Joint Publication 3-60

Joint Targeting

28 September 2018

PREFACE

1. Scope

This publication provides doctrine for 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 it provides considerations for military interaction with governmental and nongovernmental agencies, multinational forces, and other interorganizational partners. It provides military guidance for the exercise of authority by combatant commanders and other joint force commanders (JFCs), and prescribes joint doctrine for operations and training. It provides military guidance for use by the Armed Forces in preparing and executing their plans and orders. 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 objectives.

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, the Services, and combat support agencies.

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 US, 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:

DANIEL J. O'DONOHUE
Lieutenant General, USMC
Director, Joint Force Development

Intentionally Blank

SUMMARY OF CHANGES
REVISION OF JOINT PUBLICATION 3-60
DATED 31 JANUARY 2013

- **Clarifies roles and responsibilities of components and joint force commander staffs during the joint targeting cycle.**

- **Updates and clarifies the joint targeting coordination board's roles and responsibilities.**

- **Updates and clarifies the joint fires element's targeting roles and responsibilities.**

- **Updates and clarifies the joint fires targeting working group's roles and responsibilities.**

- **Adds discussion on coordination between components when one component, supported or supporting, engages time-sensitive targets within another component's area of operations.**

- **Updates the target development discussion consistent with changes to Chairman of the Joint Chiefs of Staff Instruction 3370.01B, *Target Development Standards.***

- **Consolidates and clarifies the discussion of cognitive, control, and information characteristics.**

- **Adds discussion clarifying the relationship between target lists and the no strike list.**

- **Adds new discussion on nonlethal effects estimates.**

- **Adds new discussion for joint force maritime component targeting in Appendix C, "Component Targeting Processes."**

- **Adds discussion on the integration of space operations in joint targeting in Appendix C, "Component Targeting Processes."**

- **Changes the name of phase 6 of the joint targeting cycle from "assessment" to "combat assessment," and replaces the term "targeting assessment" with "combat assessment" throughout the publication.**

Intentionally Blank

TABLE OF CONTENTS

FIGURE

EXECUTIVE SUMMARY
COMMANDER'S OVERVIEW

- **Discusses the principles of targeting.**
- **Outlines the relationship between targeting and joint planning.**
- **Describes the joint targeting cycle.**
- **Discusses categories of targeting and targets.**
- **Outlines the relationship between targeting and effects.**
- **Discusses the roles and responsibilities of the joint force commander, the joint force staff, and component commanders in the targeting process.**

Overview

Introduction

Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. Targeting requires a continuous, analytic process to identify, develop, and affect targets to meet commander objectives. Joint targeting provides planners with access to detailed information on the targets, supported by the nominating component's analytical reasoning that links the targets with the desired effects. Targeting helps integrate and synchronize fires with other joint functions.

Targets

A target is an entity or object that performs a function for the adversary considered for possible engagement or action. A target's importance derives from its potential contribution to achieving a commander's objective(s) or otherwise accomplishing assigned tasks.

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

Targeting

The purpose of joint targeting is to create specific effects in the operational environment to meet commander's

objectives through the integration and synchronization of offensive capabilities. 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, and organizations throughout all phases of an operation.

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 joint force commander's (JFC's) objectives through target engagement within the parameters set by the concept of operations, the operational limitations within the plans and orders (to include fragmentary orders), rules of engagement (ROE), the law of war, and agreements concerning the sovereignty of national territories.
- **Effects-Based.** To contribute to the achievement of the JFC's objectives, targeting is concerned with the creation of specific effects through target engagement.
- **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; and other agencies, departments, organizations, and multinational partners.
- **Systematic.** The joint targeting cycle is a rational and iterative process that methodically analyzes, prioritizes, and assigns assets against targets.

Prioritization and Special Considerations

JFC Guidance and Intent. The JFC sets priorities for planning and execution of all joint and component targets based on the relative priorities of the objectives to be achieved.

Certain targets may require special consideration or caution, because engaging them improperly could create unintended effects. Examples include targets that should be handled with sensitivity due to potential political and/or diplomatic repercussions and targets located in areas with

a high risk of collateral damage, to include weapons of mass destruction facilities.

Targeting and Joint Planning

The joint planning process allows the JFC to integrate the required Service and functional components, and their appropriate capabilities as a sustainable joint force, and then order them to execute those activities, tasks, and operations according to a coordinated and approved plan to accomplish the assigned mission. Targeting is used to prioritize targets, determine the appropriate capabilities to achieve desired objectives and which components will plan and synchronize the execution of capabilities, and determine whether the created effects are sufficient to achieve the JFC's objectives.

The Joint Targeting Cycle

Activities

Joint targeting is dependent in part on joint planning through publication of the campaign or contingency plan, operation order, or fragmentary order. Plans and orders provide the context for targeting. Geographic combatant commands (CCMDs) maintain a database for targets within their areas of responsibility (AORs) that relate to their campaign plans and contingency plans. Detailed foundational intelligence products (e.g., dynamic threat assessments, joint intelligence preparation of the operational environment, country assessments) facilitate detailed targeting, starting with target systems analysis. Many products used to support a contingency or military operation are developed, maintained, and continuously updated as foundational information for specific targets. A CCMD can normally provide a subordinate JFC with a list of targets, and perhaps target folders, applicable to a plan for a joint operations area within their AOR.

Categories of Targeting and Targets

Targeting is grouped into two categories: deliberate and dynamic. Each category is associated with a different grouping of targets, "planned targets" or "targets of opportunity," respectively.

Timing is the primary factor that determines whether deliberate or dynamic targeting will support the JFC's targeting requirements. Two types of targets are associated with each category:

- **Deliberate targeting** produces planned targets (scheduled targets and on-call targets), which are targets known to exist in the operational environment with engagement actions scheduled against them. With the exception of unanticipated targets, all targets should flow from deliberate targeting.
- **Dynamic targeting** is normally employed in **current operations planning** because the nature and timeframe associated with current operations (usually the current 24-hour execution period) typically requires more immediate responsiveness than is achieved in deliberate targeting.

Dynamic targeting prosecutes **targets of opportunity** that include **unscheduled targets** and **unanticipated targets:** those targets that meet the criteria to achieve objectives but were not selected for action during the current joint targeting cycle.

The Joint Targeting Cycle

The joint targeting cycle is a six-phase iterative process:

- **Phase 1—Commander's Objectives, Targeting Guidance, and Intent.** The JFC develops and issues targeting guidance. This guidance includes targeting priorities, time-sensitive targets (TSTs) criteria and procedures, component critical targets, target acquisition and identification criteria, authorized actions against targets, and any delegated responsibilities for target validation and joint integrated prioritized target list (JIPTL) approval.
- **Phase 2—Target Development and Prioritization.** Target development is 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.
- **Phase 3—Capabilities Analysis.** This phase of the joint targeting cycle involves evaluating all available capabilities against targets' critical target elements to determine the appropriate options available to the component commander for target engagement and developing the best possible solution under given circumstances.

- **Phase 4—Commander's Decision and Force Assignment.** The force assignment process at the component level integrates previous phases of joint targeting and fuses capabilities analysis with available forces, sensors, and weapons systems.
- **Phase 5—Mission Planning and Force Execution.** Upon receipt of component tasking orders, detailed unit-level planning must be performed for the execution of operations. The joint targeting process supports this planning by providing component 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).
- **Phase 6—Combat Assessment.** The combat 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.

Time-Sensitive Target 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 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.

The Relationship Between Targeting and Effects

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.

Roles and Responsibilities

Joint Targeting Integration and Oversight

The JFC's primary targeting responsibility lies in integrating, synchronizing, and establishing the objectives 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 and provide

clear targeting guidance. Weight of effort (apportionment) is normally proposed by the joint force air component commander (JFACC) (or JFC-designated representative), in consultation with other component commanders, and approved by the JFC. Joint force and component commanders identify high-value targets (HVTs) and high-payoff targets (HPTs) for acquisition, collection, and attack or influence, employing their forces in accordance with the JFC's guidance.

Joint Force Targeting Responsibilities

JFC Responsibilities

Joint targeting coordination responsibilities for the JFC include:

- Establish parameters for successful targeting within the JFC's operational area (OA) by promulgating intent, objectives, guidance, sequencing, and priorities.
- The JFC assigned as the supported commander will provide early, broad, and clear targeting guidance to components and supporting commands and Department of Defense agencies consistent with the operation's end state.
- Maintain currency of mission planning guidance, intent, and priority commander's critical intelligence requirements throughout the operation.
- Direct the formation, composition, and specific responsibilities of a joint fires element (JFE) and joint targeting coordination board (JTCB) (if required).

Joint Force Staff Responsibilities

- **Intelligence Directorate of a Joint Staff (J-2).** The J-2 prioritizes intelligence collection efforts, analysis, validation, and assessment for all joint operations. In addition, the J-2 provides a major input to the operations directorate of a joint staff (J-3) and plans directorate of a joint staff (J-5) in the form of adversary course of action assessments critical to the joint target prioritization process and identification of HVTs and HPTs.
- **J-3.** 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 coordinates, integrates, and

executes operations throughout the OA. The directorate also leads planning efforts for current and future operations. When a JFE is established by the JFC, the J-3 will normally organize it and serve as a member.

- **Logistics Directorate of a Joint Staff (J-4).** The J-4 identifies logistic issues unique or specific to targeting. Of particular interest, the J-4 compares the operational logistic plans to identify infrastructure and supplies required to support current and future operations.
- **J-5.** The J-5 performs the long-range or future joint planning responsibilities.
- **Civil-Military Operations Directorate of a Joint Staff (J-9).** The J-9 or supporting civil affairs planning team identifies civil considerations specific to targeting and advises on the protection of civilians and protected sites.
- **Staff Judge Advocate (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.

Component Commander Responsibilities

The components' responsibilities normally include the following:

- Conduct target development.
- Nominate potential targets to the JFC 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.
- Identify and approve component-critical targets.
- Provide appropriate representation to the joint targeting working group and JTCB, as well as other associated staff organizations when established.
- Nominate to the JFACC or designated representative targets for inclusion in the JIPTL with the intent of the JFACC engaging those targets.
- Provide timely and accurate reporting to the JFE in support of joint operations assessment.

- Provide tactical and operational assessment to the JFE for incorporation into the JFC's overall assessment efforts.
- Coordinate components' deliberate and dynamic targeting via established procedures.

Federated Targeting Support

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 J-2 using the intelligence planning process to establish federated targeting support partners and assessment reporting responsibilities between CCMDs in accordance with the supported combatant commander's requirements.

Conclusion

This publication provides doctrine for joint targeting.

CHAPTER I
OVERVIEW

"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 BC)**

1. Introduction

a. Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. Targeting requires a continuous, analytic process to identify, develop, and affect targets to meet commander objectives. Joint targeting provides planners with access to detailed information on the targets, supported by the nominating component's analytical reasoning that links the targets with the desired effects. Targeting helps integrate and synchronize fires with other joint functions (command and control [C2], intelligence, movement and maneuver, protection, sustainment, and information). While the focus of this publication is joint targeting, it should also be understood that joint targeting is focused on creating effects against the adversary. However, not all military operations require joint 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 guidance and intent will help determine if joint targeting is necessary to achieve the objectives.

b. The joint targeting cycle is a continuous process that is not always time-constrained or rigidly sequential, as some steps in various phases may be conducted concurrently. It provides a framework to describe the phases and steps that are accomplished to successfully provide targeting products to the joint force. The joint targeting cycle supports joint planning and execution of operations by providing flexibility required to support the concept of operations (CONOPS) and commander's intent as the operational environment changes, opportunities arise, and plans change. See Chapter II, "The Joint Targeting Cycle," for the detailed discussion.

c. The JFC establishes objectives and provides guidance and intent to focus and guide joint planning and execution to achieve those objectives to reach the military end state linked to national strategic direction and goals. From these objectives, activities and tasks 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 the JFC's assigned mission. A target's operational importance is determined by conducting an analysis to determine if engaging the target is consistent with planned operations to achieve the commander's objective(s).

d. Targets should be logically and causally tied to objectives at all levels—strategic, operational, and tactical. From a commander's perspective, tactical activities should be tied to operational and strategic objectives so the operation forms a logical chain of causes and effects, from the tactical engagements up to strategic objectives. Misinformed

targeting (e.g., poor intelligence or inaccurate target identification) at any level can have unintended effects at other levels. For example, targeting at the tactical level can create significant negative effects at the strategic level, such as feeding enemy propaganda, civilian casualties, or reducing cohesion within the multinational force.

e. Targeting supports the JFC's CONOPS and requires continuous target development and assessment in support of joint planning and execution to maintain viable and validated targets that reflect changes in the operational environment, or the CONOPS, and provide a range of options for commanders.

SECTION A. TARGETS

2. Target Description

A target is an entity or object that performs a function for the adversary considered for possible engagement or action. 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 JFC's assigned missions. Targets nominated for engagement may be grouped in the following entity types: facility, individual, virtual, equipment, and organization.

For more information on target entity types, refer to Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3370.01, Target Development Standards.

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, reconnaissance, analysis, engagement, and assessment. **Physical, functional, cognitive and control, environmental, and temporal** are broad categories that help define the characteristics of a target.

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 and possible concealment (outward form and features, including color).

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

(6) Dispersion or concentration of target elements.

(7) Reflectivity (to heat, light, sound, radar energy).

(8) Structural composition and degree of hardening.

(9) Cyberspace and electro-mechanical machine features.

(10) Electromagnetic spectrum signature (e.g., radar, communications, and laser 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 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 vulnerabilities (identification of potential aimpoints above ground, natural ventilation, exposure of critical infrastructure, dependence on above ground functions/facilities, such as electrical power lines and generators, fuel tanks, heating ventilation and air conditioning systems, communication lines).

(11) Target capabilities.

c. **Cognitive, Control, and Information Characteristics.** These refer to where and how individuals or groups process, perceive, judge, and then make decisions. In those cases where the entity is an individual, cognitive characteristics describe that person's reasoning patterns or how that person's will and decisions could be influenced. If a target is virtual, cognitive characteristics describe data storage, transmission, information processing, virtual capabilities, and system vulnerabilities. Cognitive and information characteristics are particularly important to properly assess the critical nodes in a target system, since nearly every target system possesses some central control function. Neutralizing control functions may be crucial to bringing about desired changes in behavior. As with functional characteristics, cognitive, control, and informational characteristics can be difficult to identify. Many factors influence these characteristics to include identity, culture, ideology, societal norms, motivations, experiences, morals, education, and mental health. Cognitive, control, and informational characteristics relate to the following, potentially resulting in exploitable vulnerabilities:

(1) How the target thinks to include sources of influence and motivation.

(2) Target ability and capacity to process, store, and protect information.

(3) Target decision process to include span of control.

(4) Inputs the target requires to perform its function(s).

(5) Process outputs resulting from target functions to include information dissemination and control functions.

(6) Target patterns and discernable signatures.

(7) Cultural considerations (perceptions, attitudes, ideological factions, affiliations).

(8) Redundancy of control functions.

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).

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

(3) Denial and deception measures.

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

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

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 engagement 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 most significant 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

The purpose of joint targeting is to create specific effects in the operational environment to meet commander's objectives through the integration and synchronization of offensive capabilities. 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, and organizations throughout all phases of an operation.

a. Targeting systematically analyzes and prioritizes entities (persons, places, or things) considered for possible engagement or action and matches appropriate capabilities to those entities to create specific effects, accounting for operational constraints and restraints and the results of previous assessments. Targeting emphasizes the identification of resources and activities the enemy can least afford to lose or that provide the greatest advantage (high-value target [HVT]) and whose loss will significantly contribute to the success of the friendly course of action (COA) (high-payoff target [HPT]). Targeting links desired effects to activities and tasks involving specific fires. This contributes to creating the effects necessary to achieve the JFC's objectives.

b. Targeting integrates intelligence, plans, and operations across all commands within a joint force and during all phases of operations. Targeting leverages the commander's guidance and intent and the operational objectives from joint planning to identify the intelligence requirements for the joint intelligence preparation of the operational environment (JIPOE) and other products of the intelligence process (e.g., intelligence preparation of the battlespace). 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 by the joint force.

c. Effective and disciplined joint targeting minimizes undesired effects, potential for collateral damage, and inefficient actions during military planning and operations. Across the joint force, joint targeting:

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

(2) Coordinates, integrates, synchronizes, and deconflicts target engagement.

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

(4) Reduces duplicate efforts.

(5) Fully integrates all available target engagement capabilities.

(6) Minimizes friendly fire and collateral damage.

(7) Focuses on creating effects to achieve commander's objectives.

(8) Assesses created effects.

(9) Complies with the rules of engagement (ROE) and law of war.

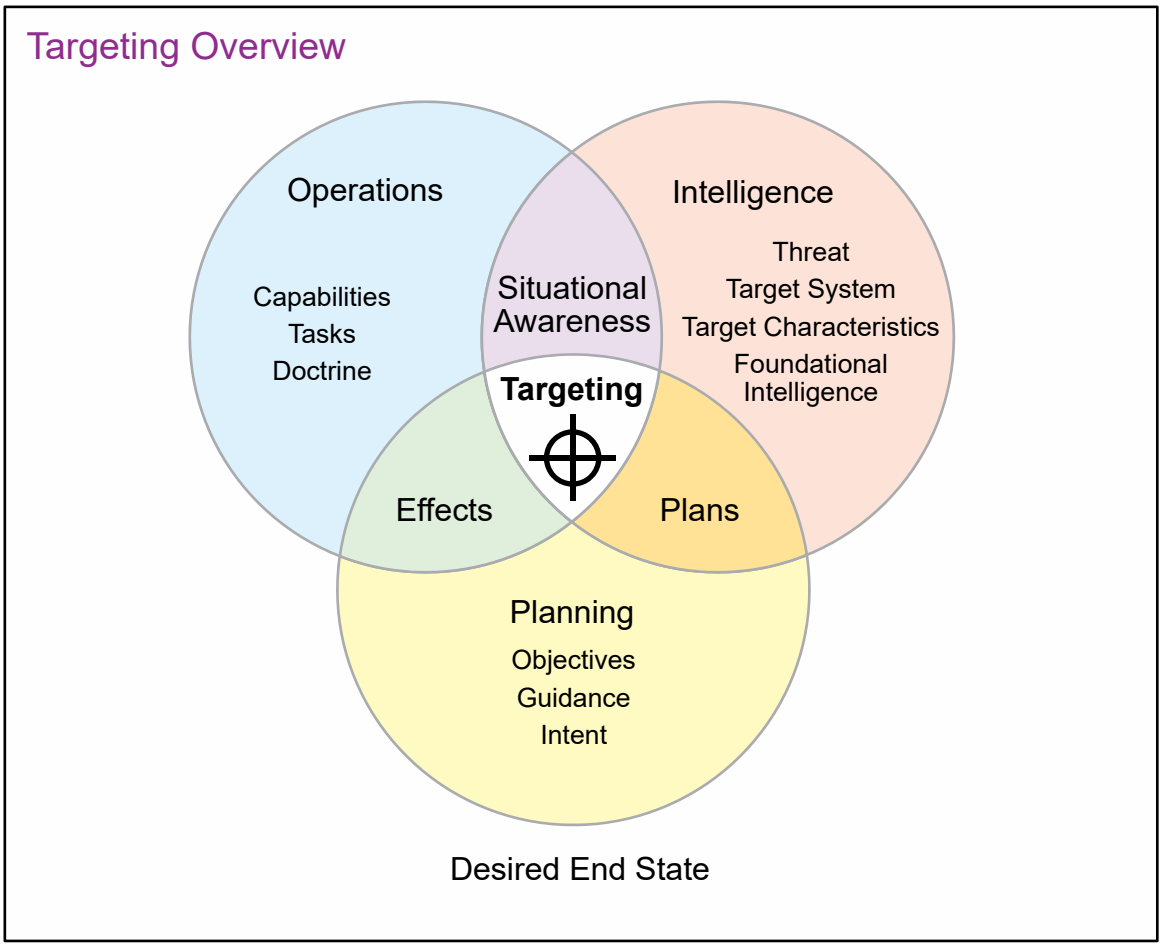


Figure I-1. Targeting Overview

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), ROE, the law of war, and agreements concerning the sovereignty of national territories. Every target contributes to achieving 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 effects through target engagement. Target analysis considers all possible means to create effects, drawing from all available capabilities, and attempts to determine the risk of potential undesired effects. The art of targeting seeks to create desired effects while balancing the risk and expenditure of time and resources.

COMBINED JOINT TASK FORCE 180

In the Sami Ghar mountain region of Afghanistan, Combined Joint Task Force (CJTF) 180 deconflicted and synchronized capabilities to create lethal and nonlethal effects, to deny the adversary sanctuary and to counter terrorism.

The CJTF prioritized a target for a lethal strike. The intelligence collection manager allocated signals intelligence, human intelligence (HUMINT), and imagery intelligence assets to identify and track the target. Analysis of the information validated the viability of the target by establishing an exploitable pattern. Civil-military operations (CMO) and information operations (IO) teams began radio broadcasts distributed by CMO teams, instructing friendly civilians to avoid activities in the area. IO teams distributed posters in conjunction with key leader engagements by CMO teams, as well as the deployment of special operations forces and other United States Government departments and agencies to mitigate collateral damage to the civilian population. Pre-drafted public affairs releases were on standby for release to national and international audiences, pending the outcome of follow-on phases. On the night of 16 September 2003, intelligence sources detected the target outside a remote village, spurring imagery assets to perform a collateral damage assessment of the target area according to United States Central Command collateral damage requirements. The AC-130 identified the target and was cleared to engage it. This attack resulted in battle damage assessment of eight enemy personnel killed. That same evening, a scheduled unmanned aerial vehicle identified approximately 25 Taliban fighters egressing down a narrow valley after the engagement. The joint fires element used this intelligence to plan further attacks in the objective area and clear it of insurgent activities.

On the heels of this lethal attack, CMO teams and the provincial reconstruction team entered the area, helping local civilians by distributing aid packages, providing medical assistance, and rebuilding infrastructure. This in turn had the desired effect of winning the support of the populace in the CJTF's operational area. According to HUMINT sources and information from CMO teams dispatched to the area, Taliban activity in this area showed the deconfliction and synchronization of capabilities had a significant disruptive effect. Intelligence indicated that fighters in the area were instructed to break into two- to five-man teams to prevent presenting a large target to coalition forces. This intelligence and subsequent CMO operations in the region validated the effectiveness of the 16 September attack in the Sami Ghar region, helping to provide the desired effect of "deny sanctuary and counter terrorism."

Adapted from Article by: Major Robert B. Herndon, Chief Warrant Officer Three John A. Robinson, Colonel James L. Creighton, Lieutenant Colonel Raphael Torres, and Major Louis J. Bello
Retrieved from Field Artillery, A Joint Magazine for US Field Artillerymen, Jan-Feb 2004, retrieved from: http://www.au.af.mil/au/awc/awcgate/army/ebo_afghan.pdf

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; and 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. If the desired effects are not created, targets should be reengaged or another method selected to create the appropriate effect through the targeting process. It may take days, weeks, or months to determine if effects have been realized. To realize the second- and third-order effects, it could even take longer. Therefore, patience is required.

6. Prioritization and Special Considerations

a. **JFC Guidance and Intent.** The JFC sets priorities for planning and execution of all joint and component targets based on the relative priorities of the objectives to be achieved.

b. Certain targets may require special consideration or caution, because engaging them improperly could create unintended effects. Examples include targets that should be handled with sensitivity due to potential political and/or diplomatic repercussions and targets located in areas with a high risk of collateral damage, to include weapons of mass destruction (WMD) facilities. The use of some capabilities that create nonlethal effects requires the same type of special considerations because, while they may reduce the potential for death and physical destruction, their improper or untimely use also may have unintended consequences that are detrimental to creating the desired effects and achieving the JFC's objectives.

(1) Sensitive targets refer to those targets for which planned actions warrant President or Secretary of Defense (SecDef) review and approval. Sensitive target criteria are normally delineated in plans, orders, and/or ROE by combatant commanders (CCDRs). Sensitive targets with high probability of 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), adverse political or diplomatic ramifications (e.g., near the territory of surrounding states), environmental harm/hazard (water contamination, chemical/biological/radiological/nuclear hazards), or adverse public sentiment (local or international). See CJCSI 3122.06, *(U) Sensitive Target Approval and Review (STAR) Process,* for more information on sensitive targets.

(2) All potential targets and all targets nominated for engagement may 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 advantage, the JFC may determine it requires immediate engagement. These targets approved by the JFC are called time-sensitive targets (TSTs) and must be fully anticipated and planned in advance during the target development phase in the joint targeting cycle. Once detected, targets

may be prosecuted using the find, fix, track, target, engage, and assess (F2T2EA) process during dynamic targeting in phase 5. TSTs should not be confused with "sensitive" targets. A target may be both "time-sensitive," as it poses an immediate threat, and "sensitive" depending on the nature of the target and the circumstances of the engagement. An example of both is a ballistic missile site planned for engagement with a collateral damage estimate that exceeds the criteria established in the ROE or other directives.

c. **HVT and HPT.** An HVT is a target 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 OA. An HPT is one whose loss to the enemy will significantly contribute to the success of the friendly COA. TSTs 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. **TST.** A TST is a JFC-validated target or set of targets that present such a significant threat, is of such high importance to the JFC's mission and objectives that the JFC dedicates intelligence assets and fires, or diverts them away from other targets to engage it.

(1) TSTs, consistent with the JFC's guidance, may 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 known but not located (e.g., mobile ballistic missiles) and must be engaged through dynamic targeting. However, TSTs typically require detailed planning and preparation within the joint targeting cycle and through direct coordination among component commanders.

(2) When the JFC designates land/maritime force commanders, they are the supported commanders within their designated areas of operations (AOs), and they synchronize maneuver, fires, and interdiction within their AOs, to include prioritizing targets, effects, fire support coordination measures (FSCMs), and timing of fires. The joint force air component commander (JFACC) (if established) coordinates with the land or maritime force commanders to plan and execute JFC-prioritized missions against TSTs within a land or maritime AO.

JOINT FORCE COMMANDER-CRITICAL TARGETS

Joint force commander (JFC)-critical targets (CTs) are only those targets designated by the JFC and identified as such in the JFC's concept of operations. They require an immediate response because they pose (or will soon pose) a direct danger to friendly forces or are lucrative targets of opportunity. JFC-CTs may include, but are not limited to, military leadership/high-value individuals; multiple rocket launchers; mobile, advanced, long-range surface-to-air missile systems; weapons of mass destruction; mobile command and control, and maritime targets.

(3) The JFC provides specific guidance, priorities, and risk for TSTs and may designate, prioritize, and accept high-risk-for-certain TSTs that require immediate action whenever and wherever those TSTs are found within the joint operations area. Examples might be a vessel carrying WMD that was just detected approaching the joint force or a sought-after enemy leader whose location was just identified. Only the JFC may validate a target or set of targets as a TST having assessed and accepted the higher risk for those priority targets. Component commanders plan, coordinate, and rehearse how the JFACC will engage TSTs within the land and maritime AOs and the joint special operations OAs.

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 targeting with cross-component coordination and assistance in a timely manner to facilitate synchronized execution with other targets. 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 (e.g., intelligence requirements, exploitation, and fires), and provide rapid cross-component coordination to minimize confusion and facilitate execution.

For more information, refer to Army Techniques Publication (ATP) 3-60.1/Marine Corps Reference Publication (MCRP) 3-31.5/Navy Tactics, Techniques, and Procedures (NTTP) 3-60.1/Air Force Tactics, Techniques, and Procedures (AFTTP) 3-2.3, Multi-Service Tactics, Techniques, and Procedures for Dynamic Targeting.

7. Targeting and Joint Planning

a. The joint planning process (JPP) allows the JFC to integrate the required Service and functional components and their appropriate capabilities as a sustainable joint force and then order them to execute those activities, tasks, and operations according to a coordinated and approved plan to accomplish the assigned mission. Targeting is used to prioritize targets; determine the appropriate capabilities to achieve desired objectives and which components will plan and synchronize the execution of capabilities, and determine whether the created effects are sufficient to achieve the JFC's objectives. Understanding the objectives, intentions, capabilities, and limitations of all actors within the operational environment enables the coordinated 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 objectives and the available ways and means to achieve them. In other words, the focus of targeting should be on executing those required tasks and activities to create the necessary effects on targets 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 capabilities and synchronize the execution of appropriate fires and activities through the joint targeting cycle to create specific lethal and/or nonlethal effects.

b. Detailed, dynamic threat assessments; JIPOE; country assessments; and other intelligence products are critical to inform target system analysis (TSA) and detailed entity-level target development.

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

c. Through the CONOPS, the JFC provides targeting guidance, objectives, desired effects, tasks, and targeting priorities. The CONOPS provides further refined guidance on what and where effects are desired by phase (e.g., deny, disrupt, delay, suppress, neutralize, destroy, corrupt, usurp, or influence). In addition, the JFC provides guidance on capability usage and restrictions, restricted target list (RTL), and a no-strike list (NSL).

d. The JFC's 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 JFC's 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 engaged sequentially to enable effects against other targets.

e. Targeting begins during pre-hostilities planning and continues throughout execution. As the operation progresses, joint 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.

f. 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 Planning, *for further information on joint planning. Refer to JP 3-33,* Joint Task Force Headquarters, *for further information on planning during execution.*

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 BC)

1. Activities

a. Joint targeting is dependent in part on joint planning through publication of the campaign or contingency plan, OPORD, or fragmentary order. Plans and orders provide the context for targeting. Geographic combatant commands (CCMDs) maintain a database for targets within their areas of responsibility (AORs) that relate to their campaign plans and contingency plans. Detailed foundational intelligence products (e.g., dynamic threat assessments, JIPOE, country assessments) facilitate detailed targeting, starting with target systems analysis. Many products used to support a contingency or military operation are developed, maintained, and continuously updated as foundational information for specific targets. A CCMD can normally provide a subordinate JFC with a list of targets, and perhaps target folders, applicable to a plan for a joint operations area within their AOR. For example, a CCMD facing a threat such as ballistic missiles and/or WMD would maintain a target database and target folders on those threats as TSTs. When geographic combatant commanders (GCCs) establish subordinate commands and give those subordinate joint forces an OA and objectives to achieve, the responsibility to conduct TSAs and produce electronic target folders (ETFs) for that OA may be transferred to the subordinate joint force. In situations when the subordinate joint force is deemed not to have the target intelligence production capacity to produce these requirements, the superior command may selectively choose which responsibilities to delegate and which to retain.

For more information about foundational intelligence, refer to the Defense Intelligence Analysis Program.

b. The consideration of effects based on JFC's guidance and intent for planning and targeting helps establish a coherent relationship between objectives and related tasks or activities to be executed by component commanders. Once actions are taken against targets, the component commander and staff assess their effectiveness.

2. Categories of Targeting and Targets

Targeting is grouped into two categories: deliberate and dynamic. Each category is associated with a different grouping of targets, "planned targets" or "targets of opportunity," respectively. Neither is indicative of the target to be engaged but is 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. Two types of targets are associated with each category. (See Figure II-1.)

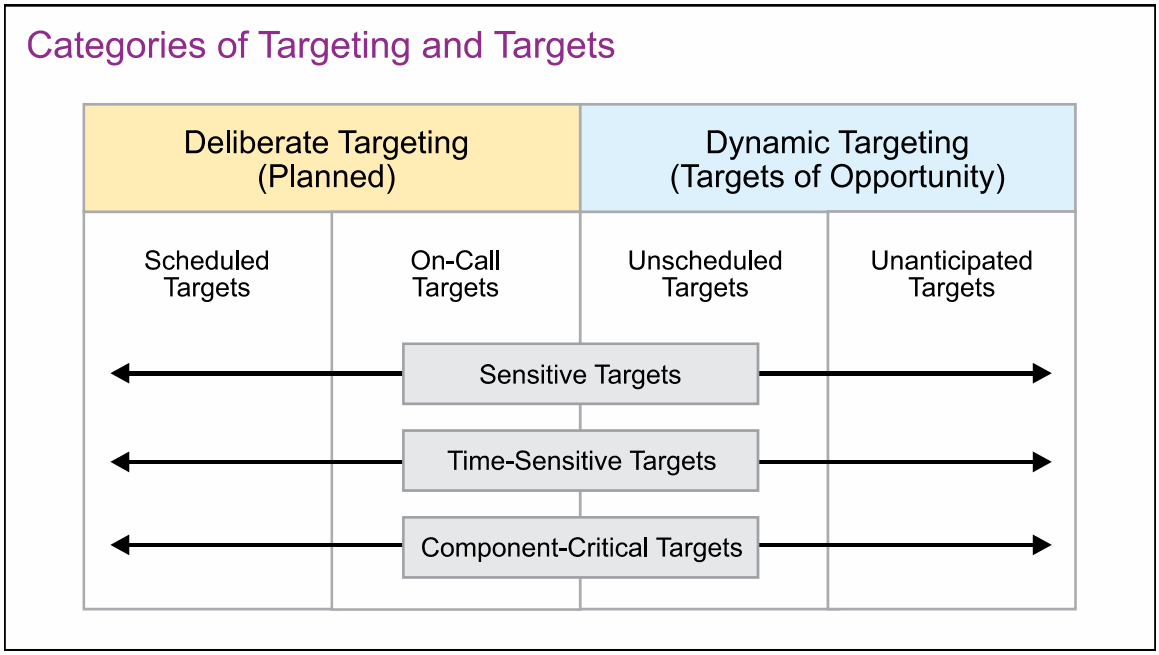


Figure II-1. Categories of Targeting and Targets

a. **Deliberate targeting** produces planned targets (scheduled targets and on-call targets), which are targets known to exist in the operational environment with engagement actions scheduled against them. With the exception of unanticipated targets, all targets should flow from deliberate targeting. Deliberate targeting supports the JFC's and components' planning processes. Deliberate targeting results in targets being properly vetted and validated and being placed on the proper joint target list (JTL) or RTL. Deliberate targeting also identifies the JFC's TSTs. During execution of an OPORD, deliberate targeting supports execution planning.

(1) **Scheduled targets** are prosecuted at a specific time.

(2) **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.

b. **Dynamic targeting** is normally employed in **current operations planning,** because the nature and timeframe associated with current operations (usually the current 24-hour execution 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 that usually occur in the joint operations center (JOC) under the operations directorate of a joint staff (J-3). Dynamic targeting prosecutes **targets of opportunity** that include **unscheduled targets** and **unanticipated targets:** those targets that meet the criteria to achieve objectives but were not selected for action during the current joint targeting cycle.

(1) **Unscheduled targets** are known targets and are included on either the JTL or RTL but were not nominated, were nominated but did not make the joint integrated prioritized target list (JIPTL), or were 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.

(2) **Unanticipated targets** are unknown or not expected to be present in the operational environment. These entities are not included on a JTL/RTL, and an evaluation of the candidate target is needed to determine engagement requirements and timing. In some cases, the candidate target will require engagement in the current targeting cycle and will require use of dynamic targeting. In other cases, the candidate target will be identified, developed, and validated for inclusion on the JTL/RTL.

c. Target development standards must be applied in both deliberate and dynamic targeting. Due to dynamic targeting's compressed timeline, development must be accomplished quickly. The same general standards for target intelligence diligence and rigor apply, but targets engaged through dynamic targeting might not be characterized to the same level of detail before execution that might otherwise occur with deliberate targeting. Thus, a target should be considered fully developed when sufficient target intelligence exists to support the operational and legal requirements to execute operations against it.

For more detailed information regarding dynamic targeting, see ATP 3-60.1/MCRP 3-31.5/NTTP 3-60.1/AFTTP 3-2.3, Multi-Service Tactics, Techniques, and Procedures for Dynamic Targeting.

3. The Joint Targeting Cycle

The joint targeting cycle is a six-phase iterative process that is not time-constrained nor rigidly sequential, as some steps in various phases may be conducted concurrently. It provides an essential framework to describe the steps that are accomplished to conduct joint targeting effectively (see Figure II-2). The joint targeting cycle supports both deliberate and dynamic targeting and provides the flexibility required when the CONOPS, commander's intent, or plans change.

a. Phase 1—Commander's Objectives, Targeting Guidance, and Intent

(1) Shaped by strategic guidance from the President and SecDef, the JFC's initial guidance and intent flows from JPP mission analysis. The result is a clear and concise expression of the operation's purpose and an understanding of the desired military end state. It articulates the commander's end state, objectives, guidance, and intent. The JFC develops and issues targeting guidance. This guidance includes targeting priorities, TST criteria and procedures, component critical targets, target acquisition and identification criteria, authorized actions against targets, and any delegated responsibilities for target validation and JIPTL approval. These and other required tasks developed during operational planning provides the initial impetus for the targeting process. JFC guidance and intent may be revised throughout the course of planning, and for transitions through

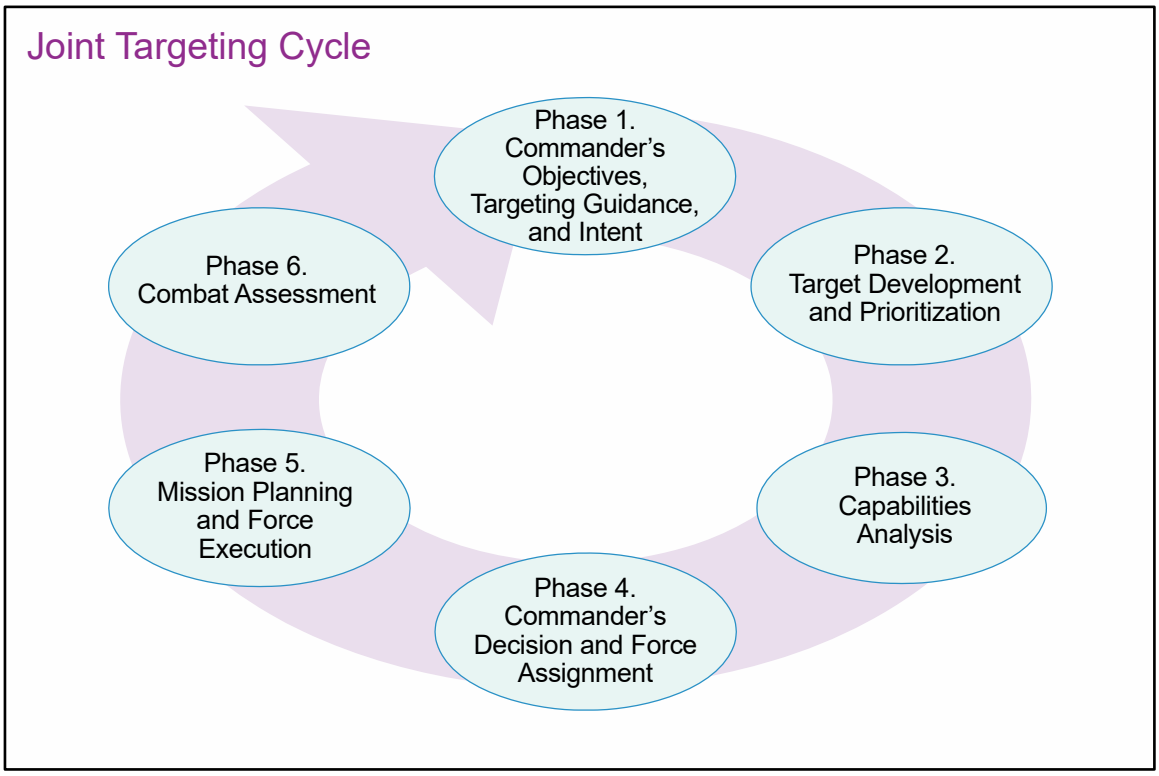


Figure II-2. Joint Targeting Cycle

different phases of an operation, so the commander may highlight selected objectives, desired effects, and required tasks for various phases. The military end state is the set of required conditions that defines achievement of all military objectives for the operation. Theater-strategic and national guidance also shapes the commander's objective(s).

(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. Proposed objectives are coordinated among strategists, planners, and intelligence analysts for approval by the commander. Achievement of clear, measurable, and achievable objectives is essential to the successful attainment 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 Planning.

(3) Equally important is the development of relevant, observable, responsive, and resourced measures (such as measures of effectiveness [MOEs] and measures of performance [MOPs]) and indicators to assess whether the effects have been created and objectives are being or have been achieved. 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.

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

(1) **Target development** is 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. Target development is the responsibility of the joint force, which must manage partnerships to leverage appropriate expertise. These partnerships leverage the roles, capabilities, and production responsibilities of national, Department of Defense (DOD), and allied organizations, including non-intelligence organizations, to conduct target development. The goal is 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 comprises the following three processes:

(a) TSA.

(b) Intermediate target development.

(c) Target list management (TLM).

(2) Target development examines threats with a systems approach, from TSA to the individual target elements utilizing the targeting taxonomy, which hierarchically orders the adversary, its capabilities, and the targets that 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 often 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 a target 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 threat 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 capabilities. JIPOE helps target developers prioritize an adversary's target systems based on how much each contributes to the threat's ability to conduct operations.

(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

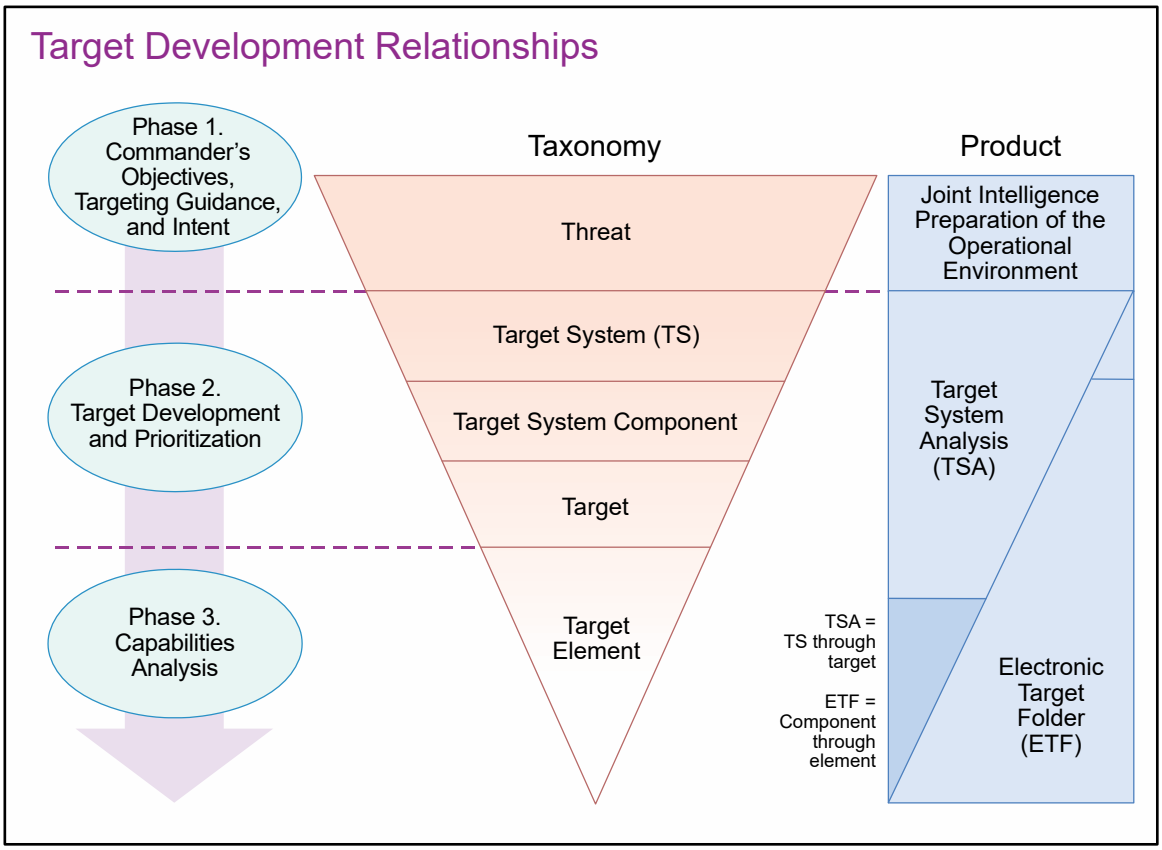


Figure II-3. Target Development Relationships

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) **JIPOE**

(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 threat centers of gravity (COGs). This baseline intelligence illuminates which decisive points offer opportunity to engage the threat'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.

(b) During planning, targeteers will evaluate the objectives and the threat COGs as described in JIPOE for selection of target systems and components. 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 phase 1 of the joint targeting cycle to weigh resources toward the most relevant and valuable target systems.

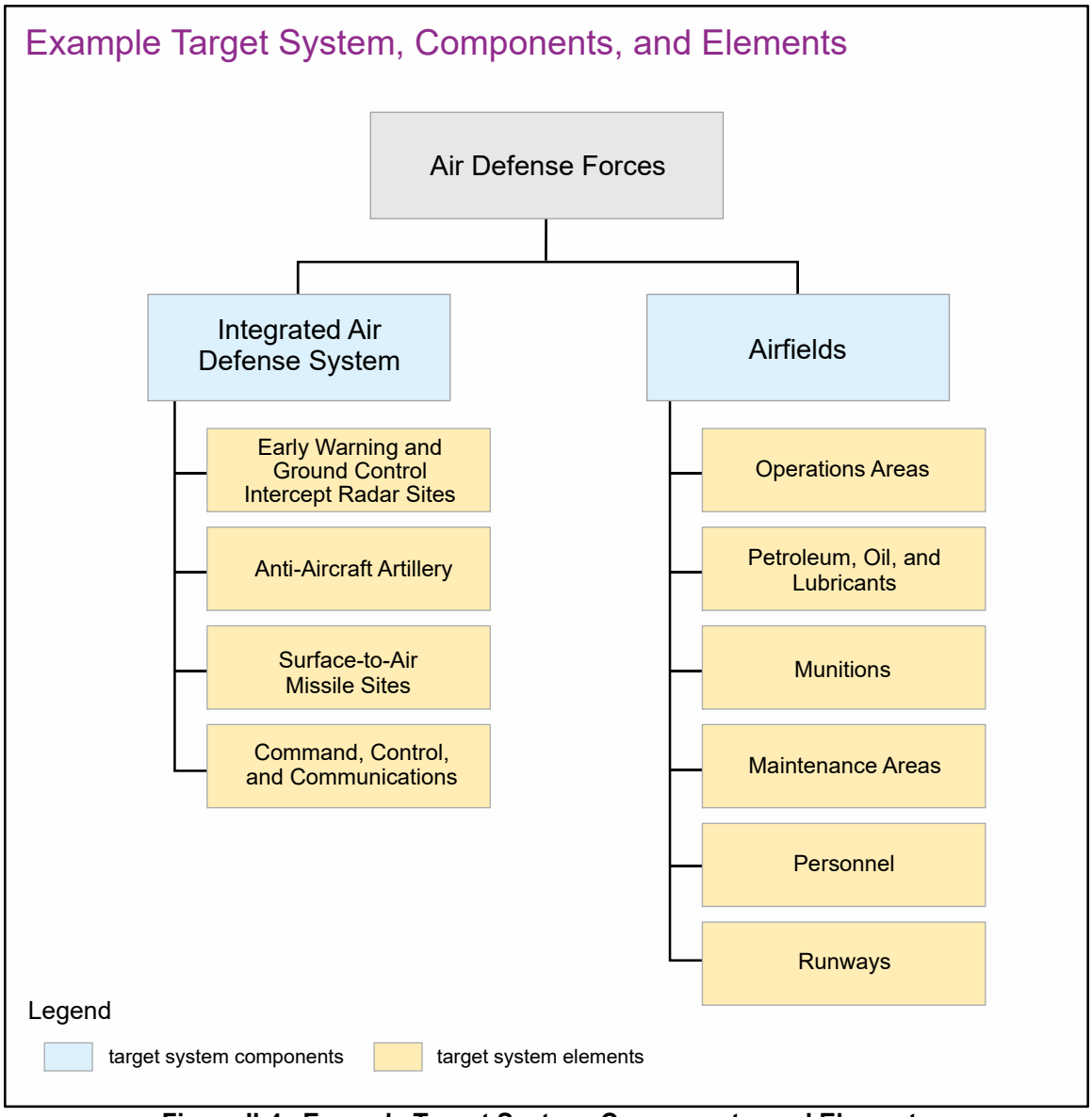


Figure II-4. Example Target System, Components, and Elements

(4) **TSA.** 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 threats. The TSA process enables additional, more detailed stages of target development. While planning during a crisis 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 a threat's C2 structure; ground forces and facilities; and the petroleum, oils, and lubricants (POL) industry (see Figure II-5).

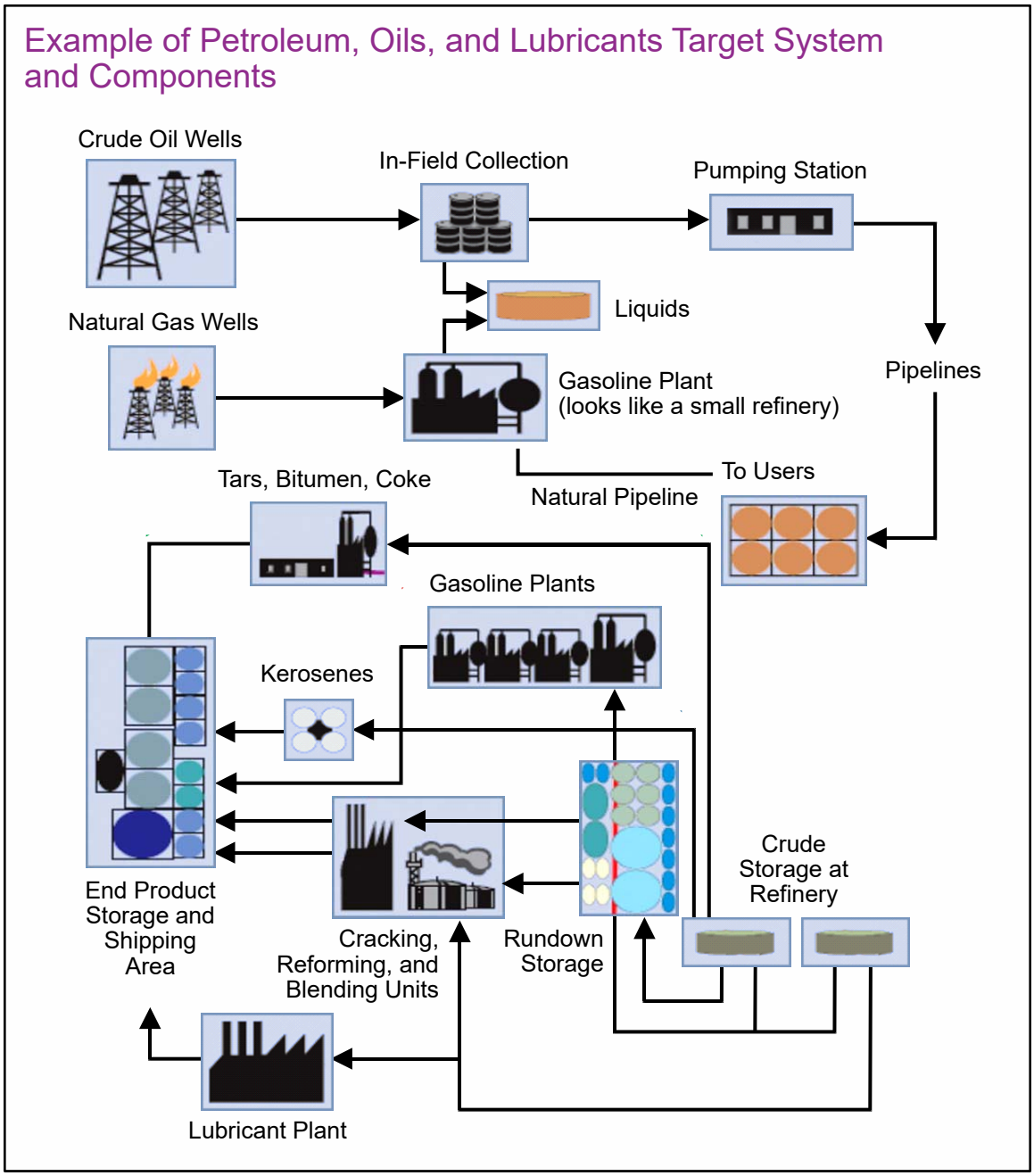


Figure II-5. Example of Petroleum, Oils, and Lubricants Target System and Components

(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 plans that enable a JFC to use targeting to create effects that accomplish objectives and to identify HVTs and HPTs 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 commander's objectives (see Figure II-6).

1. **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 target's criticality:

a. **Value** measures the target's importance to the threat'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 threat. For example, the birthplace of a political, religious, or cultural leader may hold greater psychological significance than its military value merits. Additional information about populated areas may be required to mitigate undesired effects in the fires process on the civilian population.

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 threat 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

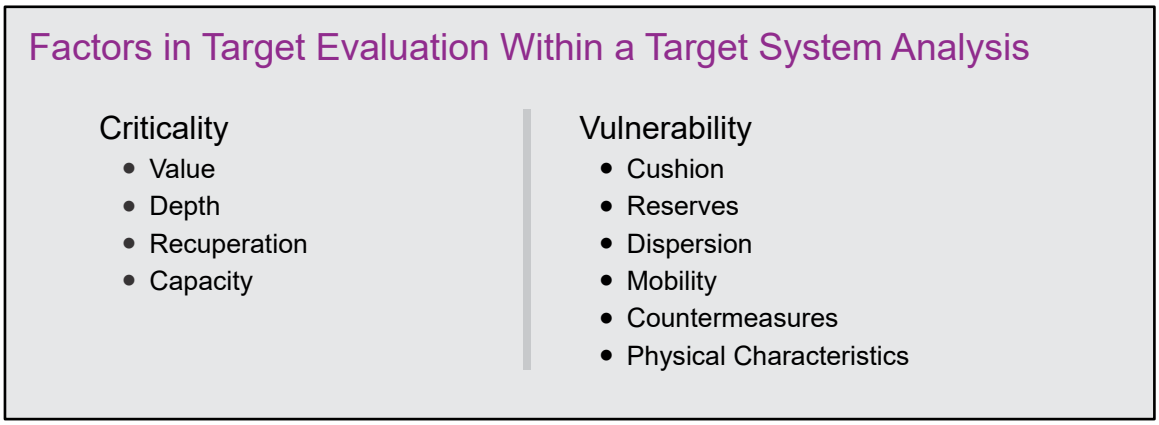


Figure II-6. Factors in Target Evaluation Within a Target System Analysis

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 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 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 the threat'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, and passive and active defenses to negate friendly efforts to affect threat 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.

g. **Nonphysical characteristics** are also analyzed to determine the target's susceptibility to the effects of fires. Cyberspace or electromagnetic spectrum characteristics can significantly increase or mitigate target vulnerabilities to attack.

(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 an entity from initial identification and functional characterization to execution-level detail. A target is considered fully developed when the three stages are complete and sufficient intelligence exists to support the operational and legal requirements necessary to proceed with military operations against the target.

(a) Once an entity has been identified as a potential target (known as a target development nomination [TDN]), an ETF should be started. ETFs are a set of webpages and/or links to metadata-tagged, dynamic target materials (TM) that are stored and maintained in central repositories. 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). 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).

(c) Aimpoints are selected for targets based on critical target element analysis and to include the ability to create desired effects to be created by an engagement. Aimpoint analysis and development, while part of target development, must also be linked to the capabilities analysis step in the targeting cycle. Aimpoints are normally expressed as geographic coordinates grid reference, logical reference, and radio frequency parameters and can include a temporal aspect to applicability. Aimpoints include a desired point of impact normally associated with the use of precision-guided munitions, desired mean point of impact, and the joint desired point of impact (JDPI). JDPI is a unique, alphanumeric-coded aimpoint identified by a three-dimensional mensurated point and is used as the standard for identifying aimpoints. For fires to create lethal effects, an aimpoint is for weapon impact or penetration. For fires to create nonlethal effects, a nonlethal reference point (NLRP) designates the location of the target. NLRPs are always associated to a target entity or element but may or may not correspond to a physical location. Unlike a JDPI, an NLRP does not represent a precise three-dimensional geocoordinate that has been measured by a certified analyst. For purposes of databasing, NLRPs are entered as aimpoints.

See CJCSI 3370.01, Target Development Standards, *and CJCSI 3505.01,* Target Coordinate Mensuration Certification and Program Accreditation, *for additional information regarding aimpoints and their analysis and development.*

(6) **TLM.** TLM is a process within 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 is an optional process initiated by the JFC and supported by intelligence community (IC) agencies in order to support proper functional characterization and highlight considerations for engagement of targets deemed by the JFC as being high risk of mischaracterization or potential dual use. Vetting should not be a universal requirement for all targets, as this significantly strains IC capacity and is detrimental to ensuring high-risk targets receive sufficient resources to be analyzed. Vetting responses from the IC do not restrict a commander's authority to engage a target and are meant to clarify both the risk and uncertainty associated with a given target—not to reduce or share in the risk of a strike. See CJCSI 3370.01, *Target Development Standards,* for more information on target vetting.

(b) Once vetted, candidate targets 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 and then added to a JTL or RTL.

(7) **Target List Development.** Various target lists may be identified for use by the JFC. It is imperative procedures be in place for additions or deletions to the lists and 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. TDN list. A list of nominated entities that meets basic target development criteria but requires intermediate target development before submitting as a candidate target.

2. CTL. A list of entities that are in target development and have not yet been validated.

3. JTL. A list of validated targets upon which there are no target engagement restrictions.

4. RTL. A list of validated targets upon which there are target engagement restrictions.

5. Target nomination list (TNL). A list of targets from the JTL and RTL that are nominated by an organization (normally a component) for targeting in a predetermined period of time (e.g., air tasking order [ATO] period).

The no-strike list (NSL) is not a target list, though it is a critical part of the joint targeting process. The NSL is a list of objects or entities characterized as protected from the effects of military operations under international law and/or rules of engagement.

6. JIPTL. A prioritized list of targets approved and maintained by the JFC.

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

(b) JFCs may retain JIPTL development responsibilities or delegate that responsibility to a component. The JIPTL is normally developed by the air component in coordination with other component liaisons.

(c) The draft JIPTL may contain more targets than can be engaged with available resources during a given time period. In such cases, a draft JIPTL cut line established to reflect the targets that will most likely be engaged. 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 priorities, extreme situations, and changing resource availability will determine which targets are ultimately prosecuted. After JFC approval, the JIPTL provides components and the JFC with feedback on how their specific target nominations are prioritized for the master air attack plan (MAAP).

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. The JFC is ultimately responsible for validating targets to the JTL/RTL. Actions that exceed specified restrictions are prohibited until coordinated and approved by the establishing headquarters. Attacking restricted targets without due regard to the specified restriction(s) may interfere with projected friendly operations. Targets may have certain specific restrictions associated with them that should be clearly documented in the ETF (e.g., coordinate with a specific national agency or do not use cluster munitions). An example of a possible restricted target could be disabling or neutralizing remote cell phone towers used by the adversary, which may neutralize our own ability to communicate by cell phones as well. When targets are restricted from lethal attacks, commanders may consider nonlethal capabilities as a means to achieve or support the commander's

objectives. However, use of capabilities to create nonlethal effects 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 approved JIPTL, which focuses targeting efforts for a designated period.

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

c. **Phase 3—Capabilities Analysis**

(1) This phase of the joint targeting cycle involves evaluating all available capabilities against targets' critical target elements to determine the appropriate options available to the component commander for target engagement and developing 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. 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 collateral effects are also performed within capabilities analysis. 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 by a component commander. Target engagement capabilities may create either lethal or nonlethal effects. All target engagement types should be considered in capabilities analysis. Weaponeering is accomplished in this step for all capabilities. 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 authority to engage such a target, this ATI would be "unfeasible."

(d) **Effects Estimate.** Each feasible ATI should have first-, second-, and higher-order effects identified. 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.

(2) Capabilities analysis conducted at the component level 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. This analysis should consider performance data on the assets considered for application against the target, means of delivery weapons characteristics, and arrival conditions. 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. 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 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).

(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 also performed within 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 to higher fidelities using Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME) methodologies.

(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. The Services, as well as the 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, range to target, angle of fall). 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 capabilities that create nonlethal effects should be a part of effects estimates, target development, and weaponeering analysis. The considerations for use of capabilities that produce nonlethal effects in targeting should be integrated throughout the operation. Though highly effective for their intended purpose, capabilities that produce lethal effects may not always be suitable. For example, during stability, humanitarian assistance, disaster recovery, security cooperation, and deterrence activities, the creation of lethal effects is normally greatly restricted, making capabilities that create nonlethal effects the dominant feasible option. The considerations for use of such capabilities in targeting should not pertain only to specific phases or missions but should be integrated throughout the operation.

(d) Analysis used to counter threat networks is done by social network analysis (SNA). SNA would be a part of the phase 3 capability analysis in the joint targeting cycle. When countering threat networks (CTN), whether state or non-state actors or groups, that may, or may not, be located in one contiguous area, special considerations must be taken. When targeting networks, the JFC has to plan for desired, first-, second-, and third-order effects and be ready to deal with undesired effects or collateral damage. It might take some time to fully realize the nonlethal effects on a targeted network. For example, a persistent series of lethal strikes killing large number of enemy combatants (first-order effect) can have the nonlethal effect of demoralizing enemy fighters (second-order effect) and may lead to mass surrender or defect, diminishing the capacity and capability of the enemy force (third-order effect) (see Figure II-7).

For more information on unique CTN targeting processes, see JP 3-25, Countering Threat Networks.

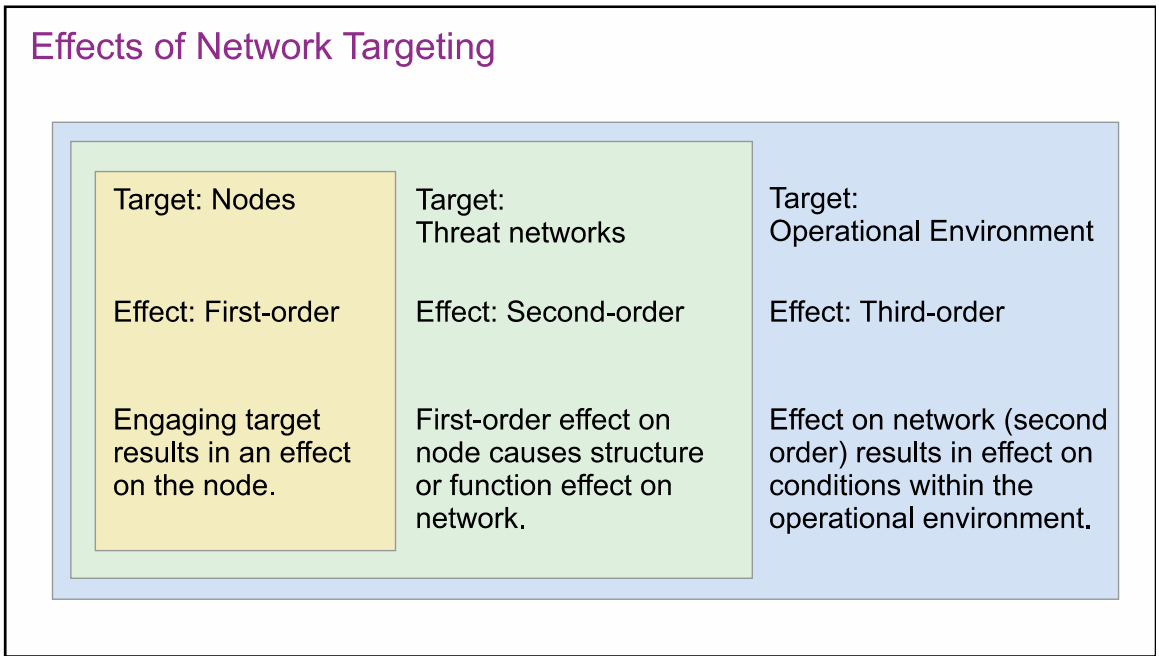


Figure II-7. Effects of Network Targeting

(e) The JFC may also need to address concerns and provide guidance 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 a captured airfield's capability to support friendly forces. The employment of capabilities and other activities that create nonlethal effects such as key leader engagement (KLE), civil-military operations, and military information support operations can help address these concerns. Nonlethal effects, including use of information-related capabilities (IRCs), can also influence adversary decision makers' choice of actions, local public opinion, and indirectly affect domestic and international support of the adversary. Nonlethal effects provide the JFC a range of flexible options. The selection, availability, scalability, and effectiveness of capabilities and activities provide the JFC the means to engage targets throughout the operational environment.

(f) The use of capabilities to create nonlethal effects 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 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 objectives. Escalation of force guidance in the form of ROE/rules for the use of force, coupled with appropriate 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 cycle phase 3 when conventional lethal capabilities are used. CJCSI 3160.01, *No-strike and the Collateral Damage Estimation Methodology,* details a repeatable process to generate casualty estimates. The decision to authorize a strike or to elevate a targeting decision when there is potential for noncombatant loss of life or injury, or loss of property, will not

be determined solely through a mechanistic or numeric process, nor will it be based on quantified casualty estimates alone. Targets with associated collateral damage concerns expected to exceed theater (CCMD) sensitive target criteria are referred either to SecDef or the President using the sensitive target approval and review (STAR) process, detailed in CJCSI 3122.06, *(U) Sensitive Target Approval and Review (STAR) Process.* For fires that create nonlethal effects, targeteers should characterize the level and extent of collateral risk for the commander, such as diplomatic and public relations consequences.

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

(1) The force assignment process at the component level integrates previous phases of joint targeting and fuses capabilities analysis with available forces, sensors, and weapons systems. Figure II-8 provides a graphic illustration of the flow of this step. It is primarily an operations function but requires considerable intelligence support to ensure intelligence collection requirements are validated and sufficient intelligence collection

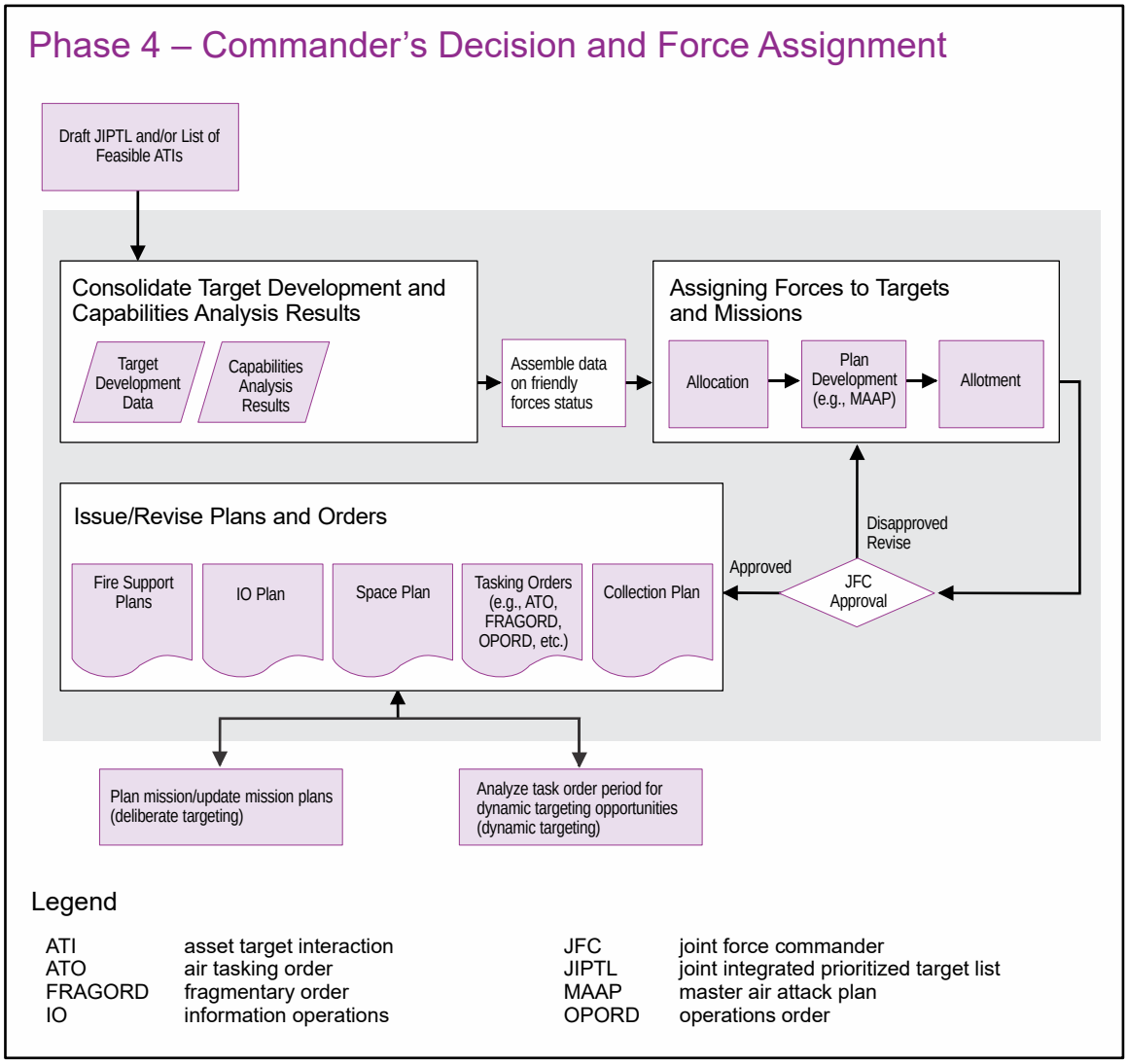


Figure II-8. Phase 4—Commander's Decision and Force Assignment

assets are made available and properly integrated into the plan. Intelligence collection assets are provided by Service components and the requirements have generally outpaced their availability. The process of resourcing JIPTL targets with available forces or systems and intelligence collection assets lies at the heart of force assignment. This process links theoretical planning to actual operations. Once the JFC has approved the JIPTL, components are tasked with engaged assigned targets.

(2) The joint targeting process is also based on the logical linkage between tasks, effects, objectives, and guidance. This process traces the analytical reasoning that supported the nominated targets and the details of the capability effectiveness estimates. The work of unit 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 component assignment available to the mission planners, and providing them real-time collaboration capability with other targeteers, enables adjustment and fine-tuning of unit mission planning. It also provides a channel to discuss mitigation of risk for the engaging 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 component execution that reduces the likelihood of confusion between joint force assignment expectations. Ultimately, the exchange of information during phase 4 and the reconciliation of a common operational picture (COP) are critical target elements during phase 6 of the joint targeting cycle where outcomes are analyzed and future actions are determined.

(3) Targeteers work closely with component planners to balance the available employment options with their expected effects. The targeteers' recommendations should reflect an assessment of the most appropriate capability to create the effect required to meet the commander's objective. During force assignment, targeteers also provide updated target status, effectiveness analysis, and collateral damage estimates.

(4) Before deciding to engage a target, the commander should consider concerns of the IC, such as intelligence gained or lost. The IC initially identifies concerns for a target during vetting in phase 2 of the joint targeting cycle and should be given the opportunity to re-address their concerns during the joint targeting coordination board (JTCB) or other appropriate venue, especially if considerable time has passed since the target was validated. CJCSI 3370.01, *Target Development Standards*, details how the joint force should incorporate intelligence gain or lost inputs provided by IC members during the vetting process into the decision to engage a target.

(5) **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, component-targeting personnel should prepare summary files and worksheets distilling the pertinent

information collected on each 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. To condense this material, component targeteers prepare target briefs summarizing the contents of the target folder.

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. Component targeting personnel may also provide the projected effects of nonlethal applications on the target. The component targeting team will normally require several possible weaponeering solutions for each JDPI or on each target, arranged in order of effectiveness.

3. **CDE.** Every target where a weaponeering solution was determined must 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 may be required to 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.** Component planners and their logistics counterparts assemble data on the current status and availability of friendly forces and munitions. The JFC approves the JFACC-recommended air apportionment describing the division of military effort among the different missions. Other issues affecting the components 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. Component 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, component planners assign forces, munitions, capabilities and activities (including IRCs), and intelligence collection 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. The operational characteristics of a particular weapon system when tasked against a specific target may require adjustments to the overall plan or order. Targets may not be engaged 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 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, not approve, or approve with modifications the draft JIPTL. Component planners, working with other component liaisons, 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 nominated targets cannot be engaged, 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 JTCB. 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.

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

(6) 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.

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

(1) Upon receipt of component tasking orders, detailed, unit-level planning must be performed for the execution of operations. Figure II-9 illustrates the typical process flow of this phase. The joint targeting process supports this planning by providing component 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).

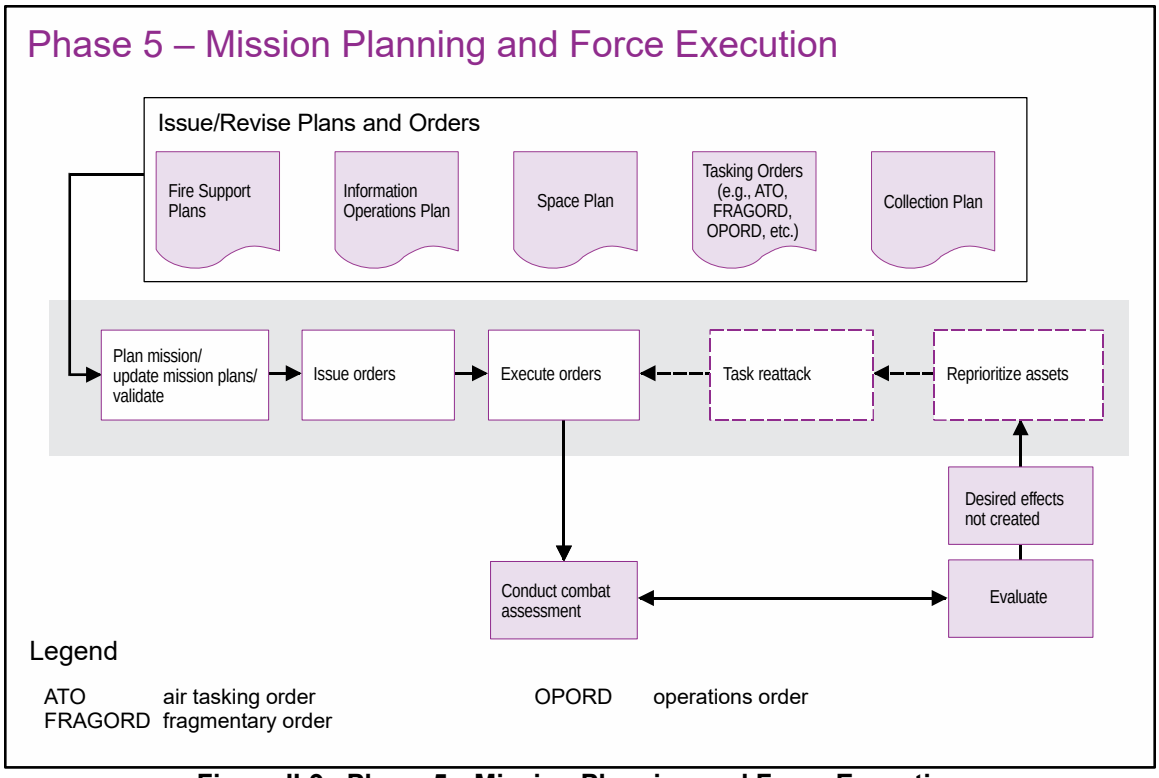


Figure II-9. Phase 5—Mission Planning and Force Execution

(2) Combat operations are fluid. 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 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 warfare 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) During execution, an analysis of the situation is critical 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) 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. The JFC should articulate risk tolerance sufficiently to let on-scene commanders understand his intent when dynamic targeting requires accelerated coordination.

(4) Dynamic targeting is executed using the dynamic process of F2T2EA (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 intelligence, surveillance, and reconnaissance-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)

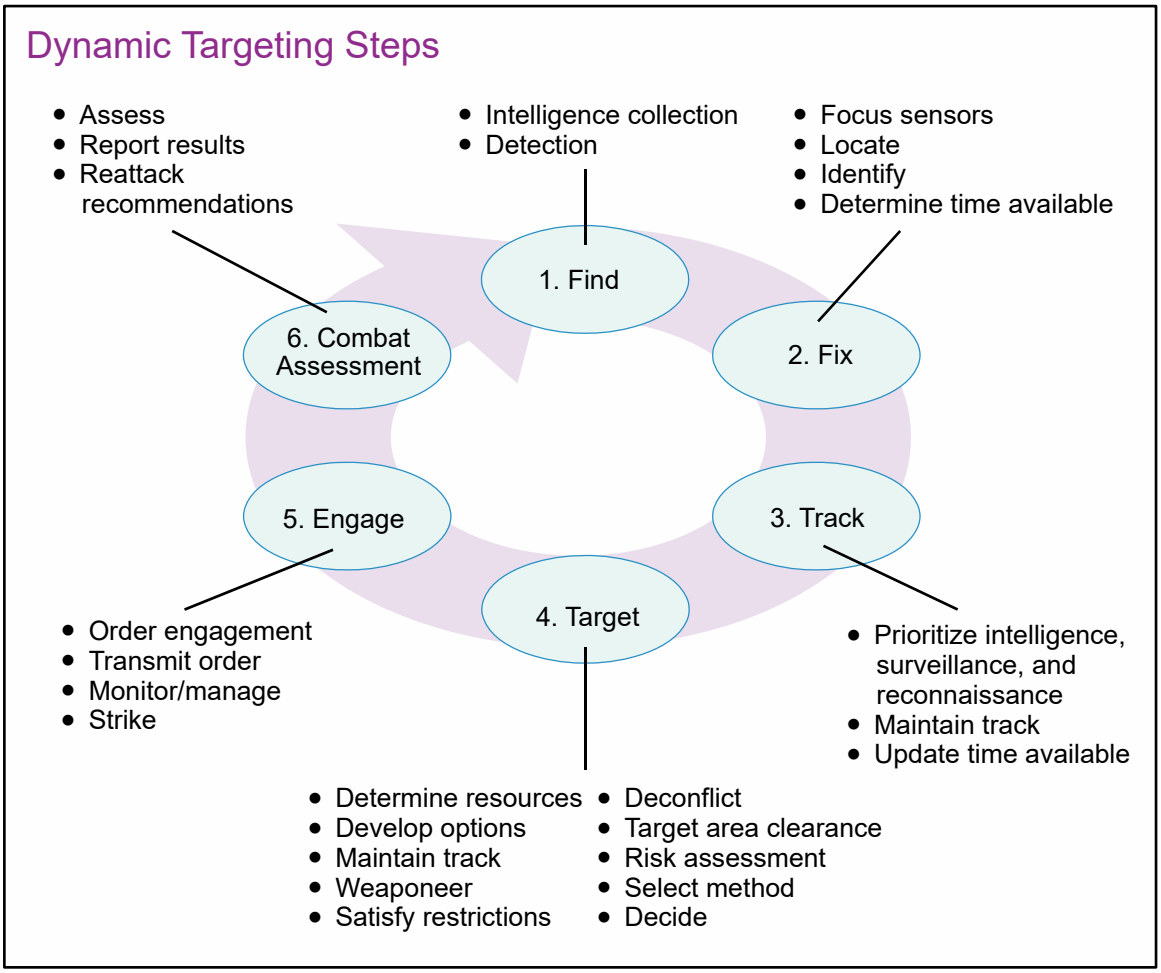


Figure II-10. Dynamic Targeting Steps

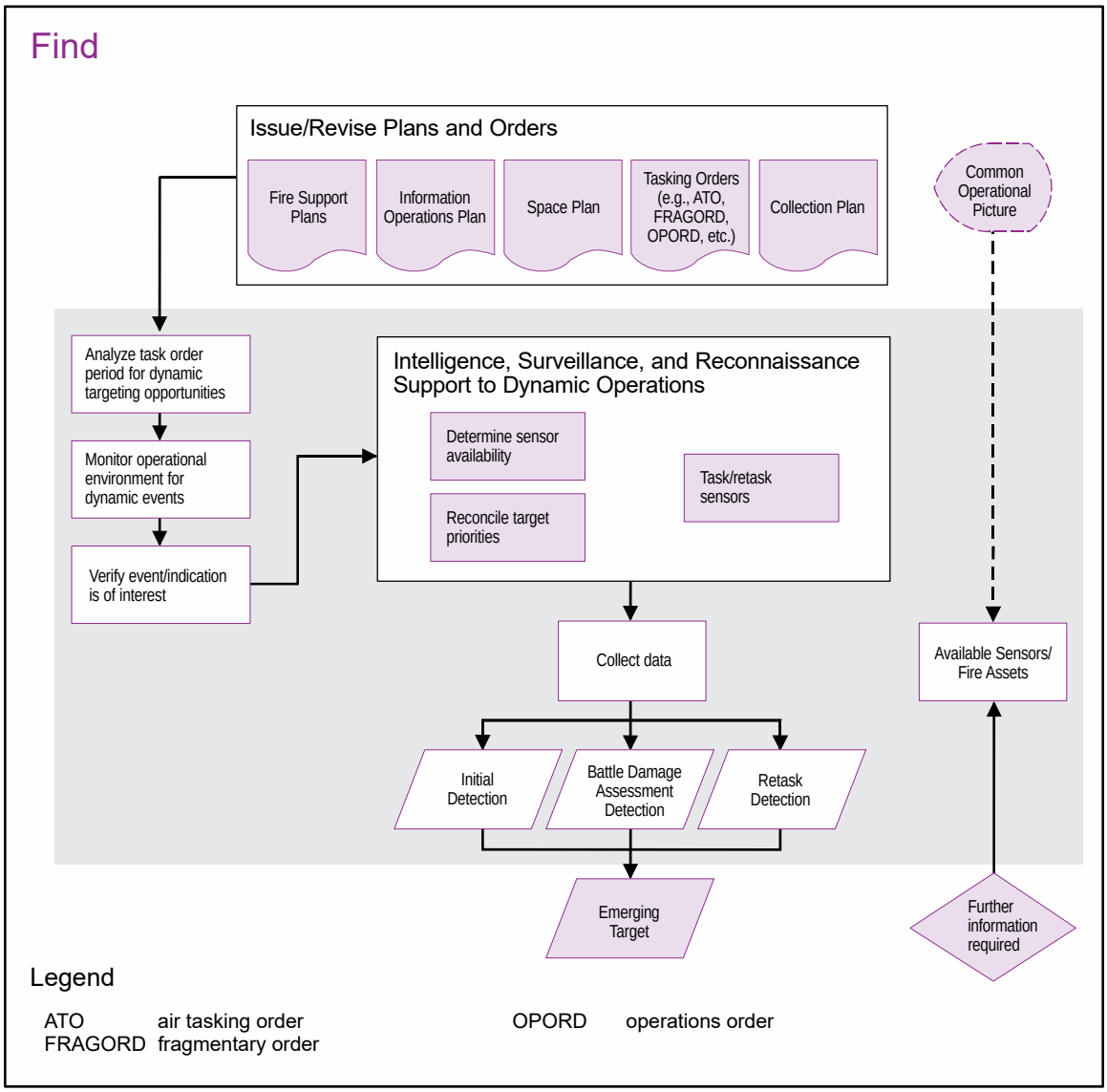


Figure II-11. Find

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

2. Inputs to the find step:

   a. Clearly delineated dynamic targeting guidance and priorities.

   b. Focused JIPOE and planning, 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. Intelligence collection assets such as aircraft targeting pods, 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 intelligence collection means.

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 often initially undetermined. Emerging targets normally require further intelligence collection 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; 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).

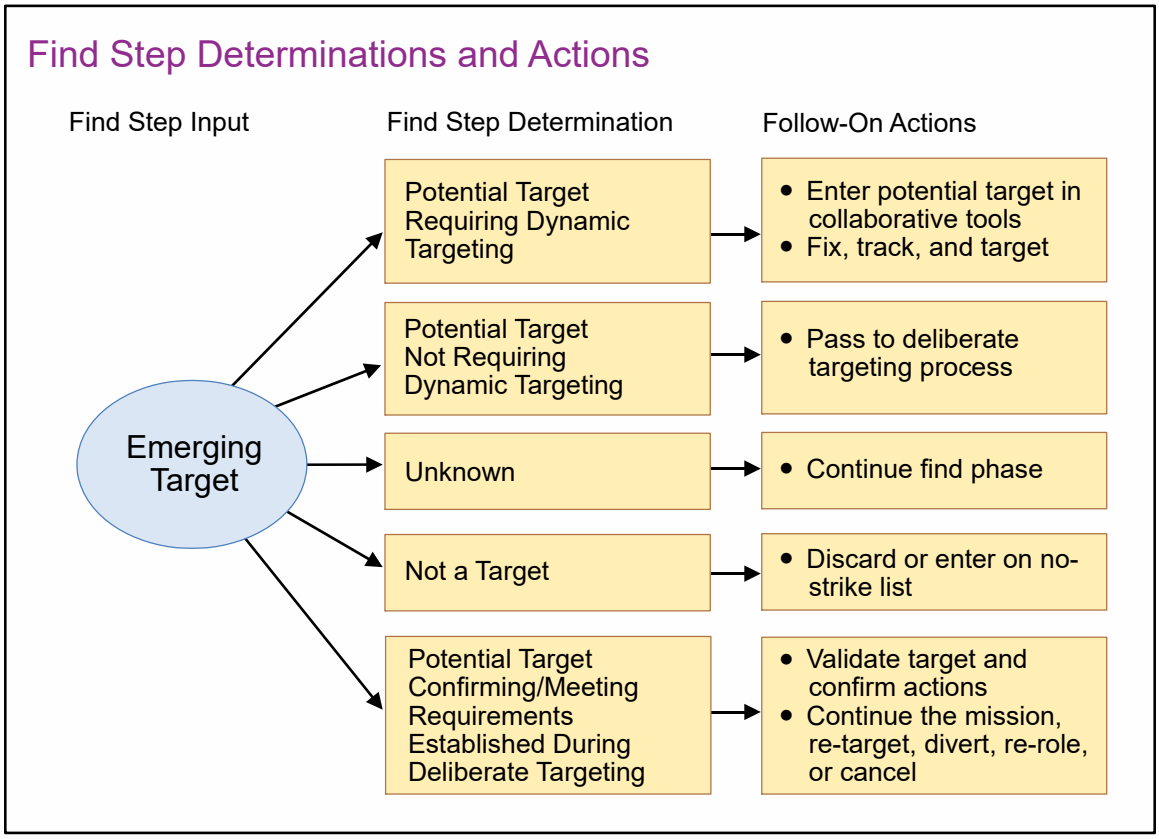


Figure II-12. Find Step Determinations and Actions

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 intelligence collection assets, and the target and engage phases being completed with a much abbreviated coordination and approval process. For example, use of aircraft systems that carry intelligence, surveillance, and reconnaissance assets 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

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:

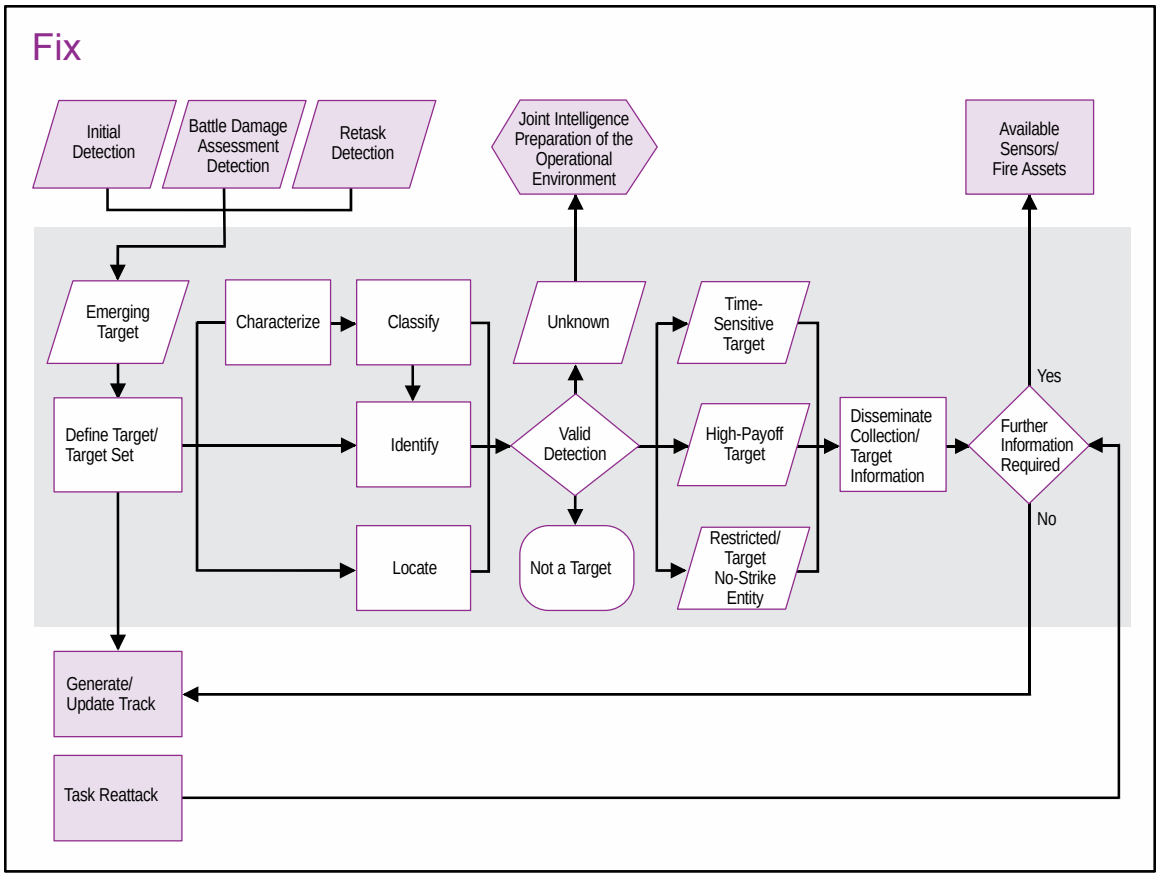


Figure II-13. Fix

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 target requiring dynamic or deliberate targeting. TSTs receive the highest priority in dynamic targeting.

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. PID.

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.

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 intelligence collection 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:

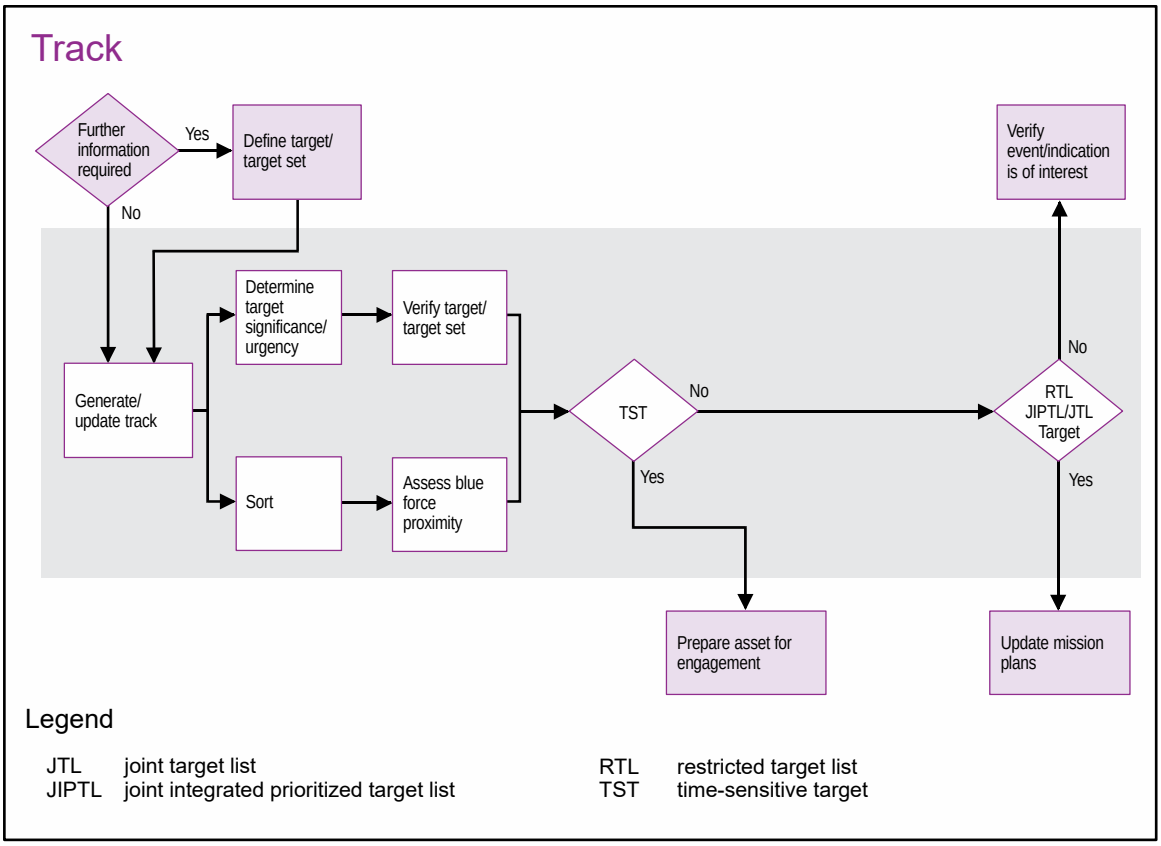


Figure II-14. Track

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, RTL, component boundaries, and FSCMs.

c. SA on available assets from all components.

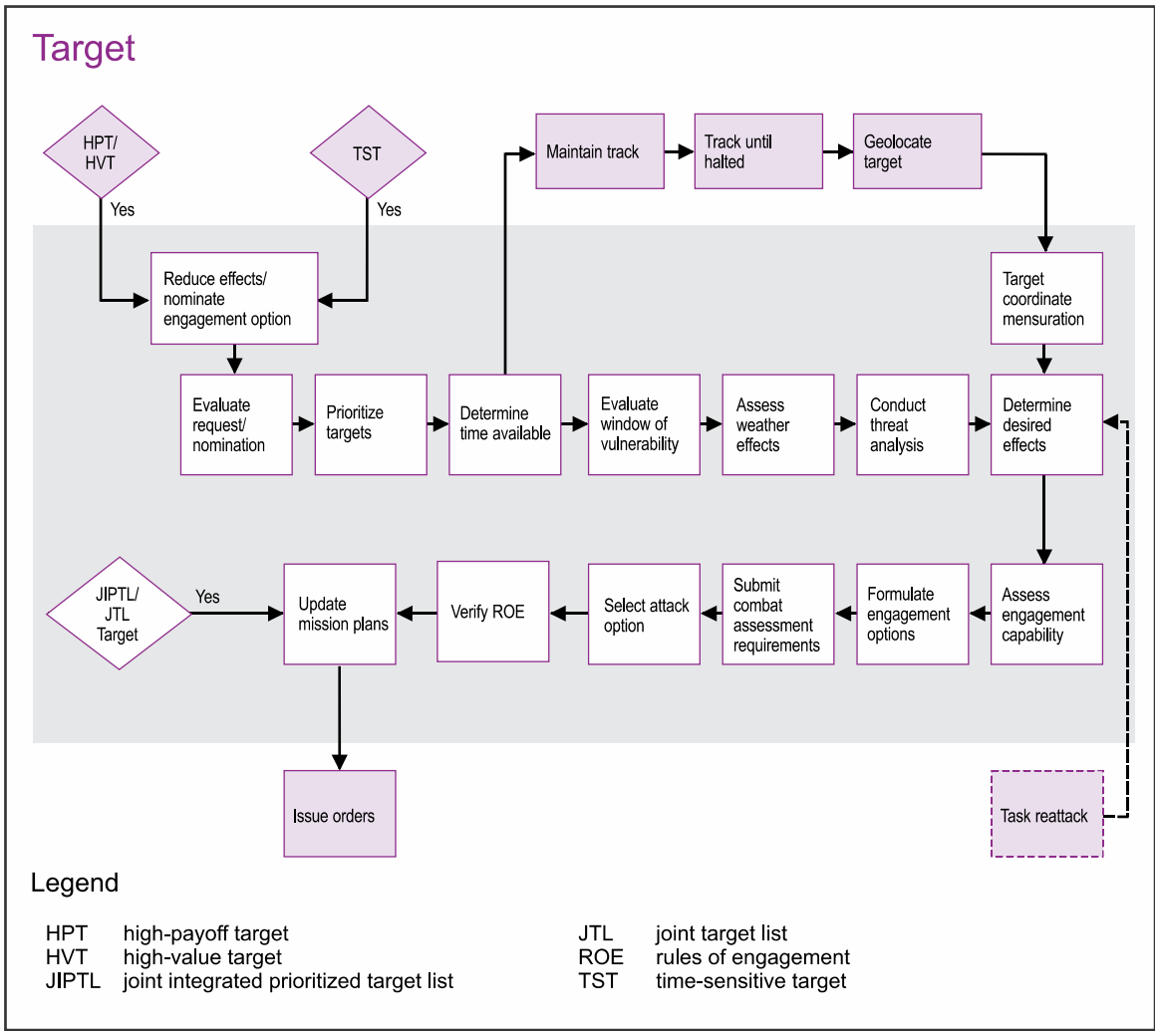


Figure II-15. Target

3. The target step begins with target validation. That is, operations personnel ensure all vetted entities 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 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 or activity that will engage it.

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

d. Target engagement approved (decision) in accordance with JFC and component commander guidance.

e. Assessment collection requirements are submitted.

f. Collateral damage is estimated.

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

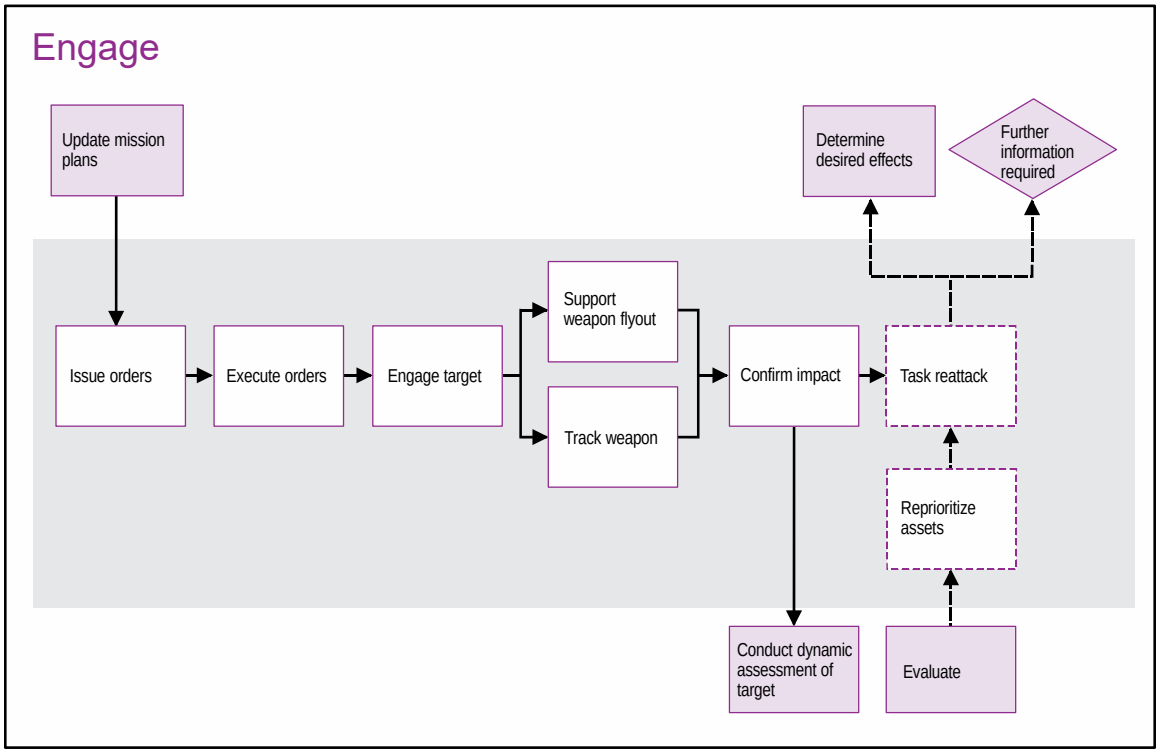


Figure II-16. Engage

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:

a. Issuing and passing of the engagement order.

b. Target engagement.

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 the assessment of nonlethal effects, the intended target(s) will need to be assessed continuously because activities such as civil affairs, military information support operations, cyberspace operations, etc. may take time (sometimes days, weeks, or months) to determine if the desired effects have been created. If the desired effect is not created, a modification/re-strike may need to be recommended.

4. For both lethal and nonlethal weapons, this initial assessment is part of phase I of battle damage assessment (BDA). 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, combat assessment (CA).

6. Find, fix, finish, exploit, analyze, and disseminate (F3EAD) is a subset of the F2T2EA process. This process is used to engage selected targets or activities (caches, bomb-making facilities). F3EAD incorporates the same fundamentals of the joint targeting cycle and facilitates synchronizing maneuvers, intelligence, and fire support.

f. **Phase 6—CA**

(1) The CA 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 CA 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. CA occurs at the tactical, operational, and strategic levels of

warfare. The assessment of target engagement results must be integrated to provide the overall joint CA. Paragraph 4, "Time-Sensitive Target Considerations," and Appendix D, "Combat Assessment," discuss assessment in more detail.

(2) The CA 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 target 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, and reattack recommendations.

For additional information on CA, see Appendix D, "Combat Assessment," and Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3162.01, Joint Methodology for Battle Damage Assessment.

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 the authority for the engagement of TSTs 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.

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 engagement method. 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.

(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 major operations and campaigns, 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 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 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. 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 warfare. Strategic and operational effects focus on larger aspects of various systems, while tactical-level effects are typically associated with results of offensive, defensive, and stability tactical actions, often involving capabilities that produce lethal and nonlethal effects. 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—CA.** BDA measures the physical and functional effect of target engagements at three levels: the target element level, the target level, and the target system level. 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, staff, and component commanders 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.

e. Commanders at all levels should be focused on selecting the appropriate response to create effects against chosen targets. Effects are the cumulative lethal and/or nonlethal results of target engagements by all employed means. Once the target is engaged, the commander must assess the effectiveness of the engagement. There are many different ways to categorize effects. One important distinction is between direct and indirect effects.

(1) **Direct effects** are the immediate and easily recognizable, first-order consequences of a military action (weapons employment results), unaltered by intervening events or mechanisms. However, nonlethal direct effects may not be so immediate or easily recognizable. For example, conducting a KLE with moderate leaders of a threat group in order to get the group to stop attacking civilians, the direct effect (desired response of the friendly force message by the moderate leaders) might take hours or days after the KLE to debrief all members of the KLE and determine the direct effect.

(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 target 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. A nonlethal example could be if counter threat finance (CTF) actions are taken against a threat network and a significant portion of the threat group's funds are seized and financiers are arrested by law enforcement, the cascading effect could be a loss in the ability to pay enemy.

For more information on CTF, see JP 3-25, Countering Threat Networks.

(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 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 was expected, complicates operations, or causes a change to operations (e.g., the enemy as expected to withdraw, 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
ROLES 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, 1870, *Battle Studies: Ancient and Modern Battles*

1. Joint Targeting Integration and Oversight

a. The JFC's primary targeting responsibility lies in integrating, synchronizing, and establishing the objectives 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 and provide clear targeting guidance. Weight of effort (apportionment) is normally proposed by the JFACC (or JFC-designated representative), in consultation with other component commanders, and approved by the JFC. 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 Incident Prevention.** Throughout the targeting process, JFCs and component commanders should establish safeguards to reduce the possibility of friendly fire incidents. Knowledge of friendly forces position and intended scheme of maneuver in relation to select targets aids in friendly fire incident prevention. Friendly fire incident prevention is a key consideration of risk assessment across all targeting timelines from long-term to rapidly changing, time-sensitive situations. Although the JFC may justifiably elect to accept additional risk when engaging targets of opportunity, appropriate friendly fire incident prevention measures must still be in place and followed.

For additional discussion of friendly fire incident prevention, risk mitigation, and avoidance, see JP 3-09, Joint Fire Support.

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 appropriate application of force with minimal collateral damage. Joint standards and methods for CDE 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.** The integration of offensive military capabilities and activities that can create nonlethal first-order effects (e.g., electronic attack, cyberspace attack, and IRCs) should be coordinated and synchronized/deconflicted during the joint targeting cycle.

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 guidance and apportionment decisions, components plan and execute assigned missions through their respective operations centers. The theater air-ground system provides a C2 architecture through which targeting may be integrated.

For additional information, see JP 3-05, Special Operations; *JP 3-09,* Joint Fire Support; *JP 3-30,* Command and Control of Joint Air Operations; *JP 3-31,* Command and Control of Joint Land Operations; *JP 3-32,* Command and Control of Joint Maritime Operations; *JP 3-33,* Joint Task Force Headquarters; *and ATP 3-52.2/Field Manual (FM) 3-52.2/MCRP 3-20.1/NTTP 3-56.2/AFTTP 3-2.17,* Multi-Service Tactics, Techniques, and Procedures for the Theater Air-Ground System.

2. Joint Force Targeting Responsibilities

a. JFC Responsibilities

(1) The JFC conducts 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 commander's critical intelligence requirements throughout the operation.

(d) Direct the formation, composition, and specific responsibilities of a joint fires element (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. TST guidance may be accomplished through the JFC established JTCB or like body.

(g) Develop theater-level TST tactics, techniques, and procedures for the AOR by the GCC in coordination with the components.

(2) **JTCB.** Targeting integration and coordination tasks are normally accomplished through the JFC-established JTCB or like body. The JFC normally appoints the deputy JFC, J-3, 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 performs this task at the joint force headquarters, with the assistance of the J-3. The JFC ensures 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 is an integrating and synchronization center for targeting oversight across the joint force to include targeting planning of all components. 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 (see Figure III-1).

(b) Membership of the JTCB should include SMEs in all capabilities. The integration of capabilities to create lethal and nonlethal effects should be a function of all phases of joint operations. The JTCB should be flexible enough to consider all capabilities for appropriate targeting. The JFC may use a joint targeting working group (JTWG) to review targeting integration before the JTCB.

(c) The JFC defines the role of the JTCB. The JTCB provides a forum in which all components can articulate plans and priorities for future target engagements so they may be synchronized and integrated. The JTCB normally integrates and coordinates joint force targeting activities with the components' schemes of maneuver to ensure the JFC's priorities are met. Targeting issues are generally resolved below the level of the

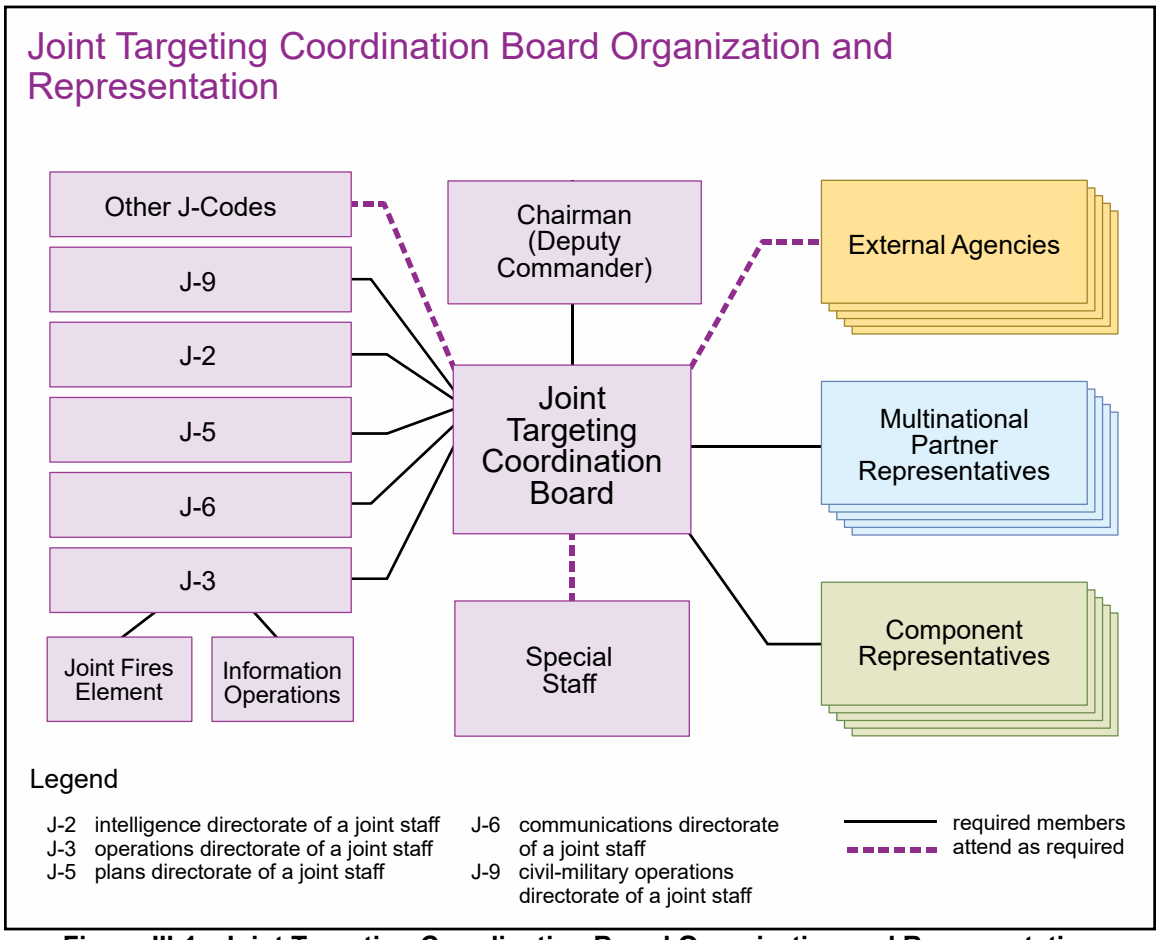


Figure III-1. Joint Targeting Coordination Board Organization and Representation

JTCB, by direct coordination between elements of the joint force, but the JTCB and/or JFC may address specific target issues not previously resolved.

(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 typically:

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

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

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

4. Reviews prioritization and integration of component plans according to the JFC's CONOPS.

5. Reviews broad component targeting guidance and priorities.

6. Reviews and refines intelligence collection requirements and joint intelligence, surveillance, and reconnaissance assessment guidance based on JFC priorities and intent, to include refinement of MOPs and MOEs, as appropriate.

7. Reviews the JIPTL for JFC approval or by a JFC-designated authority for JIPTL approval.

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

9. Reviews, validates, and approves 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 assess integration and synchronization of all components schemes of maneuver and CONOPS. The JTCB must be flexible to address targeting issues but should not become over-involved in tactical-level decision making. The JTCB requires a focused agenda to guide the daily conduct of business to function as effectively and efficiently as possible. A notional JTCB agenda is outlined in Figure III-2. In breaking the meeting into five parts, the JTCB may address at least four planning horizons.

1. **Assessment.** The first portion is a review of a completed operational period as defined by the JTCB (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 JFC guidance for future plans, given by the JTCB's chairman.

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

4. **Integration of Capabilities.** The final portion of the board should review the next 24 hours plan for how capabilities will be integrated to create effects against targets. 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) After the JFC (or designated representative) approves the JIPTL, it is promulgated throughout the joint force.

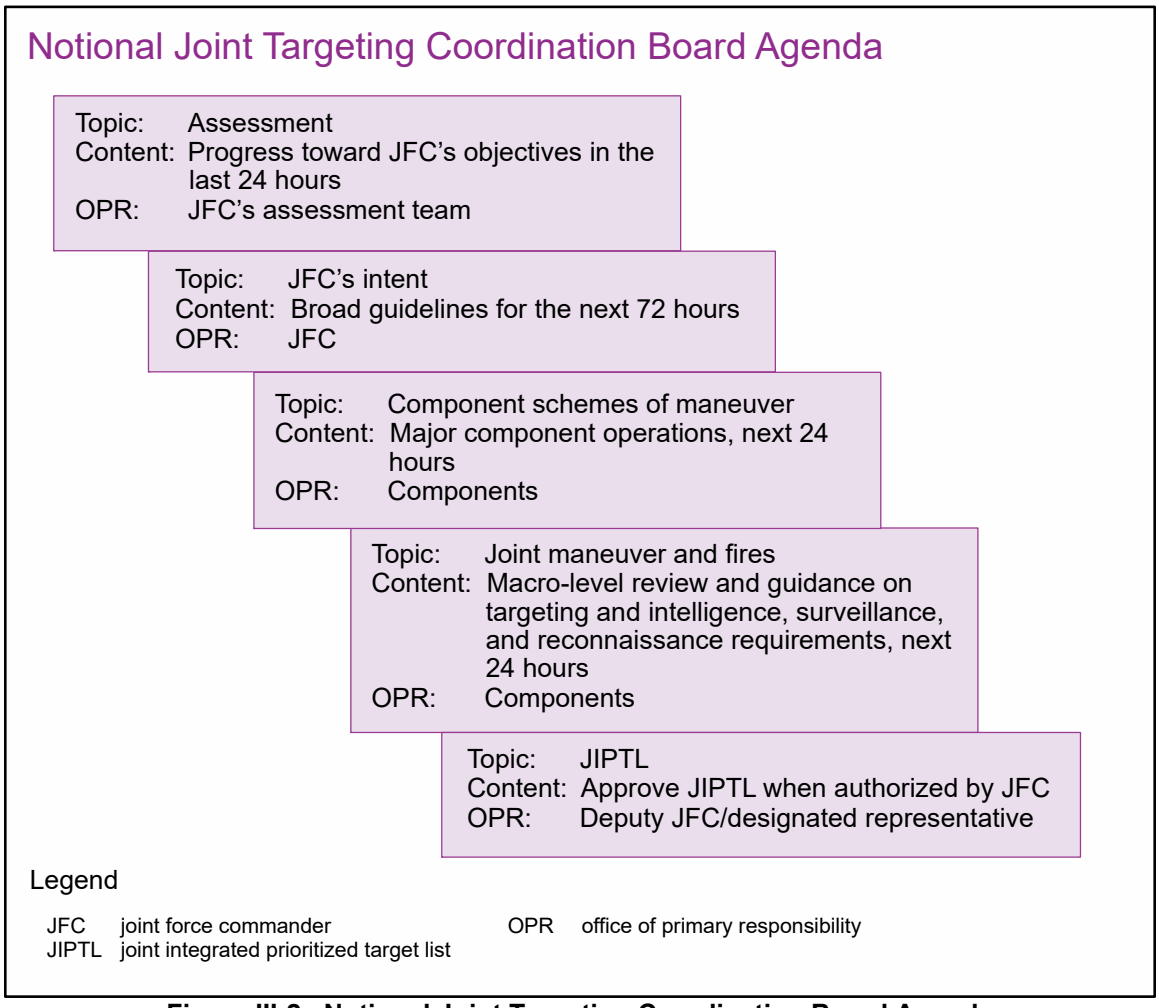


Figure III-2. Notional Joint Targeting Coordination Board Agenda

(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 the equivalent 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) **JFE.** 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; liaisons; 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), plans directorate of a joint staff (J-5), and others as required. The JFE is an integrating staff element that synchronizes and coordinates 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) Integration and synchronization of target nominations at the JFC level and higher.

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

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

(e) Develops the joint fires estimate and COAs.

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

(g) Recommends HPTs to the JPG.

(h) Coordinates joint fires and targeting ROE issues.

(i) Develops collateral damage prevention procedures based on commander's guidance and higher-level directives.

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

(4) **JTWG**

(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 reviewing, as required, 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 discuss targeting integration and synchronization issues raised by the JFC, staff, planning teams, and the JFC's major subordinate commands (see Figure III-3).

(b) The purpose of the JTWG:

1. Disseminate revised or new targeting guidance.

2. Draft guidance for the JFC-proposed schemes to integrate fires and activities to create both lethal and nonlethal effects.

(c) JTWG responsibilities are to:

1. Review the JFC's broad targeting guidance and components proposed schemes of maneuver to verify compliance with the JFC's intent and guidance.

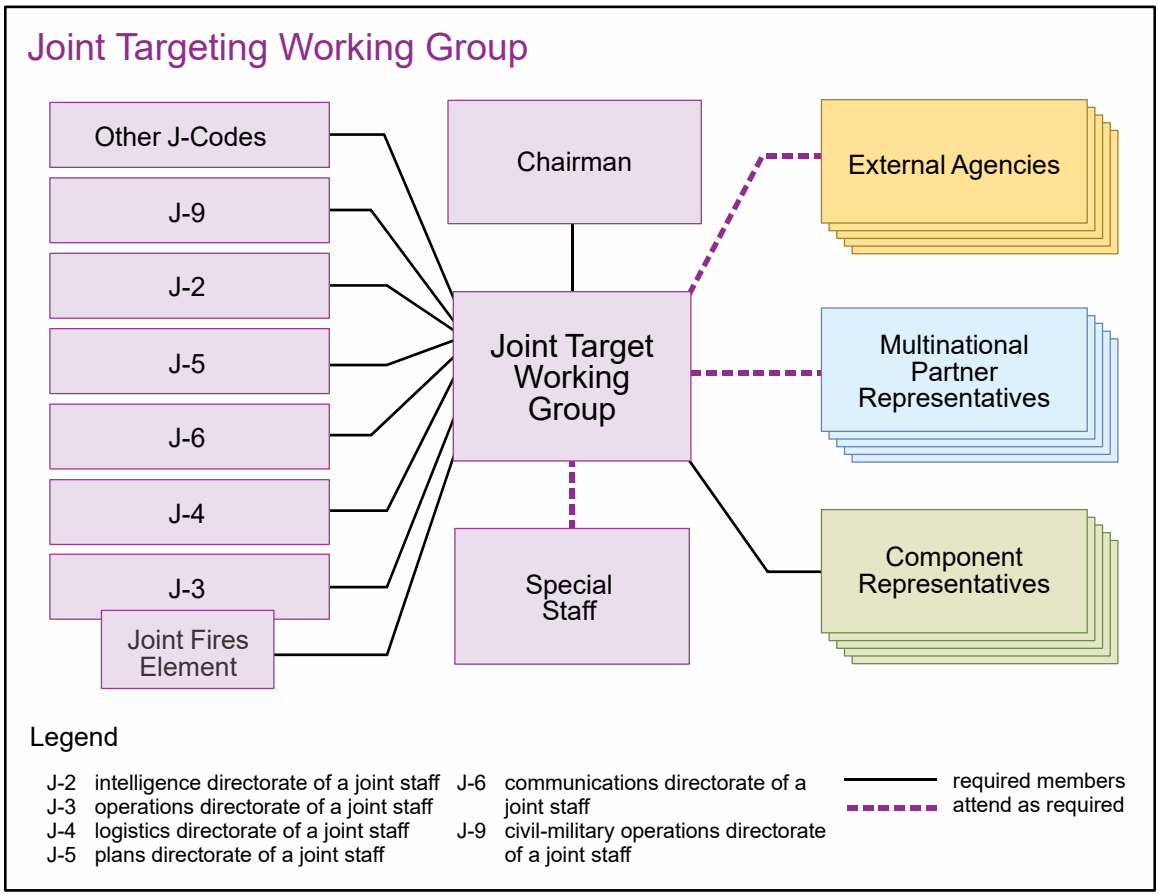


Figure III-3. Joint Targeting Working Group

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

3. Review the JTL, NSL, RTL, and other relevant lists.

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

b. **Joint Force Staff Responsibilities.** The JFC should determine the division of joint targeting cycle responsibilities 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 target element of the execution of the joint targeting cycle. Supporting and subordinate commanders will have their own targeting processes that will complement and support the supported JFC's targeting process. The supported JFC coordinates these various targeting processes and delineates the responsibilities of each supporting and subordinate commander to support the JFC's targeting cycle. Although the JFC establishes the joint targeting cycle, all subordinate commanders must have the ability to nominate targets to the JFACC or designated representative for joint targeting

consideration. The supported JFC provides opportunities for coordination through these various targeting processes.

(1) **J-2.** The J-2 prioritizes 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:

(a) Work closely with J-3 and J-5 to develop 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, execution, and assessment. For further information on JIPOE, see JP 2-01.3, *Joint Intelligence Preparation of the Operational Environment.*

(c) Produce and maintain target intelligence products, which meet the requirements of the commander. Target intelligence is the cumulative intelligence data produced by the DOD Intelligence Enterprise and other specific target support elements of the IC and multinational intelligence organizations. Such intelligence data includes entity-level basic, intermediate, and advanced target development data; TSAs; ETFs; target lists; and target intelligence assessments.

See CJCSI 3370.01, Target Development Standards, *and JP 2-01,* Joint and National Intelligence Support to Military Operations, *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 inclusion in the JTL based on all-source fusion analysis in the JIOC and/or the joint intelligence support element (JISE), component intelligence organizations, and federated partners.

(g) Recommend targets for inclusion in the draft 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 priority intelligence requirements.

(k) Serve as lead staff section 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) **J-3.** 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 coordinates, integrates, and executes operations throughout the OA. The directorate also leads planning efforts for current and future operations. When a JFE is established by the JFC, the J-3 will normally organize it and serve as a member. J-3 key functions and tasks generally include the following:

(a) Coordinate assessment activities at the JFC level.

(b) At the JFC level, the JOC is the focal point to synchronize and integrate 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. Manage the JTL and RTL.

8. Nominate targets to the JFC for inclusion on the JTL and RTL.

9. Conduct MEA.

10. Initiate and coordinate the STAR process.

See CJCSI 3122.06, (U) Sensitive Target Approval and Review (STAR) Process, *for more information on STAR.*

(c) Additionally, the J-3 may act as lead staff section for the JTCB or any similar group established to provide broad targeting oversight.

(3) **J-4.** The J-4 identifies logistic issues unique or specific to targeting. Of particular interest, the J-4 compares the operational logistic plans to identify infrastructure and supplies required to support current and future operations.

(4) **J-5.** 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 long-range planning guidance and planning directives.

(b) Identify possible branches and sequels.

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

(5) **Civil-Military Operations Directorate of a Joint Staff (J-9).** The J-9 or supporting civil affairs planning team identifies civil considerations specific to targeting and advises on the protection of civilians and protected sites. Additionally, the J-9 advises on the use of civil affairs to support the JFC's objectives.

(6) **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. The SJA also reviews target selection and force assignment for legal compliance and 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 to the JFC 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 approve component-critical targets.

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

(f) Nominate to the JFACC or designated representative targets for inclusion in the JIPTL with the intent of the JFACC engaging those targets.

(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 targeting expertise in the liaison elements to the joint air operations center (JAOC)—battlefield coordination detachment, Marine liaison element, naval and amphibious liaison element, tactical air planners, and the special operations liaison element. Cross-component coordination using the JAOC's liaison officer elements provide improved integration on JIPTL targets and a means to rapidly coordinate dynamic targeting and avoid delays or possible miscommunication through liaison elements. Decentralized execution during dynamic 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.

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 Joint Staff J-2 [Intelligence Directorate] using the intelligence planning process to establish federated targeting support partners and assessment reporting responsibilities between CCMDs in accordance with the supported CCDR's requirements. The supported CCDR may request the Joint Staff (JS) facilitate in identifying targeting support and assessment partners or work directly with other CCMDs to provide information to the JS regarding any inter-command targeting coordination. JS J-2 normally ensures 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. The major component of federated targeting support is through the targeting portion of the DOD Intelligence Enterprise. Targeting intelligence is supported by interdisciplinary, interagency, and multinational intelligence organizations, infrastructure, policies, processes, and procedures required to efficiently and effectively produce targeting data and products that meet the requirements of the commander. JS J-2 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 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 (e.g., joint air-to-surface standoff missile, terminal area models).

(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 planning process. 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 JS J-2 and CCMD (if required), begins to establish federated partnerships with other 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 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, JDPI production, weaponeering, CDE, 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. During planning, the NJOIC and 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 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 from the DOD Intelligence Enterprise 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 CCMDs. Other organizations within DOD that provide unique capabilities to joint targeting efforts include DTRA, the Joint Information Operations Warfare Center (JIOWC), United States Cyber Command (USCYBERCOM), the National Space Defense Center, and JWAC. 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 Joint Staff J-3 [Operations Directorate], NJOIC, DIA, NSA, NGA, DTRA, the Central Intelligence Agency (CIA), and NRO.

(a) **JS J-2.** 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. JS J-2 is the primary coordination element for national-level intelligence support to joint targeting. JS J-2 functions as the lead staff section for providing and coordinating national-level intelligence support to joint targeting. Specific JS J-2 targeting responsibilities are to:

1. Provide the Chairman of the Joint Chiefs of Staff (CJCS) and JS J-3 with targeting, assessment, and technical support planning.

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

3. Assist the joint force to establish, coordinate, and/or support federated intelligence operations, to include target development and assessment.

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

5. Provide 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. Identify targeting automation gaps for the target 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) **DIA.** DIA provides significant, all-source intelligence resources on a broad array of targeting issues. 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) **NJOIC.** The NJOIC is the primary conduit through which national-level target intelligence support is provided to the CCMDs and subordinate joint forces. The NJOIC and CCMD JIOCs leverage national intelligence assets and determine requirements through the Director of National Intelligence and IC representatives to CCMDs.

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

(d) **NSA.** 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 provides the CCMD, 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, CCMD JIOCs, and other interested commands and agencies informed of agency activities that take place in each respective GCC's AOR and/or JFC's OA.

(e) **NGA.** 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 can provide GEOINT support to CCMDs via an NGA support team or as part of other national intelligence support. Any intelligence support element in theater would have full connectivity with NGA to ensure reachback capability into NGA's total support effort.

2. Targeting support products use advanced GEOINT 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.

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

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

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

6. NGA's Geospatially Enabled Target Materials (GETM) is an example of a targeting object library and object-based production (OBP) product that contains geospatially referenced vector layers of installation and facility outlines. GETM follows the basic and intermediate target development standards outlined in CJCSI 3370.01, *Target Development Standards,* to ensure targeting interoperability with future OBP products.

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

(f) **DTRA.** DTRA is a combat support agency that enables DOD and the US Government to anticipate, understand, and combat risk associated with WMD, improvised threats, and the nuclear deterrent. DTRA develops and maintains data and technical tools to conduct analysis on chemical, biological, radiological, and nuclear (CBRN) plume hazard estimations and explosive hazards in support of a commander's CDE requirements. DTRA's capability encompasses the entire spectrum of CBRN threats and utilizes on-staff SMEs, as well as robust software capabilities, to conduct both in-depth, long-range, and time-sensitive plume hazard analyses. For additional details on DTRA capabilities, see DOD Directive 5105.62, *Defense Threat Reduction Agency (DTRA).*

(g) **JIOWC.** The JIOWC, a CJCS-controlled activity under JS J-3, enables the application of information at the strategic level and supports the execution of information at the operational level in order to facilitate global integrated operations in and through the information environment. The JIOWC provides support, including intelligence to JS J-3, and provides information environment-related intelligence that can be tailored for integration into TSAs and ETFs. JIOWC personnel work with DIA and supported command's targeting personnel from the earliest stages of the targeting process to ensure information environment-related intelligence is fully integrated into targeting efforts.

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

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

1. **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.

2. **Global Strike Command.** Global strike is the capability to rapidly plan and deliver extended-range attacks, limited in duration and scope, to create effects against enemy assets in support of national and theater commander objectives. Global strike missions employ capabilities against a wide variety of targets to create lethal and/or nonlethal effects. The *Unified Command Plan* assigns CDRUSSTRATCOM the responsibility for global strike. CDRUSTRATCOM plans global strike in full partnership with affected CCDRs. The CJCS or SecDef determines supporting and supported command relationships for execution. In some circumstances, USSTRATCOM may act in a supporting role to a supported CCMD for both global strike planning and execution.

3. **JWAC.** JWAC provides the JS, CCMDs, subordinate commands, 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.

4. **Joint Electromagnetic Spectrum Operations (JEMSO) Office.** The USSTRATCOM JEMSO Office is aligned under the USSTRATCOM J-3 to develop and execute the process to integrate command electromagnetic spectrum-related staff actions, offices, and activities in order to support CDRUSSTRATCOM mission requirements and to carry out directed JEMSO-related responsibilities. Operational electromagnetic spectrum-related activities, to include contingency and crisis support, are executed directly by the USSTRATCOM J-3 staff.

(i) **USCYBERCOM.** USCYBERCOM plans, coordinates, integrates, synchronizes, and conducts activities to direct the operations and defense of specified DOD information networks and prepares to, when directed, conduct military cyberspace operations to enable actions throughout the operational environment and facilitates US multinational partner freedom of action in cyberspace while denying the same to our adversaries.

(j) Supporting CCMDs have valuable resources that may be brought to bear to support federated targeting. Supporting CCMDs may construct ETFs and TM, assist in JIPOE, derive mensurated coordinates, support federated assessments, or provide other federated targeting support as coordinated during planning. CCMD 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. Principal non-

DOD organizations supporting joint targeting are the CIA, Department of State (DOS), Department of Justice (DOJ), Department of the Treasury, and Department of Energy (DOE). The Departments of Homeland Security, Transportation, and 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) **CIA.** The CIA, through its target coordination group within its Associate Directorate of Military Affairs, works with DOD on many issues relating to the targeting cycle.

(2) **DOS.** Because of DOS's worldwide network of diplomatic missions and posts staffed with representatives of numerous national agencies, it is a key source of information. The central point of contact within 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) **DOJ.** DOJ can directly support joint targeting, when the target has violated US or international law. DOJ assists DOS in a variety of efforts to promote freedom and security through the rule of law and strategic law enforcement priorities in countries around the world. DOJ officials work with partners on a variety of tasks, including the establishment of a robust judicial infrastructure, providing guidance in the investigation and prosecution of major crimes and acts of terrorism, providing technical assistance to enforcement entities, and training justice personnel on issues ranging from corrections procedures to international law regarding human rights. This relationship allows DOJ components the ability to establish and maintain liaison with principal law enforcement entities, security services, and foreign governments in their designated foreign country and OA.

(4) **Department of the Treasury.** The Department of the Treasury can support joint targeting in the area of CTF. The Department of the Treasury's Office of Terrorism and Financial Intelligence is the department's main interlocutor with other US Government departments and agencies focused on national security. Its mission is to marshal the department's intelligence and enforcement functions with the twin aims of safeguarding the financial system against illicit use and combating rogue nations, terrorist facilitators, WMD proliferators, money launderers, drug kingpins, and other national security threats. Financial networks underlie all of these threats and are sources of valuable intelligence and present vulnerabilities that can be exploited.

(5) **DOE.** DOE, through its national laboratories, provides significant CBRN 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 the 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. This appendix is not intended to be a substitute for legal counsel, which must be obtained from the command's servicing SJA.

2. International Law and the Law of War

The 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, humanity, proportionality, distinction, and honor, all of which apply to targeting decisions.

For detailed discussion, see JP 1-04, Legal Support to Military Operations, *and the* Department of Defense Law of War Manual.

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).** 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, (U) 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, and the circumstances for possible exception are discussed in the following subparagraphs. Civilian objects are those objects or locations that are not lawful military objectives. Acts of violence solely intended to kill, maim, or spread fear among the civilian population are prohibited under all circumstances.

(1) **Direct Participation in Hostilities.** The protection offered civilians carries a strict obligation on the part of civilians not to take direct part in hostilities. 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 or are used as human shields. Joint force targeting during such situations particularly implicates the principle of proportionality. The principle of proportionality requires that incidental injury, including death, to civilians and/or the collateral damage to civilian property anticipated to result from an attack not be excessive in relation to the concrete and direct military advantage anticipated to be gained by the attack. If civilians are being used as human shields, provided they are not taking a direct part in hostilities, they must be considered as civilians in determining whether a planned attack would be excessive, and feasible precautions must be taken to reduce the risk of harm to them.

For additional information on NSLs and CDE methodology, refer to CJCSI 3160.01, No-strike and the Collateral Damage Estimation Methodology, *and CJCSI 3122.06, (U) Sensitive Target Approval and Review (STAR) Process.*

(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 armed conflict occurs. Exclusively civilian objects or locations may not be intentionally targeted for attack. Furthermore, where such objects or locations are colocated with, or are in proximity to, military targets, the responsible commander must conduct a CDE analysis and, if a protected object or object on the NSL will be affected, take appropriate steps to mitigate effects on an unlisted object and request removal of a listed object from the NSL before a strike on the object can be lawfully authorized. Under the principle of proportionality, the anticipated incidental loss of life and damage to civilian/protected property resulting from an attack must not be excessive in relation to the concrete and direct military advantage expected to be gained in striking the military target. 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 and are "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 only deals 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 and may be understood to refer to objects that are, per se, military objectives. For example, military equipment and facilities, by their nature, make an effective contribution to military action. On the other hand, "nature" can also be understood to refer to objects that may be used for military purposes as discussed below.

(3) **Location.** Location of an object may provide an effective contribution to military action. For example, during military operations in urban areas, a house or other structure that would ordinarily be a civilian object may be located such that it provides cover to enemy forces or would provide a vantage point from which attacks could be launched or directed. The word "location" also helps clarify that an area of land can be militarily important because it must be captured from or denied to an enemy or because the enemy must be made to retreat from it. 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.

(4) **Purpose or Use.** Purpose means the intended or possible use of an object. For example, runways at a civilian airport could qualify as military objectives because they may be subject to immediate military use in the event runways at military air bases have been rendered unserviceable or inoperable. Use refers to the object's present function. For example, using an otherwise civilian building to billet combatant forces makes the building a military objective. Similarly, using equipment and facilities for military purposes, such as using them as a C2 center or a communications station, would result in such objects providing an effective contribution to the enemy's military action.

(5) **Make an Effective Contribution to Military Action.** The object must make or be intended to make an effective contribution to military action; however, this contribution need not be "direct" or "proximate." There does not have to be a geographical connection between effective contribution and military advantage. For example, an object might make an effective, but remote, contribution to the enemy's military action and nonetheless meet this aspect of the definition. Similarly, an object might be geographically distant from most of the fighting and nonetheless satisfy this element.

(6) **Military Action.** Military action has a broad meaning and is understood to mean the general prosecution of the war. It is not necessary that the object provide immediate tactical or operational gains or that the object make an effective contribution to a specific military operation. Rather, the object's effective contribution to the warfighting

or war-sustaining capability of an opposing force is sufficient. Although terms such as "war-fighting" and "war-sustaining" are not explicitly reflected in the treaty definitions of military objective, the US has interpreted the military objective definition to include these concepts.

(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 to deny their use to the threat. An example is the attack of all bridges on lines of communication the enemy is using, or may use, as alternate lines of communication, to reinforce or resupply his or her forces.

For more information, see the Department of Defense Law of War Manual.

5. Separation of Military Activities

a. **General Information.** The law of war generally gives civilians protection from attack during armed conflict. Civilians may lose this protection based upon commission of hostile acts or hostile intent. Once civilians take a direct part in hostilities, they become lawful targets until they have ceased their direct participation in the hostilities.

(1) The parties to a conflict must take care to distinguish or 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, and hospitals.

(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 if done to shield military objects from attack.

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 military objectives, and not civilian objects, are prosecuted. Sound target intelligence enhances military effectiveness and target vetting.

(2) **Minimization of Civilian Casualties.** Unless otherwise prohibited by ROE, attacks against military targets are permissible even if they might cause incidental injury or damage to civilians or civilian objects if the incidental injury or damage is not excessive in relation to the concrete and direct benefit of striking the target. In spite of precautions, such incidental casualties may be inevitable during armed conflict. Information obtained through civil-military operations input to the targeting process may help reduce destruction of essential civilian capabilities and minimize collateral damage and/or injury to the civilian population.

(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 strike is directed against a legitimate military objective that also serves a legitimate civilian need (e.g., electrical power or telecommunications facilities), then this factor must be carefully balanced against the military advantages 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 before commencing a bombardment where civilians are present. However, where surprise is necessary for an attack no warning is required.

(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.** Health service support assets exclusively assigned to medical duties, as a norm of customary international law in accordance with the Geneva Convention, must not knowingly be attacked, fired upon, or unnecessarily prevented from discharging their assigned functions. These assets can lose the specific protections entitled to them under the Geneva Conventions if used to engage in hostile acts not related to self-protection. Examples of assets afforded such protection may include:

(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, Red Lion and Sun, and Red Crystal are the four 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 of children under 7 are to be marked with an oblique red band on a white background.

d. **Religious, Cultural, Scientific, and Charitable Buildings and Monuments.** As long as buildings and monuments devoted to religion, art, science, 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 lose their protected status and qualify as military objectives. Lawful military objectives 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. **POW 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 structures that affect natural resources—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 Department of Defense Law of War Manual, *and 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 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 facilities to include individuals, equipment, organizations, and virtual target types. 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 desired effects on the target.

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 to develop, save, and disseminate 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 methodologies 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 joint staff; and 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, the targeting intelligence automation architecture 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, CCMDs 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 numbering system. Currently, many C2 systems can accommodate current standards for target numbering (basic encyclopedias, unit identifiers, and candidate target identifiers) 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) **TSA.** Targeteers conduct TSA to model the existence of broader, functionally related target systems and understand the roles particular targets play within a system. 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 disrupting the electrical grid used for POL production).

(b) **ETFs.** 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 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) **TM.** 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. NGA's GETM is a good example of an OBP product that supports a targeting object library that provides TM.

(d) **MIDB.** The MIDB Data Services Environment is DOD's authoritative, all-source repository of worldwide general military and target intelligence. MIDB information is maintained in support of the CCMDs, Services, combat support agencies, US Government departments and agencies, and international 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.

(e) **Joint Targeting Toolbox.** The Joint Targeting Toolbox is a software package created under the guidance of Joint Staff J-2T [Deputy Directorate for Targeting, Joint Staff Intelligence Directorate] and Air Force Research Laboratory to answer the future needs of America's warfighters and IC. The Joint Targeting Toolbox is a suite of software modules that support the targeting cycle from objectives and guidance to CA through management of critical intelligence data. It provides the functionality to perform target development and analysis, weaponeering, and the nomination of relevant targets for attack.

(4) **Capabilities Analysis.** For target-weapon pairings covered by Joint Munitions Effectiveness Manual (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) **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 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 target 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. Certain processes in the joint targeting process are not conducive to automation, particularly those that involve rapidly changing or perishable data and information. For example, systems which extract weather data through machine-to-machine interfaces could provide information to end-users without that end-user possessing a thorough understanding of the strengths and weakness of that data or knowing if weather personnel had reviewed and tailored that information. This could allow risk-based targeting decisions to be made based upon inaccurate or expired information. Because of this, care should be

taken to ensure subject and/or functional matter experts are consulted on the suitability of automated data and information in the joint targeting process.

c. 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 target information** between all users, to include multinational partners.

Intentionally Blank

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 Component

a. Land force commanders normally use interrelated processes and methodologies to enhance the integration of capabilities within the joint targeting cycle. One such targeting methodology is known as the decide, detect, deliver, and assess (D3A) methodology. D3A incorporates the same fundamental functions of the joint targeting cycle and functions within phase 5 of the joint targeting cycle. The D3A methodology facilitates synchronizing maneuver, intelligence, and fires.

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 organic assets, and promulgates command guidance. Upon execution of the collections plan, intelligence collection assets detect HPTs and tasked organizations engage 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. Fires, 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 engaged 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. An element of the decide phase is the nomination of targets for inclusion in the JIPTL.

(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. Components must plan in advance should the appropriate detect assets and or capabilities reside within a different component and are required to detect nominated targets. Special consideration should be afforded if the appropriate asset requires joint air tasking cycle input.

(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 capabilities that produce lethal and nonlethal effects. 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 to achieve objectives specified by the commander.

3. Joint Force Maritime Component Commander

a. The nature of maritime warfare is multidimensional and requires the coordinated efforts of the various tactical warfare commanders to accomplish maritime missions. Likewise, maritime targeting integrates contributions from tactical and operational commands. Each warfare commander generates specific targeting requirements, each competing for resources. The maritime operations center (MOC) may also generate maritime targeting requirements that are not apparent to tactical commanders. The multi-mission capability of Navy ships and aircraft creates competition for asset assignment. Mission prioritization and synchronization allows the task force commander, composite warfare commander, and warfare commanders to properly balance asset allocation to the various maritime warfighting tasks. When the JFC designates a maritime AO, the joint force maritime component commander (JFMCC) is generally the supported commander within the AO. As supported commander, the JFMCC integrates and synchronizes maneuver, fires, and interdiction. To facilitate this integration and synchronization, the JFMCC has the authority to designate target priority, effects, and timing of fires within the AO. The maritime AO may encompass the littoral area or land areas. However, the commander must have the capability to coordinate, synchronize, and deconflict fires and targeting within the entire AO.

b. For deliberate targeting, the maritime commander uses a six-phase targeting cycle that mirrors the joint targeting cycle and supports all of the planning horizons of the JPP to ensure the targeting process adaptively supports achievement of the commander's objectives as opportunities arise and plans change. Through the six-phase maritime targeting cycle, maritime forces support maritime objectives and composite warfare commanders' operations. The JFMCC and composite warfare commanders select and prioritize targets based on operational and tactical objectives and match the appropriate maritime capabilities to them. Maritime targeting translates the desired effects of fires to tactical force actions. Maritime targets in the maritime AO, ashore and afloat, will be engaged by organic maritime forces supported by joint forces as necessary. The interface of maritime targeting with the joint targeting cycle is an important part of integrating

maritime operations into joint operations. Integration into the joint targeting cycle provides for targeting coordination, deconfliction, prioritization, integration, synchronization, assessment, and support with other components. Through integration in the joint targeting process, the maritime component nominates for servicing by other joint forces targets that impact maritime objectives but are outside of the maritime commander's AO or targets that are inside the maritime AO but exceed the capabilities of organic or supporting assets. It also provides a venue for coordination of maritime assets made available for joint tasking. The maritime force provides representation at the various joint and other component boards, cells, working groups, and teams that manage the joint targeting cycle (e.g., the JTWG, joint collection management board, JTCB, and JFACC's target effects team). The commander is represented by the MOC fires element representatives and liaison officers. The MOC's battle rhythm synchronizes maritime targeting with joint targeting. Maritime targeting organizations interface with other joint and component targeting organizations through battle rhythm events and produce products that input into the joint targeting process. The coordination of target prosecution with other components and the JFC contributes to ensuring unity of effort within the joint force.

c. Dynamic targeting is broken down into six steps of F2T2EA. Dynamic target prosecution (F2T2EA) is the responsibility of composite warfare commanders. If mission prioritization is a question, JFC's objectives and guidance for TSTs and the maritime commander's objectives and targeting guidance for maritime dynamic targeting provide guidance for prioritization of mission requirements and assists the composite warfare commander in determining targeting requirements. MOC watch standers provide real-time mission guidance as needed. When intelligence, surveillance, and reconnaissance or additional strike assets are not available within the maritime force, the MOC will coordinate with other components and the JFC for external support.

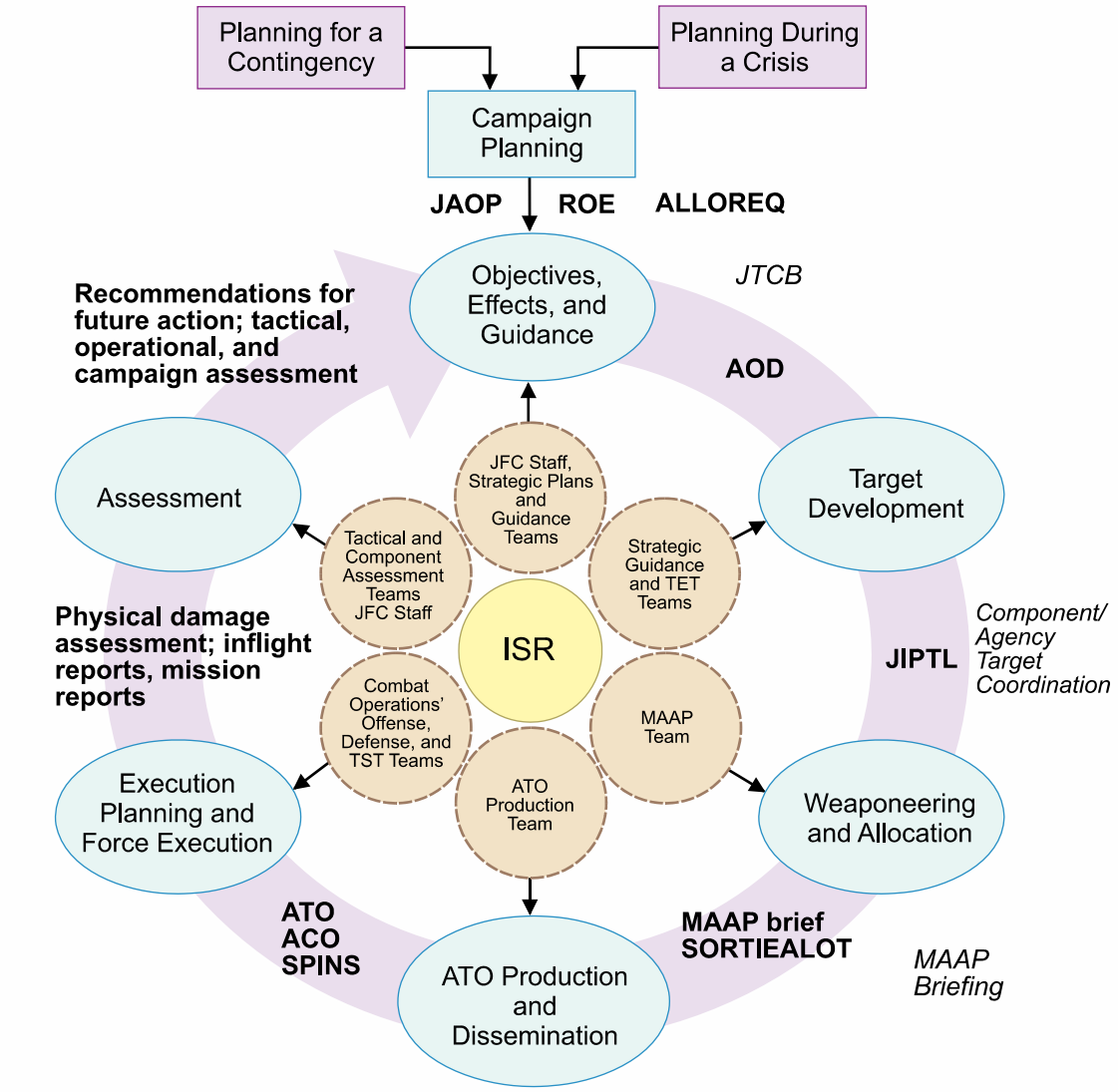
d. The Joint Automated Deep Operations Coordination System (JADOCS) is used to provide a common understanding of dynamic targeting and to rapidly coordinate dynamic targeting requirements between composite warfare commanders, the MOC, other components, and the JFC. Distributed Common Ground Station-Navy provides a dynamic intelligence, surveillance, and reconnaissance capability that complements JADOCS.

For more information on maritime targeting, see NTTP 3-32.1, Maritime Operations Center, *and NTTP 3-60.2,* Maritime Dynamic Targeting.

4. Six-Stage Joint Air Tasking Cycle

a. The JFACC employs 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.

Joint Air Tasking Cycle

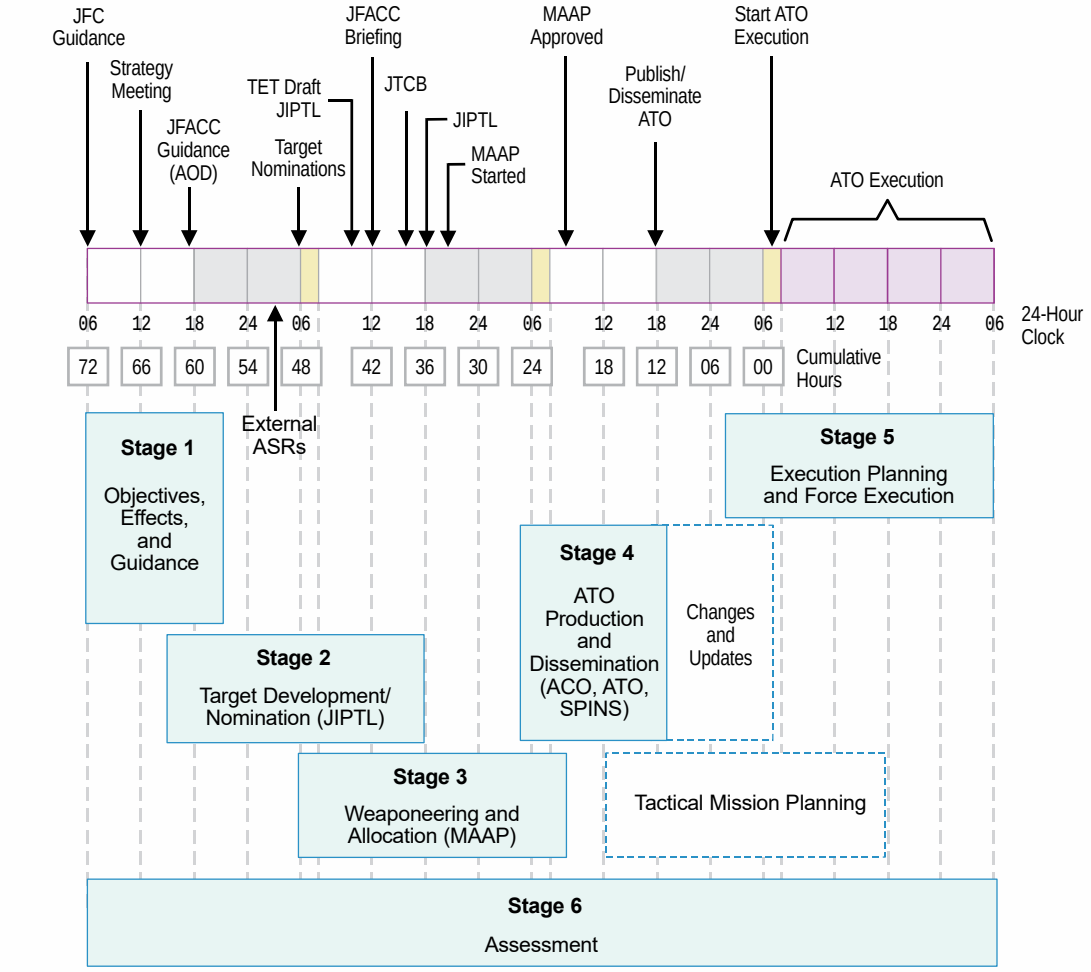


Legend

ACO	airspace control order
ALLOREQ	allocation request
AOD	air operations directive
ATO	air tasking order
ISR	intelligence, surveillance, and reconnaissance
JAOP	joint air operation plan
JFC	joint force commander
JIPTL	joint integrated prioritized target list
JTCB	joint targeting coordination board
MAAP	master air attack plan
ROE	rules of engagement
SORTIEALOT	sortie allotment message
SPINS	special instructions
TET	targeting effects team
TST	time-sensitive target
Italic Text	meetings or sub-processes
Bold Text	common products of this phase
	teams and staff agencies involved

Figure C-1. Joint Air Tasking Cycle

Notional Joint Air Tasking Cycle Timeline



Legend

ACO	airspace control order
AOD	air operations directive
ASR	air support request
ATO	air tasking order
JFACC	joint force air component command
JFC	joint force commander
JIPTL	joint integrated prioritized target list
JTCB	joint targeting coordination board
MAAP	master air attack plan
SPINS	special instructions
TET	target effects team

Figure C-2. Notional Joint Air Tasking Cycle Timeline

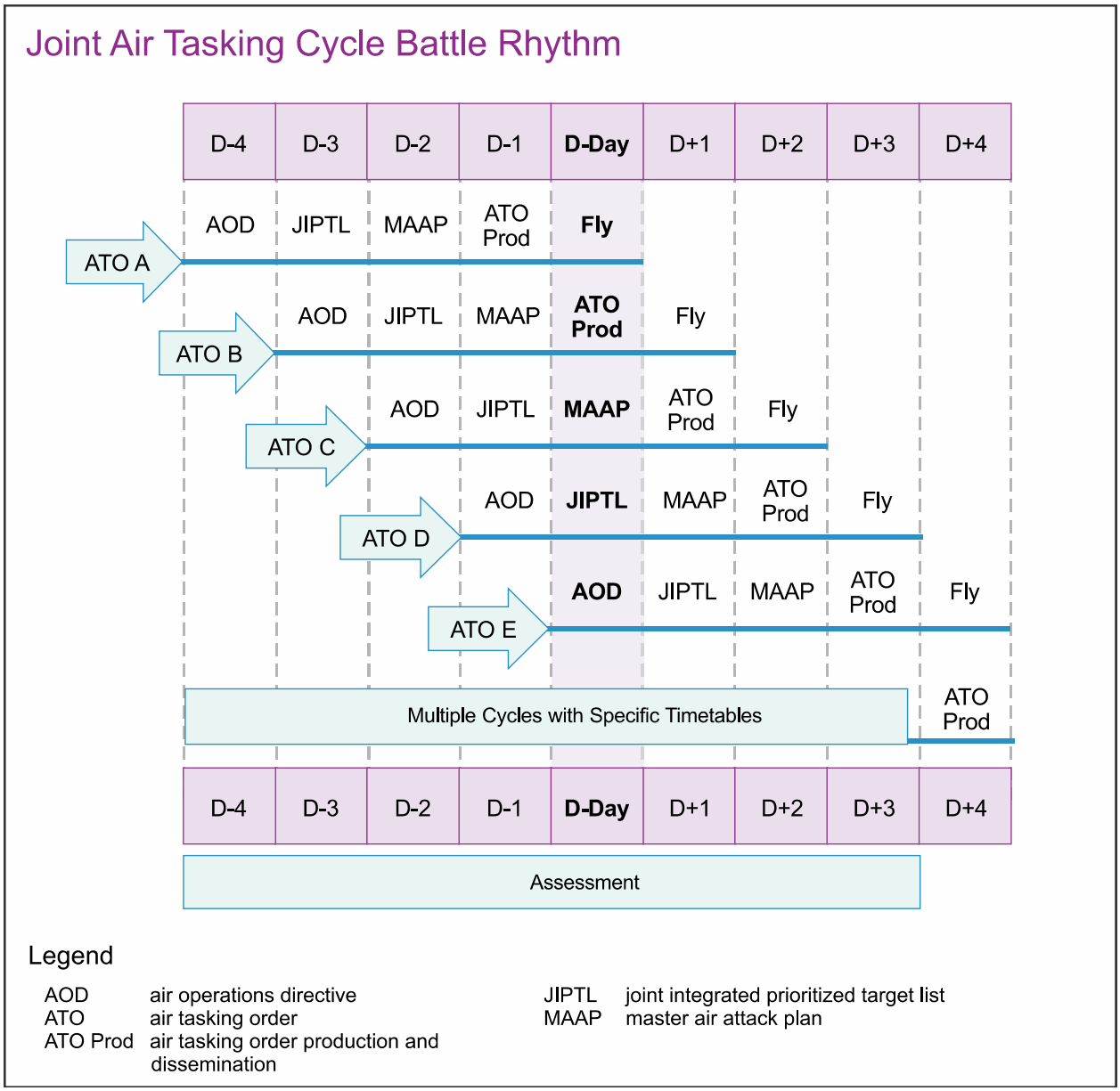


Figure C-3. Joint Air Tasking Cycle Battle Rhythm

b. The 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 development (examining objective and guidance for 72 hours and beyond). The joint air tasking cycle

begins with the JFACC's guidance and culminates with the rolling assessment of previous missions.

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

c. The joint air tasking cycle stages are not the same but are similar 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 apart from the joint air tasking cycle and contains functions, processes, and procedures that are performed in peacetime, both before and after conflicts. As a planning process, the joint air tasking cycle has fixed time horizons. In contrast, the joint targeting cycle has flexible time horizons and can be adjusted to the time requirement of the situation.

(1) Stage 1, objectives, effects, and guidance, requires JFC and component commanders to establish guidance for the duration of that contingency. Before the air tasking cycle begins, 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. The strategy division then develops a joint air operations plan (JAOP), which includes the JFACC's detailed direction and guidance for each phase. The JAOP also includes a strategy to task methodology links the JFACC's operational objectives to tactical objectives to tactical tasks. The JFACC then refines phase guidance applicable to an ATO period. As part of this planning, the target effects team develops a phased air targeting scheme. This refined guidance 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. Components, mainly through their liaison officers, should be involved with the writing of the AOD. It is also essential that other components provide inputs to the JFACC's air apportionment recommendation to the JFC.

(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. The JFACC merges other joint forces component TNLs nominated for JFACC engagement to develop the draft JIPTL, the end product of the target development stage.

(3) Stage 3 is weaponeering and allocation. Targeting personnel quantify the expected results of 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 used in the creation of the JFACC's air battle plan (ABP) by the MAAP team. The resulting ABP 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; reconnaissance, surveillance, and target acquisition annex; the air defense order; 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.

(5) Stage 5 is execution planning and force execution. The JFACC directs the execution 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 tactical control (TACON). Supported component commanders must approve all requests for redirection of direct support air assets. 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 TACON or in support of the JFACC 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 responsive system, including an assessments cell, which rolls-up the assessments from all the components' individual assessments.

5. Integration of Space Operations in Joint Targeting

Space operations are integrated into theater operations through the space coordinating authority (or JFACC in some situations), in coordination with the Joint Forces Space Component Commander. CDRUSSTRATCOM may be the supported commander if an enemy conducts hostile operations against US or allied space capabilities. In this instance, the joint targeting process will occur at the Joint Space Operations Center. The Joint Space Operations Center may coordinate with theater air operations centers for targeting of adversary terrestrial capabilities.

For more information, see JP 3-14, Space Operations.

6. Targeting within the Special Operations Component

a. Targeting and mission planning within the special operations community 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 planning. It is founded in joint targeting principles but has many unique and SOF-specific products and processes.

b. F3EAD is an aggressive targeting model that features massed, persistent intelligence, surveillance, and reconnaissance cued to a decentralized all-source

intelligence enterprise. The goal is to find HPTs. This could be an individual in the midst of civilian clutter and an attempt to fix the individual's exact location. This process can be used to conduct targeting through leveraging and synchronizing forces, assets, and enablers to create a desired effect. The emphasis on speed is not only to remove a combatant from the battlefield but also to take the opportunity to gain more information on the adversary. The exploit and analyze steps are often the main effort of F3EAD because they provide insight into the enemy network and may offer new lines of operation. The information gleaned during the exploit and analyze steps starts the cycle over again by providing leads, or start points, into the network that can be observed and tracked.

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

7. Integration of Nuclear Weapons in Targeting

Targeting and mission planning for nuclear capabilities are interrelated functions and processes; neither is accomplished in isolation of the other. Targeting with nuclear capabilities selects and analyzes targets to determine if they are appropriate for engagement with nuclear weapons and then prioritizes these targets in accordance with guidance from the President and SecDef advised by the CJCS. It seeks to deter threats and support the achievement of US strategic objectives. CDRUSSTRATCOM leads targeting for nuclear weapons.

a. Guidance for targeting with nuclear capabilities is provided in Presidential policy documents and further clarified in DOD documents such as the *Guidance for Employment of the Force;* CJCSI 3110.04, *(U) Nuclear Supplement to the Joint Strategic Capabilities Plan;* and CJCSI 3122.06, *(U) Sensitive Target Approval and Review Process.* These documents describe and prioritize the range of permissible target types and objectives that should guide selection of specific targets. This guidance ensures optimal targeting and integration of US nuclear and conventional forces prior to, during, and after conflict. USSTRATCOM uses this framework to develop detailed mission plans and OPLANs to be executed by the appropriate nuclear forces.

b. Targeting with nuclear capabilities is accomplished during the planning process. The process mirrors the traditional targeting process in many ways and is based on an integrated OPLAN(s), which incorporates commonly agreed objectives and the integration of nuclear force application across the Services. The OPLAN(s) clarifies command guidance and objectives, effectively assigns and prioritizes targets, and synchronizes execution. The US is able to quickly execute nuclear strikes using planning options captured in the OPLAN(s). During a crisis the ability to respond to new targets and changing priorities before or during the execution of nuclear operations, provides the capability to develop new options, or modify existing options, when current limited or major response options are inappropriate. USSTRATCOM coordinates with Service components and appropriate GCCs to accomplish target deconfliction and ensure appropriate weapon yields, delivery methods, and safe delivery routing.

c. Because of their importance, destructive power, and strategic and political consequences, use of nuclear weapons and nuclear weapon systems require special

consideration. Only the President, or designated successor, is authorized to approve the use and release of nuclear weapons.

8. 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). Electronic warfare must also be coordinated at the component level to ensure effects integration. These staffs should integrate their efforts into the JFC's targeting cycle to coordinate fires in strike operations.

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

9. Integration of Cyberspace Operations in Joint Targeting

Cyberspace operations are integrated into the joint targeting process by JFCs with the mission and authority to create effects in or through cyberspace in coordination with the Commander, USCYBERCOM. Targeting for cyberspace attack generally follows the processes and procedures used for targeting but must account for the unique nature of cyberspace as compared to the physical domains and the unique requirements for matching cyberspace capabilities to targets. The JFC's targeting processes and automated systems must support input from aligned cyberspace forces to integrate attacks when needed to create effects. USCYBERCOM conducts joint targeting in support of its plans and operations. Some USCYBERCOM components support CCMD planning and targeting, focusing on advanced target development, capabilities analysis, and tactical mission planning. Supporting cyberspace forces may also submit TNLs to the supported CCMD to create effects on cyberspace with conventional weapons or other capabilities. Cyberspace can be described in terms of three interrelated layers: physical network, logical network, and cyber-persona, and each represents a level on which cyberspace aspects of targets may be described.

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

10. Integration of Information Operations in Joint Targeting

a. IO are the integrated employment during military operations of IRCs. Successful integration of IRCs, in concert with other lines of operation, can influence, disrupt, corrupt, or usurp the decision making of adversaries and potential adversaries while protecting our own. IRCs can be employed as a means of target engagement and effective at all levels from tactical through national strategic. IO planners consider all of the threat's political, military, economic, social, information, and infrastructure systems to determine how best to use the information environment to create effects to achieve stated objectives. Successful integration of IRCs into the targeting process is fundamental to the success of the operation. IO planners may call for targeting certain entities (i.e., individuals, organizations and systems) that collect, process, disseminate, or act on information within the information environment with a variety of means. The selection of actions should be consistent with national objectives, international and domestic law, ROE, and other guidance.

b. The joint force IO cell is another source for target nominations and IO SMEs should be integrated into targeting battle rhythm events and all phases of the joint targeting cycle. IO planners will coordinate and integrate IRCs at all levels. IRCs can support or be used for all types of joint operations. Therefore, planners and targeteers should carefully consider prospective target nominations when making targeting decisions.

For further information regarding IRCs and IO, see JP 3-13, Information Operations.

11. Joint Targeting Within the Joint Planning Process

The JPP is the mechanism 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, planning for a contingency or during a crisis 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 Planning.

12. Monitoring and Coordinating Target Execution

a. **Target Awareness.** The operation center director at component command centers monitors the execution of current operations and maintains SA of planned, executed, and emerging (especially time-sensitive) targets. The role of the operations center director at the JFC level is to continue to monitor the synchronization and integration of fires across the components.

(1) Starting with the current OPORD and the JIPTL (or other prioritized target list), the component 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 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 engagements that deviate from the OPORD should be based on the commander's guidance, the theater strategy, and the objectives to be accomplished. These decisions can normally 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 capabilities that can create nonlethal effects. The operation center director should normally understand the capabilities of delivery platforms.

(2) **Support Requirements.** In addition to knowing what constitutes the best method of engagement to apply against an emerging target, the operation center director should understand the support requirements to match the appropriate response to create the desired effect 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.

APPENDIX D
COMBAT ASSESSMENT

1. The Purpose of Assessment

a. **Assessment.** Commanders and staffs derive relevant assessment measures during the planning process and then evaluate and reevaluate them continuously throughout preparation and execution. They consider assessment measures during mission analysis, refine these measures in the 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.

b. **Phase 6—CA** 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.

2. Assessment and Targeting

a. **CA.** Within the assessment is a subcomponent called CA that is focused on determining the results of engaging a target, 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 objectives, guidance, and desired effects. **CA is composed of three related elements: BDA, MEA, and reattack recommendations or future targeting.**

(1) **BDA.** 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 target engagement. 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/change assessment is an estimate of the quantitative extent of physical damage/change (through munitions blast, fragmentation, or

fire damage) to a target element based on observed or interpreted damage. Physical damage/change assessment is the physical damage equivalent to change assessment. This post-engagement target analysis should be a coordinated effort among combat units, component commands, the subordinate joint force, the CCMD, primary theater BDA cell, national agencies, supporting commands, and the JIOC. Some representative sources for data necessary to make a physical damage/change assessment include the ATO or MAAP, mission reports (MISREPs), aircraft cockpit video, weapons system 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/change are target type and size: Was the engaged 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/change, the assessment is conducted against one or more specific aimpoints, usually containing a critical target 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 target 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/change, obviously distorting the assessment.

4. In determining the level of physical damage/change, 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/change definitions for specific target elements, may be found in the CJCSM 3162.01, *Joint Methodology for Battle Damage Assessment.*

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.

6. Initial reports that contribute to physical damage/change 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, intelligence, surveillance, reconnaissance, video, site exploitation, forward observers, and other sources. The unit controlling the weapons system, as well as intelligence collection

units that can see the damage, develop battle 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/change 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 engagement with the current status of the target to determine if the targeting effect was created.

2. Functional damage/change assessment reviews all physical damage/change assessments and amplifies the initial analysis. A key step in functional damage/change assessment is identifying and establishing the installation's or target's critical target elements and their interconnectivity. If destroyed, a critical target element will preclude an installation or system from functioning. Additionally, the target's 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-engagement assessments, wartime functional damage assessments may be inadequately stated. Ideally, BDA will be performed by, or with, the input of the targeteer who originally developed 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) is an estimate based upon type, degree, and location of the physical damage/change. Factors used to calculate recuperation times include the availability of spares, backup or alternate replacement functions, operational tempo, expected duration of hostilities, and the adversary'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/change assessment. Therefore, it is important for analysts to verify that the target critical target elements were properly identified, weapons effects were reasonably predicted beforehand, and 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/change cannot be directly observed. These indicators allow analysts to rapidly identify the critical target 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 CCMD 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 applies to BDA for all target engagements. 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: one to two 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: four to six 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) **MEA.** 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 engagement 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. 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 (e.g., BDA) with how it was done (e.g., 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 intelligence 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) Space situational awareness data.

(e) SIGINT.

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

(g) MASINT.

(h) Open-source intelligence.

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

(j) Indigo reports for cruise missiles.

(k) Technical intelligence.

(l) Counterintelligence.

For additional information on the BDA process, see DIA publication DIA 13-1308-255, Critical Elements Handbook, *and CJCSM 3162.01,* Joint Methodology for Battle Damage Assessment.

b. **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 placeholders 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 objective 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 engagements with capabilities that create lethal effects, 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 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 engagement.

3. Assessment Metrics and Measurements

a. **Assessment Metrics.** The staff should develop metrics to determine if operations are properly linked to the JFC's objectives 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 JP 5-0, Joint Planning.

4. Post-Combat Assessment

a. The joint targeting cycle does not end when combat operations cease. Following combat operations, the commander 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/exchange.

(2) Determine the true effectiveness of engagements.

(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, and MEA exploitation. Collection of operational or mission-specific data includes all executed mission type orders (to include all executed ATOs), all MISREPs, fire MISREPs, intelligence, surveillance, reconnaissance, videos, 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 objective 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 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 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

a. Geneva Conventions.

b. DI [Defense Intelligence Agency (DIA) Directorate for Analysis]-2820-2-03, *Battle Damage Assessment Reference Handbook.*

c. DIA-13-1308-855, *Critical Elements Handbook.*

2. Chairman of the Joint Chiefs of Staff Publications

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

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

c. CJCSI 3160.01C, *No-strike and the Collateral Damage Estimation Methodology*.

d. CJCSI 3370.01B, *Target Development Standards.*

e. CJCSI 3375.01, *Target Intelligence Data Standards.*

f. CJCSI 3505.01C, *Target Coordinate Mensuration Certification and Program Accreditation.*

g. CJCSI 5125.01, *Charter of the Joint Information Operations Warfare Center.*

h. CJCSM 3162.01A, *Joint Methodology for Battle Damage Assessment.*

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

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

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

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

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

n. JP 2-03, *Geospatial Intelligence in Joint Operations.*

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

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

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

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

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

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

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

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

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

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

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

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

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

bb. JP 3-25, *Countering Threat Networks.*

cc. JP 3-30, *Command and Control of Joint Air Operations.*

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

ee. JP 3-32, *Command and Control of Joint Maritime Operations.*

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

gg. JP 3-40, *Countering Weapons of Mass Destruction.*

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

ii. JP 3-57, *Civil-Military Operations.*

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

kk. JP 5-0, *Joint Planning.*

3. Multi-Service Publications

a. ATP 3-09.34/MCRP 3-31.4/NTTP 3-09.2.1/AFTTP 3-2.59, *Multi-Service Tactics, Techniques, and Procedures for Killbox Planning and Employment.*

b. ATP-3-60.1/MCRP 3-31.5/NTTP 3-60.1/AFTTP 3-2.3, *Multi-Service Tactics, Techniques, and Procedures for Dynamic Targeting.*

c. ATP (FM) 3-52.2/MCRP 3-25F/NTTP 3-56.2/AFTTP 3-2.17, *Multi-Service Tactics, Techniques, and Procedures for the Theater Air-Ground System.*

4. Service Publications

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

b. FM 3-09, *Field Artillery Operations and Fire Support.*

c. FM 3-94, *Theater Army, Corps, and Division Operations.*

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

e. NTTP 3-03.1, *Volume 2, Tomahawk Land Attack Missile (TLAM-C/D/E) Launch Platform Weapons Systems and Tactics.*

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

g. NTTP 3-32.1, *Maritime Operations Center.*

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

i. NWP 3-09, *Navy Fires Support.*

j. Air Force Doctrine Volume 1, *Basic Doctrine, Organization and Command.*

k. Air Force Doctrine Annex 3-03, *Counterland.*

l. Air Force Doctrine Annex 3-01, *Counterair.*

m. Air Force Doctrine Annex 3-60, *Targeting.*

n. Air Force Doctrine Annex 3-70, *Strategic Attack.*

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

p. NTTP 3-60.2, *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 using the Joint Doctrine Feedback Form located at: https://jdeis.js.mil/jdeis/jel/jp_feedback_form.pdf and e-mail it to: js.pentagon.j7.mbx.jedd-support@mail.mil. These comments should address content (accuracy, usefulness, consistency, and organization), writing, and appearance.

2. Authorship

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

b. The following staff, in conjunction with the joint doctrine development community, made a valuable contribution to the revision of this joint publication: lead agent, Mr. Mark Clements, US Northern Command; Joint Staff doctrine sponsor, LCDR Justin Cooper, Joint Staff J-3; Mr. Robert Brodel, Joint Staff J-7, Joint Doctrine Analysis Division; and COL Kevin Hanrahan, Joint Staff J-7, Joint Doctrine Division.

3. Supersession

This publication supersedes JP 3-60, *Joint Targeting,* 31 January 2013.

4. Change Recommendations

a. To provide recommendations for urgent and/or routine changes to this publication, please complete the Joint Doctrine Feedback Form located at: https://jdeis.js.mil/jdeis/jel/jp_feedback_form.pdf and e-mail it to: js.pentagon.j7.mbx.jedd-support@mail.mil.

b. When a Joint Staff 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 Joint Staff J-7 when changes to source documents reflected in this publication are initiated.

5. Lessons Learned

The Joint Lessons Learned Program (JLLP) primary objective is to enhance joint force readiness and effectiveness by contributing to improvements in doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy. The Joint Lessons Learned Information System (JLLIS) is the DOD system of record for lessons learned and facilitates the collection, tracking, management, sharing, collaborative resolution, and dissemination of lessons learned to improve the development and readiness of the joint force. The JLLP integrates with joint doctrine through the joint doctrine

development process by providing lessons and lessons learned derived from operations, events, and exercises. As these inputs are incorporated into joint doctrine, they become institutionalized for future use, a major goal of the JLLP. Lessons and lessons learned are routinely sought and incorporated into draft JPs throughout formal staffing of the development process. The JLLIS Website can be found at https://www.jllis.mil (NIPRNET) or http://www.jllis.smil.mil (SIPRNET).

6. 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.*

7. Distribution of Electronic Publications

a. Joint Staff J-7 will not print copies of JPs for distribution. Electronic versions are available on JDEIS Joint Electronic Library Plus (JEL+) at https://jdeis.js.mil/jdeis/index.jsp (NIPRNET) and https://jdeis.js.smil.mil/jdeis/index.jsp (SIPRNET), and on the JEL at http://www.jcs.mil/Doctrine/ (NIPRNET).

b. Only approved JPs are releasable outside the combatant commands, Services, and Joint Staff. Defense attachés may request classified JPs by sending written requests to Defense Intelligence Agency (DIA)/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 Joint Staff 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, Services, and combat support agencies.

GLOSSARY

PART I—ABBREVIATIONS, ACRONYMS, AND INITIALISMS

ABP	air battle plan
AFTTP	Air Force tactics, techniques, and procedures
AO	area of operations
AOD	air operations directive
AOR	area of responsibility
ATI	asset target interaction
ATO	air tasking order
ATP	Army techniques publication
BDA	battle damage assessment
BDAREP	battle damage assessment report
C2	command and control
CA	combat assessment
CBRN	chemical, biological, radiological, and nuclear
CCDR	combatant commander
CCMD	combatant command
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
CJCSM	Chairman of the Joint Chiefs of Staff manual
COA	course of action
COG	center of gravity
CONOPS	concept of operations
COP	common operational picture
CTF	counter threat finance
CTL	candidate target list
CTN	countering threat networks
D3A	decide, detect, deliver, and assess
DIA	Defense Intelligence Agency
DOD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
DOS	Department of State
DTRA	Defense Threat Reduction Agency
ETF	electronic target folder
F2T2EA	find, fix, track, target, engage, and assess

F3EAD	find, fix, finish, exploit, analyze, and disseminate
FM	field manual (USA)
FSCM	fire support coordination measure
GCC	geographic combatant commander
GEOINT	geospatial intelligence
GETM	Geospatially Enabled Target Materials (NGA)
HPT	high-payoff target
HUMINT	human intelligence
HVT	high-value target
IC	intelligence community
INR	Bureau of Intelligence and Research (DOS)
IO	information operations
IRC	information-related capability
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
J-9	civil-military operations directorate of a joint staff
JADOCS	Joint Automated Deep Operations Coordination System
JAOC	joint air operations center
JAOP	joint air operations plan
JDPI	joint desired point of impact
JEMSO	joint electromagnetic spectrum operations
JFACC	joint force air component commander
JFC	joint force commander
JFCC Space	Joint Functional Component Command for Space (USSTRATCOM)
JFE	joint fires element
JFMCC	joint force maritime component commander
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
JP	joint publication
JPG	joint planning group
JPP	joint planning process
JS	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
KLE	key leader engagement
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
MOC	maritime operations center
MOE	measure of effectiveness
MOP	measure of performance
NGA	National Geospatial-Intelligence Agency
NJOIC	National Joint Operations and Intelligence Center
NLRP	nonlethal reference point
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
OBP	object-based production
OPLAN	operation plan
OPORD	operation order
PA	probability of arrival
PD	probability of damage
PID	positive identification
POL	petroleum, oils, and lubricants
POW	prisoner of war
ROE	rules of engagement
RTL	restricted target list
SA	situational awareness
SecDef	Secretary of Defense
SIGINT	signals intelligence
SJA	staff judge advocate
SME	subject matter expert

SNA	social network analysis
SOF	special operations forces
SROE	standing rules of engagement
STAR	sensitive target approval and review
TACON	tactical control
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. (DOD Dictionary. Source: JP 3-60)

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. (DOD Dictionary. Source: JP 3-60)

candidate target list. A list of entities submitted by component commanders, appropriate agencies, or the joint force commander's staff for further development and inclusion on the joint target list, restricted target list, or the no-strike list. Also called **CTL.** (Approved for incorporation into the DOD Dictionary.)

collateral damage. A form of collateral effect that causes 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 the DOD Dictionary.)

collateral effect. Unintentional or incidental effect to objects that would not be lawful military targets in the circumstances ruling at the time. (Approved for inclusion in the DOD Dictionary.)

combat assessment. The determination of the overall effectiveness of force employment during military operations. Also called **CA.** (Approved for incorporation into the DOD Dictionary.)

critical target element. A feature or part of a target that enables it to perform its primary function and, if effectively engaged, should create a significant effect on that target. Also called **CTE.** (Approved for the replacement of "critical element" and its definition in the DOD Dictionary.)

damage assessment. 1. The determination of the effect of engagements on targets. 2. A determination of the effect of a compromise of classified information on national security. (Approved for incorporation into the DOD Dictionary.)

damage criteria. The critical levels of various weapons effects required to create specified levels of damage. (DOD Dictionary. Source: JP 3-60)

damage estimation. None. (Approved for removal from the DOD Dictionary.)

desired mean point of impact. A point designated as the center for impact of multiple weapons or area munitions to create a desired effect on a mobile, transportable, or area target and normally defined by grid reference or geolocation. Also called **DMPI.** (Approved for inclusion in the DOD Dictionary.)

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 the DOD Dictionary.)

dwell time. The length of time a target is expected to remain in one location. (DOD Dictionary. Source: JP 3-60)

dynamic targeting. Targeting that prosecutes targets identified too late or not selected for action in time to be included in deliberate targeting. (Approved for incorporation into the DOD Dictionary.)

entity. Within the context of targeting, a term used to describe facilities, individuals, virtual (nontangible) things, equipment, or organizations. (Approved for incorporation into the DOD Dictionary.)

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. (DOD Dictionary. Source: JP 3-60)

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.** (DOD Dictionary. Source: JP 3-60)

high-value target. A target the enemy commander requires for the successful completion of the mission. Also called **HVT.** (DOD Dictionary. Source: JP 3-60)

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 **JDPI.** (Approved for incorporation into the DOD Dictionary.)

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

joint integrated prioritized target list. A prioritized list of targets approved by the joint force commander. Also called **JIPTL.** (Approved for incorporation into the DOD Dictionary.)

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 approving the joint integrated prioritized target list. Also called **JTCB.** (Approved for incorporation into the DOD Dictionary.)

joint target list. A consolidated list of validated targets of military significance without restrictions within a joint force commander's operational area. Also called **JTL.** (Approved for incorporation into the DOD Dictionary.)

master air attack plan. A plan that contains key information that forms the foundation of the joint air tasking order. Also called **MAAP.** (DOD Dictionary. Source: JP 3-60)

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 the DOD Dictionary.)

nonlethal reference point. A point that designates the intended target for creating nonlethal effects, which may not be a precise physical location and is considered an aimpoint for databasing. Also called **NLRP.** (Approved for inclusion in the DOD Dictionary.)

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.** (DOD Dictionary. Source: JP 3-60)

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. (DOD Dictionary. 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. (DOD Dictionary. Source: JP 3-60)

physical characteristics. Those military characteristics of equipment that are primarily physical in nature. (DOD Dictionary. Source: JP 3-60)

physical damage assessment. The estimate of the quantitative extent of physical damage to a target resulting from the application of military force. (DOD Dictionary. Source: JP 3-60)

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. (DOD Dictionary. Source: JP 3-60)

probability of damage. The probability that damage will occur to a target expressed as a percentage or as a decimal. Also called **PD.** (DOD Dictionary. Source: JP 3-60)

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. (DOD Dictionary. Source: JP 3-60)

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.** (DOD Dictionary. Source: JP 3-60)

restricted target. A valid target that has specific restrictions placed on the actions authorized against it due to operational considerations. (DOD Dictionary. 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.** (DOD Dictionary. Source: JP 3-60)

scheduled target. Planned target upon which fires or other actions are scheduled for prosecution at a specified time. (DOD Dictionary. Source: JP 3-60)

target. An entity or object that performs a function for the threat considered for possible engagement or other action. (Approved for incorporation into the DOD Dictionary.)

target acquisition. The detection, identification, and location of a target in sufficient detail to permit the effective employment of capabilities that create the required effects. Also called **TA.** (Approved for incorporation into the DOD Dictionary.)

target analysis. An examination of potential targets to determine military importance, priority of engagement, and capabilities required to create a desired effect. (Approved for incorporation into the DOD Dictionary.)

target complex. None. (Approved for removal from the DOD Dictionary.)

target component. A set of targets within a target system performing a similar function. (DOD Dictionary. Source: JP 3-60)

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. (DOD Dictionary. Source: JP 3-60)

targeteer. An individual who has completed requisite training and guides the joint targeting cycle in their current duties. (Approved for incorporation into the DOD Dictionary.)

target element. A specific feature or part of a target that enables it to function and, which if engaged, may create specific effects on that target. (Approved for inclusion in the DOD Dictionary.)

target folder. A folder, hardcopy or electronic, containing target intelligence and related materials prepared for planning and executing action against a specific target. (DOD Dictionary. 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. (DOD Dictionary. 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. (DOD Dictionary. Source: JP 3-60)

target nomination list. A prioritized list of targets drawn from the joint target list, or restricted 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 the DOD Dictionary.)

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. (DOD Dictionary. Source: JP 3-60)

target system. All the targets situated in a particular geographic area and functionally related or a group of targets that are so related that their destruction will produce some particular effect desired by the attacker. (Approved for incorporation into the DOD Dictionary.)

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.** (DOD Dictionary. Source: JP 3-60)

target system assessment. The broad assessment of the overall impact and effectiveness 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 the DOD Dictionary.)

target system component. A related group of entities within a target system that perform or contribute toward a similar function. (Approved for incorporation into the DOD Dictionary.)

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 the DOD Dictionary.)

unanticipated target. A target of opportunity that was unknown or not expected to exist in the operational environment. (DOD Dictionary. Source: JP 3-60)

unscheduled target. A target of opportunity that is known to exist in the operational environment. (Approved for replacement of "unplanned target" in the DOD Dictionary.)

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 candidate 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 the context of time-phased force and deployment data validation, it is an execution procedure whereby all the information records in the 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) 4. A global force management procedure for assessing combatant command requirements to determine viability, for sourcing, with respect to risk and prioritization between competing needs and the nature of the requirement. (JP 3-35) (Approved for incorporation into the DOD Dictionary)

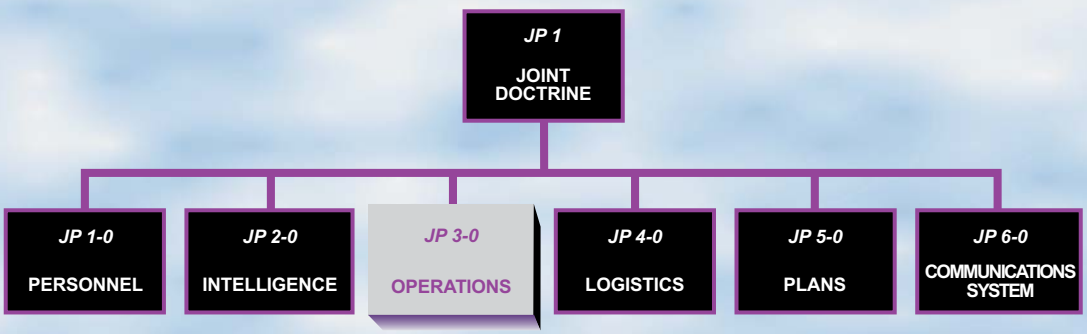
vetting. A part of target development that assesses the accuracy of the supporting intelligence to targeting. (DOD Dictionary. Source: JP 3-60)

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 can cause it to be degraded (incapability to perform the designated function or mission) as a result of being 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 3-13) (Approved for incorporation into the DOD Dictionary.)

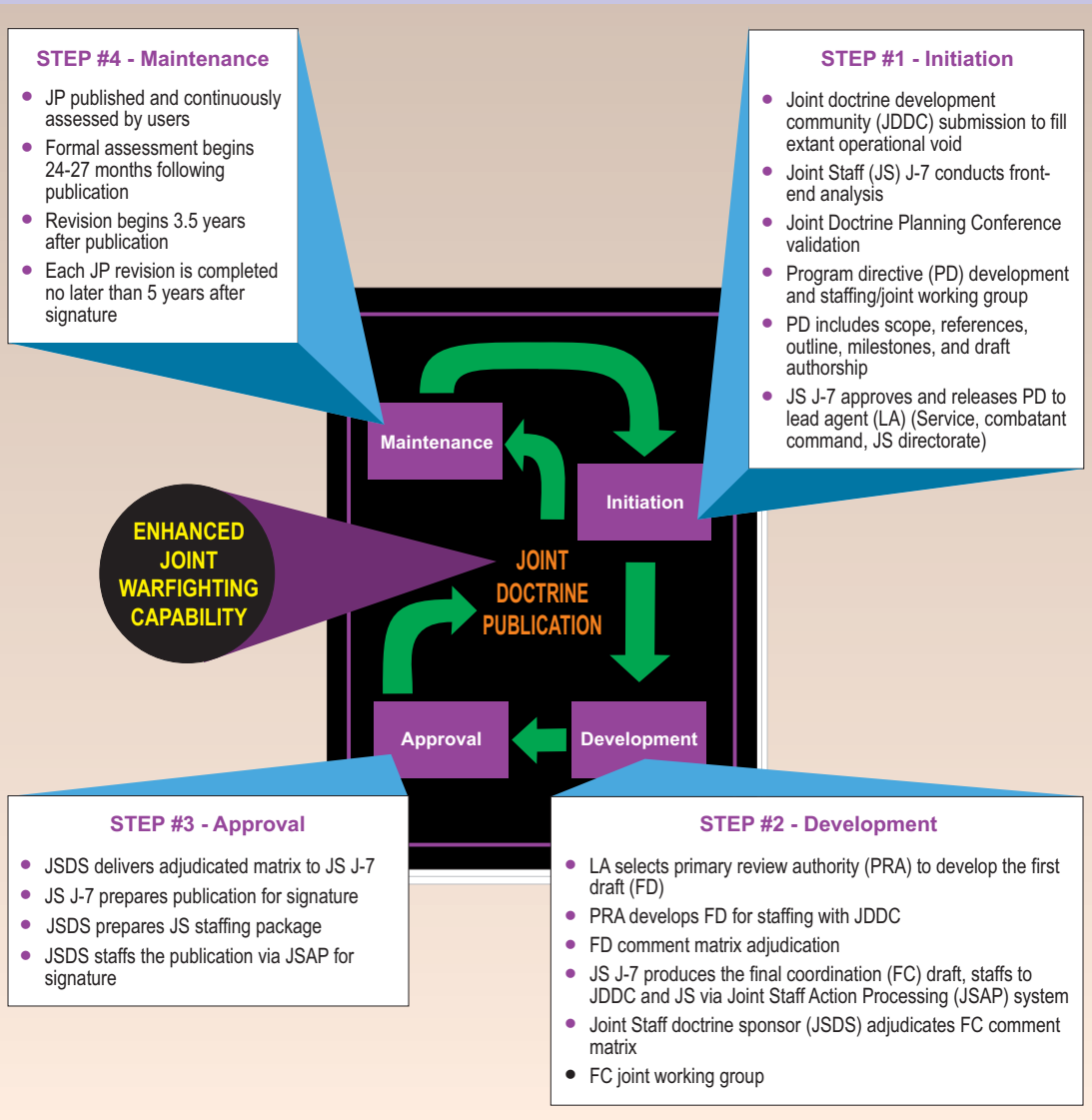
weaponeer. An individual who has completed requisite training to determine the means required to create a desired effect on a given target. (Approved for incorporation into the DOD Dictionary.)

weaponeering. The process of determining the specific means required to create a desired effect on a given target. (Approved for incorporation into the DOD Dictionary.)

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:




JOINT
CHIEFS OF STAFF