Joint Publication 3-60

Joint Targeting

13 April 2007

PREFACE

1. Scope

This publication provides fundamental principles and doctrinal guidance for the conduct of joint targeting across the range of military operations. This publication will address operational-level considerations for the commanders of combatant commands, joint task forces, and the subordinate components of these commands to plan, coordinate, and execute targeting successfully. Additionally, it addresses time-sensitive target considerations.

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 operations and provides the doctrinal basis for interagency coordination and for US military involvement in multinational operations. It provides military guidance for the exercise of authority by combatant commanders and other joint force commanders (JFCs) and prescribes joint doctrine for operations and training. It provides military guidance for use by the Armed Forces in preparing their appropriate plans. It is not the intent of this publication to restrict the authority of the JFC from organizing the force and executing the mission in a manner the JFC deems most appropriate to ensure unity of effort in the accomplishment of the overall objective.

3. Application

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

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

For the Chairman of the Joint Chiefs of Staff

WALTER L. SHARP
Lieutenant General, USA
Director, Joint Staff

Intentionally Blank

SUMMARY OF CHANGES
REVISION OF JOINT PUBLICATION (JP) 3-60
DATED 17 JANUARY 2002

- **Changes the major categories of targeting from "planned" and "immediate" to "deliberate" and "dynamic"**
- **Introduces the idea that "deliberate targeting" manages "planned targets", while "dynamic targeting" manages "targets of opportunity"**
- **Organizes "target types" as follows: "scheduled" and "on-call" are "planned targets"; "unplanned" and "unanticipated" are "targets of opportunity"**
- **Introduces a discussion of target characteristics under "fundamentals of targets"**
- **Introduces a discussion of targets that are critical to joint component operations, but are not included on the joint force commander's list of time-sensitive targets**
- **Changes the names of Phase 1 to "end state and commander's objectives," Phase 2 to "target development and prioritization," and Phase 6 to "assessment"**
- **Adds an expanded discussion of target systems analysis**
- **Adds discussion of identifying target system elements and target vetting to the target development section**
- **Adds dynamic targeting and a discussion of its phases to the chapter on joint targeting**
- **Adds a detailed discussion of assessment as it relates to targeting**
- **Broadens the scope of the joint targeting coordination board and its responsibilities**
- **Adds expanded discussion of the joint fires element and its responsibilities**
- **Moves discussion of federated targeting support partners to an appendix**
- **Re-orders the appendices to correspond to their order of mention in the text**
- **Deletes the appendix on common reference systems, now included in JP 2-03, *Geospatial Intelligence Support to Joint Operations***

- **Adds appendices on assessment, intelligence support to target development, capabilities analysis and force assignment, collateral damage estimation, federated targeting support, and targeting automation**

TABLE OF CONTENTS

GLOSSARY

FIGURES

EXECUTIVE SUMMARY
COMMANDER'S OVERVIEW

- **Discusses the definition, nature, and characteristics of targets**
- **Describes the joint targeting process and its phases**
- **Details the roles and responsibilities associated with the joint targeting process**
- **Addresses specialized concerns relating to targeting procedures in appendices**

Fundamentals of Targeting

Joint targeting is a fundamental task of the fires function.

The purpose of targeting is to integrate and synchronize fires into joint operations. Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. Targeting also supports the process of linking the desired effects of fires to actions and tasks at the joint force component level.

Target defined.

A target is an entity or object considered for possible engagement or action. It may be an area, complex, installation, force, equipment, capability, function, individual, group, system, entity, or behavior identified for possible action to support the commander's objectives, guidance, and intent. Targets relate to objectives at all levels — strategic, operational, and tactical.

Every target has distinct intrinsic or acquired characteristics, the most important of which affect how it is targeted. Generally, these characteristics are categorized as physical, functional, cognitive, and environmental. These characteristics form the basis for target detection, location, identification, and classification for future surveillance, analysis, strike, and assessment.

Time sensitivity.

All potential targets and all targets nominated for attack continually change in importance due to the dynamic nature of the operational environment. When the importance of a target rises to such a level that it poses (or will soon pose) a danger to friendly forces, or it presents a highly lucrative, fleeting opportunity of tactical advantage, the joint force commander (JFC) may designate it as requiring immediate response.

A time-sensitive target is a JFC designated target or target type of such high importance to the accomplishment of the JFC's mission and objectives or one that presents such a significant strategic or operational threat to friendly forces or allies, that the JFC dedicates intelligence collection and attack assets or is willing to divert assets away from other targets in order to find, fix, track, target, engage, and assess such targets.

Joint targeting falls into two categories: deliberate and dynamic.

Deliberate targeting prosecutes planned targets. These are targets that are known to exist in the operational environment with engagement actions scheduled against them to create the effects desired to support achievement of JFC objectives.

Dynamic targeting prosecutes targets of opportunity that are identified too late, or not selected for action in time to be included in deliberate targeting but, when detected or located, meet criteria specific to achieving objectives. When plans change and planned targets must be adjusted, dynamic targeting can also manage those changes.

Principles of targeting.

The joint targeting cycle is designed to provide a means to support the achievement of the JFC's objectives through the use of joint fires and has four principles, which, if adhered to throughout the targeting cycle, should increase the probability of creating desired effects while diminishing undesired or adverse collateral effects. These principles are:

The targeting process is **focused** on achieving the JFC's objectives.

Targeting is concerned with the creation of specific **desired effects** through target engagement.

Joint targeting is a command function that requires the participation of **many disciplines**.

The joint targeting cycle seeks to create effects through target engagement in a **systematic** manner.

Integrating and synchronizing planning, execution, and assessment is pivotal to the success of targeting. Understanding the objectives, intentions, capabilities, and limitations of all actors within the operational environment enables the use of joint, interagency, and multinational means to create effects. Target development and selection are based on what the commander wants to achieve and the measures and indicators used to evaluate their achievement rather than on the ways

and means used to affect the target. In other words, the focus should be on creating the desired effects that support the JFC's objectives rather than simply servicing a list of customary targets or basing targeting decisions on the availability of particular weapons, platforms, or systems.

Joint Force Targeting Cycle

Joint targeting is integral to the joint operation planning process (JOPP) and begins with the planning initiation and mission analysis steps of JOPP. Detailed country assessments and target systems analysis, performed by combatant commanders within their regional responsibilities, set the stage for detailed targeting within the joint targeting cycle.

The joint targeting cycle is an iterative process that is not time-constrained, and steps may occur concurrently, but it provides a helpful framework to describe the steps that must be satisfied to successfully conduct joint targeting. The deliberate and dynamic nature of the joint targeting cycle supports all of the planning horizons of the JOPP ensuring that the targeting process adaptively supports achievement of the commander's objectives as opportunities arise and plans change.

Six phases of the joint targeting cycle.

Phase 1 – End state and commander's objectives

Phase 2 – Target development and prioritization

Phase 3 – Capabilities analysis

Phase 4 – Commander's decision and force assignment

Phase 5 – Mission planning and force execution

Phase 6 – Assessment

Phases 1 through 4 of the joint targeting cycle collectively produce the commander's guidance for all targeting, whether deliberate or dynamic. Lessons learned from recent operations have demonstrated the need for a distinct focus on dynamic targeting during phase 5. Targeting in phase 5 consists of five steps:

Find. During this step, possible targets are detected and classified for further prosecution.

Fix. The fix step of dynamic targeting includes actions to determine the location (fix) of the potential target.

Track. During this step, the target is observed and its activity and movement are monitored.

Target. 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.

Engage. In this step, action is taken against the target.

Phase 6 - Assessment. The assessment phase is common to both deliberate and dynamic targeting of the joint targeting cycle and examines the results of the target engagement.

The joint targeting process does not end when hostilities cease. During the transition phase of post conflict operations there is normally a critical need to collect all available information that feeds all forms of assessment. This data collection effort is essential to evaluate the full extent of target physical, functional, and cognitive effects; determine the true effectiveness of employed delivery systems and munitions; and critique and improve the assessment, analysis, and reporting process.

Joint Force Targeting Duties and Responsibilities

The joint targeting process cuts across traditional functional and organizational boundaries.

The joint targeting cycle supports the JFC's joint operation planning and execution with a comprehensive, iterative, logical methodology for employing joint targeting ways and means to create desired effects that support achievement of objectives. The JFC's primary targeting responsibility lies in establishing the objectives that component commanders will achieve through application of air, land, maritime, space, and special operations forces capabilities. With the advice of subordinate component commanders, JFCs set priorities, provide clear targeting guidance, and determine the weight of effort to be provided to various operations. Joint force and component commanders identify high-value and high-payoff targets for acquisition, collection, and attack or influence, employing their forces in accordance with the JFC's guidance.

Joint force commander responsibilities.

The JFC has the responsibility to conduct planning, coordination, and deconfliction associated with joint targeting. This task is normally accomplished through the joint targeting coordination board (JTCB) or like body. The JFC normally appoints the deputy JFC or a

component commander to chair the JTCB. When a JTCB is not established and the JFC decides not to delegate targeting oversight authority to a deputy or subordinate commander, the JFC may perform this task at the joint force headquarters.

The JTCB's focus is to develop broad targeting priorities and other targeting guidance in accordance with the JFC's objectives as they relate operationally. The JTCB must be flexible to address targeting issues, but should not become over involved in tactical-level decision making. Briefings conducted at the JTCB should focus on ensuring that intelligence, operations (by all components and applicable staff elements), fires, and maneuver are on track, coordinated, and synchronized. In order to function as effectively and efficiently as possible, the JTCB requires a focused agenda to guide the daily conduct of business.

Joint force staff responsibilities.

The intelligence directorate of a joint staff (J-2) has the primary responsibility for prioritization of intelligence collection efforts, analysis, validation, and assessment for all joint operations. In addition, the J-2 provides a major input to the staff in the form of adversary course of action assessments critical to the joint target prioritization process and identification of high-value and high-payoff targets.

The operations directorate of a joint staff (J-3) is the lead for planning and coordinating operations throughout the operational area. The J-3 assists the commander in the discharge of assigned responsibility for the direction and control of operations, including the planning, monitoring, and completion of specific operations. In this capacity, the directorate plans, coordinates, and integrates operations. The flexibility and range of forces require close coordination and integration for effective unity of effort.

The logistics directorate of a joint staff (J-4) identifies logistic issues unique or specific to targeting. Of particular interest, the J-4 compares the operational logistic plans to developing target lists to ensure protection of infrastructure and/or supplies required to support current and future operations.

The plans directorate of a joint staff performs the long-range or future joint planning responsibilities. Planning is conducted by various organizations in conjunction with appropriate staff elements.

The staff judge advocate 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 armed

conflict high issues, and other pertinent issues involved in joint target recommendations and decisions.

Component commander responsibilities normally include target development, nominating targets for JFC consideration, maintaining their own lists of high-value and high-payoff targets, providing appropriate representation to the JTCB when established, consolidating and nominating deconflicted and prioritized targets, providing timely and accurate reporting to the in support of joint operations assessment, and providing tactical and operational assessment to the joint fires element for incorporation into the JFC's overall assessment efforts.

CONCLUSION

The purpose of targeting is to integrate and synchronize fires into joint operations. Integrating and synchronizing planning, execution, and assessment is pivotal to the success of targeting. The deliberate and dynamic nature of the joint targeting cycle supports all of the planning horizons of the JOPP ensuring that the targeting process adaptively supports achievement of the commander's objectives as opportunities arise and plans change.

CHAPTER I
FUNDAMENTALS OF TARGETING

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

***Polybius,* History (2nd century B.C.)**

1. Introduction

The combatant commander's (CCDR's) and subordinate joint force commander (JFC), with the assistance of their staffs, integrate and synchronize the joint functions. Joint targeting is a fundamental task of the fires function that encompasses many disciplines and requires participation from all joint force staff elements, and components, along with numerous nonmilitary agencies. The purpose of targeting is to integrate and synchronize fires (the use of available weapon systems to create a specific lethal or nonlethal effect on a target) into joint operations. Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. Targeting helps integrate and synchronize fires with other joint functions (command and control, intelligence, fires, movement and maneuver, protection, and sustainment) during the joint operation planning process (JOPP). Targeting also supports the process of linking the desired effects of fires to actions and tasks at the joint force component level. Targeting can be applied to multinational operations and throughout the range of military operations.

2. Target Defined

a. A target is an entity or object considered for possible engagement or action. It may be an area, complex, installation, force, equipment, capability, function, individual, group, system, entity, or behavior identified for possible action to support the commander's objectives, guidance, and intent. A target's importance is derived from its assessed relationship with planned operations to achieve the commander's objective(s) and the end state. The JFC establishes these objectives, consistent with national strategic direction, to compel an adversary to comply with specific requirements or otherwise modify behavior.

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

c. Joint forces conduct continuous target development in support of joint operation planning to ensure a range of options for commanders.

d. Joint forces engage targets to create effects that contribute to the attainment of a commander's specific objective(s).

3. Characteristics of Targets

a. Every target has distinct intrinsic or acquired characteristics, the most important of which affect how it is targeted. These characteristics form the basis for target detection, location, identification, and classification for future surveillance, analysis, strike, and assessment. In general, there are five categories of characteristics by which targets can be defined: ***physical, functional, cognitive, environmental, and time***. These are briefly described below. These lists of characteristics below are not intended to be exhaustive, and some characteristics may belong in more than one category.

b. **Physical Characteristics.** These are features that describe what a target *is*. These are discernible to the five senses or through sensor-derived signatures. These may greatly affect the type and number of weapons, the weapon systems, and the methods or tactics employed against the target.

(1) Location.

(2) Shape.

(3) Size or area covered.

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

(5) Number and nature of elements.

(6) Dispersion or concentration of elements.

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

(8) Structural composition.

(9) Degree of hardening.

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

(11) Target's 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).

c. **Functional Characteristics.** These are features that describe what the target *does* and how it does it. They describe the target's function within the enemy system, how the target or system operates, its level of activity, the status of its functionality, and in some cases, its importance to the enemy. Functional characteristics are often hard to discern, because they most often cannot be directly observed. Reaching

plausible conclusions entails careful assessment of known facts and the use of deductive and inductive reasoning. Functional characteristics generally include:

(1) Target's 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% degraded").

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

(5) Functional redundancy (can the target's function be performed elsewhere or by something else?).

(6) Target's ability to reconstitute itself or its function.

(7) Target's ability to defend itself.

(8) Target's importance within the enemy's strategic structure (such as its role in the geopolitical system or its cultural importance).

(9) If the target is a person or group, what other people or groups are necessary to enable it to function? Necessary relationships (If the target is a person or group, what other people or groups are necessary to enable it to function?) The nature of relationships: (What is the nature of the connectivity between this person / group and others?).

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

d. **Cognitive Characteristics.** These are features that describe how some targets *think*, exercise control functions, or otherwise process information. These characteristics can be critical to targeting a system, since nearly every system possesses some central controlling function, and neutralizing this may be crucial to bringing about desired changes in behavior. As with functional characteristics, these can be difficult to discern or deduce.

(1) How the target processes information?

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

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

(4) Process outputs resulting from target functions.

(5) How much information the target can handle?

(6) How the target or system stores information?

(7) If the target is a person or group of people:

(a) How does the target think?

(b) What are its motivations?

(c) What behavior does the target exhibit?

e. **Environmental Factors.** These factors describe the effect of the environment on the target. These factors may also affect the methods used to affect or observe them.

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

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

(3) Degree of denial and deception.

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

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

f. **Time-Sensitivity**

(1) All potential targets and all targets nominated for attack continually change in importance due to the dynamic nature of the evolving environment in the battlespace. When the importance of a target rises to such a level that it poses (or will soon pose) a danger to friendly forces, or it presents a highly lucrative, fleeting opportunity of tactical advantage, the JFC may designate it as requiring immediate response. Such "time-sensitive" targets may be fully anticipated and planned in advance as deliberative actions in the joint targeting process for execution by designated forces. However, if their nature precludes detailed advanced execution planning (e.g., a mobile ballistic missile threat), they may be initially identified during the deliberative analytical and planning phases of the joint targeting process (with appropriate advance intelligence, surveillance, and reconnaissance [ISR] tasking) and once detected they may be prosecuted using the find, fix, track, target, engage, and assess (F2T2EA) execution process.

(2) Component commanders may nominate targets to the JFC for consideration as time-sensitive targets (TSTs). These high-priority targets, if not approved as TSTs by the JFC, may require both dynamic prosecution and cross-component coordination and assistance in a time-compressed fashion. The JFC and component commanders should identify these targets within the joint targeting cycle; provide clear guidance to ensure the appropriate priority of asset allocation (intelligence collection, exploitation, and attack assets); and provide rules of engagement (ROE) to facilitate rapid cross-component coordination, in order to minimize confusion and speed prosecution. These targets, though not specially designated, should receive the highest priority possible, just below targets identified on the JFCs TST list.

4. Time-Sensitive Targets

a. A TST is a JFC designated target or target type of such high importance to the accomplishment of the JFC's mission and objectives or one that presents such a significant strategic or operational threat to friendly forces or allies, that the JFC dedicates intelligence collection and attack assets or is willing to divert assets away from other targets in order to find, fix, track, target, engage, and assess it/them. TSTs comprise a very small or limited number of targets due to the required investment of assets and potential disruption of planned execution, and are only those targets designated by the JFC and identified as such in the JFCs concept of operations (CONOPs). In most cases, TSTs require immediate response because they pose (or will soon pose) a direct danger to friendly forces, or are highly lucrative, fleeting targets of opportunity. TSTs are normally executed dynamically; however, to be successful, they require considerable deliberate planning and preparation within the joint targeting cycle.

b. Component commanders may designate high-priority targets that present significant risks to or opportunities for component forces and/or missions. These are generally targets that the component commander(s) have nominated to the JFC's TST list, but did not "make the cut." This class of targets may require time-sensitive processing and cross- component coordination, even though they did not qualify for inclusion on the JFC's TST list. The JFC and component commanders should clearly designate these targets prior to execution of military operations. Such targets will generally be prosecuted using dynamic targeting. These targets should receive the highest priority possible, just below targets on the JFC's TST list.

*See Appendix A, "*Time-Sensitive Target Considerations*," for details on TSTs, and Field Manual (FM) 3-60.1 / Marine Corps Reference Publication (MCRP) 3-16D / Navy Tactics, Techniques and Procedures (NTTP) 3-60.1 / Air Force Tactics, Techniques, and Procedures (Instruction) (AFTTP[I]) 3-2.3, Multi-Service Tactics, Techniques, and Procedures* Targeting Time-Sensitive Targets*, for more details.*

5. High-payoff and High-value Targets

A high-payoff target (HPT) is one whose loss to the enemy will significantly contribute to the success of the friendly course of action. Time-sensitive and component-critical targets are usually special types of HPTs**.** Component and JFC target development and priorities will focus on these targets to ensure success of the mission. HPTs are derived from the list of **high-value targets (HVTs):** A target the enemy commander requires for the successful completion of the mission. The loss of HVTs would be expected to seriously degrade important enemy functions throughout the friendly commander's area of interest.

6. The Purpose of Joint Targeting

a. Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. The emphasis of targeting is on identifying resources (targets) the enemy can least afford to lose or that provide him with the greatest advantage (HVT), then further identifying the subset of those targets which must be acquired and attacked to achieve friendly success (HPT). Targeting is both a JFC- and component-level process that links the

desired effects to actions and tasks. This, in turn, contributes to creating desired effects necessary to achieve JFC objectives.

b. Targeting links intelligence, plans, and operations across all levels of command. Targeting leverages the commander's guidance and operational end state from the Joint Operation Planning and Execution System (JOPES) to translate and operationalize the intelligence from the joint intelligence preparation of the operational environment (JIPOE) and other outputs of the intelligence process. Targeting encompasses many processes, all linked and logically guided by the joint targeting cycle, that continuously seek to analyze, identify, develop, validate, assess, and prioritize targets for engagement in order to achieve the commander's objectives and end state.

c. The purpose of targeting is to integrate and synchronize fires into joint operations. The joint targeting cycle provides an iterative, logical methodology for the development, planning, execution, and assessment of the effectiveness of targeting and weapons employment in supporting commander's objectives. Principles of joint targeting can apply in multinational operations, and may involve participation from other agencies, governments, and organizations.

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

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

(2) Coordination, integration, synchronization, and deconfliction of actions.

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

(4) Reduced duplication of effort.

(5) Full integration of all available capabilities.

(6) Reduced chance of fratricide and collateral damage.

7. Targeting Categories

a. Joint targeting falls into two categories: deliberate and dynamic (see Figure I-1). Within the joint targeting cycle, deliberate targeting corresponds to all operation horizons within the joint operation planning process, while dynamic targeting is exclusive to phase 5. Both categories of targeting follow the joint targeting cycle and differ only in the execution of phase 5.

b. Deliberate targeting prosecutes planned targets. These are targets that are known to exist in the operational environment with engagement actions scheduled against them to create effects which support JFC objectives. Examples range from targets on joint target lists (JTLs) in the applicable operations plan, to targets detected in sufficient time to list in an air tasking order (ATO), mission-type orders,

attack guidance matrix, fragmentary orders, or fire support plans. There are two types of planned targets: scheduled and on-call.

(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 (e.g., close air support [CAS] missions, TSTs).

c. Dynamic targeting prosecutes targets of opportunity and changes to planned targets or objectives. Targets of opportunity are targets identified too late, or not selected for action in time, to be included in deliberate targeting that, when detected or located, meet criteria specific to achieving objectives. When

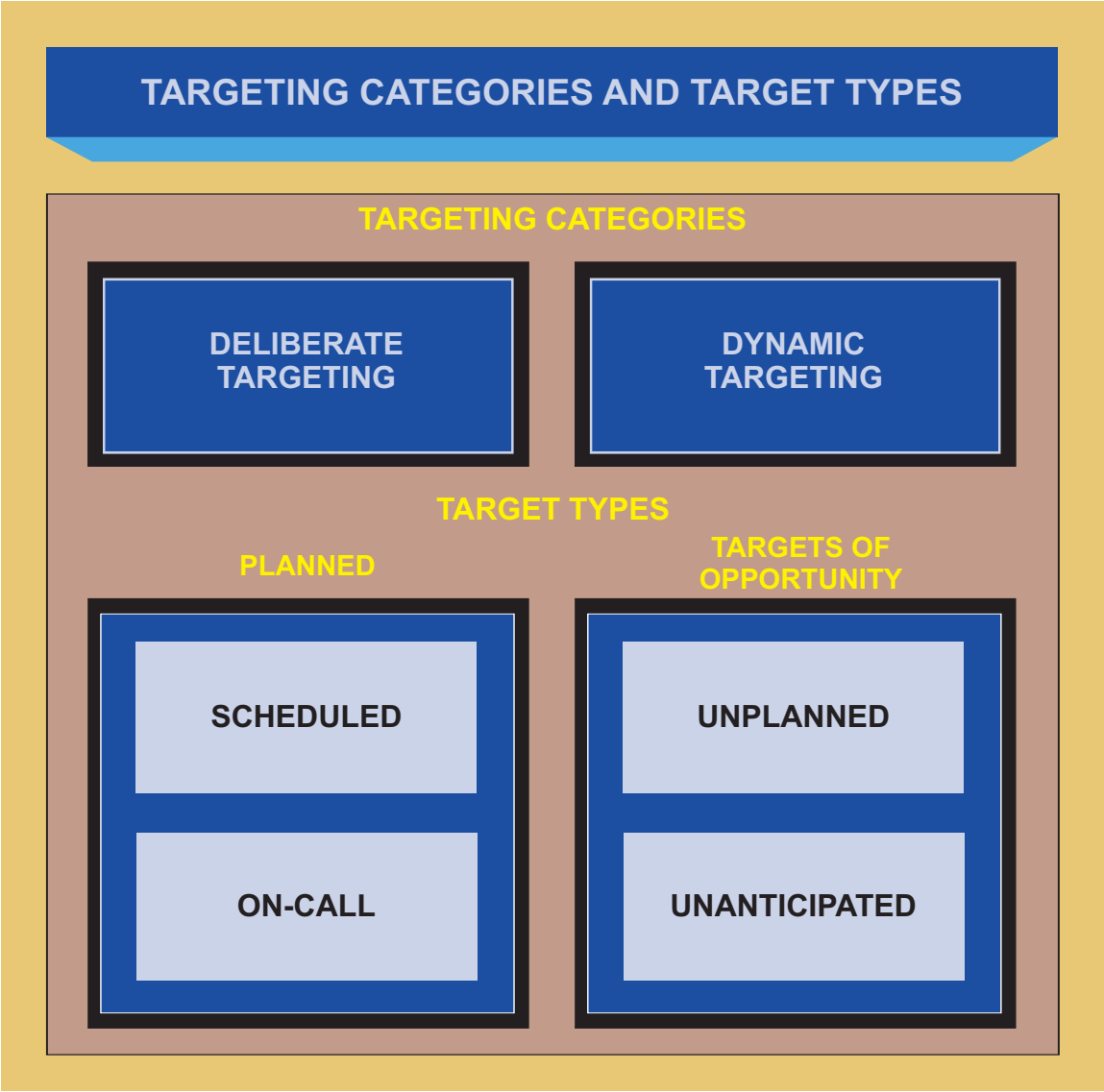


Figure I-1. Targeting Categories and Target Types

plans change and planned targets must be adjusted, dynamic targeting can also manage those changes. There are two types of targets of opportunity: unplanned and unanticipated.

(1) Unplanned targets are known to exist in the operational environment.

(2) Unanticipated targets are unknown or not expected to exist in the operational environment.

8. Principles of Targeting

The joint targeting cycle is designed to provide these means to support the achievement of the JFC's objectives through the use of joint fires. Adherence to the four principles throughout the targeting cycle should increase the probability of creating desired effects while diminishing undesired or adverse collateral effects.

a. **Focused**. The targeting process is focused on achieving the JFC's objectives. It is the function of targeting to efficiently achieve those objectives within the parameters set by the concept of operations (CONOPS), directed limitations, the ROE, the law of armed conflict (LOAC), and agreements concerning the sovereignty of national territories. Every target nominated should in some way contribute to attaining the JFC's objectives.

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

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

d. **Systematic**. In supporting the JFC's objectives, the joint targeting cycle seeks to create effects through target engagement in a systematic manner. The targeting cycle is a rational and iterative process that methodically analyzes, prioritizes, and assigns assets against targets systematically to create those effects that will contribute to the achievement of the JFC's objectives. If the desired effects are not created, targets are recycled through the process.

9. Effects

a. An effect is a physical and/or behavioral state of a system that results from an action, a set of actions, or another effect. A desired effect can also be thought of as a condition that can support achieving an associated objective, while an undesired effect is a condition that can inhibit progress toward an objective.

b. The joint force can create effects across the levels of war. Strategic and operational effects focus on larger aspects of various systems, while tactical-level effects typically are associated with results of offensive and defensive tactical actions, often involving weapons employment. Many of the

ways and means associated with targeting and employing fires 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.

For example, during operations defending friendly country Green, the JFC might approve the following desired operational-level effect relative to the adversary's air force: *Red air cannot interfere with joint task force operations after D+5.* Early and effective offensive counterair targeting of the adversary's aircraft and supporting infrastructure results in destruction of 60 percent of Red aircraft and near elimination of air command and control capability by D+4. Red also evacuates an estimated 30 percent of aircraft to a safe haven. The joint force air component commander (JFACC) expects Red intends to preserve these assets for future conflicts. The cumulative results of the JFACC's tactical target engagements create the JFC's desired operational-level effect, since Red's air "system" is virtually inoperable by D+4. In turn, this desired effect is one of several conditions that support the JFC's objective — *Integrity of Country Green's borders is restored by D+19.* This example shows that understanding desired effects helps link joint force components' tasks to the JFC's objectives.

c. The JFC and staff must consider undesired effects in course of action (COA) and CONOPS development. The JFC's and components' operational constraints and restraints can be adjusted to prevent undesired effects.

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

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.

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

JFACC flies the missions the following day, and bomb damage assessment indicates the bridges are damaged sufficiently to prevent foot and vehicle traffic, the typical desired effect for this type of target. 12 hours later the

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

e. The commander must be focused on the purpose of the fires with regard to creating effects against chosen targets. Effects are more than the results of the fires. Effects are the cumulative results of actions taken to engage geographical areas, complexes, installations, forces, equipment, functions, perception, or information by lethal and nonlethal means. Once the action is taken, the commander must assess the effectiveness of the operation. If the desired effect was not achieved, the target may need to be reengaged or another method selected to achieve the effect. Effects can be categorized in many ways. One important distinction is between direct and indirect effects.

(1) **Direct effects** are the immediate, first-order consequences of a military action (weapons employment results, etc.), unaltered by intervening events or mechanisms. They are usually immediate and easily recognizable. (For example, an enemy command and control center is destroyed by friendly artillery or a terrorist network courier is captured by a direct action mission.)

(2) **Indirect effects** are the delayed and/or displaced second-, third-, and higher-order consequences of action, created through intermediate events or mechanisms. These outcomes may be physical or behavioral in nature. Indirect effects may be difficult to recognize, due to subtle changes in system behavior that may make them difficult to observe. For example, an indirect effect of destroying a communications node or capturing a terrorist cell courier may degrade the effectiveness of the fielded enemy force's command and control structure. Effects such as this have real benefits, but are difficult to assess and measure.

(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 effects is most often greater than the sum of their immediate consequences. Likewise, indirect effects often combine to produce greater effects than the sum of their individual consequences.

(b) **Cascading Effects**. Indirect effects can ripple through a targeted system, often influencing other systems as well. This most typically occurs through nodes and links that are common and critical to related systems. Cascading effects may also result from direct engagements. 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 command and control (C2) and thus degrade the effectiveness of subordinate organizations.

(c) **Unintended Effects**. Effects often spill over to create unintended consequences, which may be counterproductive or may create opportunities. An example of a counterproductive consequence entails injury or collateral damage to persons or objects unrelated to the intended target. Conversely, some unforeseen effects may create opportunities that the joint force can exploit to help accomplish objectives. Unintended effects may also occur if the pre-strike analysis was incorrect and the enemy's reaction differs from what we expected and complicates operations or causes a change to operations (e.g., we expected their withdrawal and instead they counterattacked with their strategic reserve). The pre-strike analysis may also have miscalculated the local civilian population reactions and actions as well as that of the international community, with the end result impacting target selection, or engagement timing. Consider second-, third-, and higher-order effects, especially political-military effects, during planning and assessment. While estimating their outcomes can never be 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.

Intentionally Blank

CHAPTER II
THE JOINT TARGETING PROCESS

"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 (c. 500 BC)**

1. General Activities

Joint targeting is integral to the JOPP and begins with the planning initiation and mission analysis steps of JOPP. Detailed JIPOE, country assessments, and target systems analysis (TSA), performed by CCDRs within their regional responsibilities, set the stage for detailed targeting within the joint targeting cycle. Many products used to support a contingency or military operation are developed, maintained, and continuously updated as foundational information for specific targets.

For details on contingency and crisis action planning, see Joint Publication (JP) 5-0, Joint Operation Planning.

2. Integrating Joint Targeting into Joint Operation Planning

a. Integrating and synchronizing planning, execution, and assessment is pivotal to the success of targeting. Understanding the objectives, intentions, capabilities, and limitations of all actors within the operational environment enables the use of joint, interagency, and multinational means to create effects. Target development and selection are based on what the commander wants to achieve and the measures and indicators used to evaluate their achievement rather than on the ways and means used to affect the target. In other words, the focus should be on creating the desired effects that support the JFC's objectives rather than simply servicing a list of customary targets or basing targeting decisions on the availability of particular weapons, platforms, or systems. The consideration of effects during joint operation planning helps ensure a coherent relationship between objectives and tasks. During development of COAs and the CONOPS, understanding desired and undesired effects can help the JFC and staff refine their mission statement and the joint force components' tasks. Once actions are taken against targets, the commander must assess the effectiveness of the actions. If the desired effects were not created, the target may need to be reengaged, or another method selected to create the desired effects.

b. **Planning**

(1) Planning is an iterative and continuous process. The JFC and planners begin to consider effects early in the planning process during mission analysis. Planning should address all lethal and nonlethal options for creating desired effects, including use of interagency and multinational nontraditional

ways and means. Planning includes understanding the interaction of many systems in the operational environment (such as political, economic, social, and informational) and considering the impact of the joint force's actions on these systems. Planning for assessment should start as early as possible, and must consider collection and analysis requirements to support assessment. Refer to JP 5-0, Joint Operation Planning, for more information on how the JFC determines and uses operational-level and theater-strategic effects in the joint operation planning process.

(2) As the operation progresses, joint operation planning generally occurs in three distinct but overlapping timeframes: future plans, future operations, and current operations. The joint force battle rhythm and the JFC's decision cycle are two factors that affect planning in these timeframes, with the greatest potential impact on current operations planning. The joint targeting cycle and supporting component processes (such as the joint force air component commander's (JFACC's) six-stage air tasking cycle) must adapt to the joint force battle rhythm and decision cycle. See Appendix B, "Component Targeting Processes." Also refer to JP 3-33, Joint Task Force Headquarters, for more information on joint force planning timeframes, battle rhythm, and decision cycle.

c. **Execution.** The JFC and staff should reconsider (and revise if necessary) the desired effects whenever an objective changes or other circumstances dictate a change. For example, the assessment process (see Chapter II and Appendix C, "The Assessment Process") might determine that unintended effects of joint force actions require adjustment that could result in new or revised tasks to joint force components. Regardless of the cause, targeting and other joint force planning processes must be responsive to these changes. A thorough understanding of the end state and the JFC's mission, objectives, and desired effects will help component commanders and their staffs anticipate and respond to such changes.

d. **Assessment**. Assessment is a continuous process that measures progress of the joint force toward mission accomplishment. The JFC and component commanders continuously assess the operational environment and the progress of operations, and compare them to their initial vision and intent. Commanders adjust operations based on their assessment to ensure objectives are met and the military end state is achieved. The assessment process begins during mission analysis when the commander and staff consider what to measure and how to measure it to determine progress toward accomplishing a task, creating an effect, or achieving an objective. The process continues throughout execution. As a general rule, the level at which a specific operation, task, or action is directed should be the level at which such activity is assessed. Since the direct effects of target engagement typically reside at the tactical level, the joint targeting cycle focuses on combat assessment to determine qualitative and quantitative results of fire efforts. Refer to Appendix C, "The Assessment Process," for detailed discussion of assessment.

3. The Joint Targeting Cycle

a. The joint targeting cycle (see Figure II-1) is an iterative process that is not time- constrained, and steps may occur concurrently, but it provides a helpful framework to describe the steps that must be satisfied to successfully conduct joint targeting. The deliberate and dynamic nature of the joint targeting cycle supports all of the planning horizons of the JOPP - future plans, future operations, and current operations - ensuring that the targeting process adaptively supports achievement of the commander's objectives as opportunities arise and plans change.

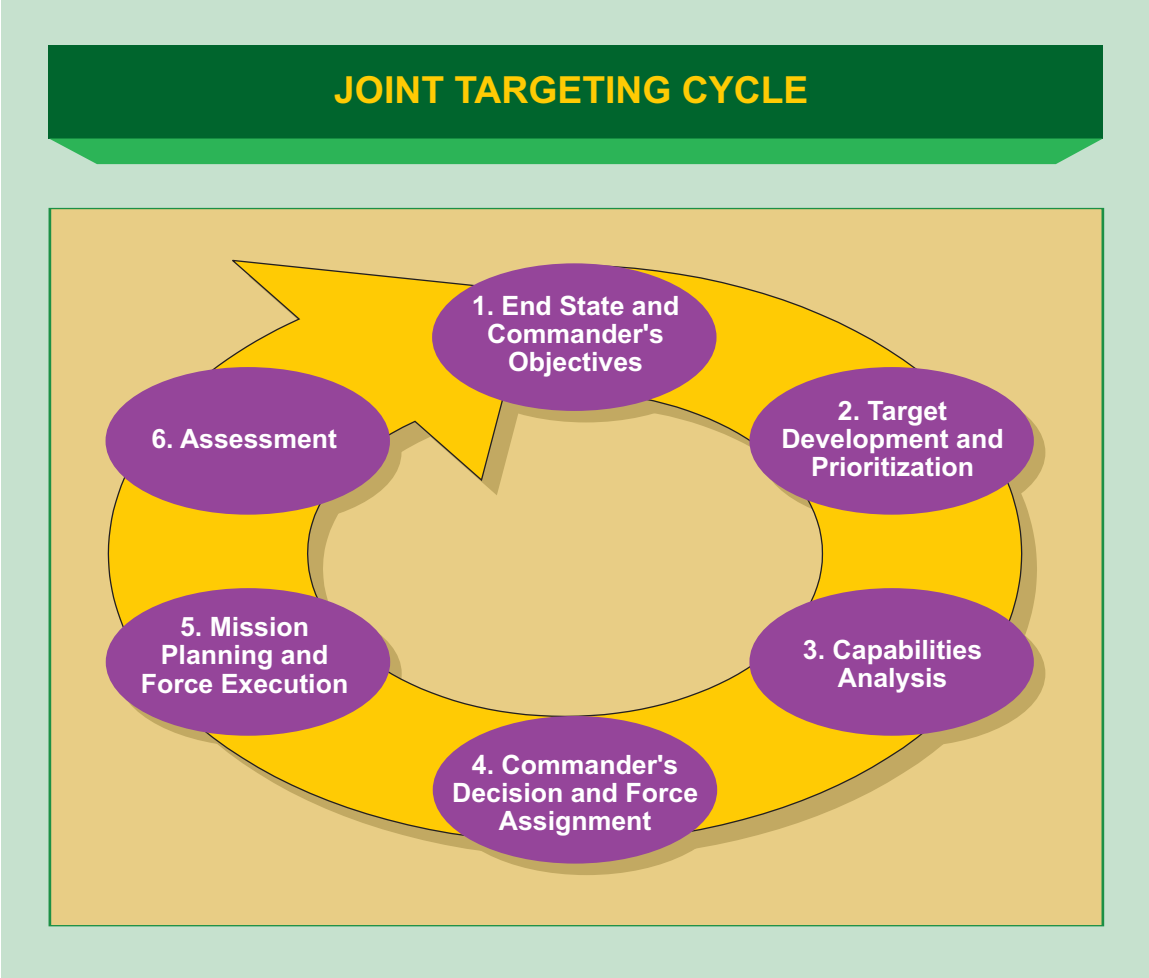


Figure II-1. Joint Targeting Cycle

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

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

(2) Understanding the CONOPs is the most important and first activity of joint targeting, because they encapsulate all the guidance in a set of outcomes relevant to the present situation and set

the course for all that follows. Commander's objectives, guidance, and intent drives the subsequent phases of the targeting cycle. Objectives are the basis for developing the desired effects and scope of target development, and are coordinated among strategists, planners and intelligence analysts for approval by the commander. Attainment of clear, measurable, and achievable objectives is essential to the successful realization of the desired end state. Effective targeting is distinguished by the ability to generate the type and extent of effects necessary to achieve the commander's objectives. Identification of centers of gravity (COGs) is essential to focusing target development.

For more information on COGs, see Joint Publication (JP) 3-0, Joint Operations.

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

c. Phase 2 — Target Development and Prioritization

(1) **Target development** entails the systematic examination of potential target systems (their components, individual targets, and target elements) to determine the necessary type and duration of action that must be exerted on each target to create the required effect(s) consistent with the commander's objectives.

(a) Once potential target systems are matched against the commander's objectives, the next step is to conduct a TSA. TSA identifies critical components or nodes of a target system, which are generally used as a base line for target selection.

(b) **Target vetting and validation** determine whether a target remains a viable element of the target system, and whether it is a lawful target under LOAC and ROE. In this process, the potential benefit of striking a target is weighed against the potential costs.

(c) **Once potential targets are identified, vetted, and validated, they are nominated**, through the proper channels, for approval. **Targets are prioritized based on the JFC's guidance and intent.**

(d) The target development process will generate several products and lists as it progresses, but the end product supports the succeeding steps of the joint targeting cycle.

(2) TSA is the process of choosing from among all potential targets those, that when engaged, are most likely to create the desired effects that still contribute to achieving the commander's objectives. TSA is an open-ended analytic process that draws upon all-source, fused intelligence. It proceeds from the principle that all physical and virtual assets of an enemy function as components of systems, and that these systems mutually support one another to provide capabilities that enable enemy behaviors. The foundation of TSA is nodal analysis, focused on the physical and functional relationships within systems

and among potential targets. The purpose of this analytical approach is to estimate the outcomes of given actions, which may support choosing a course of action during planning, as well as choosing individual actions during execution. TSA is not confined to a particular period of planning, but is continuous throughout. The products of TSA are critically linked to both the capabilities analysis and assessment phases. Desired effects to be created through target engagement, as well as desired points of impact (DPIs) or desired mean points of impact (DMPIs), functioning locations, and collateral effects limitations, flow from deliberations performed in TSA. These aimpoints are identified in the modernized integrated database (MIDB) and combatant command target materials as joint desired points of impact. Assessment is critically dependent on TSA to provide the logical framework against which observed behaviors must be evaluated. Conversely, TSA is critically dependent on assessment to update the status of systems within the operational environment. Assessment also helps improve understanding of the true functional relationships among an enemy's political, military, economic, social, informational, and infrastructural systems. Typical products of TSA include nodal system analysis studies generally used as a base line for target selection.

(a) Target development always approaches adversary capabilities from a systems perspective. While a single target may be significant because of its own characteristics, **the target's real importance lies in its relationship to other targets within an operational system**. A target system is most often considered as a collection of assets directed to perform a specific function or series of functions (See Figure II-2). While target systems are intra-dependent to perform a specific function, they are also interdependent in support of adversary capabilities (e.g., the electric power system may provide energy to run the adversary's railroads that are a key component of their military logistic system). Target development links these multiple target systems and their components (targets) to reflect both their intra- and interdependency that, in aggregate, contribute to the adversary capabilities.

(b) Establishing intelligence requirements is critical to the success of the entire targeting process. Targeteers must work closely with collection managers, intelligence analysts, and planners to ensure that intelligence requirements for planning, execution, and assessment requirements, and any changes that occur throughout the targeting cycle are integrated into the collection plan. This intelligence support is vital for the analysis performed in target development, as well as to prepare for future targeting during the execution of operations (e.g., to pre-task real-time intelligence, surveillance, and reconnaissance [ISR] assets) and to support assessment. For more information, see Appendix D, "Intelligence Support to Target Development."

(3) Target development also includes functions such as target research, nomination, deconfliction, aimpoint recommendation, target materials production, and collateral damage estimation. **Target development generally results in four products: target development nominations (TDNs), target folders, collection and exploitation requirements, and target briefs.** Detailed analysis should characterize the function, criticality, and vulnerabilities of each potential target, linking targets back to targeting objectives and MOEs developed during the end state and commander's objectives phase of the targeting process. One of the keys to successful target development is to understand the **relationships** between and within target systems in order to uncover capabilities, requirements, and vulnerabilities for targeting. Critical capabilities are those that are considered crucial enablers for a COG to function as such, and are essential to the accomplishment of the adversary's estimated objective(s). Critical requirements are the conditions, resources, and means that enable a critical capability to become

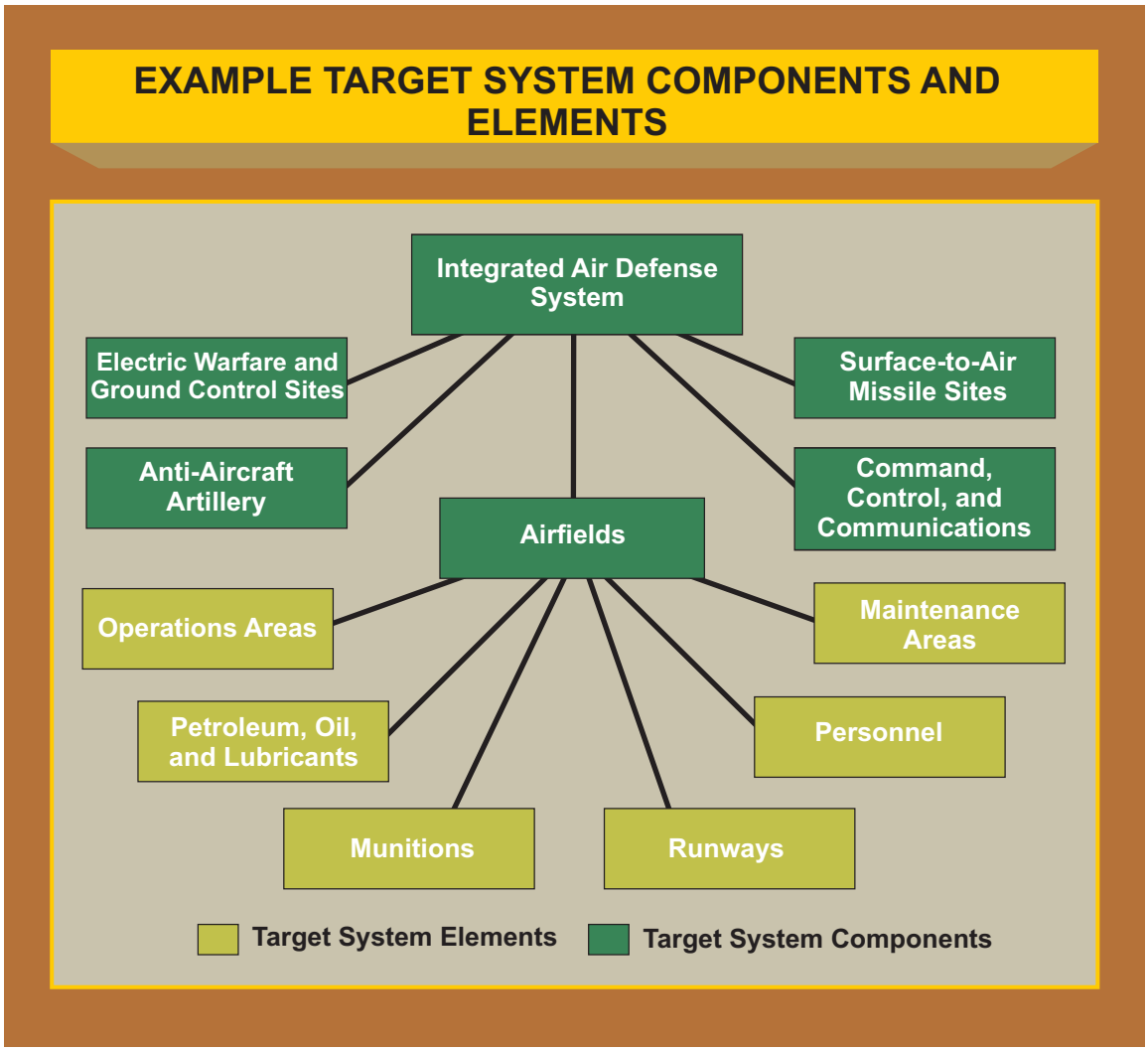


Figure II-2. Example Target System Components and Elements

fully operational. Critical vulnerabilities are those aspects or components of critical requirements that are deficient, or vulnerable to direct or indirect attack in a manner achieving decisive or significant results. Collectively, the terms above are referred to as critical factors. Analysts from across the joint force simultaneously conduct analysis of target systems and submit individual entities to the JFC joint force targeting staff as TDNs for further development, vetting, and validation.

(4) TDN are submitted by components, other government agencies, and/or multinational partners to the JFC targeting staff for inclusion in the JFC's candidate target list (CTL). The CTL subsequently drives further target development, vetting, validation, and generation of the joint target list (JTL), restricted target list (RTL), and possible additions to the no-strike list (NSL) if LOAC issues emerge. Target nominations contain the nominator's analysis, supporting intelligence, objectives, and desired effects.

(5) Target development of mobile targets (like mobile missiles or high value individuals) suspected to be in a particular area can involve creation of a geospatially defined target area of interest

(TAI) to help focus intelligence process within the suspect area. If indications are received on the mobile target's presence, the named areas of interest with DMPI/DPIs can be created within the TAI to speed target execution once positive identification of the target is made.

(6) Collection managers must provide a collection plan that addresses intelligence gaps discovered during the target development phase in order to fill as many gaps as possible.

(7) **Target Vetting and Validation**

(a) Target vetting allows the combatant commands to engage the intelligence community (IC) and other organizations subject matter experts (SMEs) to establish a reasonable level of confidence in a candidate target's functional characterization based on a review of the supporting intelligence. Target vetting normally occurs throughout the target development process, but in all cases ends with the community-wide assessment of the candidate target's intelligence validity.

(b) Target vetting supports the combatant commands' target development process, including validation, by providing the commander and his staff with the opportunity (facilitated by the Joint Staff Deputy Directorate for Targeting, Joint Staff Intelligence Directorate [J-2T]) to gain IC concurrence on the functional characterization of candidate targets, including review and validation of:

1. Target identification and the use of the appropriate naming convention.

2. Target location.

3. Target function, including the assignment of appropriate category code.

4. Target description.

5. Target significance focused on the significance of the target considering the system.

6. Critical target elements, including characterization and geospatial definition within the target facility.

7. Target expectation statement, focused on the effect on the overall target system.

8. Functional characterization and geospatial definition of collateral objects of concern.

9. Intelligence gain/loss concern.

(c) Target vetting also provides an opportunity for the IC to continue contributing to combatant command targeting and planning efforts through a formal voting process (see Appendix D, "Intelligence Support to Target Development"). Once relevant members have voted, the target is considered vetted and ready for combatant command validation.

(d) Target validation is a JFC responsibility that ensures all vetted targets meet the objectives and criteria outlined in the commander's guidance. In addition, validation reviews individual targets' compliance with LOAC and ROE. In bilateral or coalition environments, targets must also be validated against allied concerns. Target validation should be revisited as new intelligence becomes available or the situation changes. Target validation answers the following questions:

1. Does the target comply with JFC guidance and intent? Does the target (still) contribute to achieving one or more JFC objectives or supporting sub-tasks?

2. Is the target a lawful target? What are the LOAC and ROE considerations? Consider collateral damage and effects concerns in relation to LOAC, ROE, and commander's guidance.

3. Is the target (still) operational? Is it (still) a viable element of a target system? Where is the target currently located?

4. What would be the impact of not conducting operations against the target?

5. How will actions taken against the target impact on other operations? What is the target's proximity to friendly elements?

(8) **Target List Development**

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

(b) A CTL is a consolidated list of selected TDNs submitted to the JFC considered to have military significance in the JFC's operational area. National agencies, the CCDR's staff, joint forces subordinate to the CCDR, supporting unified combatant commands, and components all submit TDNs to the CCDR for validation and inclusion on the CTL.

(c) A JTL is a prioritized list of targets developed, vetted, and validated from the CTL. Components select targets from the JTL to compile their respective target nomination lists (TNLs) and forward them to the CCDR. The TNLs are then combined, validated, and prioritized to form a draft joint integrated prioritized target list (JIPTL) that is submitted to the joint targeting coordination board (JTCB) for finalization. Targets are validated against the NSL and the RTL at each successive level. Component commanders must request the JFC (or the JFC's appointed representative) review and approve RTL targets nominated to the JIPTL before execution.

(d) The draft JIPTL is formed from a prioritized listing of targets based on prioritized JFC objectives. Those compiling the JIPTL consider the estimated available capabilities and their ability to affect the targets on the list. The list usually contains more targets than there are resources available to

take action. Thus, a draft JIPTL "cut line" is usually established. This "cut line" should reflect which targets will most likely have action taken against them.

(e) It must 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 attacked. Other variables like TSTs, evolving JFC priorities, in extremis situations, and changing resource availability will determine which targets are ultimately prosecuted. The JIPTL provides components as well as the JFC with the proper feedback on how their specific target nominations fit into creating the effects desired.

(f) The JFC may prohibit or restrict joint force attacks on specific targets or objects without specific approval based on military risk, LOAC, ROE or other considerations. Targeting restrictions fall into two categories:

1. An NSL is a list of objects or entities characterized as protected from the effects of military operations under international law and/or the rules of engagement. Attacking these may violate LOAC (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. The NSL is compiled independently of and in parallel to the CTL. It is important to note, however, that entities from the CTL may be moved to the NSL if, as a result of additional target development, it is determined that attacking them may violate LOAC. Conversely, targets placed on a NSL may be removed from that list and become subject to military action if their status as a protected object or entity has changed. For example, a church that functions as a weapons storage facility or a barracks may lose its protected status and could legally be attacked.

2. A restricted target is a valid target that has specific restrictions placed on the actions authorized against it due to operational considerations. Actions that exceed specified restrictions are prohibited until coordinated and approved by the establishing headquarters. Attacking restricted targets may interfere with projected friendly operations. The targets on the RTL are nominated by elements of the joint force and approved by the JFC. This list also includes restricted targets directed by higher authorities. Targets may have certain specific restrictions associated with them that should be clearly documented in the RTL (for example, do not strike during daytime, strike only with a certain weapon). Some targets may require special precautions (for example, chemical, biological, or nuclear facilities, proximity to no-strike facilities). When targets are restricted from lethal attacks, commanders should consider nonlethal capabilities as a means to achieve or support the commander's desired objectives. For additional information, see Appendix E, "Legal Considerations in Targeting," and JP 2-0, *Joint Intelligence*.

(9) **Target Nomination for Prioritization, Synchronization, and Action**

(a) Once potential targets are identified, researched, developed, vetted, and validated, they are nominated for approval and action in a given time period, usually via a coordinating body or working group that represents the interests of all joint force components and other organizations providing target nominations.

(b) Component commanders, national agencies, supporting commands and/or the JFC joint force staff submit target nominations for vetting and validation and can recommend that targets on the JTL are added to the JIPTL. Once compiled, the draft JIPTL is submitted to the JFC for approval. Once approved, the list is transmitted to all components and appropriate agencies as the JFC's JIPTL, which focuses targeting efforts for a designated time period.

d. **Phase 3 — Capabilities Analysis**

(1) This phase of the joint targeting cycle involves evaluating available capabilities against desired effects to determine the appropriate options available to the commander. 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. Commanders also consider risks to the force and collateral concerns in evaluating available capabilities. Estimates of required weapons or capabilities shape other planning considerations within the joint force. For example, weapons requirements will drive significant portions of theater logistics planning efforts.

(2) Once appropriate options are developed, analysis focuses at the target detail level on evaluating specific capabilities against identified target vulnerabilities to estimate 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. These estimates may be generated using probabilistic mathematical models (e.g., Joint Munitions Effectiveness Manuals (JMEM)) that take into account the target's critical vulnerabilities, performance data on the assets contemplated for application against the target, and means of delivery. Nonlethal capabilities should be considered as part of this analysis. Effects estimates should also take into account estimated repair and recuperation times when matching capabilities with vulnerabilities. Reuse and reconstruction during later plan phases should also be accounted for to avoid negatively affecting the end state.

(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 are cautioned against assuming that the estimated effectiveness of a force capability under one set of circumstances is broadly applicable to other circumstances. Relatively minor targeting variations may have an unintended impact on effects estimates. It is equally important to stress that these estimates of performance are not designed to take into account considerations outside of the realm of asset-target interaction (e.g., they do not address whether or not the delivery system will survive to reach the target). Estimates of consequences only consider the first order effects of asset-target interaction and do not model higher-order desired effects or unintended collateral effects. For more information on capabilities analysis, see Appendix F, "Capabilities Analysis and Force Assignment."

(4) Collateral damage estimation (CDE) is a critical component of the joint targeting process. CDE begins in the target development phase and continues through execution. Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3160.01A, *Joint Methodology for Estimating Collateral Damage and Casualties for Conventional Weapons: Precision, Unguided, and Cluster*, details a specific CDE process followed Department of Defense (DOD)-wide. Targets with associated collateral damage concerns expected to exceed theater (combatant command) thresholds are referred either to the Secretary

of Defense (SecDef) or President using the sensitive target approval and review process, detailed in Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3122.06B, *Sensitive Target Approval and Review (STAR) Process*. See also Appendix A, "Time Sensitive Target Considerations" and Appendix G, "Collateral Damage Estimation," for more detail.

(5) Once the capabilities analysis phase is complete, the individual target nominations can be matched with appropriate weapons or other capabilities to create the desired effects on the target(s). It is important to remember that all joint capabilities should be considered when conducting capabilities analysis. Planners and targeteers should not arbitrarily exclude any capability that can create the desired effect(s).

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

(1) Once the JFC has approved the JIPTL, either entirely or in part, tasking orders are prepared and released to the executing components and forces. The joint targeting process facilitates the publication of tasking orders by providing amplifying information necessary for detailed force-level planning of operations.

(2) During any current operation, the joint targeting process also documents the logical linkage between objectives and guidance. This documentation traces the analytical reasoning that supported the nominated targets and the details of the capability effectiveness estimates. The work of operations planners is significantly enhanced when they are furnished with detailed insights into the reasoning that resulted in their 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 force-level planners. Making the factors used in joint force planning available to the operations planners, and providing them real-time collaboration capability with other component and joint force-level targeting specialists, enables adjustment and fine-tuning of operational planning. It also provides a channel to discuss mitigation of risk for the attacking force, since variations in tactics may be required that could affect the results achieved at the target; the joint targeting process must account for these variations and adjust expectations accordingly. This is a critical path of information flow that reduces the likelihood of confusion between what was expected at the joint force level and what was actually achieved during execution. Ultimately, the exchange of information at this phase and the reconciliation of a common operational picture (COP) are critical elements in the last phase of the joint targeting process where outcomes are analyzed and future actions are determined.

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

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

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

(2) Combat operations are dynamic. During execution, the operational environment changes as the adversary responds and deviates from friendly force assumptions. The joint targeting process monitors these changes in order to allow commanders to maintain the initiative through flexibility.

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

(4) Lessons learned from recent operations have demonstrated the need for a distinct focus on dynamic targeting (including the prosecution of TSTs during phase 5). Phases 1 through 4 of the joint targeting cycle collectively produce the commander's guidance for all targeting, whether deliberate or dynamic. (See Figure II-3 for an illustration of how the joint targeting cycle differs during phase 5.) The JFC and staff, in coordination with joint components and other agencies, 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 TSTs; 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.

(5) Targeting in phase 5 consists of five steps: find, fix, track, target, and engage. (See Figure II-4). Dynamic targeting has often been called "F2T2EA" (find, fix, track, target, engange, and assess) or "the "kill chain" and has also been used for specifically engaging TSTs. 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. 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, and track steps tend to be ISR-intensive, while the target and engage steps are typically labor-, force-, and decision-making intensive. Whether dynamic or deliberate targeting is used the next phase is assessment.

(a) Step 1 - Find

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

2. Inputs to the find step:

a. Clearly delineated JFC dynamic targeting guidance and priorities.

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

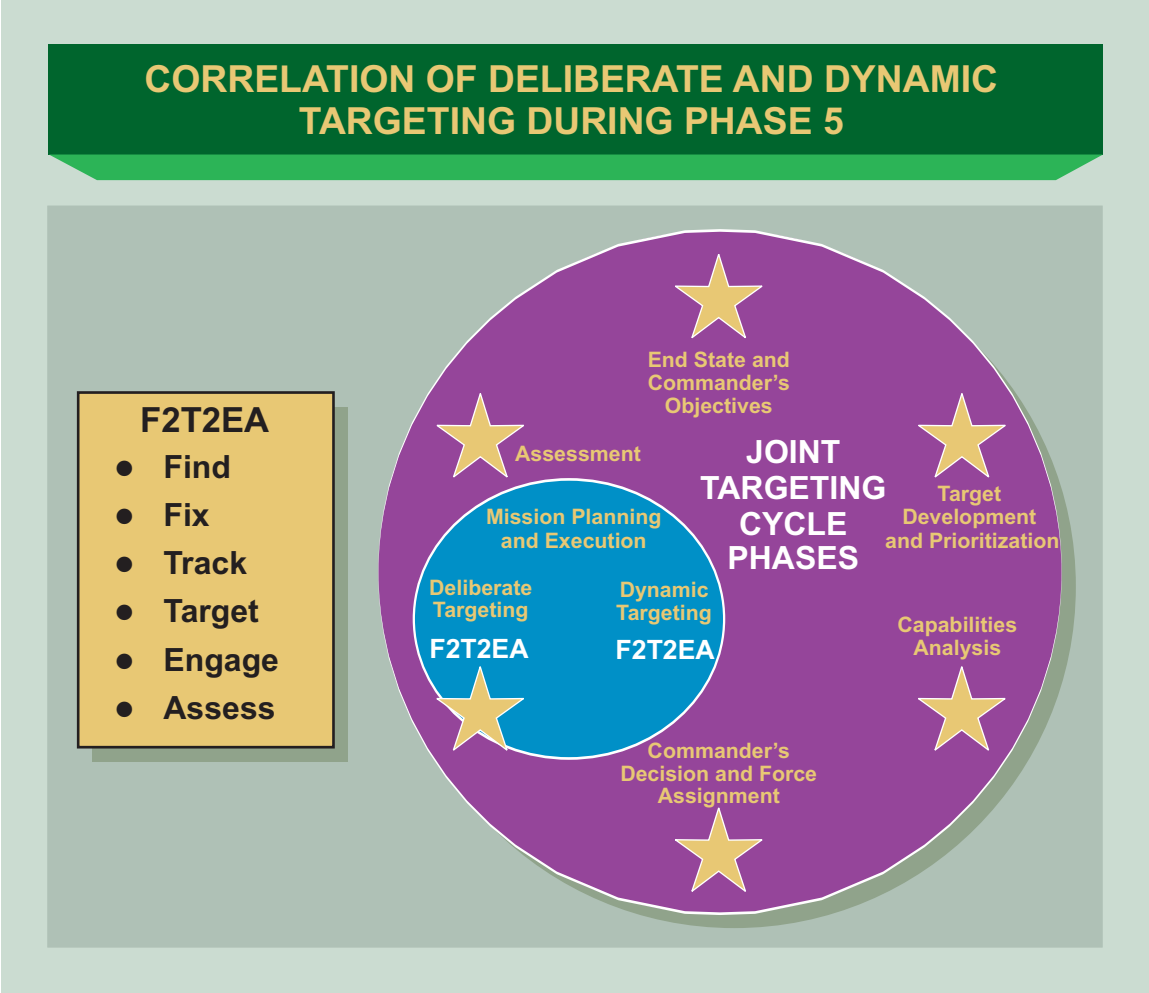


Figure II-3. Correlation of Deliberate and Dynamic Targeting During Phase 5

c. Collection plans based on the JIPOE.

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

4. The term "emerging target" is used to describe a detection that meets sufficient criteria to be developed as a potential target using dynamic targeting. The criticality and time sensitivity of an emerging target, and its probability of being a potential target, is initially undetermined. Emerging targets normally require further ISR and/or analysis to develop, confirm, and continue dynamic targeting. During the find step (see Figure II-5), an emerging target will be:

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

Figure II-4. Dynamic Targeting Steps

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

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

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

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

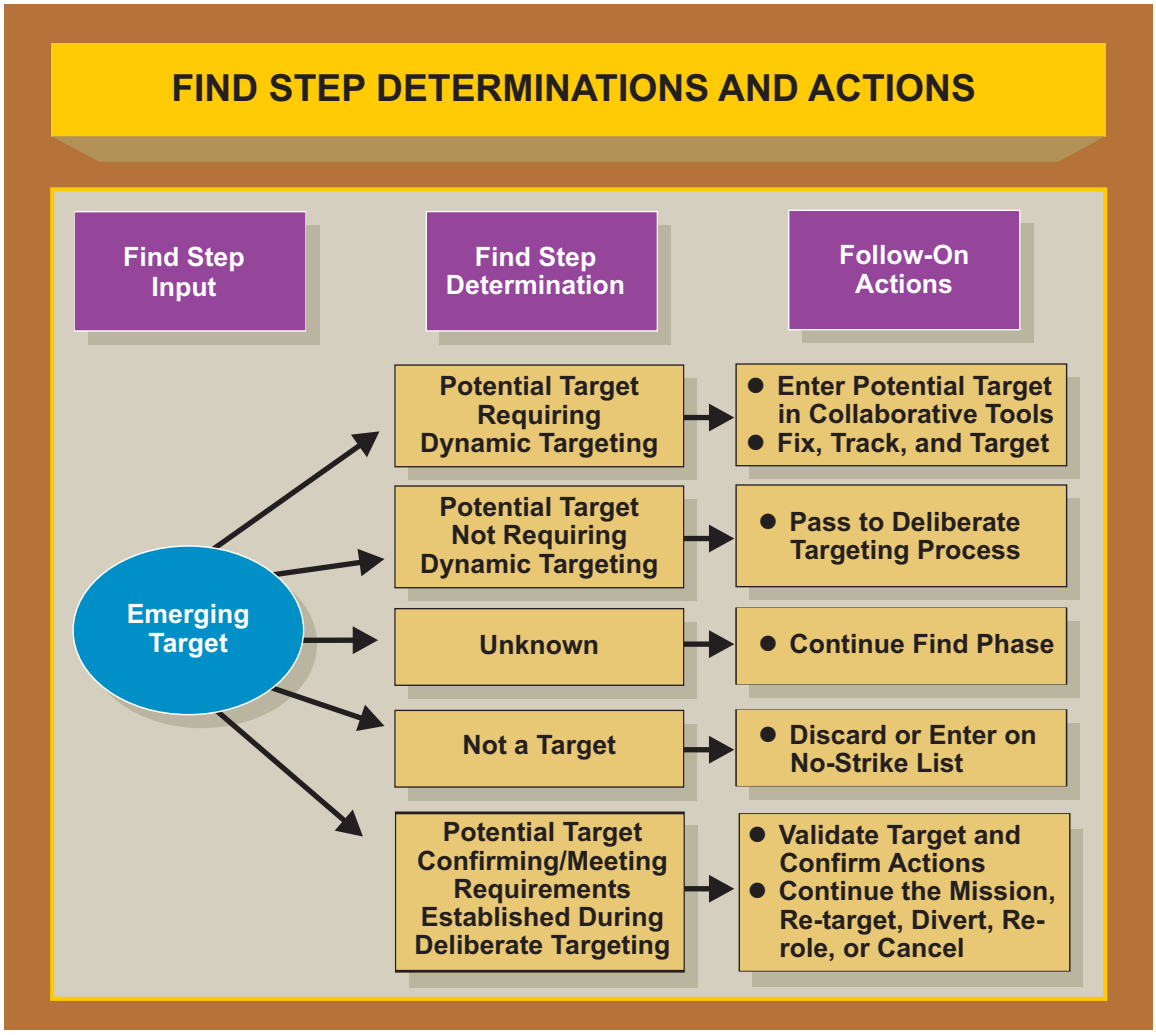


Figure II-5. Find Step Determinations and Actions

simultaneously without the need for traditional ISR, and the target and engage phases being completed with a much abbreviated coordination and approval process.

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

(b) Step 2 - Fix

1. A "fix" is a position determined from terrestrial, electronic, or astronomical data. The fix step of dynamic targeting includes actions to determine the location (fix) of the potential target.

2. Inputs to the fix step:

a. Potential targets requiring dynamic targeting.

b. Sensor information on the target.

3. The fix step begins after potential targets requiring dynamic targeting are detected. When a potential target is identified, sensors are focused, which may require additional sensors, to confirm target identification and precise location. The correlation and fusing of data confirms, identifies, and locates the target and it may then be classified as a TST or other target requiring dynamic targeting. TSTs receive the highest priority in dynamic targeting. Optimally, ISR assets should provide both operators and intelligence analysts with the capability to identify stationary and mobile targets, day or night, in a timely manner in any weather, terrain, or form of concealment, to the degree of accuracy required by the engaging weapon systems.

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. Target identification, classification, and confirmation.

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.

2. Input to the track step:

a. Confirmed 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 ISR requirements are based on JFC guidance and objectives. TSTs generally receive the highest priority. If track continuity is lost, the fix step will likely have to be re-accomplished (and potentially the find step as well).

4. Output of the track step:

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

b. Sensor prioritization scheme.

c. Updates to target window of vulnerability.

(d) Step 4 – Target

1. During this step the decision is made to engage the target in some manner to create desired effects and the means to do so are selected and coordinated.

2. Input to the target step:

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

b. Restrictions: CDE guidance, weapons of mass destruction (WMD) consequences of execution, LOAC, ROE, NSL, and RTL, component boundaries, fire support coordination measures (FSCMs), etc.

c. SA on available assets from all components.

3. The target step begins with target validation. That is, operations personnel ensure that an attack on the target complies with guidance, LOAC, and ROE, and is not otherwise restricted. The target phase matches available attack 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. Weapon-target pairing and 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 desired effect is validated.

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

c. Asset deconfliction and target area clearance considerations are resolved.

d. Target execution approval (decision) in accordance with JFC and component commander guidance.

e. Assessment collection requirements are submitted.

f. Consequence of execution prediction and assessment for WMD targets is performed.

(e) Step 5 - Engage

1. In this step, action is taken against the target.

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 system selected to engage it. Engagement orders must be transmitted to, received by, and understood by those engaging the target. The engagement is managed and monitored by the engaging component and the output is the actual target engagement.

4. Output of the engage step:

a. Issuing and passing of the engagement order.

b. Target engagement via lethal or nonlethal means.

c. Engagement direction and control.

g. **Phase 6 —Assessment**

(1) The assessment phase is common to both deliberate and dynamic targeting of the joint targeting cycle and examines the results of the target engagement. The assessment of dynamic and deliberate target engagement results must be integrated to provide the overall joint targeting assessment. Assessment is discussed in detail in Paragraph 4 of this chapter and in Appendix C, "Assessment Process." However, the basic steps are part of this phase.

(2) Inputs to the assessment phase: Assessment requests matched against desired lethal or nonlethal effects.

(3) During the assessment phase, the collection of information about the results of the engagement is conducted to determine whether the desired effects have been created. Immediate assessment should provide quick results and to allow for expeditious reattack recommendations, and therefore may not be as rigorous as assessment.

(4) Output of the assessment phase:

(a) Estimated or confirmed engagement results to decision makers and deliberate targeting in a timely manner.

(b) Reattack recommendation.

(c) Friendly force warning of WMD release, if applicable.

4. Joint Operation Planning and Targeting During Execution

a. **The joint targeting cycle supports both contingency planning and crisis-action planning** as described in JP 5-0, *Joint Operation Planning.* Planning continues during execution, with an initial emphasis on refining an existing plan or order and producing the operation order (OPORD). As the operation progresses, joint operation planning generally occurs in three distinct but overlapping time frames: ***future plans***, ***future operations***, and ***current operations***.

(1) **The joint force plans directorate of a joint staff's (J-5) effort focuses on *future plans***. The time frame of focus for this effort varies according to the level of command, type of operation, JFC's desires, and other factors. Typically the emphasis of the future plans effort is on planning the next phase of operations (**sequels** to the current operation). In a campaign, this could be planning the next major operation (the next phase of the campaign).

(2) Planning also occurs for **branches** to current operations (***future operations planning***). The time frame of focus for *future operations* planning varies according to the factors listed for *future plans*, but the period typically is more near-term than the *future plans* time frame. *Future* planning could occur in the J-5 or joint planning group, while *future operations planning* could occur in the joint operations center or J-3.

(3) Finally, ***current operations planning*** addresses the immediate or very near-term planning issues associated with ongoing operations. This occurs in the joint operations center or J-3.

b. **Deliberate targeting** typically supports the joint force's *future plans* effort, while the nature and time frame associated with *current operations planning* (usually the current 24-hour period) typically requires the immediate responsiveness of **dynamic targeting.** The time frame for *future operations planning* can vary from a day to several days. The time frame involved is the primary factor that determines whether deliberate or dynamic targeting will support the JFC's *future operations* targeting requirements.

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

Intentionally Blank

CHAPTER III
JOINT FORCE TARGETING DUTIES AND RESPONSIBILITIES

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

Colonel Charles Ardant du Picq, 1880

1. Joint Targeting Integration and Oversight

a. The joint targeting cycle supports the JFC's joint operation planning and execution with a comprehensive, iterative, logical methodology for employing joint targeting ways and means to create desired effects that support achievement of objectives. Joint targeting selects and prioritizes targets and matches the appropriate means to engage them, considering operational requirements and capabilities. The JFC's primary targeting responsibility lies in establishing the objectives that component commanders will achieve through application of air, land, sea, space, and special operations forces capabilities. With the advice of subordinate component commanders, JFCs set priorities, provide clear targeting guidance, and determine the weight of effort to be provided to various operations. Joint force and component commanders identify HVTs and HPTs for acquisition, collection, and attack or influence, employing their forces in accordance with the JFC's guidance.

b. A primary consideration in organizing the framework of the joint targeting cycle is the requirement to coordinate, deconflict, prioritize, integrate, synchronize, and assess joint targeting operations. The structure established by the JFC must be able to facilitate the joint targeting process throughout the entire spectrum of anticipated targeting timelines from long-term to rapidly changing time-sensitive situations. The JFC defines this structure based upon assigned, attached, and supporting forces, as well as the threat, mission, and operational area. This strategy and planning and supporting targeting structure is established to either directly or indirectly achieve the JFC's objectives. It must also be able to identify those critical vulnerabilities that when effectively engaged, directly or indirectly, generate the desired effects. Likewise, the targeting structure should be able to execute all phases of joint targeting efficiently and continuously.

c. The joint targeting process cuts across traditional functional and organizational boundaries. Operations, plans, and intelligence personnel are the primary participants, but other functional area (e.g., as logistics, weather, legal, and communications) SMEs also support the joint targeting cycle. Close coordination, cooperation, and communication among the participants are essential for the best use of JFC and component resources.

d. The JFC is responsible for all aspects of strategy, planning, and targeting. This responsibility includes establishing objectives and command relationships, integration, coordination and deconfliction between component commanders, through assessment of operations. The targeting cycle is complicated by the requirement to deconflict duplicative efforts, to prevent fratricide, and to synchronize and integrate targeting with other activities of the joint force.

e. **Draft JIPTL Construction**. The draft JIPTL is formed from a prioritized listing of targets based on component and JFC target priorities. Members consider the estimated available air capabilities and their ability to effect the targets on the list. A draft JIPTL "cut line" is normally established. The draft JIPTL "cut line" should reflect which targets will most likely be attacked (barring technical problems with aircraft, weather, re-tasking for higher priority targets, or other operational circumstances) with the projected apportionment of air assets assigned or made available to the JFACC. The "cut line" is an important concept since targets below the line may not be tasked in that day's targeting cycle. Component liaison officers should be ready to justify and/or prioritize target nominations among all the priorities of the joint operation. The JFACC may also recommend that other component assets be used against targets on the draft JIPTL.

f. **The JFC has the responsibility to conduct planning, coordination, and deconfliction associated with joint targeting.** This task is normally accomplished through the JTCB or like body. The JFC normally appoints the deputy JFC or a component commander to chair the JTCB. When a JTCB is not established and the JFC decides not to delegate targeting oversight authority to a deputy or subordinate commander, the JFC may perform this task at the joint force headquarters, with the assistance of the J-3. The JFC ensures that this is a joint effort involving applicable subordinate commands, other agencies, and multinational partners, as applicable. Joint targeting is a highly iterative process that needs close coordination during operations. To ensure the widest flexibility and greatest reaction to the adversary and changing conditions in the operational environment, joint targeting should be closely linked to the component commander with the preponderance of assets to strike or otherwise affect joint targets and the staff to adequately plan, control, and coordinate these missions. The commander to whom the JFC delegates authority for joint targeting planning, coordination, and deconfliction must possess or have access to a sufficient C2 infrastructure, adequate facilities, and joint planning expertise. 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.

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

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

(3) 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.

(4) As previously stated, directorship of the JTCB will be determined by the JFC. The JTCB is often led by the deputy JFC or designated representative to provide the appropriate level of rank,

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.

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

(a) Review of operational-level assessment to guide the JFC's decision making.

(b) Maintaining a macro-level view of the operational environment.

(c) Review of components' schemes of maneuver and broad targeting guidance to ensure compliance with the JFC's intent.

(d) Ensuring integration of component plans according to the JFC's CONOPS.

(e) Developing and refining broad component targeting guidance and priorities.

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

(g) Submitting the coordinated JIPTL for JFC approval.

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

(6) **JTCB Scope and Focus.** The JTCB's focus is to develop broad targeting priorities and other targeting guidance in accordance with the JFC's objectives as they relate operationally. The JTCB must be flexible to address targeting issues, but should not become overinvolved in tactical-level decision making. Briefings conducted at the JTCB should focus on ensuring that intelligence, operations (by all components and applicable staff elements), fires, and maneuver are on track, coordinated, and synchronized. In order to function as effectively and efficiently as possible, the JTCB requires a focused agenda to guide the daily conduct of business. A notional JTCB agenda is outlined below (see Figure III-1). In breaking the meeting into four parts, the JTCB may address at least four planning horizons.

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

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

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

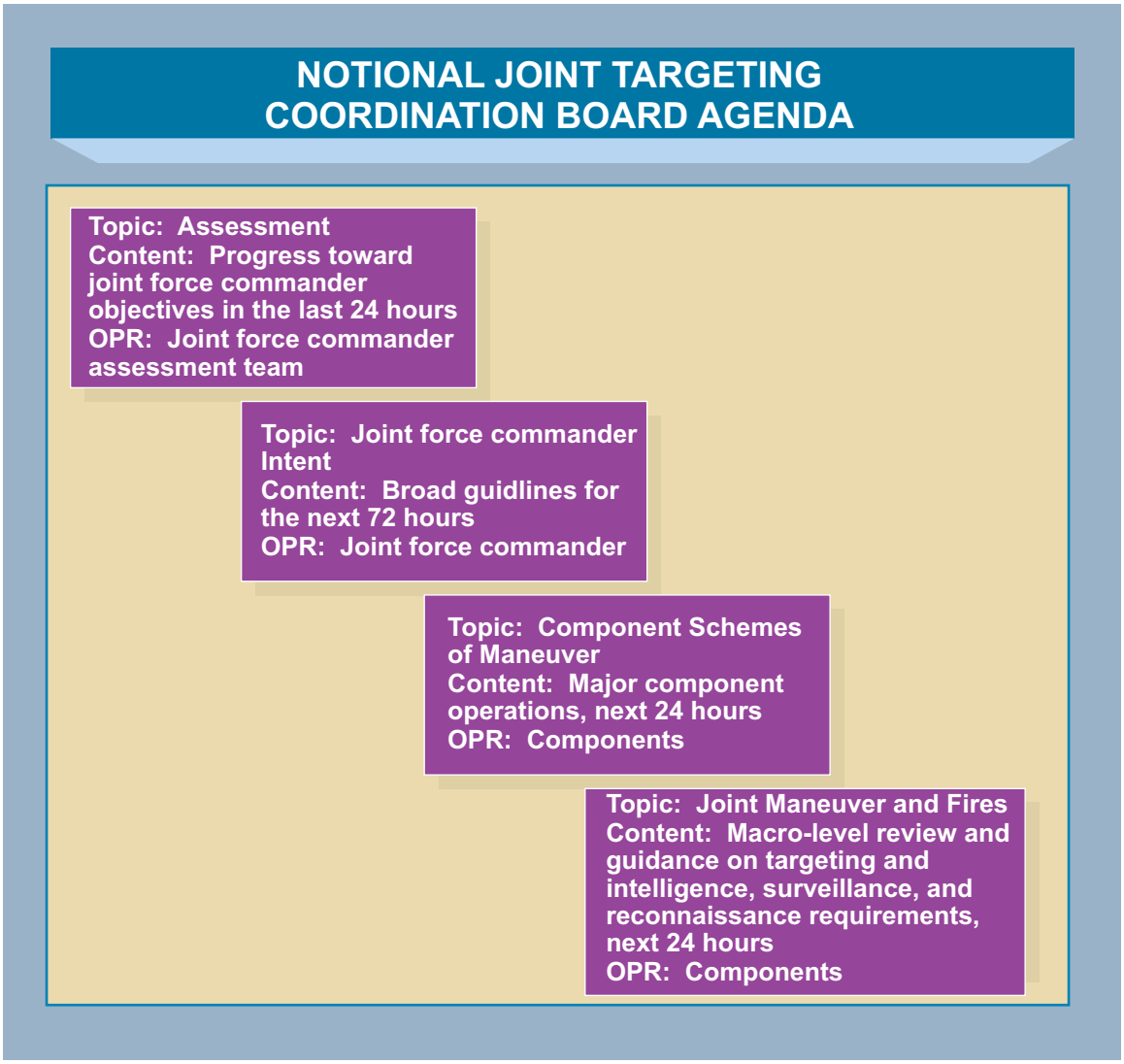


Figure III-1. Notional Joint Targeting Coordination Board Agenda

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

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

(8) The JTCB is concerned with future operations, not the "current battle." Operators already have the current day's targeting plan(s) in hand and are preparing to execute. Changing priorities on the day of execution is possible, but will normally be handled through the J-3 (or their equivalents at

the component level) rather than the JTCB. Moreover, component commanders are normally authorized to make execution day changes compelled by current conditions, consistent with the JFC's guidance and intent.

g. **Joint Fires Element (JFE).** The JFC may approve the formation of a JFE. The JFE is an optional staff element comprised of representatives from the JFC's J-3, the components, and other elements of the JFC staff, to include the J-2 targeting staff, the J-5, among others (see Figure III-2). The JFE is an integrating staff element that synchronizes and coordinates fires planning and coordination on behalf of the JFC. The JFE assists the J-3 in accomplishing responsibilities and tasks as a staff advisor to the J-3 and may include any and all of the J-3's tasks with the JFC's approval. In addition, the JFE may perform the following functions related to joint targeting:

(1) Coordinate the development of the JFC's JIPTL with the joint components.

(2) Assist the joint intelligence operations center (JIOC) and/or joint intelligence support element (JISE) in developing HVTs and HPTs.

(3) Monitor for the J-3 TST operations and make recommendations for deconfliction.

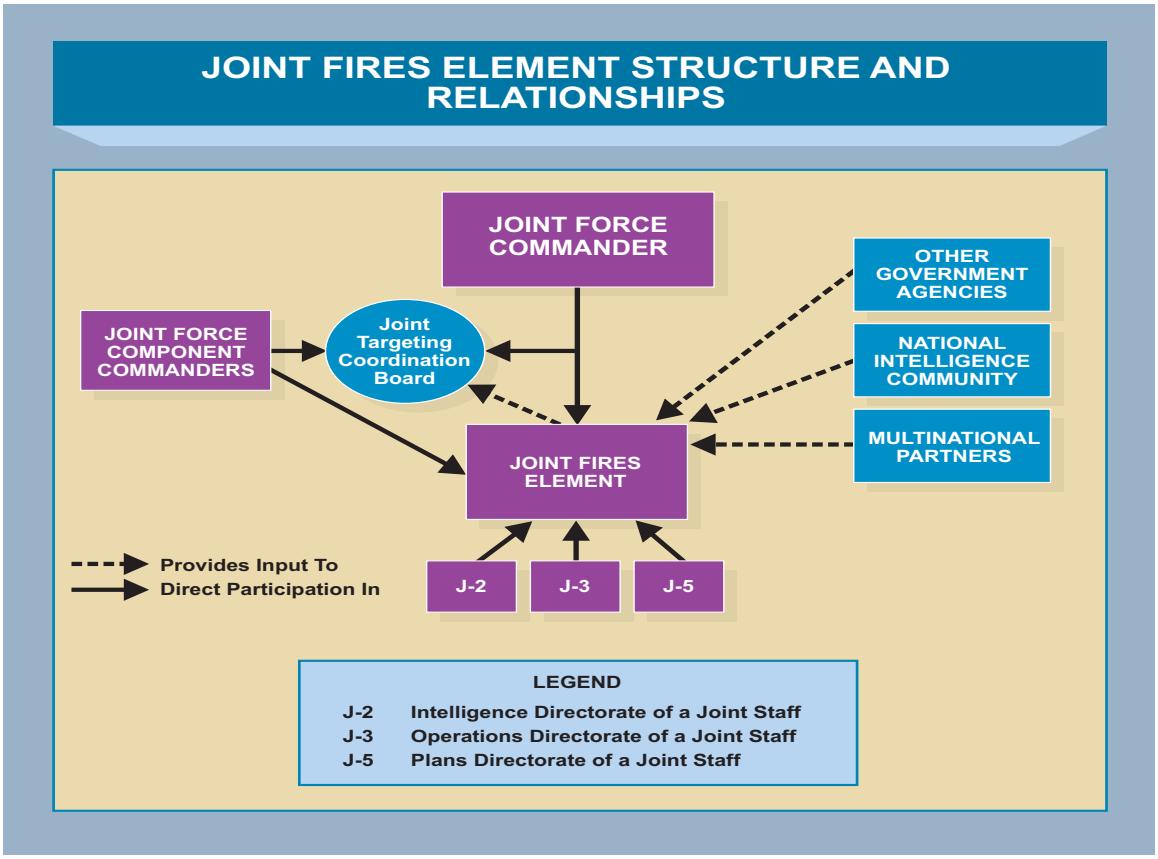


Figure III-2. Joint Fires Element Structure and Relationships

(4) Deconflict and validate target nominations at the JFC level and higher, then recommends prioritize and forward to the JFC for review, approval and inclusion in the JIPTL.

(5) Nominate targets to the JFC based on the JTL, NSL, and RTL.

(6) Identify potential conflicts in preparation for the JTCB or similar forum.

(7) Organize a strategy team to address intermediate targeting efforts to bridge the gap between current operations and future plans.

(8) Maintain a complete list of restricted and no-fire areas (such as where SOF or other components and organizations are operating) to avoid fratricide and conflicts with other current or future operations.

(9) Conduct assessment in cooperation and coordination with joint components.

(10) Coordinate, disseminate and manage theater FSCMs and other appropriate measures submitted by the components.

2. Relative Division of Joint Targeting Cycle Responsibilities

a. Collaboration between joint force staff targeting specialists and component-level operations and targeting planners is a critical element of the execution of the joint targeting cycle at all levels. Supporting and subordinate commanders, functional and Service, will have their own targeting processes that will complement and support the supported CCDR or subordinate JFC's targeting process. The supported CCDR or subordinate JFC is responsible for coordinating these various targeting processes and delineating the responsibilities of each supporting and subordinate commander to support the CCDR or subordinate JFC's targeting process. Interaction between the joint force level (primarily concerned with overall planning) and the component level (primarily concerned with operational planning and execution) occurs mainly during the fourth phase of the joint targeting cycle. Figure III-3 provides a notional model for the division of functional responsibility between the JFC and the components for execution of the joint targeting cycle. However the JFC establishes the joint targeting cycle, all subordinate commanders must have the ability to nominate targets for joint targeting consideration. NOTE: The targeting process will occur at many levels. Supporting and subordinate commanders, functional and Service, will have their own targeting processes that will complement and support the supported CCDR or JFC's targeting process. The supported CCDR or JFC is responsible for coordinating these various targeting processes and delineating the responsibilities of each supporting and subordinate commander to support the CCDR or JFC's targeting process.

b. It is incumbent upon the JFC to determine the relative burden sharing for the joint targeting cycle between the JFC staff and those of the component commanders. The JFC develops guidance that directs and focuses operation planning and targeting to support the concept of operations.

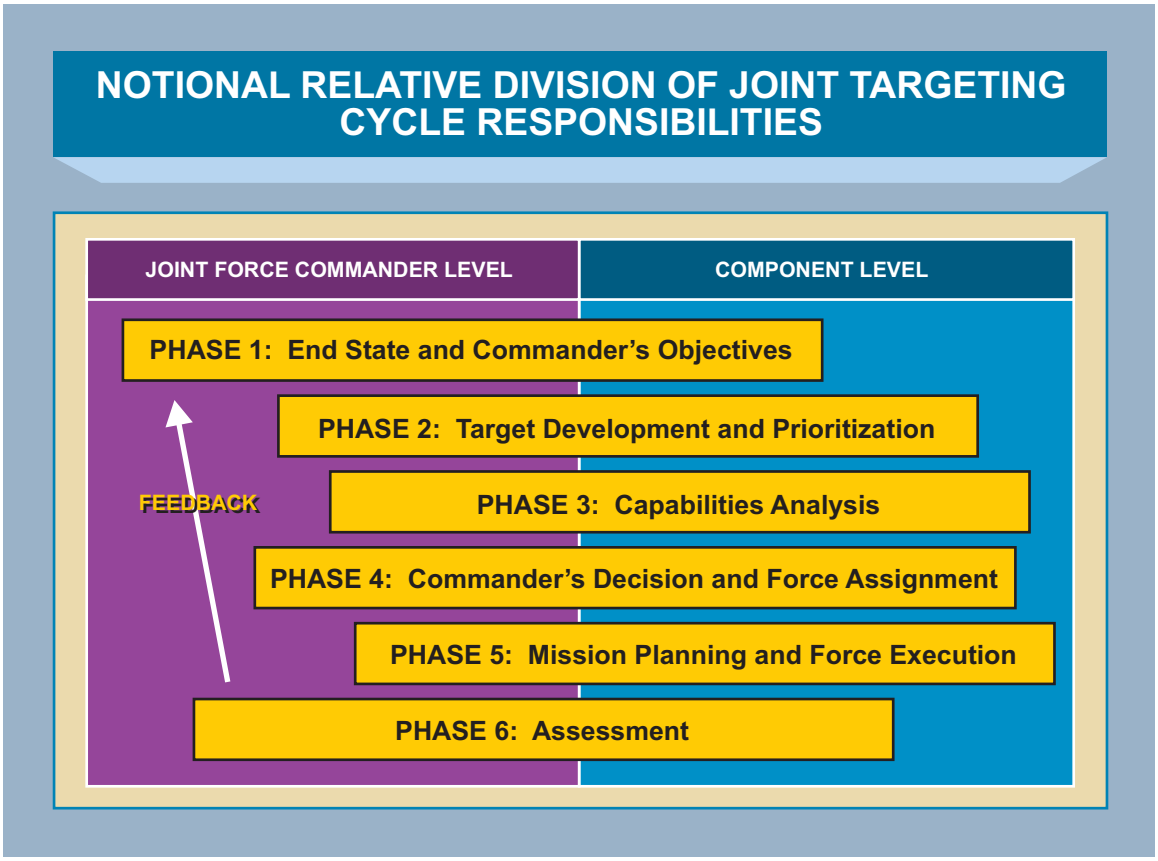


Figure III-3. Notional Relative Division of Joint Targeting Cycle Responsibilities

3. Joint Targeting Responsibilities

a. **JFC Responsibilities.** Joint targeting coordination responsibilities for the JFC are as follow :

(1) Establish parameters for successful operations within the JFC's operational area by promulgating intent, objectives, guidance, sequencing and priorities.

(2) The CCDR or subordinate JFC assigned as the supported commander for a given OPLAN/CONPLAN under the JSCP will provide early, broad and clear targeting guidance to components and supporting commands and defense agencies consistent with the operation's end state.

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

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

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

(6) Define criteria for identification of TSTs in the operational area. For more detailed information on TSTs, see Appendix A, "Time-Sensitive Target Considerations."

4. Joint Force Staff Responsibilities

a. **Intelligence Directorate.** The J-2 has the primary responsibility for prioritization of intelligence collection efforts, analysis, validation, and assessment for all joint operations. In addition, the J-2 provides a major input to the J-3 and J-5 in the form of adversary course of action (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.

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

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

(3) In conjunction with the rest of the joint staff, produce and maintain related nodal system analysis studies.

(4) In conjunction with the rest of the joint staff, conduct target development. including target research, nomination, deconfliction, aimpoint development, target materials production, functional recuperation time, and collateral damage estimation.

(5) Manage and coordinate target vetting activities with the national IC.

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

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

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

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

(10) Manage JFC's PIRs.

(11) Serve as lead agent for overall coordination and direction of assessment within the JIOC, or JISE in support of the JFE's assessment. Coordinate assessment with the national IC.

(12) Provides the intelligence assessment of the operational area.

b. **Operations Directorate**. The J-3 is the lead for planning and coordinating operations throughout the operational area. The J-3 assists the commander in the discharge of assigned responsibility for the direction and control of operations, including the planning, monitoring, and completion of specific operations. In this capacity, the directorate plans, coordinates, and integrates operations. The flexibility and range of forces require close coordination and integration for effective unity of effort. When a JFE is established by the JFC, the J-3 will normally organize it and serve as a member.

(1) Coordinate assessment activities at the JFC level

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

(a) Provide current operational assessment.

(b) Develop and maintain operational ROE in coordination with other staff elements and agencies.

(c) Publish JFC's objectives and targeting guidance. Publish JFC's daily guidance letter in coordination with J-2; the logistics directorate of a joint staff (J-4); J-5; and special staff to include legal (i.e., staff judge advocate (SJA) for review of the ROE); and components.

(d) Compile, review, and forward the JIPTL and RTL for JFC approval.

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

(f) Provide targeting options, boundary, and FSCMs changes for future operations.

(g) Nominate targets for inclusion in the JIPTL.

(h) Monitor, and integrate as appropriate, targets in support of information operations.

(i) Nominate targets in support of the theater deception plan.

(j) Ensure all aircraft diplomatic clearances are approved prior to over flying nations en route to targets.

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

c. **Logistics Directorate**. The J-4 identifies logistic issues unique or specific to targeting. Of particular interest, the J-4 compares the operational logistic plans to developing target lists to ensure protection of infrastructure and/or supplies required to support current and future operations.

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

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

(2) Identify possible branches and sequels to the theater campaign plan.

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

(4) Ensure over flight agreements or arrangements are in place with en route nations prior to commencement of operations.

e. **Staff Judge Advocate 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, LOAC issues, and other pertinent issues involved in joint target recommendations and decisions. SJA also reviews target selection for compliance with domestic and international laws, multilateral and bilateral agreements, LOAC requirements, and compliance with published ROE. The SJA ensures awareness of potential associated issues, such as harmful environmental impacts or other consequences that should be considered in the targeting process. For additional information see Appendix E, "Legal Considerations in Targeting."

5. Component Commander Responsibilities

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

(1) Conduct target development.

(2) Nominate potential targets for inclusion in the JTL, RTL and NSL.

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

(4) Provide appropriate representation to the JFE and JTCB when established.

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

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

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

(8) Coordinate components' dynamic targeting via established procedures. Examples include the liaison elements to the joint air operations center (JAOC)—battlefield coordination detachment, Marine liaison officer, naval and amphibious liaison element, Air Force liaison element, tactical air planners, and the special operations liaison element (SOLE). Direct cross-component coordination provides a

means to rapidly coordinate dynamic targeting and avoid delays or possible miscommunication through liaison elements. Decentralized execution during dynamic operations (e.g., counterinsurgency and certain stability operations) is facilitated by conducting tactical air planning within lower, tactical-level units and commands. For these types of operations, when feasible, JAOC-qualified tactical air planners should be provided in a liaison capacity to brigade and lower units. This level of integration will enable more flexible employment of airpower and also improve the fidelity of the JFACC's overall COP.

6. 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 Joint Staff (JS)/J-2T, Deputy Directorate for Targets agencies (such as the Defense Joint Intelligence Operations Center (DJIOC)) using the intelligence operations plan process to establish federated targeting support partners and assessment reporting responsibilities between combatant commands in accordance with the supported CCDR's requirements. The supported CCDR may request that the JS facilitate in identifying targeting support and assessment partners or work directly with other combatant commands to provide information to the JS regarding any inter-command targeting coordination. The JS J-2 normally ensures that federated targeting support requirements are addressed in operation plans (OPLANs)/concept plans and will assist in the dissemination of targeting support-related information between the federated partners and the supported CCDR. For additional detail and information on national and non-DOD organizations supporting joint targeting, see Appendix H, "Federated Targeting Support."

7. Automation Support to Joint Targeting

A variety of "automated targeting tools" or targeting applications are in use by the Services, combatant commands, national agencies, and multinational partners. Automation and interoperability are integral to the entire targeting process. See Appendix J, "Targeting Automation," for greater detail.

Intentionally Blank

APPENDIX A
TIME-SENSITIVE TARGET CONSIDERATIONS

1. General

a. A TST is a target of such high priority to friendly forces that the JFC designates it as requiring immediate response because it poses (or will soon pose) a danger to friendly forces, or it is a highly lucrative, fleeting target of opportunity. They may be fixed, mobile, or transportable. The JFC provides specific guidance and prioritization for TSTs within the operational area. TSTs such as airborne aircraft and missiles and submarines may be handled by separate components, but others may require detailed inter component planning and coordination. Fleeting TSTs may be difficult to detect or identify because of the adversary's use of mobility and/or denial and deception techniques. Hence the target may need to be rapidly engaged before the adversary can employ mobility and/or denial and deception to disrupt effective targeting efforts.

b. **Objectives and Guidance for TSTs.** The JFC's objectives and guidance set the basic procedural framework for components to expedite targeting 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 attacking 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 and deconflicted FSCMs against specific TSTs.

(2) Defining TST engagement authority based on a JFC's operational area, 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 fratricide.

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

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

c. **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 friendly forces and noncombatants, possible collateral damage, and the disruption of diverting attack assets from their deliberately planned missions. These base considerations must be balanced against the danger of not engaging the TST and risk mission failure or harm to friendly forces.

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

(3) The reaction time between the sensor detecting the target and means chosen to affect it can be greatly accelerated if the on-scene commander knows exactly what the JFC desires when time compression precludes thoroughly coordinating all decisions and actions. For this to occur, the JFC must articulate objectives, guidance, priorities, and intent for TSTs before the target is even identified.

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

2. Command and Control for TST Operations

a. **Focused Operations. A critical factor in prosecuting TSTs is the requirement to conduct all the steps of the joint targeting cycle in a short time.** The JFC has several options with which to structure C2 operations for attacks against TSTs. Generally, TSTs are prosecuted using dynamic targeting. Overall responsibility for mission execution remains with the components in order to accomplish coordination and deconfliction, and the authority to plan and engage should be delegated to the C2 node that has the best information or situational awareness to execute the mission and direct communications (e.g., hotlines, radio net) to the operators and crews of the systems chosen to affect the TST. Placing the appropriate level of authority at subordinate C2 nodes can streamline the C2 process and allow 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, coordinated execution of time-sensitive attacks.

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

3. Targeting TSTs

TSTs are prosecuted using either the deliberate or dynamic targeting. Since TSTs are time-sensitive, and often fleeting, or emerging, they tend to be prosecuted via dynamic targeting, but guidance,

categorization, relative prioritization, assessment criteria, collection requirements, and many other aspects of prosecuting TSTs can be accomplished during pre-operation planning and/or as part of deliberate targeting.

Intentionally Blank

APPENDIX B
COMPONENT TARGETING PROCESSES

1. Joint Targeting Cycle: Input to Joint Operation Planning and Execution

a. Joint targeting is a tailored application of the basic estimate process that supports joint operation planning and execution (see Figure B-1).

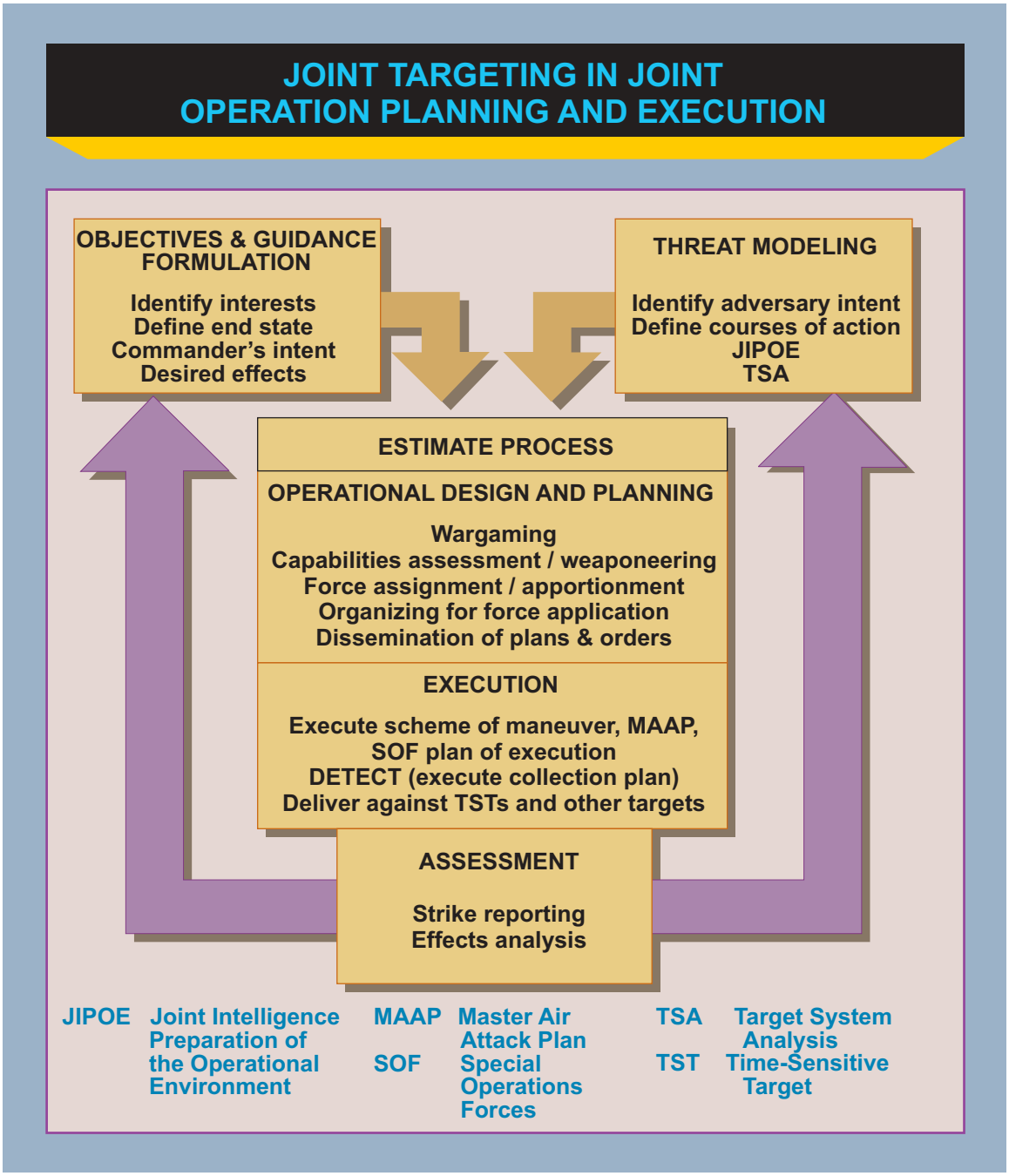


Figure B-1. Joint Targeting in Joint Operation Planning and Execution

b. Targeting is an application of the decision-making process that is tailored to coordinate, plan, execute, and assess joint operations. Individual components and staff sections should further tailor the decision making process to meet their specific needs and maximize the effectiveness of the joint force.

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

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

a. Land and maritime force commanders normally use an interrelated process to enhance joint fire support planning and interface with the joint targeting cycle known as the decide, detect, deliver, and assess (D3A) methodology. D3A incorporates the same fundamental functions of the joint target cycle. The D3A methodology facilitates synchronizing maneuver, intelligence, and fire support (see Figure B-2).

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

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

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

(2) The **detect phase** is designed to acquire the targets selected in the decide phase. In this phase, target acquisition assets and agencies execute the intelligence collection plan and focus on specific areas of interest. Targets must be monitored after detection (especially mobile targets). Tracking is an essential element of the detect function. Tracking priorities are based on the commander's concept of the operation and targeting priorities. Detection and tracking are executed through use of a collection plan.

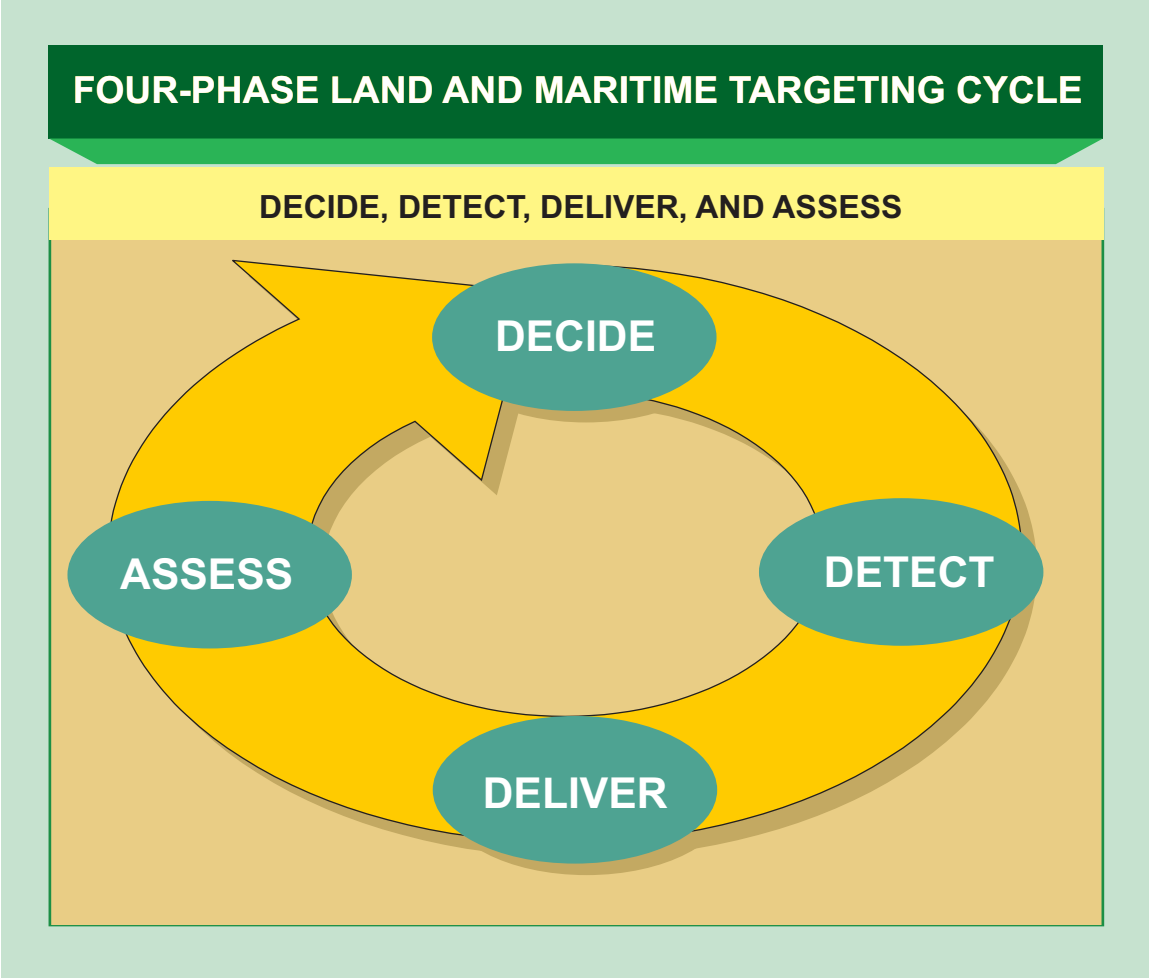


Figure B-2. Four-Phase Land and Maritime Targeting Cycle

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

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

d. The commander and staff use JOPP to arrive at and to execute tactical decisions. JOPP is designed to direct staff functions to produce a coordinated plan or OPORD to accomplish the mission in accordance with the commander's concept of the operation, intent, and scheme of maneuver. Fire support planning within the decision-making process includes the decide phase in the four-phase surface targeting cycle. The decision making process includes: planning initiation, mission analysis, COA development, COA analysis and war-gaming, COA comparison, COA selection and approval, and plan or order development.

(1) **Planning initiation**. This begins when there is potential for a military capability to be employed in response to a potential or actual crisis. The JFC issues guidance to begin planning for action. Planning is continuous once execution begins.

(2) **Mission Analysis**. Upon receiving the mission, the commander conducts a mission analysis. The fire support coordinator (FSCOORD) does preliminary analysis of the fire support mission by identifying factors pertaining to fire support. Once the commander has completed the mission analysis, the mission is restated and planning guidance is issued to the staff for their consideration when preparing individual staff estimates. The FSCOORD groups the commander's perceptions of the most dangerous types of targets as close support, counterfire, interdiction, strategic attack, suppression of enemy air defenses, offensive counterair, etc.

(3) **COA Development**. While the commander develops tentative COAs, the FSCOORD and the staff continue collecting information that will affect the provision of fire support. A key source of information at this point is from the situation development process conducted using JIPOE.

(4) **COA Analysis and Wargaming**. Proposed COAs are analyzed for feasibility in order to make a recommendation to the commander. In the course of analysis, COAs become more refined. Target value analysis conducted during this step yields JFC TSTs as well as targets of particularly high priority or value to the components.

(5) **COA Comparison**. After the analysis, operations, intelligence, and FSCOORD compare the advantages and disadvantages of each COA to determine which promises to be the most successful. COA comparison is an objective process where COAs are considered independently of each other and evaluated and compared against a set of criteria established by the commander and staff. Consequently, COAs are not compared to each other. The goal is to identify and recommend the COA that has the highest possibility of success against the enemy COA that is of most concern to the commander.

(6) **COA Selection and Approval**. The result of COA comparison is a recommendation of the best COA to the commander. To better explain the COA to the commander, the fire support concept must be developed sufficiently to address (at a minimum) the allocation of fire support resources, fire support organization for combat, C2 relationships, and priorities of effort. The commander selects a COA based upon the staff's recommendation and the commander's personal estimate, experience, and judgment.

(7) **Plan or Order Development**. The FSCOORD expands the fire support concept and prepares the fire support plan in detail. Key elements are summarized in the execution paragraph of the OPORD.

3. Six-Stage Air Targeting and Tasking Process: Air Components

a. For targeting in general, the JFACC uses both deliberate and dynamic targeting. To integrate targeting into the ongoing battle rhythm the JFACC normally uses the joint air tasking cycle (See Figure B-3).

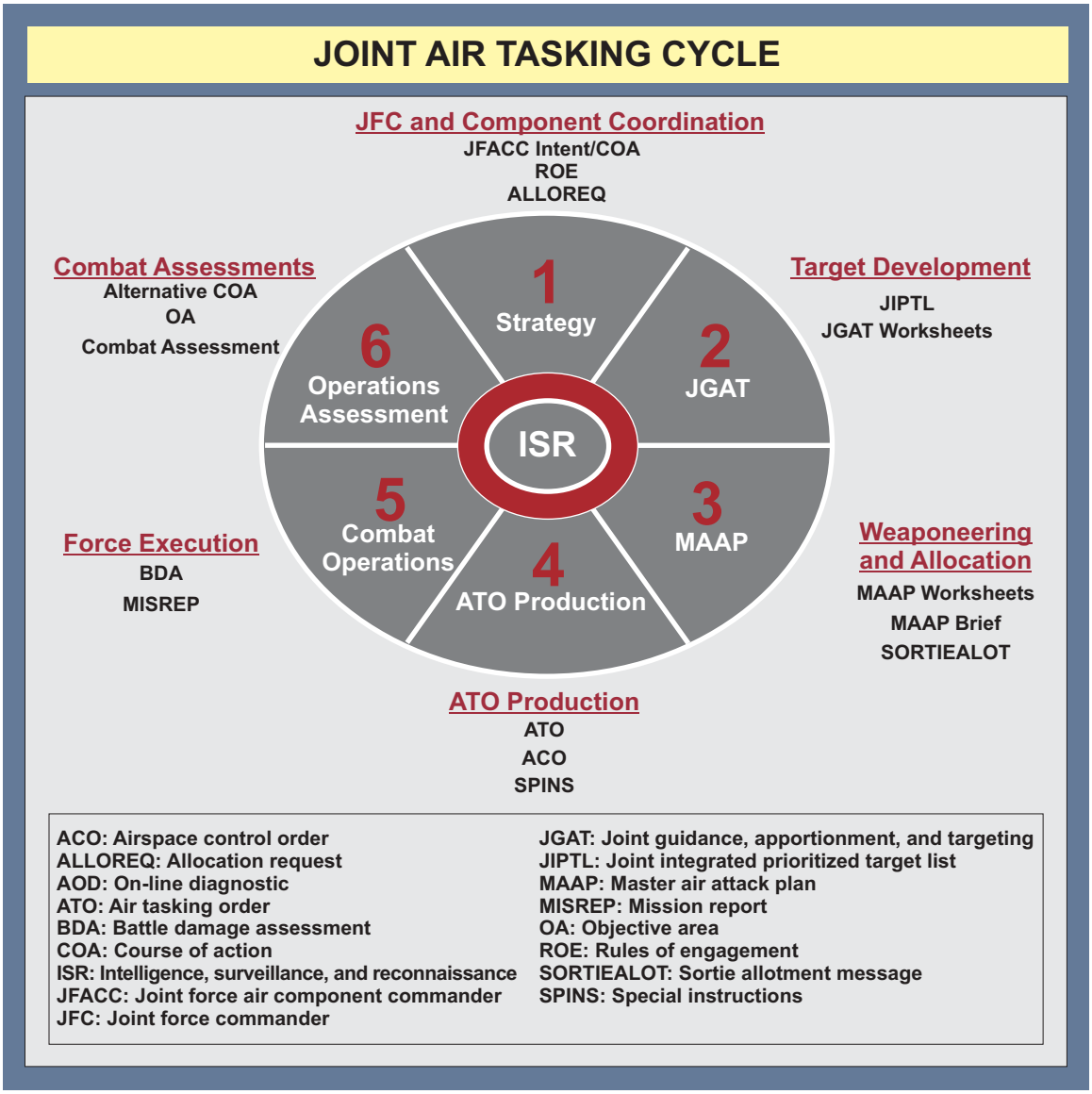


Figure B-3. The Joint Air Tasking Cycle

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

c. The joint air tasking cycle stages are related to deliberate targeting. The approach is similar; a systematic process that matches available capabilities with targets to achieve operational objectives. However, they are not the same, since joint targeting may be executed apart from the joint air tasking cycle and contains functions, processes, and procedures that are performed in peacetime, both before and after conflicts.

(1) Stage 1 is **JFC & component coordination**. The JFACC provides the strategy division of the JAOC with broad guidance based on the JFC's priorities and intent, coordination with other component commanders, and the JFACC's own objectives. This is normally transmitted in an air operations directive and guides the planning for the duration of that ATO cycle. If a JFACC is not used, this process will be conducted for each Service component performing air operations.

(2) Stage 2 is **target development**. The specific objectives received during stage 1 are used to focus this effort. Targets are nominated to support the objectives and priorities provided by the JFC. In accordance with the JFC's objectives and component targeting requirements, the JFACC (or Service component commander if a JFACC is not used) conducts daily joint air planning for the employment of available capabilities and/or forces. The end product of the target development phase is the draft JIPTL that supports the objectives and conforms to guidance.

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

(4) Stage 4 is **joint ATO developement**. After the MAAP is approved by the JFACC, detailed preparations continue by the JAOC combat plans. The joint air tasking cycle applies targeting to air-specific operations. Products include the ATO, special instructions, and the airspace control order. The airspace control authority's and area air defense commander's instructions must be provided in sufficient detail to allow components to plan and execute all missions tasked in the joint ATO. The JAOC reviews each air capable component's allocation decision and/or air allocation request message and prepares a sortie allotment message back to the components as required, in accordance with the established OPLAN's guidelines.

(5) Stage 5 is **execution**. The JFACC (or Service component commander if a JFACC is not used) directs the execution or deconfliction off all capabilities or forces made available for a given joint ATO. The JFACC has the authority to redirect those forces for which the JFACC has operational or tactical control. For all others, the affected component commander must approve all requests for redirection of direct support air assets. Affected component commanders will be notified by the JFACC upon redirection of joint sorties previously allocated in the joint ATO for support of component operations. Aircraft or other capabilities or forces not apportioned for tasking, but included in the joint ATO for coordination purposes, will be redirected only with the approval of the respective component commander or designated senior JAOC liaison officer. 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 **combat assessment**. Assessment is conducted at all levels of the joint force. The JFC should establish a dynamic system, including an assessments cell, to support assessment for all components. Normally, the joint force operations officer will be responsible for coordinating assessment, assisted by the joint force intelligence officer. The assessment cell evaluates the effectiveness of operations to achieve command objectives, answering the questions, "are we doing things right" and "are we doing the right things."

4. Special Operations Component Targeting

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

For additional information, see JP 3-05.2, Joint Special Task Force Operations Planning.

5. Integration of Information Operations in Joint Targeting

a. Information operations is the integrated employment of the core capabilities of electronic warfare, computer network operations, psychological operations, military deception, and operations security, in concert with specified supporting and related capabilities, to influence, disrupt, corrupt or usurp adversarial human and automated decision making while protecting our own. Information operations (IO) can be accomplished across the range of military operations and may be conducted at all levels from tactical through national strategic. IO planners consider all instruments of the adversary's national power to determine how best to achieve stated objectives by affecting information and information systems. Successful integration of IO considerations into the targeting process is fundamental to the success of the campaign. IO may call for "targeting" adversary human decision processes (human factors), information, and information systems used to support decision making or adversary morale with a variety of lethal and nonlethal means. The selection of IO actions should be consistent with national objectives, applicable international conventions, ROE, and other guidance.

b. The joint force IO cell is another source for target requirements and should be closely integrated to deconflict redundant targeting, consider intelligence gain versus loss assessments, and provide inputs to the RTL and NSL. IO planners will coordinate and integrate IO at all levels. Most destructive IO attacks qualify as strategic attack or interdiction, and apportionment decisions should take into consideration prospective IO target nominations.

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

6. Joint Targeting Process within Contingency and Crisis Action Planning

Contingency and crisis action planning are the mechanisms with which a JFC translates national military objectives into a viable COA that is supported by detailed planning. This is the context within

which the joint targeting process occurs. Despite the outward differences, contingency and crisis action planning are essentially the same processes completed under different circumstances. Joint targeting remains the same within these processes, with shifting emphasis based upon the situation.

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

7. Targeting Integration via Joint and Component Operations Centers

The JIOC, JOC, and/or component command centers plan for and conduct operations. Targeting mechanisms should exist at multiple levels. Joint force components identify requirements, nominate targets that are outside their boundaries or exceed the capabilities of organic or supporting assets (based on the JFC's apportionment decision), and conduct execution planning. After the JFC makes the targeting and apportionment decisions, components plan and execute assigned missions. The theater air ground system is normally the C2 architecture through which targeting should be integrated. Joint air operations are normally directed from a JAOC. The JAOC may be an Air Force air operations center, Marine air-ground task force aviation combat element tactical air command center, or a Navy forces (NAVFOR) tactical air control center. Land operations are normally directed through an operations center, such as the Army forces (ARFOR) command post or Marine Corps forces (MARFOR) combat operations center. Other key ARFOR agencies for ground operations are the fire support cell and operational fires support directorate. Other key MARFOR agencies include the force fires coordination center, the ground combat element, fire support coordination center, and tactical air operation center. The NAVFOR supports land and naval operations with the supporting arms coordination center. Key SOF agencies can include the special operations command coordination element, the SOLE, and the naval special warfare task unit.

For additional information see JP 3-05, Doctrine for Joint Special Operations, *JP 3-09,* Joint Fire Support, *JP 3-30,* Command and Control for Joint Air Operations, *JP 3-31,* Command and Control for Joint Land Operations, *JP 3-32,* Command and Control for Joint Maritime Operations, *and JP 3-33,* Joint Task Force Headquarters.

8. Monitoring and Coordinating Target Execution

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

(1) Starting with the current OPORD and the JIPTL, the operation center director must have knowledge of each target, its importance, when it is scheduled for attack, the responsible component, the attack 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 attack on a particular target has been unsuccessful or of a report of a newly located priority target. In the latter situation, the operation center director should recommend to the commander whether the new target would require actions at the expense of another

one already scheduled for attack. This advice should also analyze the impact on friendly operations (including consequences for taking no action versus the impact on ongoing and planned joint force actions). Decisions to modify missions or direct attacks that deviate from the OPORD should be based on the commander's guidance, the theater strategy, and the campaign objectives to be accomplished. These decisions normally can only be made with an understanding of priorities of each component's targeting efforts throughout the operation.

b. **Emerging Targets**. The operation center director should know what forces are available for tasking, as well as their capabilities to attack 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 concept of operations 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 CAS 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.

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

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

Intentionally Blank

APPENDIX C
THE ASSESSMENT PROCESS

1. The Purpose of Assessment

a. Assessment is used to measure progress of the joint force toward mission accomplishment. Commanders continuously assess the operational environment and the progress of operations, and compare them to their initial vision and intent. Commanders adjust operations based on their assessment to ensure objectives are met and the desired end state is achieved. The assessment process is continuous and directly tied to the commander's decisions throughout planning, preparation, and execution of operations. Staffs help the commander by monitoring the numerous aspects that can influence the outcome of operations and provide the commander timely information needed for decisions. The assessment process helps the commander and staff decide what to measure and how to measure it to determine progress toward accomplishing a task, creating an effect, or achieving an objective. Commanders and their staffs determine relevant assessment actions and measures during planning. They consider assessment measures as early as mission analysis, and include assessment measures and related guidance in commander and staff estimates. They use assessment considerations to help guide operational design because these considerations can affect the sequence and type of actions along lines of operations.

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

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

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

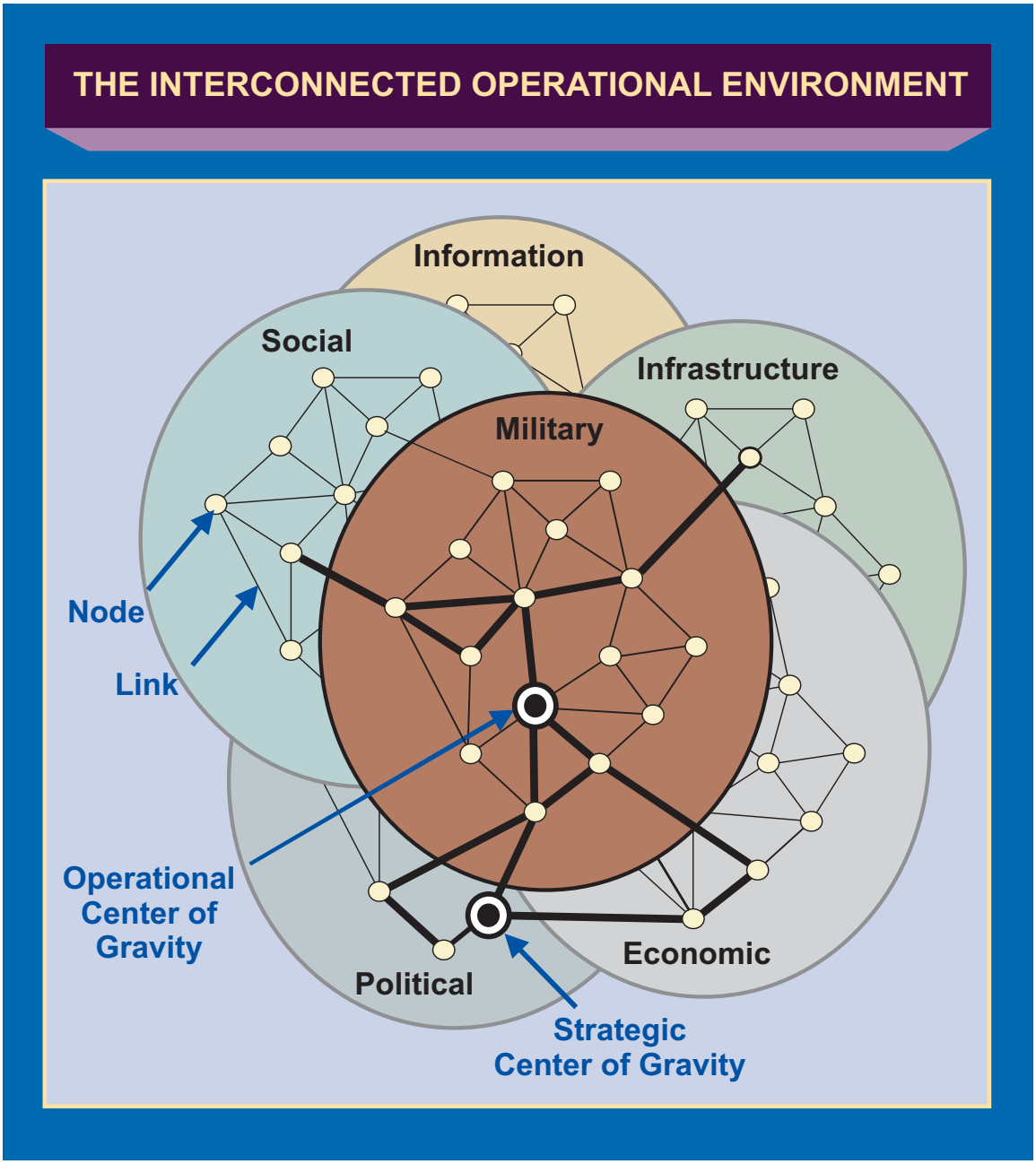


Figure C-1. The Interconnected Operational Environment

2. Assessment and the Levels of War

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

and execution. This properly focuses assessment and collection at each level, reduces redundancy, and enhances the efficiency of the overall assessment process. See Figure C-2.

b. Operational and Strategic-Level Assessment: Assessment at the operational and strategic levels typically is broader than at the tactical level (e.g., combat assessment) and uses MOEs that support strategic and operational mission accomplishment. Strategic- and operational-level assessment efforts concentrate on broader tasks, effects, objectives, and progress toward the end state. Continuous assessment helps the JFC and joint force component commanders determine if the joint force is "doing the right things" to achieve objectives, as well as just "doing things right." The JFC also can use MOEs to determine progress toward success in those operations for which tactical-level combat assessment ways, means, and measures do not apply. Strategic- and operational-level assessment helps the operational-level JFC and CCDR and subordinate JFC adjust future plans and current operations as

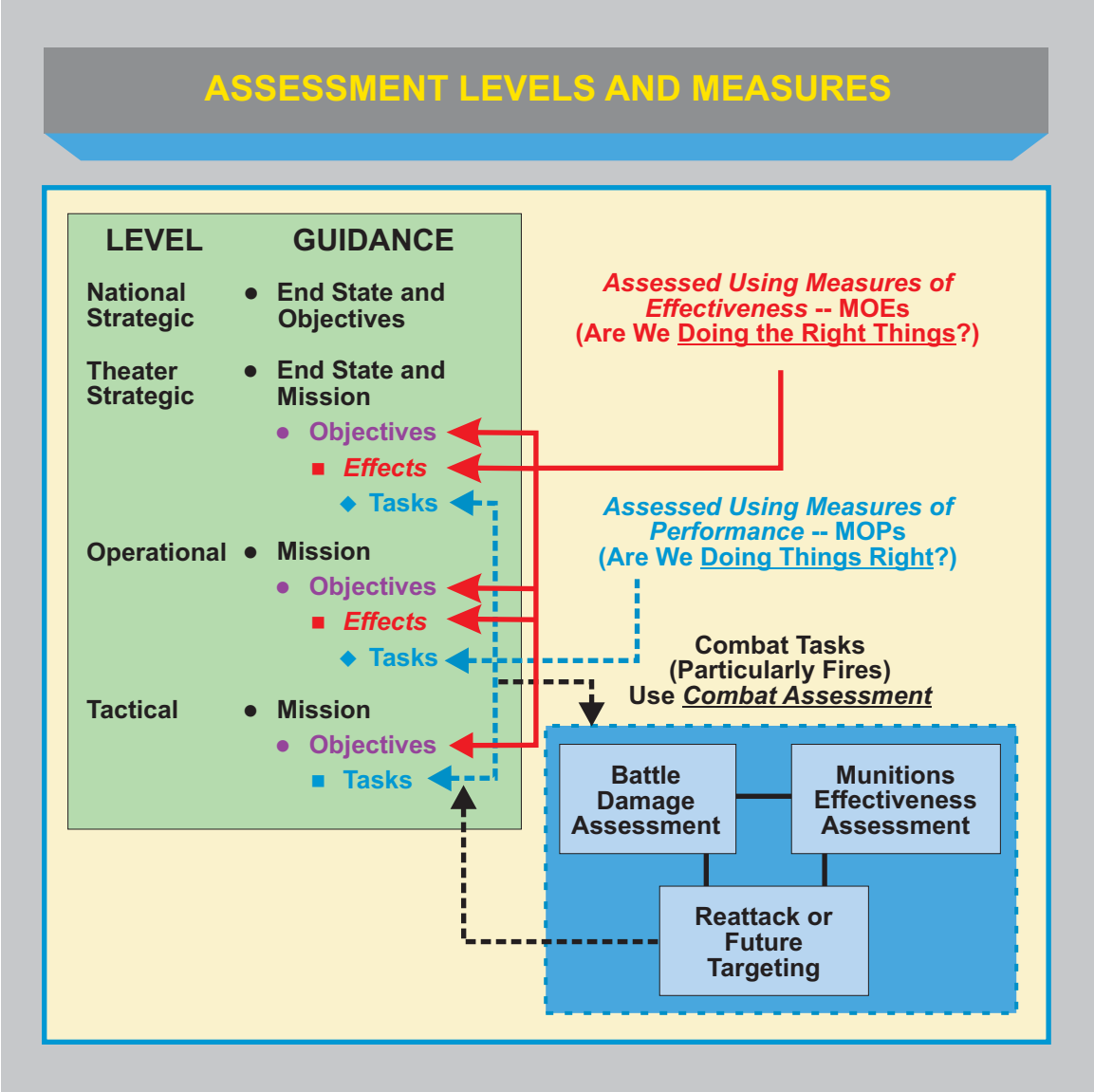


Figure C-2. Assessment Levels and Measures

necessary, and also provides the President and Secretary of Defense a way to measure progress toward national-strategic objectives.

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

d. **Combat Assessment.** Combat assessment encompasses many tactical-level assessment actions and has implications at the operational level as well. Combat assessment typically focuses on determining the results of weapons engagement (with both lethal and nonlethal capabilities), and thus is an important component of joint fires and the joint targeting process. To conduct CA, it is important to fully understand the linkages between the targets and the JFC's objectives, guidance, and desired effects . **Combat assessment is composed of three related elements: battle damage assessment, munitions effectiveness assessment, and reattack recommendations or future targeting.**

(1) **Battle Damage Assessment:** The purpose of BDA is to compare post-execution results with the projected results generated during target development. Comprehensive BDA requires a coordinated and integrated effort between joint force intelligence and operations functions. Traditionally, BDA is composed of physical damage assessment, functional damage 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, to ultimately arriving at macro-level conclusions regarding the functional outcomes created in the target system. Phase 3 analysis suggests that BDA, and consequently CA, is both tactical and operational in nature.

Using Figure D-1, Refining Components of the Pertoleum, Oils, and Lubricants Target System, and a hypothetical air strike scenario to clarify this process. Phase one BDA assesses the physical damage to the atmospheric distillation units at a gasoline plant: six of the ten units were destroyed, two are damaged and two are on fire. Phase two BDA, assesses the functionality of the gasoline plant: the plant is severely damaged and is at 50 percent throughput capacity. Phase three BDA assesses the functionality of the gasoline production and the overall petroleum, oils, and lubricants (POL) industry: liquefied natural gas production is off-line for approximately six months and gasoline production is at 17.5 percent for approximately three months.

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

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

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

(c) Aircraft cockpit video and weapon system video.

(d) Signals intelligence (SIGINT).

(e) Human intelligence (HUMINT) to include direct reporting by forward air/ground observers, tactical air control parties, special operations forces, etc.

(f) Measurement and signature intelligence (MASINT).

(g) Open source intelligence.

(h) End of mission reports for surface-to-surface fires.

(i) Indigo reports for cruise missiles.

(3) **Munitions Effectiveness Assessment (MEA):** MEA studies how combat systems performed and the method in which they were applied. It examines the evidence after attacks to determine whether weapons and weapon systems performed as expected. The purpose of MEA is to compare the actual effectiveness of the means employed to their anticipated effectiveness calculated during the capability analysis phase of the joint targeting cycle. The results of MEA support both near-term improvement in force employment tactics and techniques and long-term improvements in lethal and nonlethal capabilities. Consequently, a critical ingredient for effective MEA is detailed familiarity with all inputs to the calculations performed in capability assessment that resulted in weapon system selection.

(4) **Reattack Recommendations:** Future target nominations and reattack recommendations merge the picture of what was done (BDA) with how it was done (MEA) and compares the result with predetermined MOEs that were developed at the start of the joint targeting cycle. The purposes of this phase in the process are to determine degree of success in achieving objectives and to formulate any required follow-up actions, or to indicate readiness to move on to new tasks in the path to achieving the overall JFC objectives.

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

e. Estimated Assessments: The current CA process relies on phased BDA analysis to assess combat effectiveness. If no data is available for a target, the assessment is usually left blank or unknown. Based on the BDA scenario and commander's guidance, analysts may try to provide a prediction of the

estimated damage for both individual targets and target systems based on the initial predictions as place holders for the probabilities of success, a process facilitated by the precision and reliability of many modern weapon systems. As the operation is executed, the predictions for individual target elements are updated continually with the latest available information on the action taken. Such updates might be final, definitive BDA or it may be information, which, while not definitive, helps refine the estimate (e.g., confirmation that a joint direct attack munitions successfully dropped through the clouds on the programmed coordinates). Combining latest information on individual target elements means an assessment cell can provide an estimate of success refined with the latest available information. As more definitive data becomes available, the assessment becomes less of an estimate and more an actual assessment of what was or was not achieved.

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

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

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

3. Assessment Metrics and Measurements

a. **Assessment Metrics:** The staff should develop metrics to determine if operations are properly linked to the JFC's overall strategy and the larger hierarchy of operational and national objectives. These metrics evaluate the results achieved during joint operations. 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 situational awareness 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.

(1) **MOEs** are used to assess changes in system behavior, capability, or the operational environment. They are tied to measuring the attainment of an end state, achievement of an objective, or creation of an effect. They do not measure task accomplishment or performance. These measures typically are more subjective than MOPs, but can be crafted as either qualitative or quantitative. MOEs can be based on quantitative measures to reflect a trend and show progress toward a measurable threshold. While MOEs may be harder to derive than MOPs for a discrete task, they are nonetheless essential to effective assessment.

(2) **MOPs** are criteria for measuring task performance or accomplishment. MOPs are generally quantitative, but also can apply qualitative attributes to task accomplishment. They are used in most aspects of combat assessment, since it typically seeks specific, quantitative data or a direct observation of an event to determine accomplishment of tactical tasks, but have relevance for noncombat operations as well (e.g., tons of relief supplies delivered or noncombatants evacuated). MOPs also can be used to measure operational and strategic tasks, but the type of measurement may not be as precise or as easy to observe.

c. **Characteristics of Metrics:** Assessment metrics should be relevant, measurable, responsive, and resourced so there is no false impression of task or objective accomplishment. Both MOPs and MOEs can be quantitative or qualitative in nature, but meaningful quantitative measures are preferred because they may be less susceptible to subjective interpretation.

(1) **Relevant**. MOPs and MOEs should be relevant to the task, effect, operation, the operational environment, the desired end state, and the commander's decisions. This criterion helps avoid collecting and analyzing information that is of no value to a specific operation. It also helps ensure efficiency by eliminating redundant efforts.

(2) **Measurable.** Assessment measures should have qualitative or quantitative standards they can be measured against. To effectively measure change, a baseline measurement should be established prior to execution to facilitate accurate assessment throughout the operation.

(3) **Responsive.** Assessment processes should detect situation changes quickly enough to enable effective response by the staff and timely decisions by the commander. Assessors should consider the time required for an action or actions to take effect within the operational environment and for indicators to develop. Many actions require time to implement and may take even longer to produce a measurable result.

(4) **Resourced**. To be effective, the assessment process must be adequately resourced. Staffs should ensure resource requirements for collection efforts and analysis are built into plans and monitored. An effective assessment process can help avoid duplication of tasks and avoid taking unnecessary actions, which in turn can help preserve military power.

4. Post-Combat Assessment

a. The joint targeting cycle does not end when combat operations cease. During the stabilize and enable civil authority phases of the joint operation, there is normally a critical need to collect all available information that feeds both BDA and MEA analysis. This data collection effort is essential to:

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

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

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

b. Although there are many different types of data to collect for follow-on analyses, generally they can be grouped into the areas of operational data, intelligence information, and MEA exploitation. Collection of operational or mission-specific data includes all executed mission type orders (to include all executed ATOs), all MISREPs, and copies of aircraft or weapon system video 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. Finally, the optimal method to analyze munitions effects is to deploy MEA exploitation teams (engineers, tacticians, and intelligence analysts) to conduct on-site analyses of the damage from the ground-level perspective. The goal of these operations is to bridge the knowledge gap existing between the levels of damage the observed, and what actual physical and functional damage was done to the adversary targets and systems. *Due to the perishable nature of critical data at targeted sites, planning for ground truth exploitation needs to be fully integrated in OPLANs and in operation plans in concept format for immediate execution following combat operations.* If feasible, initial exploitation could be accomplished during operations by ground forces.

APPENDIX D
INTELLIGENCE SUPPORT TO TARGET DEVELOPMENT

1. Overview

a. In the second phase of the joint targeting cycle, the JFC's objectives are translated into an actionable JIPTL. This phase begins with target development and the systematic analysis of potential target systems. This examination includes target system components, the individual targets that make up the target system, and elements within these systems. Clear commander's objectives are essential to determine the type and duration of the action that must be exerted on each target. IO target development also follows this same general methodology of identifying target systems, components, and their critical elements, but uses a broader scope that accounts for information systems and psychological processes. Target vetting and validation are integral to target development. Target vetting ensures the JFC and IC have a coordinated understanding of the target's characterization and of the accuracy and currency of the supporting intelligence. Target validation determines whether attacking the target is a lawful target under LOAC, ROE, and special instructions. In this process, the potential benefit of striking a target is weighed against the potential costs.

b. Once potential targets are identified, vetted and validated, they are nominated through the proper channels for approval. Targets are prioritized based on the JFC's objectives and guidance.

2. Target Development

a. Target development requires analysts develop the following documentation and identify collection and exploitation requirements:

(1) Lists of targets.

(2) Target folders containing detailed analysis on the target and its surroundings, relevant target materials, and modeling and simulation products.

(3) Collection, exploitation, and assessment requirements.

(4) Target briefs.

b. Target analysts should characterize the function, criticality, and vulnerabilities of each potential target and ensure there is a direct and logical link between the JFC's objectives and the specific action to be taken against a particular target and how that action and its effect(s) can be measured. One of the keys to successful target development is to understand the relationships between and within target systems in order to uncover vulnerabilities and identify critical elements. Target analysts must include the importance of information and the adversary's reliance on this information to investigate these relationships.

c. **Target System Analysis.** Target analysis is an all-source examination of potential targets to determine relevance to stated objectives, military importance, and priority of attack. It is an open-ended analytic process produced through the intelligence production process using national and theater

validated requirements as a foundation. Typical products include nodal system analysis studies, generally used as a baseline for target selection. In IO planning, for example, TSA uses an expanded methodology to examine all aspects of information flow to expose the interrelationships between components and their criticality to the system's function. Targeting personnel use these products to identify target systems and system components, which can be attacked or influenced to support the JFC's objectives. Planners use the results of iterative target analysis throughout the operation and in all phases of joint targeting to update objectives, guidance, and assessment. While analysts look at all aspects of the target system, the joint targeting cycle emphasizes functional system activity and components. By determining which activity must be modified or affected by friendly forces in order to achieve the objectives, key target systems and critical components are identified and nominated as targets. Target analysis consists of target system identification and target system component identification.

(1) **Target System Identification.** The first step is identifying those target system(s) supporting adversary activity. While a single target may be significant because of its own characteristics, the target's real importance lies in its relationship to other targets within an operational system. Target systems are usually complex, with interdependent components, and contribute to a wide variety of activities directed toward pursuit of system goals. Examples of target systems are an adversary's C2 structure, ground forces and facilities, and the POL industry (see Figure D-1).

(2) **Target System Component Identification.** A target component is a set of targets within a target system that perform 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 theater ballistic missile target system might include: missile transporter erector launchers, resupply vehicles, C2 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. Targeteers should consider the target's criticality and vulnerability when evaluating its status within the target system (see Figure D-2).

(a) **Criticality.** Criticality measures a component's contribution to a target system's larger function and its relative importance among the components of the 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:

1. **Value**. Value measures the system's importance to the adversary's ability to conduct operations; to a friendly force's ability to achieve a mission or objective; and/or the system's significance to the adversary. 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 system reflects the thought processes of the adversary. For example, the birthplace of a political, religious, or cultural leader may hold greater psychological significance than its military value merits.

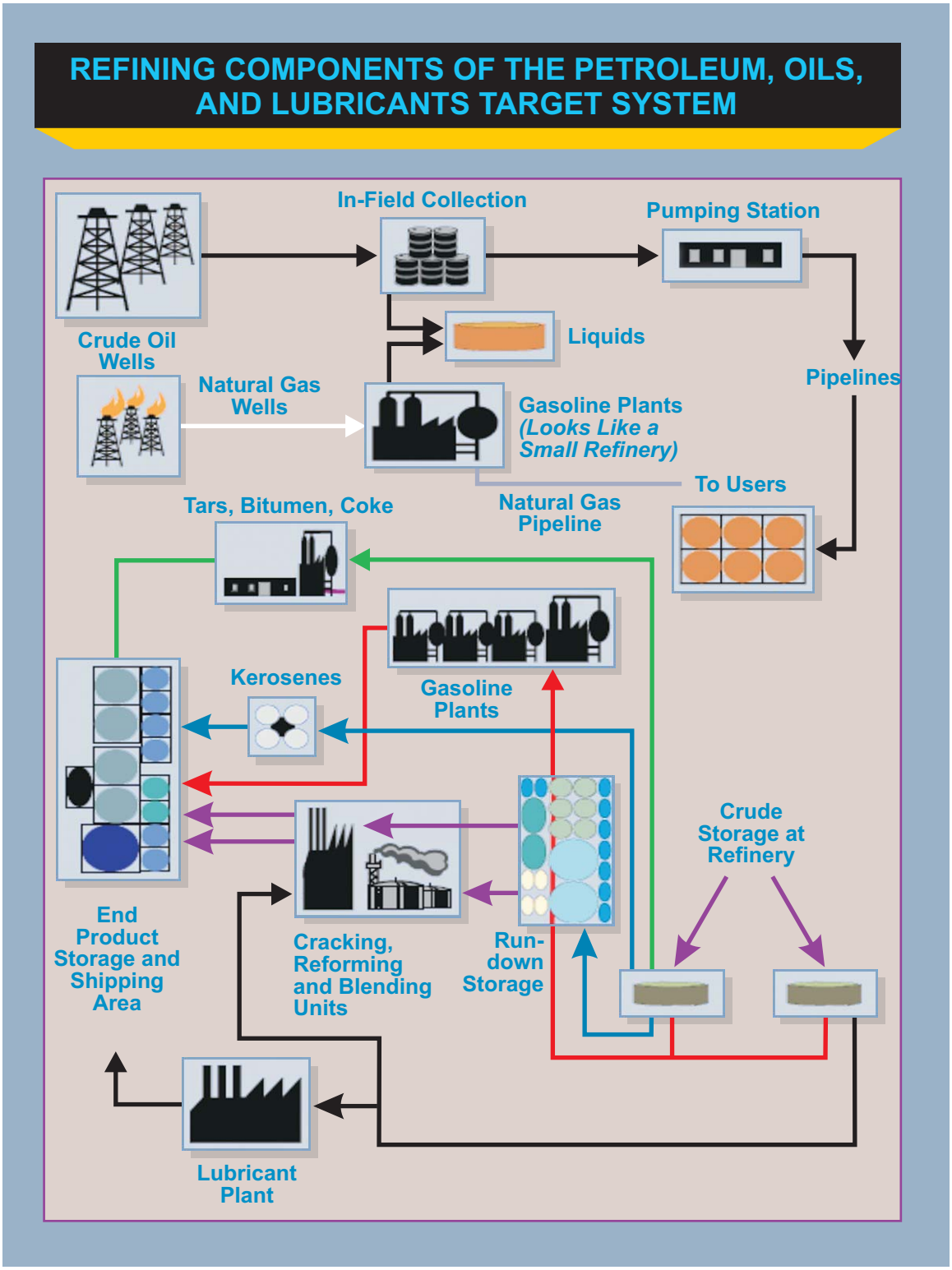


Figure D-1. Refining Components of the Petroleum, Oils, and Lubricants Target System

2. **Depth** is a measure of the time between the disruption of a component'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

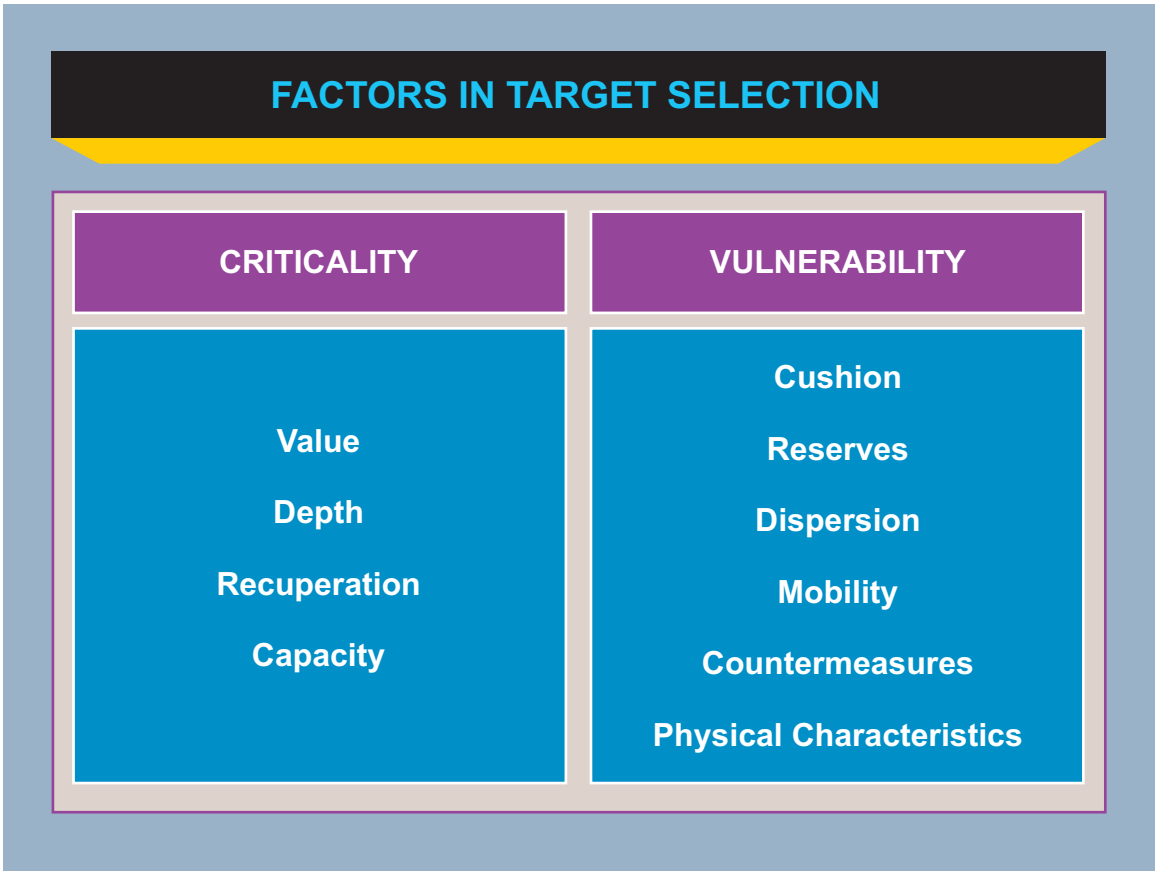


Figure D-2. Factors in Target Selection

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

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

4. **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.

(b) **Vulnerability.** A target's vulnerability refers to the physical susceptibility to damage, disruption, 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:

1. **Cushion** is a measure of the extent to which a single component or system can absorb a disruptive influence and continue to produce or provide the required product or service. Viewed another way, cushion is that portion of the adversary's system, which must be affected in order to achieve desired outcomes. Determining this point for an industry or a military activity requires detailed analysis of a system'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.

2. **Reserves** provide a quantity of stored resources the adversary may use 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.

3. **Dispersion** is the geographic distribution of either the installations in a target system or target elements within a target complex. An installation with a large number of dispersed elements presents a more difficult targeting problem than does a tightly concentrated installation. Alternatively, dispersion may degrade the efficiency of an adversary's capabilities by making his own operations more complex.

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

5. **Countermeasures** mean an adversary's ability to counteract the potential disruptive activity of the friendly system through active and passive means. The adversary can use terrain, camouflage, emission controls, passive and active defenses to negate friendly efforts to effect the adversary component activity.

6. **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. See characteristics of "target characteristics" in Chapter I.

d. **Documentation** within target development includes a list of potential targets and their associated target folders. These folders contain target information, which includes validation data and approval messages along with any identified potential collateral damage concerns or collateral effects associated with the target. CJCSM 3160.01A provides specific guidance for collateral damage analysis. Target folders should be continually updated as data is collected to reflect the most recent information regarding the target's status. An independent technical review of the compiled data helps to ensure mistakes do not proliferate through the rest of the targeting cycle. *DIA Instruction 3000.002, US/Allied Targeting Analysis Program,* contains detailed requirements for electronic target folders (ETFs).

e. **Identification of Collection and Exploitation Requirements**

(1) During target development, intelligence gaps will be identified and form the basis of additional intelligence requirements. These requirements must be articulated as early in the targeting process as possible in order to support continued target development and other assessments. To satisfy these requirements, targeting personnel submit requests for information (RFIs) through their collection managers. RFIs must clearly articulate what pieces of information are needed to complete the target development. It is an iterative process continuing throughout the entire joint targeting cycle.

(2) Another type of collection requirement involves monitoring the level of activity at various installations. This may be done to validate their viability as targets; to identify other facilities within the same target system; or identify when alternate facilities should be nominated to the JTL. These are usually standing requirements and are incorporated into the JFC's PIRs.

(3) Exploitation of TSTs requires robust ISR support. Once identified and prioritized, a comprehensive ISR plan must be implemented to effectively detect, identify, precisely locate, and monitor these targets. These requirements must also be incorporated into the JFC's PIRs.

f. Target development is time- and resource-intensive. The supported commander may choose to federate portions of the workload with experts outside his direct control. This can provide staffs with access to specialized technical or analytical expertise, lighten the workload on them throughout all steps of the JOPP, provide for an independent technical review of targeting options, reaffirm nomination rationales, and validate intelligence assessments.

g. Collaboration methods such as federating are excellent methods of bringing target development expertise and planning support to JFCs. Crisis intelligence federation provides valuable preplanned support options, which can be initiated at the supported commander's discretion. Collaborative technologies can help facilitate federated target development provided an established process governs methods and timelines for tasking and deliverables. See Appendix H, "Federated Targeting Support" for additional details.

h. JIPOE supports targeting specialists through development of detailed analyses, describing how taking action against individual targets affect target systems. The intelligence products required for this analysis may include:

(1) All-source intelligence (geospatial intelligence, SIGINT, MASINT, etc.);

(2) Target materials, including TSAs, nodal system analyses, and targeting graphics.

3. Target Vetting and Validation

a. Vetting. Target vetting is a key component of the target development process. In target vetting, JS J-2T coordinates an IC review of the target data for accuracy of the supporting intelligence. Vetting provides reachback and engagement with the SMEs from the IC, who contribute to combatant command targeting and planning efforts through a formal voting process. At the conclusion of target vetting, IC SMEs may vote concur, concur with comment, nonconcur, or abstain on the validity of the target intelligence and any identified intelligence gain/loss concerns. IC members who abstain do so primarily

because they do not have independent information or have not made an independent assessment. Though unanimous concurrence is not required to complete the vetting process, the combatant commander should view abstentions, nonconcurrence, and concurrence with comments as indications of evaluated operational and strategic risk. Once relevant IC members have voted, the target is considered vetted and ready for combatant command validation against the combatant commander's objectives in the JTCB process prior to final approval. As part of the vetting process, the IC may also advise the combatant commander regarding the level of success expected in achieving his objectives. An assessment of the supporting intelligence will consider at a minimum of target identification, significance, CDE, geospatial or location issues, impact on the enemy and/or friendly forces, impact of not conducting operations against the target, environmental sensitivity and intelligence gain/loss concerns. Vetting assists the JFC with the completion of target development and approval process.

b. Validation. Target validation ensures all vetted targets meet the objectives and criteria outlined in the commander's guidance. Additionally, validation reviews individual target's compliance with LOAC and ROE. In bilateral or coalition environments, targets must be validated against allied concerns. Target vetting and validation should be revisited as new intelligence arrives or the situation changes. As new intelligence becomes available or the situation changes, target vetting and validation should be revisited as required (see Figure D-3).

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

d. The JFC's intelligence personnel, SJA, planners, and other personnel are included in the target development process and they must be familiar with the combatant command's target validation process.

4. Target Nomination

National agencies, the commander's staff, joint forces subordinate to the JFC, supporting commands, and joint components all nominate targets to the JFC for validation and approval (in some cases, national-level approval is required). Component commanders, national agencies, supporting commands and/or the JFC's staff submit their TNLs for inclusion on the JIPTL. TNLs are submitted to the JFC's targeting representative. Once compiled, the draft JIPTL is normally forwarded to the JTCB for coordination and final approval by the JFC. Once approved, the list is transmitted to components and appropriate agencies as the daily JIPTL. Targets are also vetted against the NSL and RTL at each successive level. Relief may be requested from the JFC for targets nominated to the JIPTL that are also on the RTL. When national-level restrictions are imposed, SecDef or Presidential approval may be needed and a specific process is followed.

5. Prioritization

Targets on the JIPTL are prioritized based on the JFC's objectives and guidance and the mutual support required between the joint force components. Once the JIPTL is consolidated, prioritized, and deconflicted, it must be approved by the JFC, or his designated representative, before the component

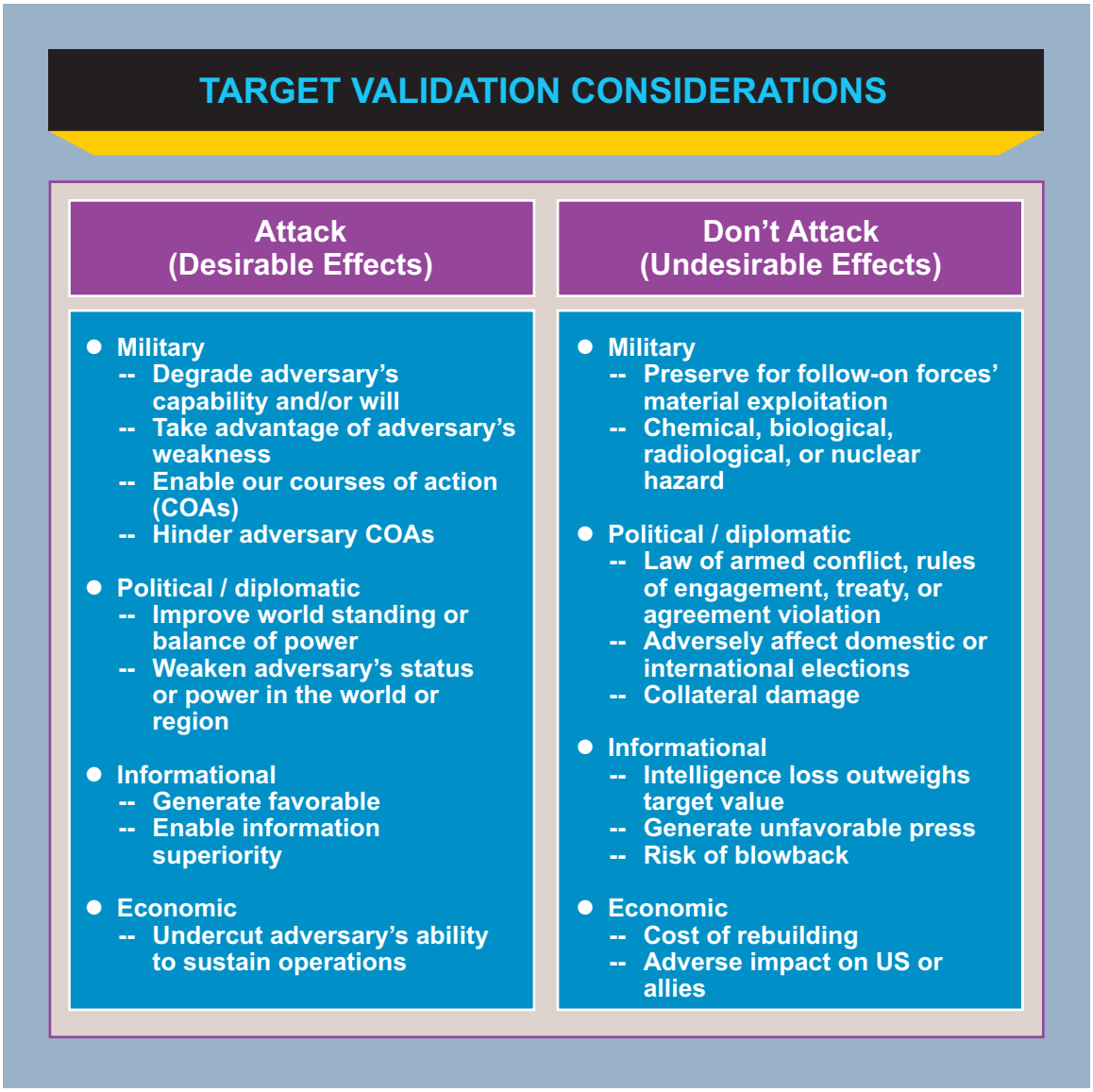


Figure D-3. Target Validation Considerations

commanders can use it to prepare their plans and orders. Intelligence supports this process by ensuring target information is complete and accurate, targets are clearly related to objectives, and the selection rationale is clear and detailed. This may include specifying which targets must be attacked as integrated systems — sets or individually — and which must be struck in sequence and which pose potential collateral damage concerns.

6. Information Operations Considerations for Target Development

a. The traditional methodology of identifying target systems, components, and their critical elements remains valid for IO target development. IO targeting may involve a wider scope to include information processing systems and psychological factors. This expansion of the traditional concept of target systems requires a correspondingly wider scope in intelligence collection as well as additional IO-specific technical and analytical expertise.

b. **Long lead times are usually required to fulfill IO-related collection requirements.** Target analysts must work to associate IO capabilities with potential target vulnerabilities, and determine information gaps for those targets as early as possible. Competition for intelligence collection requires full data sharing and coordination among target analysts and planners for the most prudent use of resources.

c. Effective target systems analysis will discern all the dimensions of an adversary's information systems and their interrelations. System dimensions include human factors, communications architecture, network topology, information flow and functionality, among other factors. Target intelligence specialists must seek to include these interrelated elements when analyzing processes/systems in order to identify their critical elements.

Intentionally Blank

APPENDIX E
LEGAL CONSIDERATIONS IN TARGETING

1. Introduction

It is DOD policy that members of DOD comply with the LOAC 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. Target 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, issues related to the basic principles of LOAC, ROE, general restrictions, precautions in attack, separation of military activities, special protections, national sovereignty, and environmental considerations.

2. International Law and the Law of Armed Conflict

a. LOAC is defined as 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 United States or its individual citizens, including treaties and international agreements to which the United States is a party, and applicable customary international law. The LOAC rests on fundamental principles of military necessity, unnecessary suffering, proportionality, and distinction (discrimination), which will apply to targeting decisions.

b. **Military Necessity**. This principle limits those measures not forbidden by international law to legitimate military objectives whose engagement offers a definite military advantage. While military necessity gives commanders great latitude in conducting military operations, it does not authorize all military action and destruction. For instance, under no circumstance would military necessity authorize actions specifically prohibited by LOAC, such as the murder of prisoners of war or the deliberate targeting of innocent civilians.

c. **Unnecessary Suffering**. This principle forbids the employment of arms, projectiles, or material calculated to cause unnecessary suffering. This construct also extends to unnecessary destruction of property. Combatants may not use arms that are calculated to cause unnecessary suffering, and may not use otherwise lawful weapons in a manner or with the intent to cause unnecessary suffering.

d. **Proportionality**. The principle of proportionality requires that commanders weigh the anticipated loss of civilian life and damage to civilian property reasonably expected to result from military operations with the advantages expected to be gained. The principle of proportionality is weighed by a commander in determining whether, in engaging in an operation, the commander's actions may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, that would be excessive in relation to the concrete and direct military advantage anticipated by those actions. The military advantage anticipated is intended to refer to the advantage anticipated from those actions considered as a whole, and not only from isolated or particular parts thereof. Generally, "military advantage" is not restricted to tactical gains, but is linked to the full context of a strategy.

e. **Distinction (Discrimination)**. LOAC requires that military forces are directed only against lawful military objectives. To that end, the principle of distinction (discrimination) requires both attacker and defender to distinguish between combatants and noncombatants, as well as between military objectives and protected property, locations, or objects. Defenders are obligated to use their best efforts to segregate noncombatants and to refrain from placing military personnel or materiel in or near civilian objects or locations. Attackers are required to only use those means and methods of attack that are discriminate in effect and can be controlled, as well as take precautions to minimize collateral injury to civilians and protected objects or locations.

3. Rules of Engagement

a. ROE are defined in JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, as "directives…that delineate the circumstances and limitations under which United States 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 provide a framework that encompasses national policy goals, mission requirements, and the rule of law. All targeting decisions must be made in light of the applicable ROE. Supplemental measures enable a commander to obtain or grant those additional authorities necessary to accomplish an assigned mission.

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

4. General Restrictions on Targeting

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

(1) Nonparticipation in Hostilities. The protection offered civilians carries a strict obligation on the part of civilians not to take an active part in armed combat, become combatants, or engage in acts of war. Civilians engaging in combat or otherwise taking an active part in combat operations, singularly or as a group, lose their protected status. However, a defender may not use civilians as human shields in an attempt to protect, conceal, or render military objects immune from military operations or force them to leave their homes or shelters to disrupt the movement of an adversary. In these cases, the civilians have not lost their protected status and joint force responsibilities during such situations are driven by the principle of proportionality as mentioned above. In such cases, otherwise lawful targets shielded with protected civilians may be attacked, and the protected civilians may be considered as

collateral damage, provided that the collateral damage is not excessive compared to the concrete and direct military advantage anticipated by the attack.

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

b. Lawful Military Attacks. Military attacks will be directed only at military targets. Only a military target is a lawful object of direct attack. By their nature, location, purpose, or use, military targets are those objects whose total or partial destruction, capture, or neutralization offer a military advantage.

(1) Many objects are clearly military targets, such as military barracks, military airfields, armaments, aircraft, tanks, antiaircraft emplacements, or troops. Economic targets (i.e., factories, workshops, and plants) that make an effective contribution to adversary military capability are considered legitimate military targets. Dual-use objects, those serving both a military and a civilian purpose, may be lawful targets as determined by the application of the LOAC and, in large measure, the principle of proportionality. This may include targets that indirectly, but effectively, support and sustain the adversary's warfighting capability. Attacks on objects such as dikes and dams are prohibited if their breach or destruction would result in the loss of civilian lives disproportionate to the military advantage to be gained. Traditionally, modern transportation and communications systems have been considered military targets because of heavy use by the military during conflicts. Similarly, some civilian infrastructure, such as radio or television transmitters, may be a legitimate target if used by the enemy to support military operations. However, consult with the staff judge advocate when targets include radio or television broadcasts and other dual-use objects.

(2) An object's normal use does not automatically determine its status. Even a traditionally civilian object such as a house can be a military target if it is occupied and used by military forces.

(3) The key factor in determining if a target is a lawful military object is whether the desired effect to be rendered on the target offers a definite military advantage in the prevailing circumstances without excessive collateral damage. In all cases, consult the Staff Judge Advocate.

5. Precautions in Attack

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

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

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

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

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

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

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

6. Separation of Military Activities

a. General Information. The LOAC gives civilians protection from attack during armed conflict. Civilians may lose this protection based upon specific warlike acts. Once civilians become unprivileged belligerents, they become lawful targets.

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

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

(3) Similarly, the LOAC 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 LOAC requires combatants to locate 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 breach of the LOAC.

7. Special Protection

a. 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 cause for redress. Special protections are discussed below.

b. Wounded and Sick Personnel, Medical Units, Hospitals, and Medical Transport. Under the LOAC, the following are protected:

(1) Fixed hospitals and mobile medical establishments.

(2) Medical personnel and chaplains.

(3) Medical transports.

(4) Medical aircraft when flying at agreed times on agreed routes.

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

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

c. Distinctive Medical Emblems. The Red Cross, Red Crescent, and (as of 2005) Red Diamond are the three internationally recognized symbols for designating protected medical activities. However, some countries use other distinctive emblems, such as a Red Cedar tree by Lebanon. 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 Conventions is not the emblem, but rather the notice that a facility is a protected medical installation.

(1) These emblems may be used to mark civilian and military medical personnel, 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 Proliferation of Civilian Persons in Times of War authorizes use of symbols to mark zones established for the wounded and sick. Safety zones for wounded, sick, aged, expectant mothers, children under 15, and mothers with children under 7 are to be marked with an oblique red band on white ground.

d. Religious, Cultural, and Charitable Buildings and Monuments. As long as buildings and monuments devoted to religion, art, charitable purposes, or historical sites are not used for military purposes, they

may not be targets. Combatants have a duty to identify such places with distinctive and visible signs. When these buildings are used for military purposes, they may qualify as military targets. Lawful military targets located near protected buildings are not immune from attack, but precautions must be taken to limit collateral damage to the protected buildings. Many allies and potential adversaries of the United States are party to the Protection of Cultural Property in the Event of Armed Conflict treaty. This treaty establishes a royal blue and white shield as the distinctive emblem for protected cultural property in war.

e. Prisoner of War Camps. POWs may not be targets, be kept in a combat zone, or 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 operational area. Attacks against installations containing dangerous natural forces — including dams, dikes, and nuclear power facilities — must be carefully considered for potentially catastrophic collateral damage.

b. It is generally lawful under the LOAC 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, an SJA must be immediately available and should be consulted at all levels of command to provide advice about law of war compliance during planning and execution of exercises and operations. Early involvement by the SJA will improve the targeting process and can prevent possible violations of international or domestic law.

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

APPENDIX F
CAPABILITIES ANALYSIS AND FORCE ASSIGNMENT

1. Overview

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. In some applications, capabilities analysis is referred to as "weaponeering." 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.

2. Capabilities Analysis

a. **Overview.** During the capabilities analysis phase of joint targeting, the targeteer estimates the most likely outcome resulting from employing selected friendly-force capabilities against a specific target to achieve a specific effect. Its purpose is to weigh the relative efficacy of the available forces and systems or processes and agents. Capabilities analysis may also inform the JFC's choice of COA and other decision-making processes. Specifically, the targeteer focuses on the target's physical, functional, cognitive, and environmental characteristics to determine vulnerabilities that can be leveraged. The IC and federated partners provide target materials, 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.

b. **Weaponeering**

(1) Weaponeering is conducted the third phase of the joint targeting cycle. 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.

(2) Presently, weaponeering is far more developed to support conventional operations than for nontraditional methods. The Services, as well as the Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME), 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 targeteers to predict the effectiveness of weapons against most selected targets. Inputs to these calculations include target characteristics (e.g., size, shape, and hardness), desired damage criteria or probability of damage (PD) calculations, and delivery parameters (e.g., altitudes, speeds, dive angles). Model outputs include the predicted effectiveness of selected weapons and target pairings or the number of assets required to achieve desired effects using specified weapons and/or delivery systems.

(3) Time constraints and a large number of potential targets may necessitate prioritizing weaponeering. The JTL, JIPTL, and commander's objectives and guidance should provide the basis for prioritizing weaponeering assessments.

3. Force Assignment

a. **Overview.** The force assignment process integrates previous phases of joint targeting and fuses capabilities analysis with available forces, sensors, and weapons systems. It is primarily an operations function, but requires considerable intelligence support to ensure ISR assets are integrated into the plan. The process of resourcing prioritized JIPTL targets with available forces or systems and ISR assets lies at the heart of force assignment. This process links theoretical planning to actual operations.

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

c. **Five General Steps in the Conventional Force Assignment Process.**

(1) **Consolidate target development, BDA and capabilities analysis results.** In this step, targeting personnel assemble the necessary data from previous research. To make this complex data more useful to their operations counterparts, the targeteers must prepare summary files and worksheets distilling the pertinent information collected on each potential target. Target files should contain four types of information: target development data, capabilities analysis (PD) or number of assets required, collateral damage analysis, and attrition calculations.

(a) **Prepare Target Development Data.** The process of target development produces extensive, detailed target folders and supporting products for each potential target on the JIPTL. While crucial for the overall joint targeting cycle, this mass of detail may very quickly overwhelm the force assignment team unless it is distilled down into a summary containing only the essential information needed to perform this function. To condense this material, targeteers prepare target worksheets summarizing the contents of the target folder. Mandatory information includes the target name and target identification (ID), its category code and O-suffix, facility aimpoints, target coordinates and country code, target significance or contribution to the overall target system and how its destruction or degradation contributes to the JFC's objectives. Additionally, the worksheets must contain a statement reflecting the target's priority (as reflected in the JIPTL), current status as reflected in the most current assessment products and functional assessments, the targeted DPI (if applicable) and its precise coordinates, the desired effect, and any potential collateral damage concerns.

(b) **Generate Capabilities Analysis Results.** During capabilities analysis, estimates of weapons effects and damage criteria are typically arrayed using the following factors: forces, delivery systems, weapons fuzing and delivery tactics. The results from the capabilities analysis provide multiple PD calculations, which estimate the physical damage resulting from planned actions against the target. Targeting personnel may also provide the projected effects of nonlethal applications on the target. The

force assignment team will normally require several possible weaponeering solutions for each DPI or on each target, arranged in order of effectiveness. Each DPI should also include an assessment of the projected collateral damage resulting from each anticipated weapon type. Commonly, commander's guidance will require collateral damage be minimized.

(c) **Produce Attrition Calculations.** Intelligence analysts provide data on the enemy defensive posture, capabilities, and intentions. Working with operational planners, targeteers 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, adversary defenses, and weather. Weaponeering personnel should factor this attrition analysis and PA data into their PD calculations.

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

(3) **Assigning Forces to Specific Targets and Supporting Missions.** In this step, operations planners assign forces, munitions, and ISR assets to specific targets and aimpoints. They develop force packages, assign supporting assets and resolve timing, sequencing, and deconfliction issues. Targeteers support this process by providing prioritized recommendations for munitions and delivery systems for specific targets or aimpoints. They may also specify delivery parameters, weapons fuzing, axis of attack, and assessment criteria. Operational constraints 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 plan or order. The operational characteristics of a particular weapon system when tasked against a specific target may require adjustments to the overall plan or order. Often, targets are not attacked in the same priority order as they appear on the JIPTL. Targeting personnel must be ready to assist in evaluating the impact of these changes upon the entire targeting effort. As changes are made due to operational and special constraints (such as collateral damage restrictions) it is important to maintain a balance between achieving the commander's objective and inadvertently violating existing constraints.

(4) **Present Joint Targeting Recommendations to the JFC for Approval.** The force assignment team will prepare a comprehensive briefing on the recommended plan explaining the rationale behind the operational decisions and target selections. If high priority targets cannot be attacked or

objectives cannot be met, the planners must inform the affected component commander(s). The component commander may seek different means to achieve the objective or, if necessary, ask the JFC to modify the objective, guidance or prioritization via the JTCB process. Normally, a summary of the plan resulting from the force assignment process, once approved by the component commander, is briefed to the JFC. Generally, operations and intelligence staffs work together to produce and brief the recommended plan.

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

APPENDIX G
COLLATERAL DAMAGE ESTIMATION

1. Introduction

The United States of America places high value on the preservation of civilians' and noncombatants' lives and property. The military accomplishes its mission through the discriminate application of force. In the 21st century global environment, the US military must remain cognizant of these matters.

2. CJCSM 3160.01A, Joint Methodology for Estimating Collateral Damage for Conventional Weapons, Precision, Unguided, and Cluster (S)

a. CJCSM 3160.01A codifies the joint standards and methods for estimating collateral damage potential, provides mitigation techniques, and assists commanders with weighing collateral risk against military necessity and assessing proportionality within the framework of the military decision-making process. These joint standards and methods for conducting CDE apply across the range of military operations. In addition, the CDEs that result from CJCSM 3160.01A are meant to inform decision makers and commanders and are not decisions themselves. CDEs help senior leaders evaluate collateral risk against military necessity during the planning and execution of combat operations.

b. CJCSM 3160.01A provides a logical and repeatable five-step process for estimating collateral damage. The technical basis for these CDE levels is a series of munitions effective miss distance (EMD) tables that were developed and accredited by the JTCG/ME. The EMD tables contain collateral damage distances for all air-to-surface and surface-to-surface conventional munitions.

3. CDE Levels 1 – 5

As the methodology defined in CJCSM 3160.01A moves through the CDE levels, the level of analysis and risk the commander accepts increases. The first step, CDE 1, determines whether the target can be positively identified and is a valid military target. CDE 1 also provides an initial collateral damage estimate for the employment of all conventional munitions. The second step, CDE 2, provides an estimate for precision-guided unitary and cluster munitions based on nominal weaponeering restrictions. CDE 2 also provides an assessment of whether a target meets the minimum requirements for employment of air-to-surface and surface-to-surface unguided munitions. The third step, CDE 3, provides specific EMD values and weaponeering assessments for all precision and unguided munitions to ensure the desired effect is achieved while mitigating collateral damage. The fourth step, CDE 4, further refines the CDE 3 assessment by incorporating collateral structure type with the goal of achieving a low CDE while minimizing tactical restrictions. Finally, CDE 5, casualty estimation, is employed when some level of collateral damage is unavoidable.

See CJCSM 3160.01A for further information on collateral damage estimation.

4. Sensitive Target Approval and Review Process

a. Sensitive targets are targets where the commander has estimated the physical damage and collateral effects on civilian and/or noncombatant persons, property, and environments, occurring incidental to military operations, exceed established national-level notification thresholds. Sensitive targets do not need to be collateral damage related. They may also include those targets that exceed national-level ROE thresholds, or where the CCDR determines the effects from striking the target may have adverse political ramifications.

b. CJCSI 3122.06B – *Sensitive Target Approval and Review (STAR) Process* provides guidance for the combatant commands for designating sensitive targets and nominating them for national-level review. The STAR process supports contingency and crisis action planning. STAR products, which usually consist of a briefing slide or series of slides, are used to present sensitive targets for national-level review. CJCSI 3122.06B provides examples of STAR products, but does not require a certain format because STAR products will vary by combatant command and planning effort.

c. The CDE methodology outlined in CJCSM 3160.01A supports the STAR process by assessing and identifying sensitive targets that are related to collateral damage. The material used to determine the CDE forms the basis of the STAR products used in these cases.

See CJCSI 3122.06B for further information on the STAR process and CJCSM 3160.01A for information on how the collateral damage methodology contributes to the STAR process.

APPENDIX H
FEDERATED TARGETING SUPPORT

1. Introduction

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

a. **Target Development:** TSA and nodal analysis, critical element analysis, and target vetting.

b. **Target Materials:** ETFs, to include supporting graphics and specific data such as target descriptions, significance statements, expectation statements, and joint DPIs.

c. **Weaponeering and Weapons Effects:** Weaponeering solutions, CDEs, and modeling and simulation products.

d. **Assessment:** physical, change, functional and target system assessments, as required.

2. Roles and Responsibilities

a. Federated production planning takes place as part of the CCDR's contingency planning process. The J-2 conducts the intelligence planning process and develops the intelligence plan as appendix B (Intelligence) to the OPLAN. The J-2 assesses the combatant command's organic tasking, collection, processing, exploitation and dissemination capabilities to support the CCDR's selected operations through all phases of conflict. The combatant command J-2 determines intelligence shortfalls and, working with the DJIOC, begins to establish federated partnerships with other intelligence organizations to address these shortfalls. Federated partnerships are formal agreements with other theater JIOCs, Service intelligence centers, defense intelligence agencies, reserve intelligence elements, or other non-DOD intelligence agencies to assist with the combatant command J-2's intelligence responsibilities. These agreements form the basis for national intelligence functional support plans to annex 4 (Targeting) to appendix B (Intelligence) for OPLANs, as well as all-source intelligence analysis and production (e.g., linguistics and translation services, document and material exploitation, counterintelligence, HUMINT operations, GEOINT operations, and SIGINT operations). Federation agreements are formalized during intelligence plan development. JS J-2T, in coordination with the DJIOC, assists the combatant command's J-2 in establishing a federated targeting and assessment plan.

b. Under the Defense Intelligence Analysis Program, there are designated responsible analytic centers (RACs) 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. RACs conducting target development should also be responsible for performing assessments on the same capabilities and targets.

c. TSA, ETF and DPI production, weaponeering, CDEs, and physical and functional assessments are typically conducted in theater to the maximum extent possible. However, if federation is required, it should leverage the array of national agency, command, and service centers that are resourced and proficient in these areas. Specific targeting federation requirements are identified in command intelligence plans and supporting RACs specified within related functional support plans (refer to Figure H-1 below for a matrix of capabilities and recommended RACs and collaborating analytic centers). For both contingency and crisis action planning, J-2T, and DJIOC will work with the supported command, national agencies, and supporting service centers to form federated partnerships to synchronize use of available resources and capabilities. Specific organizations and agencies that support federated targeting are discussed in the next paragraph.

3. Intelligence Organizations and Supporting Agencies

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

b. **DOD Organizations**. The primary organizations within the DOD include the JS, DJIOC, DIA, National Security Agency (NSA), National Geospatial-Intelligence Agency (NGA), and the National Reconnaissance Office (NRO), as well as the combatant commands. Other organizations within the DOD that provide unique capabilities to joint targeting efforts include DTRA, Joint Information Operations Warfare Center (JIOWC), and JWAC. Additionally the Central Intelligence Agency (CIA), although not a DOD organization, will provide support to the targeting effort. JS J-2T leads the national intelligence community for target vetting. The community of interest for target vetting should include, as a minimum, JS J-2 and J-3, DJIOC, DIA, NSA, NGA, DTRA, and NRO.

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

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

(b) Providing the combatant commands, if requested and validated, with IC target development through all phases of the targeting cycle.

(c) Assisting the combatant commands in establishing, coordinating, and/or supporting federated intelligence operations, to include target development and assessment.

TARGET SYSTEM ANALYSIS RESPONSIBILITIES		
Target System	**Responsible Analytic Center**	**Collaborating Analytic Center(s)**
Command, Control, Communications, Computers, Intelligence	DIA/CCO	NSA, CIA, NASIC, JWAC, NGA, JIOWC
Weapons of Mass Destruction	DIA/CPT	DTRA, NGA, CIA
Ground Forces and Facilities	DIA/MFA & NGA	NGIC, NGA
Air Forces and Airfields	DIA/MFA & NGA	NASIC, USTRANSCOM
Integrated Air Defense Forces	NASIC	DIA/MFA, NGA
Naval Forces and Ports	DIA/MFA & USRTANSCOM	NMIC, NGA
Space Forces	NASIC	DIA, NGA
Ballistic Missile Forces	DIA/MSIC	NGA, NGIC, NASIC
Electric Power	DIA/MIO	JWAC, NGA
Petroleum Industry	DIA/MIO	JWAC, NGA
Industry	DIA/MIO	JWAC, NGA
Transportation and Lines of Communications	DIA/MIO	JWAC, NGA
Counterterrorism	DIA/JITF-CT	CIA, NGA
Counterdrug	DIA/CNT	CIA, NGA
CCO - Command and Control office CIA - Central Intelligence Agency CNT - Counterdrug office CPT - Counterproliferation and Technology Office DIA - Defense Intelligence Agency DTRA - Defense Threat Reduction Agency	JITF-CT - Joint Intelligence Task Force Combating Terrorism JIOWC - Joint Information Operations Warfare Command JWAC - Joint Warfare Analysis Center MFA - Military Forces Analysis Office MIO - Military Infrastructure Office MSIC - Missile and Space Intelligence Center	NASIC - National Air and Space Intelligence Center NGA - National Geospatial-Intelligence Agency NGIC - National Ground Intelligence Center NMIC - National Maritime Intelligence Center USTRANSCOM - United States Transportation Command

Figure H-1. Target System Analysis Responsibilities

(d) Assisting combatant commands with coordination of IC target vetting.

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

For additional details see JP 2-0, Joint Intelligence.

(2) **Defense Intelligence Agency**. The DIA provides significant all-source intelligence resources on a broad array of targeting issues. The Director of DIA is actually "triple-hatted," also fulfilling roles as the Director of the DJIOC and Commander, Joint Functional Component Command for ISR (JFCC-ISR) under US Strategic Command (USSTRATCOM). DIA provides finished target intelligence to the President, SecDef, and JFCs, providing worldwide support across the entire range of 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.

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

(4) **Joint Functional Component Command for Intelligence, Surveillance, and Reconnaissance.** The JFCC-ISR performs the following roles:

(a) Planning, integrating, and coordinating ISR support to strategy across the globe in support of contingency and crisis action planning and operations.

(b) Formulating recommendations to integrate global DOD ISR capabilities and DJIOC requirements in coordination with the Commander, USSTRATCOM.

(c) Providing personnel and resources to directly support combatant command JIOCs.

(d) Coordinating with combatant commands to determine the status of ISR assets.

(5) **National Security Agency**. NSA provides critical intelligence support to all phases of joint targeting. This support includes analysis of communications networks or other aspects of the information infrastructure, as well as operational SIGINT. NSA is also responsible for providing the combatant command, JS J-2, and DJIOC 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 DJIOC, combatant command JIOCs and other interested command and

agencies informed of agency activities that take place in each respective combatant commander's area of responsibility (AOR) and/or JFC's operational area.

(6) **National Geospatial-Intelligence Agency**. NGA is a combat support agency as well as a national intelligence organization. NGA is the primary source for GEOINT analysis and products at the national level. In addition to the GEOINT support identified in JP 2-01, *Joint and National Intelligence Support to Military Operations*, NGA's mission supports national and homeland security, and advanced weapons and systems development.

(a) NGA works with commercial imagery vendors to procure diverse, unclassified imagery to better support its customers. This effort facilitates NGA's support to and collaborative efforts with international coalition partners, other IC agencies, DOD organizations, and other civil and government entities.

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

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

(d) NGA's imagery analysts play a critical role in federated target development and assessment. NGA informs the DJIOC, combatant command JIOCs and other interested commands and agencies as analysis effecting targets of interest occur in each respective AOR and/or operational area.

(e) CJCSI 3505.01, Target Coordinate Mensuration Certification, establishes NGA as the responsible agency for providing mensuration training and certification to national agencies involved in providing geospatial intelligence in support of targeting. NGA is the accreditation authority for mensuration certification training programs under this instruction.

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

(7) **Defense Threat Reduction Agency**. DTRA provides special tools and expertise on WMD and helps safeguard the US and its allies by providing capabilities to eliminate, reduce, and/or counter these threats and/or mitigate their effects. DTRA's work covers a broad spectrum of activities, but is directly involved in the targeting process by making collateral damage and casualty estimations

when employing weapons against facilities that may contain WMD. DTRA also provides target characterization and high fidelity weapons effects modeling to support physical and functional defeat of hardened and deeply buried targets. DTRA also verifies existing foreign controls of stockpiles of nuclear-related equipment and materials.

(8) **United States Strategic Command.** In addition to its direct roles managing, and JFCC-ISR, described above, USSTRATCOM maintains other capabilities that directly support joint targeting.

(a) Joint Functional Component Command (JFCC) Space will optimize planning, execution, and force management (as directed by USSTRATCOM) of the assigned missions of coordinating, planning, and conducting space operations" via the JSPOC. CDR 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, Joint Doctrine for Space Operations.

(b) **Joint Information Operations Warfare Command**. The JIOWC, a subordinate functional component of USSTRATCOM, provides federated support, including intelligence, to combatant commanders, and can be tasked directly by the chain of command. JIOWC supports the full spectrum of IO capabilities, including operations security, computer network operations, psychological operations, military deception, electronic warfare, and physical destruction. Intelligence support can be tailored for integration into TSAs. JIOWC personnel often work directly with the supported command's targeting personnel from the earliest stages of the targeting process to ensure that IO considerations are fully integrated into targeting efforts.

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

(c) **USSTRATCOM Center for Combating Weapons of Mass Destruction (SCC)**. The SCC was established to optimize integrating and synchronizing DOD efforts to dissuade, deter, prevent acquisition, development, transfer, or use of WMD and related materials and precursors. The SCC director is dual-hatted as the director of DTRA, enabling the SCC to leverage DTRA capabilities and assist DOD with preventing, deterring, detecting, locating, tracking, targeting, and mitigating the effects of WMD systems or threats.

(9) United States Joint Forces Command (USJFCOM) Quick Reaction Team (QRT). The QRT is a rapidly deployable team of targeteers and collections managers designed to provide immediate crisis support to combatant commands. They can deploy from USJFCOM within 24-hours at the request of a combatant commander via JS J-2/DJIOC. They are trained analysts, but must be integrated into existing theater intelligence organizations as they deploy with no organic automated data processing or communications support. The supported combatant commander determines the team's in-theater location (headquarters, JIOC, JTF, or component command) based on assessed needs. The QRT is

not a permanent targeting or collection augmentation and should be returned to national control as mobilization and/or individual augmentation arrive to support the combatant commander's requirements

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

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

c. **Non-DOD Organizations Supporting Joint Targeting**

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

(2) **Central Intelligence Agency**. The CIA, through its target support group (TSG) within its Office of Military Affairs, works closely with the DOD on many issues relating to every phase of the targeting cycle. The TSG makes a variety of CIA resources available to military target planners. Additionally, in peacetime, applicable requests for information are routed to the CIA to be addressed by the agency's Office of Military Affairs. The TSG provides information and expertise in support of military target development and processes formal requests for target nominations (review and approval by the CIA's leadership) to add CIA selected targets to a DOD plan. TSG manages all military Special Technical Operations and Special Access Program compartments, and deconflicts military targeting with CIA operational assets.

(3) **Department of State.** Because of the DOS' worldwide network of diplomatic missions and posts staffed with representatives of numerous national agencies, the DOS is a key source of information during war or crises. The central point of contact within the DOS for intelligence, analysis, and research is the Bureau of Intelligence and Research (INR). INR produces intelligence studies and analyses, which have provided valuable information in support to 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 joint targeting.

(4) **Department of Energy**. DOE, through its national laboratories, provides significant chemical, biological, radiological, and nuclear process analysis data related to counterproliferation facilities and installations. Additionally, DOE has resources to assist in consequence analysis prediction.

APPENDIX J
TARGETING AUTOMATION

1. Overview

a. Targeting automation is the use of computer 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, targeting should automate all steps in the targeting cycle in support of deliberate and dynamic targeting. This appendix addresses current targeting automation capabilities necessary for contingency and crisis action planning. It details how targeting automation occurs within the joint targeting cycle and concludes with a summary discussion of implications for targeting automation.

b. Automating targeting has historically been a challenge. The definition of what is considered a target by automation systems and databases has evolved from only fixed facilities to include moving objects, terrorists, and even virtual elements of information networks. Similarly, a need to accommodate a progression of weapon systems from 'dumb' bombs to coordinate seeking weapons, to directed energy weapons and even nonlethal means has redefined the systems that targeting automation must consider.

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.

2. Automating the Joint Targeting Process

a. The essence of targeting automation is its ability to assist a targeteer in developing, saving, and disseminating the details of targeting decisions. Targeting automation underpins the orderly accumulation and flow of information that 'connects the dots' of the joint targeting process. Joint targeting is a series of phased activities that plan, execute, monitor, and assess the application of force 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, 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 so many levels and in so many locations simultaneously, yet no single interoperable solution has emerged or been established. To serve such a diverse and distributed client base, targeting automation must conduct efficient bidirectional data flow among intelligence centers, users of both classified and unclassified computer systems, multinational partners, targeting tools, and, most significantly, support data exchange and interoperability. To extend the targeting enterprise to the edge user base, targeting automation must also be able to accommodate producers and consumers of information on low bandwidth,

message-based environments. The following sections detail considerations associated with automating elements of joint targeting:

(1) **End State and Commander's Objectives**. During contingency planning, combatant commands typically provide objectives, guidance, desired effects, and intent to their staff and subordinate forces. Targeteers and intelligence analysts then select the appropriate target sets and map them electronically to the supported objective(s). In this phase, targeteers search for targets in databases (e.g., the MIDB) and portals via automated searches. At the end of this process, a CTL is generated. Each potential target is associated with a unique target identifier.

(2) **Target Identifiers**: Target identifiers are an alphanumeric convention that can be assigned to a range of entities, including facilities, units, individuals, organizations, and information systems. One example of a target ID is the widely recognized basic encyclopedia (BE) numbering system. Unfortunately, while many C2 systems can accommodate current standards for target numbering (BEs, unit identifiers, candidate target identifiers, etc.) as defined by DIA, no integrated capabilities exist to extend target numbering to moving targets and other emerging target classes.

(3) **Target Development and Prioritization.** To fully develop the CTL, targeteers access web-based intelligence repositories to perform in-depth target research and development. Where sufficient information is not already available, intelligence analysts submit RFIs and collection requirements to fill these gaps. The CTL is shared, usually via video teleconferencing or using collaborative tools, with federated partners in DOD and the rest of the IC for further development and vetting, then goes back to the combatant command for validation. At the end of this process, the CTL is forwarded to the J-3 for approval. Upon approval the CTL becomes the JTL.

(a) **Target Systems Analysis**: In order to understand the roles particular targets play as part of an adversary's system, targeteers conduct TSA to model the existence of broader, functionally-related target systems. Examples of TSA include analysis of a country's electrical power generation system, its POL system, or its transportation system. TSA typically describes the functional role of individual facilities, personnel, and equipment as well as the aggregate capability of the target system. TSA is useful for modeling how planned effects against critical nodes of the system would affect overall system performance. Automation is often used to record the structure of target systems and model various functional impacts on them. Automated models are also used to study the "cascading effects" and coupling of target systems to show how they could affect one another (e.g., the effect of dropping the electrical grid on POL production).

(b) **Electronic Target Folders**: Targeteers create an ETF via a web-based ETF service for each JTL target. The ETF web-service acts as both a production interface to local and community intelligence databases (e.g., MIDB) and as a means for users to query for "produced" ETFs. It is important to ensure that ETF data is duplicated across networks to ensure widest dissemination. Using the target identifier as a query input, consumers request ETFs, which are compiled dynamically via the ETF web-service employing "on-the-fly" data pulls from local databases, MIDB, 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 must be shared with targeting intelligence systems as well as targeting C2 systems and with the J-3.

(c) **Joint Digital Target Materials (JDTM)**: JDTM are standardized products that capture portrayals of targeting information found useful during the targeting process. Typically these include softcopy imagery annotated with pertinent information, titling, and other reference data. JDTM 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. JDTMs are most often kept in ETFs and produced by combatant commands and national/strategic producers during the contingency planning process. Automation assists with the generation, storage, and presentation of JDTMs.

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

(4) **Capabilities Analysis**. During capabilities analysis, weaponeering information and CDE data for a particular target are entered into automated weaponeering and CDE tools. 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. CDE software takes these weaponeering outputs and various mitigation criteria to automate CDE assessments. This data is then automatically tagged and linked to associated ETFs. Once imported into the ETF, the data is replicated out to other MIDB servers and is thus available to the wider targeting community.

(5) **Mission Execution**. 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.

(a) **Dynamic Targeting:** During execution, some targets will be identified as emerging targets or not selected for execution in time to be included in the normal targeting process. These targets must be prosecuted on a compressed timeline than those that are 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.

(b) **Combat Assessment**: At the tactical and operational levels, assessment cells develop a task list assigning specific targets or target sets to federated assessment partners. Targeteers will parse the targets to assessment analysts responsible for specific target sets, so they can search for operational reports for their assigned targets in order to 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. Machine readable dissemination enables the automatic update of MIDB and/or other databases. Changes in databases are then reflected dynamically in the ETFs and various operating pictures, allowing targeteers the ability to work with the latest intelligence in order to start the next iteration of deliberate targeting.

(c) **Assessment**: At the operational and strategic levels, targeteers and intelligence analysts study the progressive changes to the target systems to determine if the effects are being created to achieve the commander's objectives.

3. Implications for Targeting Automation

a. Targeteers rely on automation to facilitate rapid exchange of target and targeting information between all players to transform targeting information into a variety of forms to support warfighters , structure the legal case for target engagement, collect information on observed damage, maintain the accuracy and credibility of information used to determine the desired effects to be created through target engagement. As such, automation must be responsive enough to meet aggressive timelines; distributed enough to reach all the stakeholders; precise enough to ensure that intentions are delivered effectively and without ambiguity; persistent enough to support recall, research, and reuse; and annotated adequately to provide documentation of belief, intention, and ultimately the actions that result. To meet these goals and to be sure that all stakeholders are reading off the same page, it is vital that the entire extended targeting enterprise seamlessly share well understood, standardized representations of targeting information and not rely on private databases.

b. In summary, automation is a critical enabler allowing targeteers to be more accurate and efficient in all phases of the joint targeting process with actionable targeting intelligence. Stand-alone systems create a break in the flow of intelligence or targeting data and sub-optimize the enterprise and waste resources. Ideally, targeting automation should facilitate real-time, virtual, collaborative, and multilayered security analysis and planning. The key components to targeting automation are **common target data standards** and **data interoperability.** These components, in turn, enhance **information sharing** while providing for the **worldwide replication of targeting information** between all users, to include multinational partners.

APPENDIX K
REFERENCES

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

1. Joint Publications

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

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

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

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

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

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

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

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

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

j. JP 3-02, *Joint Doctrine for Amphibious Operations*.

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

l. JP 3-05, *Doctrine for Joint Special Operations*.

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

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

o. JP 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS).*

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

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

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

s. JP 3-14, *Joint Doctrine for Space Operations.*

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

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

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

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

x. JP 3-52, *Joint Doctrine for Airspace Control in the Combat Zone.*

y. JP 3-53, *Doctrine for Joint Psychological Operations.*

z. JP 4-0, *Doctrine for Logistic Support of Joint Operations.*

aa. JP 5-0, *Joint Operations Planning.*

2. Multi-Service Publications

a. FM 3-01.51/NWP 3-01.13/AFTTP(I) 3-2.24, *Multi-Service Procedures for Joint Theater Missile Target Development.*

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

c. FM 3-60/MCRP 3-16A, *Tactics, Techniques, and Procedures for the Targeting Process.*

d. FM-3-60.1/MCRP 3-16D/NTTP 3-60.1/AFTTP(I) 3-2.3, *Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets.*

3. CJCS Publications

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

b. CJCSI 3122.06B, *Sensitive Target Approval and Review (STAR) Process* (S).

c. CJCSI 3127.01, *No-Strike Policy and Guidance* (U).

d. CJCSI 3505.01, *Target Coordinate Mensuration Certification* (U).

e. CJCSM 3160.01A, *Joint Methodology for Estimating Collateral Damage For Conventional Weapons, Precision, Unguided, and Cluster* (S).

4. Service Publications

a. FM 3-0, *Operations.*

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

c. FM 3-93, *The Army in Theater of Operations.*

d. FM 6-20-10/MCRP 3-1.6.14, *Tactics, Techniques, and Procedures for the Targeting Process.*

e. NWP 3-03.1, *Tomahawk Employment Manual*.

f. NWP 3-03.2, *TLAM Platform and Weapons Systems*.

g. NWP 3-03.4, *Strike Operations Against Land Targets*.

h. Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine*.

i. AFDD 2, *Operations and Organization.*

j. AFDD 2-1, *Air Warfare*.

k. AFDD 2-1.2, *Strategic Attack*.

l. AFDD 2-1.3, *Counterland*.

m. AFDD 2-1.9, *Targeting.*

n. AFI 13-1AOC, Vol. 3, *Operational Procedures –Aerospace Operations Center*.

o. AFTTP 3-3.60, *Operational Employment Air and Space Operations Center.*

Intentionally Blank

APPENDIX L
ADMINISTRATIVE INSTRUCTIONS

1. User Comments

Users in the field are highly encouraged to submit comments on this publication to: Commander, United States Joint Forces Command, Joint Warfighting Center Code JW100, 116 Lake View Parkway, Suffolk, VA 23435-2697. These comments should address content (accuracy, usefulness, consistency, and organization), writing, and appearance.

2. Authorship

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

3. Supersession

This publication supersedes JP 3-60, 17 January 2002, *Joint Doctrine for Targeting*, and JP 2-01.1, 19 January 2003, *Joint Tactics, Techniques, and Procedures for Intelligence Support to Targeting*.

4. Change Recommendations

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

TO: CSAF WASHINGTON DC//XOXD//
INFO: JOINT STAFF WASHINGTON DC//J3/J7-JDEDD JEDD//
CDRUSJFCOM SUFFOLK VA//DOC GP//

b. Recommendations for routine changes should be submitted electronically to the Commander, Joint Warfighting Center, Doctrine and Education Group, with info to the lead agent and the Director for Operational Plans and Joint Force Development (J-7/JEDD), via the CJCS joint electronic library (JEL) at http://www.dtic.mil/doctrine.

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

d. Record of Changes:

CHANGE NUMBER	COPY NUMBER	DATE OF CHANGE	DATE ENTERED	POSTED BY	REMARKS

5. Distribution of Printed Publications

Local reproduction is authorized and access to unclassified publications is unrestricted. However, access to and reproduction authorization for classified joint publications must be in accordance with DOD Regulation 5200.1 R, *Information Security Program*.

6. Distribution of Electronic Publications

a. Joint Staff J-7 will not print copies of JPs for distribution. Electronic versions are available at http://www.dtic.mil/doctrine (NIPRNET), and http://nmcc20a.nmcc.smil.mil/dj9j7ead/doctrine/ (SIPRNET), or on JDEIS at https://jdeis.js.mil (NIPRNET), and https://jdeis.js.smil.mil (SIPRNET).

b. Only approved joint publications and joint test publications are releasable outside the combatant commands, Services, and Joint Staff. Release of any classified joint publication to foreign governments or foreign nationals must be requested through the local embassy (Defense Attaché Office) to DIA Foreign Liaison Office, PO-FL, Room 1E811, 7400 Pentagon, Washington, DC 20301-7400.

c. JEL CD-ROM. Upon request of a JDDC member, the Joint Staff J-7 will produce and deliver one CD-ROM with current joint publications. This JEL CD-ROM will be updated not less than semiannually and when received can be locally reproduced for use within the combatant commands and Services.

GLOSSARY
PART I — ABBREVIATIONS AND ACRONYMS

AFTTP(I)	Air Force tactics, techniques, and procedures (instruction)
AOR	area of responsibility
ARFOR	Army forces
ATO	air tasking order
BDA	battle damage assessment
BE	basic encyclopedia
C2	command and control
CA	combat assessment
CAS	close air support
CCDR	combatant commander
CDE	collateral damage estimation
CIA	Central Intelligence Agency
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
CTL	candidate target list
D3A	decide, detect, deliver, and assess
DIA	Defense Intelligence Agency
DJIOC	Defense Joint Intelligence Operations Center
DMPI	desired mean point of impact
DOD	Department of Defense
DOE	Department of Energy
DOS	Department of State
DPI	desired point of impact
DTRA	Defense Threat Reduction Agency
EMD	effective miss distance
ETF	electronic target folder
F2T2EA	find, fix, track, target, engage, and assess
FM	field manual (Army)
FSCM	fire support coordination measure
FSCOORD	fire support coordinator
GEOINT	geospatial intelligence

HPT	high-payoff target
HUMINT	human intelligence
HVT	high-value target
IC	intelligence community
ID	identification
INR	Bureau of Intelligence and Research, Department of State
IO	information operations
ISR	intelligence, surveillance, and reconnaissance
J-2	intelligence directorate of a joint staff
J-2T	Deputy Directorate for Targeting, Joint Staff Intelligence Directorate
J-3	operations directorate of a joint staff
J-4	logistics directorate of a joint staff
J-5	plans directorate of a joint staff
JAOC	joint air operations center
JFACC	joint force air component commander
JFC	joint force commander
JFCC	joint functional component command
JFE	joint fires element
JIOC	joint intelligence operations center
JIOWC	Joint Information Operations Warfare Command
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
JOPES	Joint Operation Planning and Execution System
JOPP	joint operation planning process
JP	joint publication
JS	the Joint Staff
JTCB	joint targeting coodination board
JTCG/ME	Joint Technical Coordinating Group for Munitions Effectiveness
JTF	joint task force
JTL	joint target list
JWAC	Joint Warfare Analysis Center
LOAC	law of armed conflict
MAAP	master air attack plan
MARFOR	Marine Corps forces
MASINT	measurement and signature intelligence
MCRP	Marine Corps reference publication
MEA	munitions effectiveness assessment
MIDB	modernized integrated database

MISREP	mission report
MOE	measure of effectiveness
MOP	measure of performance
NAVFOR	Navy forces
NGA	National Geospatial-Intelligence Agency
NIST	national intelligence support team
NRO	National Reconnaissance Office
NSA	National Security Agency
NSL	no-strike list
NTTP	Navy tactics, techniques, and procedures
OPLAN	operation plan
OPORD	operation order
PA	probability of arrival
PD	probability of damage
PIR	priority intelligence requirement
POL	petroleum, oils, and lubricants
POW	prisoner of war
RAC	responsible analytic center
RFI	request for information
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
SOF	special operations forces
SOLE	special operations liaison element
SROE	standing rules of engagement
STAR	sensitive target approval and review
TAI	target area of interest
TDN	target development nomination
TNL	target nomination list
TSA	target system analysis
TSG	target support group
TST	time-sensitive target
USJFCOM	United States Joint Forces Command
USSTRATCOM	United States Strategic Command

WMD	weapons of mass destruction

aimpoint. 1. A point associated with a target and assigned for a specific weapon impact. May be defined descriptively (e.g., vent in center of roof), by grid reference, or geolocation. More specific classifications of aimpoint include desired point of impact, joint desired point of impact, and desired mean point of impact. 2. A prominent radar-significant feature, for example a tip of land or bridge, used to assist an aircrew in navigating and delivering their weapons (usually in bad weather and/or at night). (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

air interdiction. Air operations conducted to divert, disrupt, delay, or destroy the enemy's military potential before it can be brought to bear effectively against friendly forces, or to otherwise achieve objectives. Air interdiction is conducted at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required. (JP 1-02)

air tasking order. A method used to task and disseminate to components, subordinate units, and command and control agencies projected sorties, capabilities, and/or forces to targets and specific missions. Normally provides specific instructions to include call signs, targets, controlling agencies, etc., as well as general instructions. Also called ATO. (JP 1-02)

allocation (air). The translation of the air apportionment decision into total numbers of sorties by aircraft type available for each operation or task. (JP 1-02)

apportionment (air). The determination and assignment of the total expected effort by percentage and/or by priority that should be devoted to the various air operations for a given period of time. Also called air apportionment. (JP 1-02)

assessment. 1. A continuous process that measures the overall effectiveness of employing joint force capabilities during military operations. 2. Determination of the progress toward accomplishing a task, creating an effect, or achieving an objective. 3. Analysis of the security, effectiveness, and potential of an existing or planned intelligence activity. 4. Judgment of the motives, qualifications, and characteristics of present or prospective employees or "agents." (JP 1-02)

battle damage assessment. The estimate of damage resulting from the application of lethal or nonlethal military force. Battle damage assessment is composed of physical damage assessment, functional damage assessment, and target system assessment. Also called BDA. (JP 1-02)

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

bullseye. An established reference point from which the position of an object can be referenced. (JP 1-02)

campaign plan. A joint operation plan for a series of related major operations aimed at achieving strategic or operational objectives within a given time and space. (JP 1-02)

campaign planning. The process whereby combatant commanders and subordinate joint force commanders translate national or theater strategy into operational concepts through the development of an operation plan for a campaign. Campaign planning may begin during contingency planning when the actual threat, national guidance, and available resources become evident, but is normally not completed until after the President or Secretary of Defense selects the course of action during crisis action planning. Campaign planning is conducted when contemplated military operations exceed the scope of a single major joint operation. (JP 1-02)

candidate target list. A list of objects or entities submitted by component commanders, appropriate agencies, or the joint force commander's staff for further development and inclusion on the joint target list and/or restricted target list, or moved to the no-strike list. Also called CTL. See also joint integrated prioritized target list; target, target nomination list. (Approved for inclusion in JP 1-02.)

center of gravity. The source of power that provides moral or physical strength, freedom of action, or will to act. Also called COG. (JP 1-02)

clandestine operation. An operation sponsored or conducted by governmental departments or agencies in such a way as to assure secrecy or concealment. A clandestine operation differs from a covert operation in that emphasis is placed on concealment of the operation rather than on concealment of the identity of the sponsor. In special operations, an activity may be both covert and clandestine and may focus equally on operational considerations and intelligence-related activities. (JP 1-02)

close air support. Air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces. Also called CAS. See also air interdiction. (JP 1-02)

collateral damage. Unintentional or incidental injury or damage to persons or objects that would not be lawful military targets in the circumstances ruling at the time. Such damage is not unlawful so long as it is not excessive in light of the overall military advantage anticipated from the attack. (JP 1-02)

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

course of action. 1. Any sequence of activities that an individual or unit may follow. 2. A possible plan open to an individual or commander that would accomplish, or is related to the accomplishment of the mission. 3. The scheme adopted to accomplish a job or mission. 4. A line of conduct in an engagement. 5. A product of the Joint Operation Planning and Execution System concept

development phase and the course-of-action determination steps of the joint operation planning process. Also called COA. (JP 1-02)

covert operation. An operation that is so planned and executed as to conceal the identity of or permit plausible denial by the sponsor. A covert operation differs from a clandestine operation in that emphasis is placed on concealment of the identity of the sponsor rather than on concealment of the operation. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

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

decisive point. A geographic place, specific key event, critical factor, or function that, when acted upon, allows commanders to gain a marked advantage over an adversary or contribute materially to achieving success. (JP 1-02)

desired mean point of impact. A precise point, associated with a target, and assigned as the center for impact of multiple weapons or area munitions to create a desired effect. May be defined descriptively, by grid reference, or by geolocation. Also called DMPI. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

desired point of impact. A precise point, associated with a target, and assigned as the impact point for a single unitary weapon to create a desired effect. May be defined descriptively, by grid preferences, or geolocation. Also called DPI. See also aimpoint; desired mean point of impact. (This term and its definition modify the existing term and its definition and are approve for inclusion in JP 1-02.)

dwell time. (1) The time cargo remains in a terminal's in-transit storage area while awaiting shipment by clearance transportation. (2) The length of time a target is expected to remain in one location. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

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

effect. 1. The physical or behavioral state of a system that results from an action, a set of actions, or another effect. 2. The result, outcome, or consequence of an action. 3. A change to a condition, behavior, or degree of freedom. (JP 1-02)

effective damage. That damage necessary to render a target element inoperative, unserviceable, nonproductive, or uninhabitable. (JP 1-02)

end state. The set of required conditions that defines achievement of the commander's objectives. (JP 1-02)

fires. The use of weapon systems to create a specific lethal or nonlethal effect on a target. (JP 1-02)

functional damage assessment. The estimate of the effect of military force to degrade or destroy the functional or operational capability of the target to perform its intended mission and on the level of success in achieving operational objectives established against the target. This assessment is based upon all-source information, and includes an estimation of the time required for recuperation or replacement of the target function. (JP 1-02)

geospatial intelligence. The exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the Earth. Geospatial intelligence consists of imagery, imagery intelligence, and geospatial information. Also called GEOINT. (JP 1-02)

high-payoff target. A target whose loss to the enemy will significantly contribute to the success of the friendly course of action. High-payoff targets are those high-value targets that must be acquired and successfully attacked for the success of the friendly commander's mission. Also called HPT. See also high-value target; target. (JP 1-02)

high-payoff target list. A prioritized list of high pay-off targets by phase of the joint operation. Also called HPTL. (JP 1-02)

high-value target. A target the enemy commander requires for the successful completion of the mission. The loss of high-value targets would be expected to seriously degrade important enemy functions throughout the friendly commander's area of interest. Also called HVT. See also high pay-off target; target. (JP 1-02)

immediate targets. None. (Approval for removal from JP 1-02.)

information operations. The integrated employment of the core capabilities of electronic warfare, computer network operations, psychological operations, military deception, and operations security, in concert with specified supporting and related capabilities, to influence, disrupt, corrupt or usurp adversarial human and automated decision making while protecting our own. Also called IO. (JP 1-02)

intention. An aim or design (as distinct from capability) to execute a specified course of action. (JP 1-02)

interdiction. An action to divert, disrupt, delay, or destroy the enemy's military potential before it can be used effectively against friendly forces or to otherwise achieve objectives. See also air interdiction. (JP 1-02)

joint air operations. Air operations performed with air capabilities/forces made available by components in support of the joint force commander's operation or campaign objectives, or in support of other components of the joint force. (JP 1-02)

joint desired point of impact. A unique, alpha-numeric coded aimpoint identified by a three dimensional (latitude, longitude, elevation) mensurated point. It represents a weapon or capabilities desired point of impact or penetration and is used as the standard for identifying aimpoints. Also called a JDPI. See also aimpoint; desired point of impact; desired mean point of impact. (Approved for inclusion in JP 1-02.)

joint fires. Fires delivered during the employment of forces from two or more components in coordinated action to produce desired effects in support of a common objective. (JP 1-02)

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

joint force. A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments operating under a single joint force commander. See also joint force commander. (JP 1-02)

joint force commander. A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force. Also called JFC. See also joint force. (JP 1-02)

joint integrated prioritized target list. A prioritized list of targets approved and maintained by the joint force commander. Targets and priorities are derived from the recommendations of components and other appropriate agencies, in conjunction with their proposed operations supporting the joint force commander's objectives and guidance. Also called JIPTL. See also target; target list. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

joint targeting coordination board. A group formed by the joint force commander to accomplish broad targeting oversight functions that may include but are not limited to coordinating targeting information, providing targeting guidance and priorities, and refining the joint integrated prioritized target list. The board is normally comprised of representatives from the joint force staff, all components, and if required, component subordinate units. Also called JTCB**.** See also joint integrated prioritized target list; targeting**.** (JP 1-02)

joint targeting steering group. A group formed by a combatant commander to assist in developing targeting guidance and reconciling competing requests for assets from multiple joint task forces. Also called JTSG. (JP 1-02)

joint target list. A consolidated list of selected targets, upon which there are no restrictions placed, considered to have military significance in the joint force commander's operational area. Also called JTL. (This term and its definition modify the existing term and its definition and are approved for inclusion in the next edition of JP 1-02.)

joint task force. A joint force that is constituted and so designated by the Secretary of Defense, a combatant commander, a subunified commander, or an existing joint task force commander. Also called JTF. (JP 1-02)

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

master air attack plan. A plan that contains key information that forms the foundation of the joint air tasking order. Sometimes referred to as the air employment plan or joint air tasking order shell. Information that may be found in the plan includes joint force commander guidance, joint force air component commander guidance, support plans, component requests, target update requests, availability of capabilities and forces, target information from target lists, aircraft allocation, etc. Also called MAAP. (JP 1-02)

measure of effectiveness. A criterion used to assess changes in system behavior, capability, or operational environment that is tied to measuring the attainment of an end state, achievement of an objective, or creation of an effect. Also called MOE. (JP 1-02)

measure of performance. A criterion used to assess friendly actions that is tied to measuring task accomplishment. Also called MOP. (JP 1-02)

mensuration. The process of measurement of a feature or location on the earth to determine an absolute latitude, longitude, and elevation. For targeting applications, the errors inherent in both the source for measurement as well as the measurement processes must be understood and reported. (Approved for inclusion in JP 1-02.)

mission. 1. The task, together with the purpose, that clearly indicates the action to be taken and the reason therefore. 2. In common usage, especially when applied to lower military units, a duty assigned to an individual or unit; a task. 3. The dispatching of one or more aircraft to accomplish one particular task. (JP 1-02)

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

mission type order. 1. An order issued to a lower unit that includes the accomplishment of the total mission assigned to the higher headquarters. 2. An order to a unit to perform a mission without specifying how it is to be accomplished. (JP 1-02)

munitions effectiveness assessment. Conducted concurrently and interactively with battle damage assessment, the assessment of the military force applied in terms of the weapon 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. Munitions effectiveness assessment is primarily the responsibility of operations with required inputs and coordination from the intelligence community. Also called MEA. (JP 1-02)

node. 1. A location in a mobility system where a movement requirement is originated, processed for onward movement, or terminated. 2. In communications and computer systems, the physical

location that provides terminating, switching, and gateway access services to support information exchange. 3. An element of a system that represents a person, place, or physical thing. (JP 1-02)

no-strike list. A list of objects or entities characterized as protected from the effects of military operations under international law and/or rules of engagement. Attacking these may violate the law of armed conflict or interfere with friendly relations with indigenous personnel or governments. Also called NSL. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

objective. 1. The clearly defined, decisive, and attainable goal toward which every operation is directed. 2. The specific target of the action taken (for example, a definite terrain feature, the seizure or holding of which is essential to the commander's plan, or an enemy force or capability without regard to terrain features). See also target. (JP 1-02)

offensive counterair. Offensive operations to destroy, disrupt, or neutralize enemy aircraft, missiles, launch platforms, and their supporting structures and systems both before and after launch, but as close to their source as possible. Offensive counterair operations range throughout enemy territory and are generally conducted at the initiative of friendly forces. These operations include attack operations, suppression of enemy air defenses, fighter escort, and fighter sweep. Also called OCA. (JP 1-02)

on-call target. Planned target upon which fires or other actions are determined using deliberate targeting and triggered, when detected or located, using dynaminc targeting. See also planned target; dynamic targeting. (This term and its definition modify the existing term "on-call targets" and its definition and are approved for inclusion in JP 1-02.)

operation. 1. A military action or the carrying out of a strategic, operational, tactical, service, training, or administrative military mission. 2. The process of carrying on combat, including movement, supply, attack, defense, and maneuvers needed to gain the objectives of any battle or campaign. (JP 1-02)

operational environment. A composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. (JP 1-02)

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

physical damage assessment. The estimate of the quantitative extent of physical damage (through munitions blast, fragmentation, and/or fire damage effects) to a target resulting from the application of military force. This assessment is based upon observed or interpreted damage. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

planned target. Target that is known to exist in the operational environment, upon which actions are planned using deliberate targeting, creating effects which support commander's objectives. There are two types of planned targets: scheduled and on-call. See also deliberate targeting; scheduled target; on-call target. (This term and its definition modify the existing term "planned targets" and its definition and are approved for inclusion in JP 1-02.)

reattack recommendation. An assessment, derived from the results of battle damage assessment and munitions effectiveness assessment, providing the commander systematic advice on reattack of targets and further target selection to achieve objectives. The reattack recommendation considers objective achievement, target, and aimpoint selection, attack timing, tactics, and weapon system and munitions selection. The reattack recommendation is a combined operations and intelligence function. Also called RR. (JP 1-02)

restricted target. A valid target that has specific restrictions placed on the actions authorized against it due to operational considerations. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

restricted target list. A list of restricted targets nominated by elements of the joint force and approved by the joint force commander. This list also includes restricted targets directed by higher authorities. Also called RTL. (JP 1-02)

rules of engagement. Directives issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered. Also called ROE. (JP 1-02)

scheduled target. Planned target upon which fires or other actions are scheduled for prosecution at a specified time. See also planned target, deliberate targeting. (This term and its definition modify the existing term "scheduled targets" and its definition and are approved for inclusion in JP 1-02.)

special operations. Operations conducted in hostile, denied, or politically sensitive environments to achieve military, diplomatic, informational, and/or economic objectives employing military capabilities for which there is no broad conventional force requirement. These operations often require covert, clandestine, or low visibility capabilities. Special operations are applicable across the range of military operations. They can be conducted independently or in conjunction with operations of conventional forces or other government agencies and may include operations through, with, or by indigenous or surrogate forces. Special operations differ from conventional operations in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets. Also called SO. (JP 1-02)

system. A functionally, physically, and/or behaviorally related group of regularly interacting or interdependent elements; that group of elements forming a unified whole. (JP 1-02)

tactics. The employment and ordered arrangement of forces in relation to each other. (JP 1-02)

target. 1. An entity or object considered for possible engagement or other action. 2. In intelligence usage, a country, area, installation, agency, or person against which intelligence operations are directed. 3. An area designated and numbered for future firing. 4. In gunfire support usage, an impact burst that hits the target. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

target acquisition. The detection, identification, and location of a target in sufficient detail to permit the effective employment of weapons. Also called TA. See also target analysis. (JP 1-02)

target analysis. An examination of potential targets to determine military importance, priority of attack, and weapons required to obtain a desired level of damage or casualties. See also target acquisition. (JP 1-02)

target complex. A geographically integrated series of target concentrations. See also target. (JP 1-02)

target component. A set of targets within a target system performing a similar function. (JP 1-02)

target concentration. A grouping of geographically proximate targets. See also target; target complex. (JP 1-02)

target critical damage point. The part of a target component that is most vital. Also called critical node. See also target; target component. (JP 1-02)

target development. The systematic examination of potential target systems — and their components, individual targets, and even elements of targets — to determine the necessary type and duration of the action that must be exerted on each target to create an effect that is consistent with the commander's specific objectives. (Approved for inclusion in JP 1-02.)

target folder. A folder, hard copy or electronic, containing target intelligence and related materials prepared for planning and executing action against specific target. See also target. (JP 1-02)

targeting. The process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities. (JP 1-02)

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

target intelligence. Intelligence that portrays and locates the components of a target or target complex and indicates its vulnerability and relative importance. (JP 1-02)

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

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. Target materials are suitable for training, planning, executing, and evaluating military operations. (JP 1-02)

target nomination list. A target-consolidated list of targets made up of the multiple candidate target lists. A prioritized list of targets drawn from the joint target list and nominated by component commanders, appropriate agencies, or the joint force commander's staff for inclusion on the joint integrated prioritized target list. Also called TNL. See also candidate target list, joint integrated

prioritized target list. (This term and its definition modify the existing term and definition and are approved for inclusion in JP 1-02.)

target of opportunity. (1) A target identified too late, or not selected for action in time, to be included in deliberate targeting that, when detected or located, meets criteria specific to achieving objectives and is processed using dynamic targeting. There are two types of targets of opportunity: unplanned and unanticipated. (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. See also dynamic targeting, unplanned target, unanticipated target. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

target priority. A grouping of targets with the indicated sequence of attack. (JP 1-02)

target signature. 1. The characteristic pattern of a target displayed by detection and identification equipment. 2. In naval mine warfare, the variation in the influence field produced by the passage of a ship or sweep. (JP 1-02)

target stress point. The weakest point (most vulnerable to damage) on the critical damage point. Also called vulnerable node. See also target critical damage point. (JP 1-02)

target system. 1. All the targets situated in a particular geographic area and functionally related. 2. A group of targets that are so related that their destruction will produce some particular effect desired by the attacker. See also target complex. (JP 1-02)

target system analysis. An all-source examination of potential target systems to determine relevance to stated objectives, military importance, and priority of attack. It is an open-ended analytic process produced through the intelligence production process using national and theater validated requirements as a foundation. Also called TSA. (Approved for inclusion in JP 1-02.)

target system assessment. The broad assessment of the overall impact and effectiveness of the full spectrum of military force applied against the operation of an enemy target system or total combat effectiveness (including significant subdivisions of the system) relative to the operational objectives established. (JP 1-02)

target system component. A set of targets belonging to one or more groups of industries and basic utilities required to produce component parts of an end product, or one type of a series of interrelated commodities. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

time-sensitive target. A joint force commander designated target 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. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

unanticipated target. A target of opportunity that was unknown or not expected to exist in the operational environment. See also target of opportunity. (This term and its definition modify the existing term "unanticipated immediate targets" and its definition and are approved for inclusion in JP 1-02.)

unplanned target. A target of opportunity that is known to exist in the operational environment. See also target of opportunity. (This term and its definition modify the existing term "unplanned immediate targets" and its definition, and are approved for inclusion in JP 1-02.)

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. 2. A part of target development that ensures all vetted targets meet the objectives and criteria outlined in the commander's guidance and ensures compliance with the law of armed conflict and rules of engagement. 3. In computer modeling and simulation, the process of determining the degree to which a model or simulation is an accurate representation of the real world from the perspective of the intended uses of the model or simulation. 4. Execution procedure used by combatant command components, supporting combatant commanders, and providing organizations to confirm to the supported commander and US Transportation Command that all the information records in a time-phased force and deployment data not only are error free for automation purposes, but also accurately reflect the current status, attributes, and availability of units and requirements. Unit readiness, movement dates, passengers, and cargo details should be confirmed with the unit before validation occurs. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

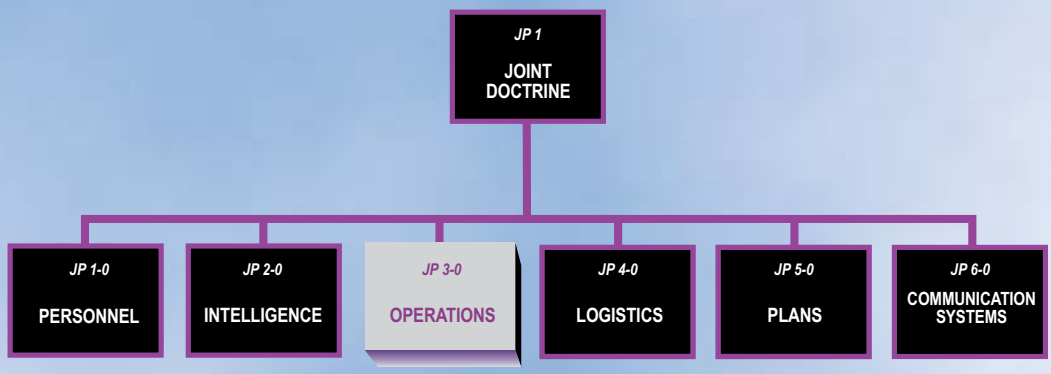
vetting. A part of target development that assesses the accuracy of the supporting intelligence to targeting. (Approved for inclusion in JP 1-02.)

vulnerability. 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. 2. The characteristics of a system that cause it to suffer a definite degradation (incapability to perform the designated mission) as a result of having been subjected to a certain level of effects in an unnatural (man-made) hostile environment. 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. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

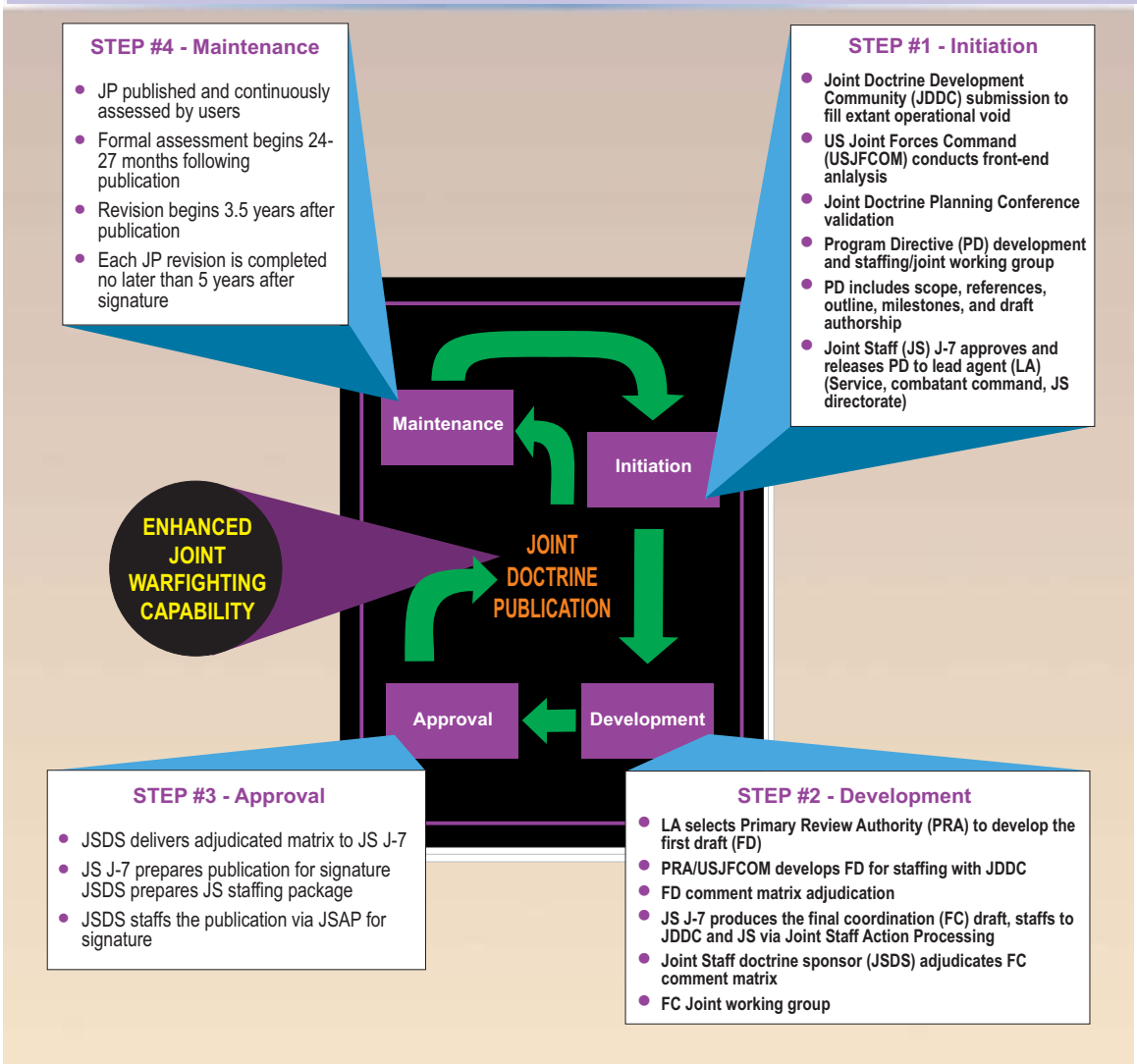
weaponeering. The process of determining the quantity of a specific type of lethal or nonlethal weapons required to achieve a specific level of damage to a given target, considering target vulnerability, weapons characteristics and effects, and delivery parameters. (This term and its definition modify the existing term and its definition and are approved for inclusion in JP 1-02.)

Intentionally Blank

JOINT DOCTRINE PUBLICATIONS HIERARCHY



All joint publications are organized into a comprehensive hierarchy as shown in the chart above. **Joint Publication (JP) 3-60** is in the **Operations** series of joint doctrine publications. The diagram below illustrates an overview of the development process:




JOINT
CHIEFS OF STAFF