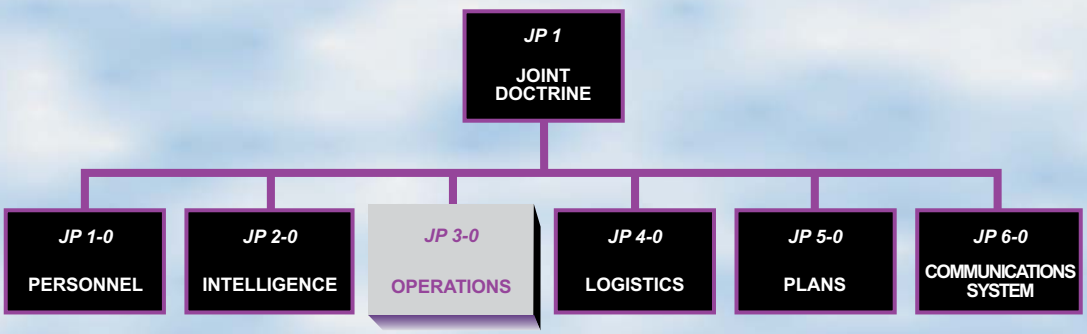
vulnerable node. None. (Approved for removal from JP 1-02.)

weaponeer. An individual who has completed requisite training to determine the quantity and type of lethal or nonlethal means required to create a desired effect on a given target. (Approved for inclusion in JP 1-02.)

weaponeering. The process of determining the quantity of a specific type of lethal or nonlethal means required to create a desired effect on a given target. (Approved for incorporation into JP 1-02.)

Intentionally Blank

JOINT DOCTRINE PUBLICATIONS HIERARCHY



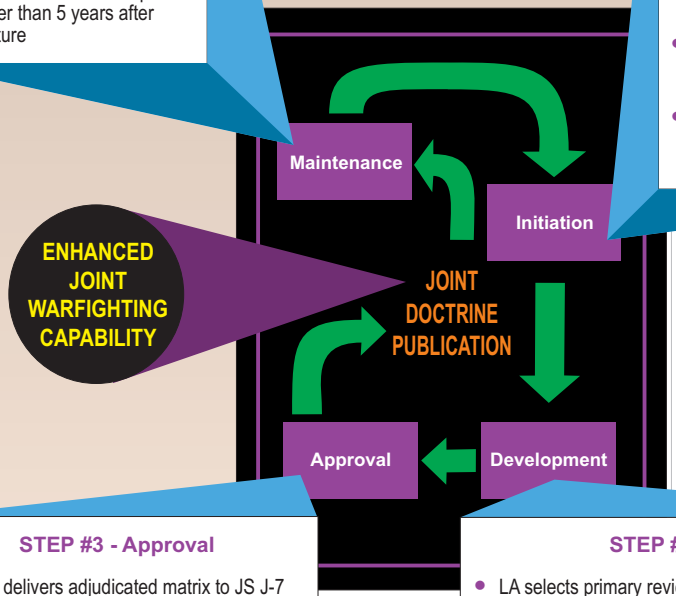
All joint publications are organized into a comprehensive hierarchy as shown in the chart above. **Joint Publication (JP) 3-60** is in the **Operations** series of joint doctrine publications. The diagram below illustrates an overview of the development process:

STEP #4 - Maintenance

- JP published and continuously assessed by users
- Formal assessment begins 24-27 months following publication
- Revision begins 3.5 years after publication
- Each JP revision is completed no later than 5 years after signature

STEP #1 - Initiation

- Joint doctrine development community (JDDC) submission to fill extant operational void
- Joint Staff (JS) J-7 conducts front-end analysis
- Joint Doctrine Planning Conference validation
- Program directive (PD) development and staffing/joint working group
- PD includes scope, references, outline, milestones, and draft authorship
- JS J-7 approves and releases PD to lead agent (LA) (Service, combatant command, JS directorate)



STEP #3 - Approval

- JSDS delivers adjudicated matrix to JS J-7
- JS J-7 prepares publication for signature
- JSDS prepares JS staffing package
- JSDS staffs the publication via JSAP for signature

STEP #2 - Development

- LA selects primary review authority (PRA) to develop the first draft (FD)
- PRA develops FD for staffing with JDDC
- FD comment matrix adjudication
- JS J-7 produces the final coordination (FC) draft, staffs to JDDC and JS via Joint Staff Action Processing (JSAP) system
- Joint Staff doctrine sponsor (JSDS) adjudicates FC comment matrix
- FC joint working group


JOINT
CHIEFS OF STAFF