



**MCTP 3-31B**

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# **Marine Air-Ground Task Force Targeting**

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**U.S. Marine Corps**

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FOREWORD

Marine Corps Tactical Publication (MCTP) 3-31B, *Marine Air-Ground Task Force Targeting*, provides the doctrinal basis for planning, conducting, and assessing targeting activities in support of Marine air-ground task force operations, with focus on the Marine Expeditionary Force (MEF). Applicable to all Fleet Marine Force echelons, it addresses targeting considerations for activities across the competition continuum and provides MEF specific guidance for other targeting methodologies.

Marines of all occupational fields can use this publication as a foundation to develop their unit's targeting process or modify an existing targeting process in support of the commander's decision-making cycle.

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# CHAPTER 1

## MAGTF TARGETING

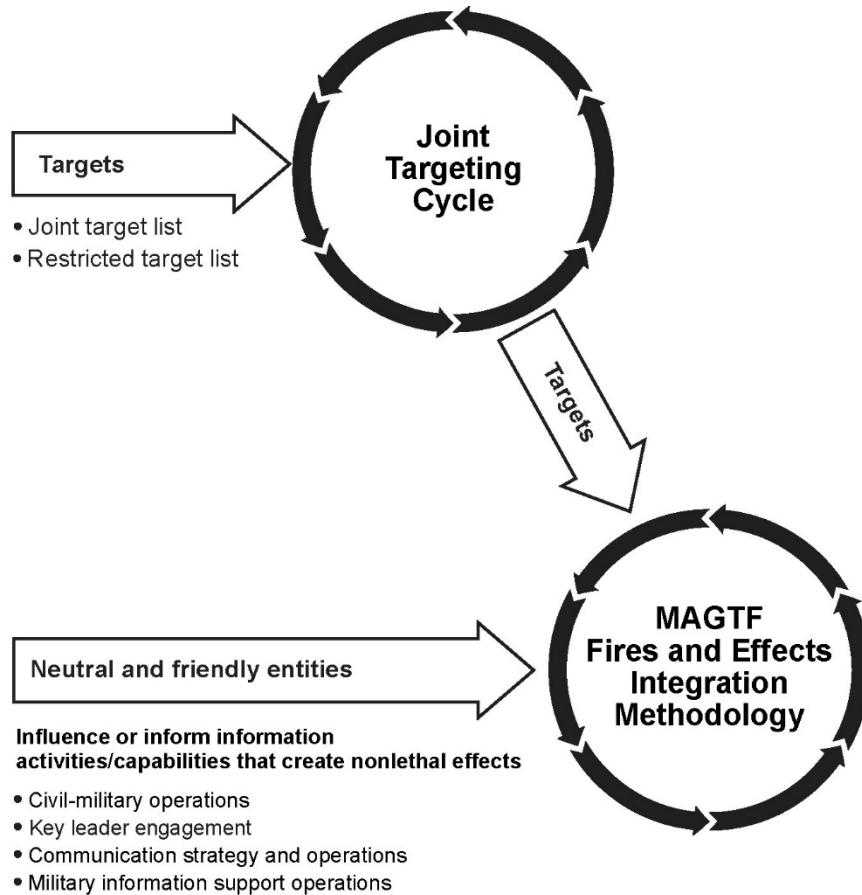
Marine air-ground task force (MAGTF) fires and effects is the coordinated and collective employment of fires, information capabilities, and systems to create desired effects throughout the battlespace to achieve objectives. Under the single battle concept, MAGTF fires and effects are coordinated with maneuver during operations to shape the battlespace, setting conditions for decisive action and successful mission execution. Commanders employ fires while considering the requirements and costs to project and sustain the units that produce desired effects. Targeting is one of the primary functions within fires to coordinate these activities.

Targeting is, “the process of selecting and prioritizing targets and matching the appropriate response to them, considering operational requirements and capabilities” (*DoD Dictionary of Military and Associated Terms*, hereafter referred to as the *DoD Dictionary*). Targeting professionals assist the commander in achieving their objectives through identifying entities that, if their function is affected, enhance the ability of the commander to create their desired effects. There are many methodologies available to a targeting professional, with the most appropriate one dependent on the domain, environment, phase of operation, and element of the competition continuum. This publication provides best practices, additional context to doctrine, and examples that enable targeting professionals to efficiently plan, execute, and assess the commander’s targeting guidance. Additionally, it includes valuable supporting references that aid in the execution of MAGTF targeting activities.

This publication focuses on the conduct of the MAGTF fires and effects integration methodology, also known as the MAGTF targeting cycle, at the Marine expeditionary force (MEF) fires and effects coordination center (FECC). It provides a detailed analysis of the best practices for each phase of the methodology including injects, activities, and outputs that staff members provide during the conduct of the commander’s targeting process. This targeting methodology uses a six-phase targeting-cycle construct, like the joint targeting cycle (JTC), with an emphasis on including information capabilities and entity types (i.e., friendly, neutral) to ensure a holistic approach to targeting and ultimately the execution of fires. By incorporating these additional details, MAGTF targeting professionals enhance their capability to create the desired effects on the applicable enemy or adversary system. For more information on the JTC, see Joint Publication (JP) 3-60, *Joint Targeting*.

Engagement processes and tactics, techniques, and procedures (TTP) differ depending on the type of entity. Military forces employ targeting TTP to engage targets and achieve joint force commander (JFC) objectives. Targeting TTP do not apply to entities not classified as targets. Military forces may interact with or engage these neutral and friendly entities using select information activities and capabilities to create desired nonlethal effects. The MAGTF targeting cycle provides a single, holistic approach to integrate and synchronize fires and information capabilities, creating desired effects throughout the battlespace (see Marine Corps Warfighting Publication [MCWP] 3-31, *Marine Air-Ground Task Force Fires and Effects*). Targeting is one part of this methodology, while processes to engage neutral and friendly entities, creating desired

nonlethal effects, is the other part. This publication focuses on targeting. Figure 1-1 shows the relationship between the JTC and the MAGTF targeting cycle.



**Figure 1-1. Target and Neutral and Friendly Entity Relationship.**

## TARGETING OVERVIEW

Targeting is a process that allows targeting professionals to logically and efficiently use limited time, space, and resources to achieve the commander's objectives. Per JP 3-60, the principles of targeting are objectives-based, effects-based, interdisciplinary, and systematic. These principles are the foundation for the MAGTF targeting cycle.

- **Objectives-Based.** The JFC sets the parameters of target engagement through approved plans and orders, operational limitations within those plans and orders, rules of engagement (ROE), the law of war, and applicable international agreements. Every target engagement is linked to the JFC's operational objectives that link and lead to achieving the strategic objectives.
- **Effects-Based.** The art of targeting seeks to create desired effects while balancing risk against the expenditure of time and resources. To contribute to achieving the JFC's objectives, targeting is concerned with creating specific effects through target

engagement. It considers all possible means to create desired effects and attempts to determine the risk of potential desired effects.

- **Interdisciplinary.** Joint targeting is a command function that requires the participation of many disciplines. It entails participation from all JFC's staff elements; component commanders' staffs; and other agencies, departments, organizations, and multinational partners.
- **Systematic.** The MAGTF targeting cycle is a rational and iterative process that methodically analyzes, prioritizes, and assigns assets against targets.

The commander's targeting process is driven by identifying entities and capabilities whose engagement or effectuation create the commander's desired effects (effects-based planning). The ability to create the desired effects requires the effective integration of all stakeholders within the staff (higher, adjacent, and subordinate), interagency, interorganizational, and partners and allies. This highly inclusive integration ensures a robust pool of resources, methods, and means are available to create desired effects. This process is also iterative in that targeting professionals must methodically plan which entity and capability pairing will create the desired effects. Entities may be in different phases of development, capabilities pairing, mission planning, execution, and assessments, so it is critical for the staff, and most importantly the commander, to understand why each entity is at that point in development to ensure risk is properly identified and managed to inform decisions.

Targeting is separated into two main categories—deliberate and dynamic. The main difference between the categories are nature and timeframe. Nature refers to the basic or inherent features of something, especially when seen as a characteristic of it. Timeframe refers to the amount of time the staff has identified to effectively address the target. Each target category is associated with a different grouping of targets, “planned targets” or “targets of opportunity,” respectively. Neither is indicative of the target to be engaged but is aligned with the planning phase in which the target is identified and engaged. Timing is the primary factor that determines whether deliberate or dynamic targeting will support the commander's targeting requirements. In short, deliberate targeting focuses on the future battle with a time horizon of days or weeks out, while dynamic targeting focuses on the near and current battle with a time horizon of hours. Two types of targets are associated with each category.

### **Deliberate Targeting**

Deliberate targeting produces planned targets (i.e., scheduled targets, on-call targets), which are targets known to exist in the operational environment with engagement actions scheduled against them. Except for unanticipated targets, all targets should flow from deliberate targeting.

Deliberate targeting supports the commander's planning processes. Deliberate targeting results in targets being properly vetted and validated and being placed on the proper joint target list (JTL) or restricted target list (RTL). During execution of an operation order (OPORD), deliberate targeting supports execution planning. For information on the global integrated target list (GITL), see JP 3-60.

***Scheduled Targets.*** A scheduled target is a “planned target upon which fires or other actions are scheduled for prosecution at a specified time” (*DoD Dictionary*).

**On-Call Targets.** An on-call target is a “planned target upon which fires are determined using deliberate targeting and triggered, when detected or located, using dynamic targeting” (*DoD Dictionary*). 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 is usually conducted using dynamic targeting.

### **Dynamic Targeting**

Dynamic targeting is “targeting that prosecutes targets identified too late or not selected for action in time to be included in deliberate targeting” (*DoD Dictionary*). These include targets of opportunity that meet criteria to achieve objectives during the current operations planning and execution period. Targets of opportunity (i.e., unscheduled target, unanticipated target) require more immediate responsiveness that is best served by current operations (COPS). Dynamic targeting is usually employed in COPS planning because the nature and timeframe associated with COPS typically requires more immediate responsiveness than is achieved in deliberate targeting.

**Unscheduled Targets.** An unscheduled target is “a target of opportunity that is known to exist in the operational environment” (*DoD Dictionary*). They are included on either the JTL or RTL. They were neither nominated nor approved for inclusion on the joint integrated prioritized target list (JIPTL), nor were they available for engagement within the current targeting cycle. However, changes to the target status, based upon priority, access, or permissions, could result in the need or opportunity to engage the target during the current cycle.

**Unanticipated Targets.** An unanticipated target is “a target of opportunity that was unknown or not expected to exist in the operational environment” (*DoD Dictionary*). These entities are not included on a JTL or RTL, and an evaluation of the candidate target is needed to determine engagement requirements and timing. In some cases, the candidate target requires engagement in the current targeting cycle and require the use of dynamic targeting. In other cases, the candidate target is identified, developed, and validated for inclusion on the JTL or RTL.

### **Deliberate and Dynamic Targets**

Both deliberate and dynamic targets are developed and subjected to legal analysis to ensure an accurate functional characterization, as well as alignment with military objectives. Because of the compressed timeline associated with dynamic targeting, development may require expeditious staff work. The same general standards for target intelligence diligence and rigor apply. However, targets engaged through dynamic targeting might not be characterized to the same level of detail before execution as compared to the deliberate targeting process. Therefore, a target is considered fully developed when sufficient target intelligence exists to support the operational and legal requirements to execute operations against it (see Chapter 3 for additional information on target development requirements).

## **TARGETS**

A target is “an entity that performs a function for the adversary or enemy considered for possible engagement” (*DoD Dictionary*). It is selected from entities that are identified via the intelligence process. See MCWP 2-10, *Intelligence Operations*, for more information on the intelligence

process. These targets are further defined by assigning them to a type, characteristic, criticality, and time standard. Entity types include facilities, individuals, virtual, equipment, and organizations, also known as FIVE-O. Each entity also has characteristics that must be considered when aligning them with the commander’s objectives and the desired effect. These characteristics include physical, functional, cognitive and control, environmental, and temporal. Targets are validated by a designated target validation authority and listed on a JRL, RTL or GITL. Table 1-1 provides a basic list of these characteristics. To better understand target characteristics, refer to JP 3-60.

**Table 1-1. Target Characteristics.**

<b>Physical</b>	<b>Functional</b>	<b>Cognitive, Control, and Informational</b>	<b>Operational Environment</b>	<b>Temporal</b>
Location	Target use	How the target thinks?	Atmospheric or exoatmospheric conditions	Time of appearance
Shape	Target status	Target ability and capacity to process, store, and protect information	Geography and terrain features	Dwell time
Size or area covered	Degree, proportion, or percentage of functionality	Target decision process to include span of control	Denial and deception measures	Time to target functionality
Appearance and possible concealment	Materials the target requires to perform its function(s)	Inputs the target requires to perform its function(s)	Physical relationships	Identifiable time
Number and nature of entities	Functional redundancy	Process outputs resulting from target functions	Dependencies	Cyclic nature of activity on the reduction of collateral damage
Dispersion or concentration of entities	Ability to reconstitute or recuperate the target or its functions	Target patterns and signatures	Special or unique environments	Predicted time to target
Reflectivity	Self-defense capability	Cultural considerations		
Structural composition and degree of hardening	Target importance within the strategic structure	Redundancy of control functions		
Cyberspace-related equipment and facilities	Nature or necessity of relationships	Social and economic considerations		
Electro-mechanical features	Target vulnerabilities			
Electromagnetic signatures	Target capabilities			
Mobility characteristics (i.e. fixed, transportable, mobile)				

The different categories of targets include a high-value target (HVT), high-payoff target (HPT), high-value individual, component critical target, time sensitive target, and sensitive target.

## **High-Value Target and High-Payoff Target**

Targets are categorized by importance to the enemy or friendly commander by designating HVT and HPT, respectively. A HVT is “a target the enemy requires for the successful completion of the mission” (*DoD Dictionary*). A HPT is “a target whose loss to the enemy will significantly contribute to the success of the friendly course of action” (*DoD Dictionary*). Target identification and selection is a whole-of-staff effort. During steps 3 and 4 of intelligence preparation of the battlespace (IPB), the intelligence section identifies and provides a list of HVTs in the area of operation, area of interest, and area of influence that are associated with each adversary or enemy capability or course of action (COA). Not all HVTs are essential to achieving the commander’s objectives or desired effects. Therefore, the targeting working group uses target-value analysis to analyze the list of HVTs and identify HPTs. These HPTs are consolidated and prioritized on an HPT list and submitted to the commander for approval. The HPT list informs the construction of other products like target selection standards and the attack guidance matrix (AGM). See Marine Corps Reference Publication (MCRP) 2-10B.1, *Intelligence Preparation of the Battlespace*, for more information about target-value analysis. See Chapter 2 for additional discussions on target selection standards and the AGM.

## **High-Value Individual**

A high-value individual is a person of interest who is identified, surveilled, tracked, influenced, or engaged. They are the decision makers or action officers within the enemy’s order of battle and, if affected, will degrade the enemy’s or adversary’s ability to accomplish its objectives. A high-value individual can become a HPT that must be acquired and successfully engaged for the success of the friendly commander’s mission. There is a targeting methodology that assists in the engagement of high-value individuals called find, fix, finish, exploit, analyze, and disseminate. Find, fix, finish, exploit, analyze, and disseminate is the primary means for engaging high-value individuals. See JP 3-26, *Joint Combatting Terrorism*, for additional information on the find, fix, finish, exploit, analyze, and disseminate dynamic targeting methodology.

## **Component Critical and Time-Sensitive Target**

Prioritizing certain HPTs over others may be necessary to the commander’s assessed mission criticality. These include component critical targets, time-sensitive targets (TSTs), and sensitive targets. Component critical targets and TSTs are often linked. A component critical target is an HPT designated critical by a component commander that requires time-sensitive treatment and is vital to schemes of maneuver or immediately threatens forces. A TST is a JFC-validated target or set of targets requiring immediate response because it is a highly lucrative, fleeting, target of opportunity, or it poses or will soon pose a danger to friendly forces. The component may nominate the component critical target as a TST to the JFC; however, if the target is not approved as a TST by the JFC, the component critical target will stay within the component’s prioritized list. The staff will develop specific TST guidance and a TST cell might be created to manage these targets in the COPS section. For additional information on how to conduct component critical target and TST nomination, see MCRP 3-31.5, *Multi-service Tactics Techniques and Procedures for Dynamic Targeting*.

## **Sensitive Target**

A sensitive target refers to those targets for which planned actions warrant President of the United States or Secretary of Defense (tier 0 echelon) review and approval. Some targets that fall into this category include those with the high probability of collateral damage and effects or that

can cause adverse political or diplomatic ramifications, environmental harm or hazard, or adverse public sentiment. The combatant commander (CCDR) (tier 1 echelon) coordinates with the tier 0 echelon to review criteria and approve sensitive targets. The criteria follow the Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3122.06, *Sensitive Target Approval and Review Process* (Secret).

## **Relevant Actors**

A relevant actor is an “individual, group, population, or automated system whose capabilities or behaviors have the potential to affect the success of a particular campaign, operation, or tactical action” (*DoD Dictionary*). Relevant actors can be categorized as target audiences, audiences, or targets depending on their relationship to other entities in the operational environment and the means with which the force will interact with them. Relevant actors can include enemy, adversary, neutral, and friendly entities. A target audience is “an individual or group selected for influence” (*DoD Dictionary*). A target audience can be an enemy, adversary, neutral, or friendly entity. Influence is to affect perceptions, attitudes, decisions, and other drivers of relevant actor behavior in support of commander’s objectives. Audiences are a broadly defined group that contains stakeholders and publics relevant to military operations. Audiences are not targets and do not directly perform a function for enemy or adversary entities. Target audiences can be validated as targets and added to a JTL or RTL. Relevant actors are important because the targeting end state is creating desired effects and achieving the commander’s objectives. Depending on the capability types employed and the first, second, and third-order effects created, relevant actors might react in a favorable, neutral, or threatening manner. Targeting professionals must always account for relevant actors and the human dimension when planning. See JP 3-04, *Information in Joint Operations*, and MCWP 8-10, *Information in Marine Corps Operations*, for more information.

## **TARGETING METHODOLOGIES**

For each command echelon and level of warfare that operations are being planned, there is a targeting methodology that has been developed, proven, and used. Targeting professionals in the MAGTF must understand the methodologies as they interact and coordinate with other agencies who use them for their targeting needs. The primary methodologies referenced in this publication are the JTC, MAGTF fires and effects integration methodology, and the decide, detect, deliver, and assess (D3A) methodology.

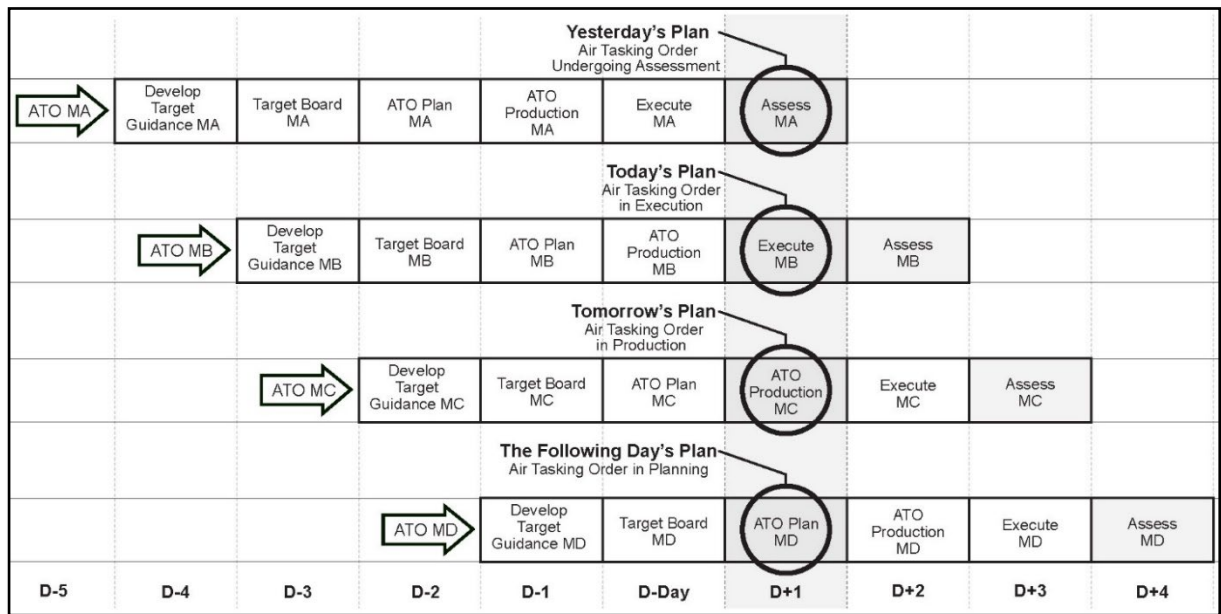
The JTC and the MAGTF fires and effects integration methodology are both deliberate, six-phased, iterative processes that are neither time-constrained nor rigidly sequential. As these methodologies are more deliberate in nature, the staff resourcing requirements are higher. Six-phased targeting methodologies are employed by:

- US joint forces (JTC).
- Multi-national forces.
- Functional and Service components.
- US Air Force (air targeting cycle)
- US Navy (maritime targeting cycle)
- Fleet Marine Forces at the MEF and MAGTF command echelons.

For more information on US Air Force and US Navy targeting see Air Force Doctrine Publication 3-60, *Targeting*, and Navy Warfare Publication 3-10, *Maritime Targeting*, respectively.

The D3A methodology is a land and maritime component tactical-level targeting methodology often employed by the US Army and US Marine Corps from division through battalion. Through the different phases of D3A, the commander and staff identify HPTs, acquire targets, engage those targets, and assess if the tactical actions produced the desired effects. It is discussed further in Appendix A.

Even though the air tasking cycle is not a targeting methodology, it is integrated with targeting cycles and methodologies to efficiently and effectively employ available MAGTF and joint air assets. The six-phased air tasking cycle employs a systematic process to match aircraft against targets to achieve operational objectives. The air tasking cycle promotes flexibility and versatility with a series of air tasking orders (ATOs) and related products. Figure 1-3 is a MAGTF ATO example.



**Figure 1-3. Example of MAGTF Air Tasking Order.**

Other capabilities might have their own process (e.g., military deception planning process) that resembles a targeting cycle and should be considered when conducting planning and targeting. Some combatant commands use an integrated tasking order which compiles air, space, and cyberspace tasking and might also include other component targeting actions. The integrated tasking order is an order promulgated by a JFC that integrates effects using fires from all domains throughout the operational area. It does not change command and control authorities; rather, it enables integration, coordination, synchronization, and deconfliction across domains and between supporting components and combatant commands during execution. For more information on integrated tasking orders, see JP 3-30, *Joint Air Operations*. The ATO is discussed further in Appendix B.

## EFFECTS

Using effects in planning helps commanders determine the tasks required to achieve their objectives. In the MAGTF targeting cycle context, effects are condition related and describe desired changes in relevant actor entities and systems, or battlespace conditions that support achieving an objective. A desired effect is a condition that supports achieving an associated objective. The targeting activities end state is the desired effect on the function that a target performs for the enemy or adversary. An undesired effect is a condition that inhibits progress toward an objective. During planning, the commander's guidance identifies effects that must be created or avoided to achieve their objectives. Targeting professionals are guided by the commander's objectives, which feed into targeting guidance and intent. Targeting products must remain focused on the required target effect throughout the process. Effects are discussed further in Appendix C.

The *DoD Dictionary* has three separate, but related, definitions for effect:

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

In the targeting context, effects are the cumulative lethal and nonlethal results of target engagements. Commanders focus on choosing appropriate actions to create desired effects on selected targets. Military forces execute actions that result in lethal or nonlethal effects.

Targeting professionals consider effects during target cycle phases 1, 2, 3, and 6. As part of the objective-to-task approach, planners develop effects statements describing desired change(s) to targets or battlespace conditions that support achieving targeting objectives. Desired and undesired effects should be clearly communicated to ensure desired effects are created and undesired effects avoided.

## EFFECTS BASED PLANNING VERSUS CAPABILITIES BASED PLANNING

Targeting is not based upon a specific capability, rather how to create the desired effects efficiently and effectively on the function that a target performs for the enemy or adversary. Throughout the targeting process, the targeting professional conducts holistic analysis with the staff to best understand how to create the desired effects. The targeting professional must consider:

- Commander's desired effects.
- Authorities.
- ROE.
- Law of armed conflict (LOAC).
- Phase of the competition continuum.
- Political state in the area of operation.
- Area of interest.

- Area of influence.
- Partner and allies' interests.
- Interagency and joint supporting activities.

Some of these variables automatically rule out certain capabilities, which is why targeting professionals must adhere to effects-based planning and capabilities agnostic.

## **SYSTEMS THINKING**

A system is made up of three things—nodes, links, and a function. Targeting professionals need to look at target systems, not just targets. Otherwise, the targeting professional limits their scope of what targets can create the commander's desired effects. For example, a space system has three segments. The satellite vehicle is not the only possible target within the system. The targeting professional must look at the system as a whole and identify multiple ways to create the same effect. If the desired effect is to deny satellite communications, the targeting professional could target the satellite vehicle (with significant amount of collateral damage and effects concerns); the uplink and downlink (with time being the limitation); or the ground station that controls the system (with cross-combatant command coordination considerations). The example's purpose is to broaden the targeting professional's scope beyond the target's singular and linear path to consider the interconnectivity of the system. See Appendix D for more on systems thinking.

## COMPETITION CONTINUUM

Targeting is not just a wartime function and must continuously be exercised throughout the competition continuum. Competition is a constant state with adversaries and enemies as they use their national power instruments to gain a strategic advantage. Targeting professionals must look beyond armed conflict and identify ways to achieve the commander's objectives throughout the competition continuum. During cooperation and adversarial competition, targeting professionals can create the commander's desired effects through both lethal and nonlethal means. Targeting professionals must also plan for armed conflict or war as environmental friction escalates. This is illustrated in the 31<sup>st</sup> Commandant's 3-Block War concept of fighting the enemy on one block, conducting security operations one block over, and on the next block, handing out humanitarian supplies to friendlies and neutrals. Targeting professionals must view the environment through multiple lenses with the goal of achieving the commander's desired end state. Joint Publication 3-0, *Joint Operations*, provides an outline of the competition continuum. See Appendix E for more detail on information integration.

## TARGETING ROLES AND RESPONSIBILITIES

Throughout the targeting process the entire staff strives to facilitate integration. Targeting professionals guide the process as approved by the commander, and the staff uses the process to most efficiently and effectively achieve the commander's objectives. Every staff member uses the targeting process, including planning and orders development, accountability, capability, logistics to move personnel and equipment around the battlespace, and communication means between sensors and shooters.

Key targeting team members are part of the commander's coordinating and special staff. They perform the targeting process as part of their responsibilities within the Marine Corps Planning Process (MCP). From initial estimates and analysis to the supervision and execution of the plan, the staff continuously revises and updates estimates. The planning process formality depends on the time available and the command level. The commander is responsible for the targeting effort. The intelligence, operations, plans, and fires personnel form the targeting team core at each level. Usually, the chief of staff (COS) or designated representative conducts routine activity oversight and targeting process coordination. The FECC is the principal MAGTF agency responsible for coordinating the overall planning, integration, direction, and assessment

Targeting is enhanced by the commander organizing the primary operations, intelligence, plans, and fires advisors into a targeting team. An inclusive and robust targeting team is essential to ensure a thorough understanding of the targeting capabilities and limitations available to the commander.

Typically, the core team is comprised of representatives from:

- G/S-2 intelligence sections.
- G/S-2T target intelligence section.
- G/S-3 operations sections.
- Fires element. Name dependent on echelon (e.g., FECC for a MEF).
- G/S-39 information.

- G/S-5 plans sections.
- Air officer.
- Staff judge advocate (SJA).

Additional required personnel include:

- Marine liaison element.
- Navy liaison/maritime operations center representative.
- Air defense representative.
- Subordinate and adjacent headquarters fires elements.
- Higher headquarters (HHQ) representative, when required.
- Joint, interagency, interorganizational, multinational liaisons.
- Administrative personnel.
- Logistics personnel.

The targeting team's primary responsibilities include:

- Integrating into and informing the commander's battle rhythm.
- Assisting in synchronizing operations.
- Conducting targeting through the approved methodology.
- Identifying targeting limitations and authorities.
- Identifying all weaponeering solutions to create the commander's desired effects.

The targeting effort is continuous at all command levels. Continuity through all echelons is achieved through parallel planning by targeting teams from MEF to battalion. Targeting team members must be familiar with their roles and the roles of the other team members. That familiarity can only be gained through staff training. Listed below are some individual targeting billets that oversee the targeting process within the MAGTF.

### **Fires and Effects Coordinator**

The MAGTF fires and effects coordinator (FEC) serves as the MAGTF commander's principal advisor responsible for the overall planning, coordinating, and execution of fires and effects throughout the MAGTF battlespace. The FEC serves as the officer in charge of the MAGTF FECC. The FECC's size, scope, and organization can vary based on MAGTF type and mission requirements. The FEC is ultimately responsible for ensuring fires are produced to create effects that support the commander's objectives and the scheme of maneuver across all domains— air, land, sea, space, cyberspace, and environment – information or electromagnetic spectrum. For additional information on FEC duties, see MCWP 3-31.

### **Fires and Effects Coordination Center Chief**

The FECC chief assists the FEC in overseeing the conduct of fires. The FECC chief is ultimately responsible for ensuring that all fires command and control systems have connectivity, products are collected and integrated for all decision briefs, and subordinate sections are manned, trained, and equipped.

## **Targeting Officer**

The targeting officer holds a critical role in overseeing the MEF's deliberate targeting process. The targeting officer chairs the targeting working group and ensures the group meets the commander's decision-making requirements. This officer collaborates with various staff members, including the G/S-2, G/S-3, G/S 35 (Future Operations), G/S 39 (Information), G/S-5 and SJA, to ensure that linked working groups and boards are informed of targeting efforts and requirements. The targeting officer is responsible for coordinating and integrating targeting efforts across functional areas within the MEF.

## **Target Development Officer**

The target development officer serves as the subject matter expert (SME) on targeting and the targeting process within the MEF FECC. This officer assists in overseeing the targeting process and emphasizes monitoring entity and target development from initial identification through post-combat assessments. The target development officer has a crucial role in ensuring that targets are properly identified, characterized, and prioritized for engagement.

## **Targeting Chief**

The targeting chief works closely with the targeting officer to assist in the commander's deliberate targeting process. The targeting chief supports the targeting officer in coordinating and executing targeting efforts across the MEF. They may be responsible for specific targeting process aspects or provide additional expertise and support.

## **Current Fires Officer**

The current fires officer oversees the MEF's dynamic targeting process in the COPS section. This officer leads the coordination and execution of dynamic targeting efforts, focusing on TSTs and other rapidly emerging threats. By employing the find, fix, track, target, engage, and assess (F2T2EA) targeting methodology, the current fires officer ensures that dynamic targets are engaged in a timely and relevant manner to meet the commander's objectives and desired effects.

## **Current Fires Chief**

The current fires chief supports the current fires officer in conducting the dynamic targeting process in the COPS section. They assist in coordinating and executing dynamic targeting efforts, working closely with the current fires officer and other targeting cell members to ensure that TSTs are effectively engaged to achieve mission success.

## **G-2 Target Intelligence Section**

The G-2 target intelligence section provides a link between the FECC and intelligence for all entity development in accordance with CJCSI 3370.01, *Target Development Standards* (This publication is marked "Confidential.") The personnel also support request for information management for targeting, combat assessment, and foundational intelligence gathering.

## **Information Coordinator**

The information coordinator, also known as the information operations planner, is the link between the Marine expeditionary force information group (MIG) and the MEF FECC. The information coordinator maintains a current in-depth multi-domain understanding of the information battle to include the unfolding situation; location and status of friendly maneuver forces; location, status and availability of organic and external information capabilities and

formations; pending fragmentary orders; and the commander's mission priorities. The information coordinator nominates targets for deliberate or dynamic targeting, and coordinates the timing and tempo of externally provided information capabilities and activities applied against targets when authorized.

### **Marine Expeditionary Force Information Group Support**

Information operations that create desired effects, supporting fires and effects objectives, are coordinated through the FECC. Other information activities that enable and protect command and control of MAGTF forces include operations security, information assurance, electromagnetic protection, signature management, and Department of Defense (DoD) information network operations. These information activities fall outside FECC purview and are not typically coordinated through the FECC. The MIG and information coordination center (ICC), in coordination with the G-3 and other MAGTF agencies, are responsible for planning and coordinating information activities that enable and protect MAGTF command and control. All these activities directly affect what resources are allocated during the targeting process. The MEF FECC must constantly communicate and coordinate, via the information coordinator, with the MIG activities to synchronize the use of resources and creating effects. More information on the MIG and this relationship is found in MCWP 8-10.

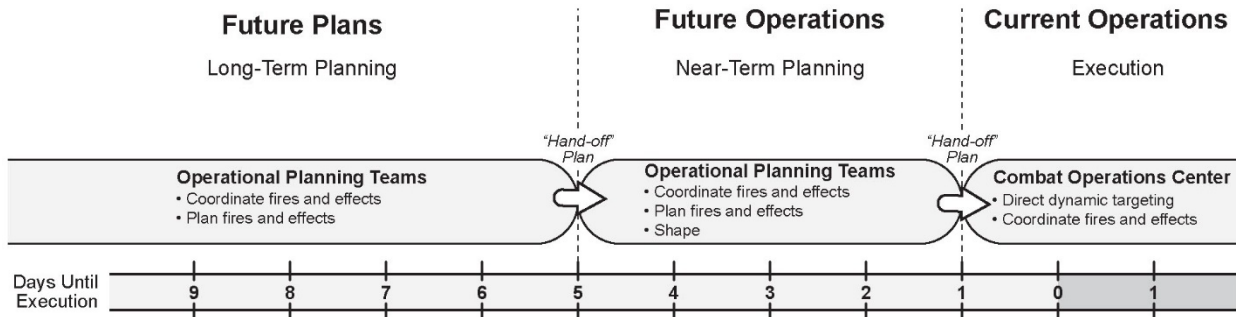
### **KILL CHAINS AND KILL WEBS**

A kill chain is the sequence of actions and flow of information from detecting a possible target through engagement and post attack assessment, to create the commander's desired effect on that target. The F2T2EA dynamic targeting process is an example of executing a kill chain. It includes the potential target acquisition, authorities, communication pathway, formats, and decision-making requirements to attack a singular target or system. While executing a kill chain, fires personnel might need to revert to a previous step or change assets, if the desired effect cannot be created. Multiple target acquisitions and engagement units, including both lethal and nonlethal, can support a single target, creating a "kill web" of possible sensor and shooter combinations. Fire support and dynamic targeting planners build kill webs and decision tools to prepare for unplanned targets that appear in the battlespace. The resilient design of a kill web provides options to complete the kill chain despite a loss or interruption of a single node or pathway, but requires more resources, planning, and coordination. During execution, fires personnel must ensure that appropriate connections are made across the kill web to complete an effective kill chain. Complex targets or systems may require synchronizing multiple target acquisitions or engagement units to create a combined arms dilemma or penetrate integrated defenses.

### **PLANNING HORIZONS**

Targeting is conducted on triggers or time in line with the rest of the planning efforts. It is essential to integrate future plans, future operations (FOPS), and COPS when conducting targeting. Future plans and FOPS work together to develop entities into targets that align with identified military objectives and approved adversaries or enemies. Current operations focus on the current fight to create desired effects on identified entities that are approved by an authorized individual. Through the deliberate targeting process and dynamic targeting execution, these

entities work over a specified timeline to execute the commander’s plan and achieve military objectives. Figure 1-5 illustrates fires and effects integration across planning horizons.



**Figure 1-5. Fires and Effects Integration Across Planning Horizons.**

# CHAPTER 2

## PHASE 1: COMMANDER'S OBJECTIVES, TARGETING GUIDANCE, AND INTENT

Phase 1 of the MAGTF targeting cycle, and most other targeting methodologies, is the most critical phase ensuring that the commander's objectives are achieved and desired effects are created. In this phase the commander outlines their objectives and intent, providing the groundwork for the staff to develop the ways and means to achieve the objectives. The staff must integrate their activities to support the commander's decision-making cycle. Integration ensures that fully developed targeting guidance and priorities are developed and identified for follow-on action.

### COMMANDERS DECISION-MAKING CYCLE

The commander's decision-making cycle is a guide to develop a holistic targeting process. Figure 2-1 is an example of a commander's decision-making cycle outlining the commander's process to ensure the staff understands the intent. The commander uses a battle-rhythm consisting of various TTP to move efficiently through the cycle. This battle-rhythm includes boards, centers, cells, and working groups, to synchronize with higher echelons. The battle rhythm might need to be elongated or condensed depending on the commander's information requirements, or because of the operation phase, competition continuum, or an emergent crisis. The commander continuously moves through the decision-making cycle as the targeting process progresses, and the staff must ensure they provide accurate and timely assessments and information to the commander as needed.

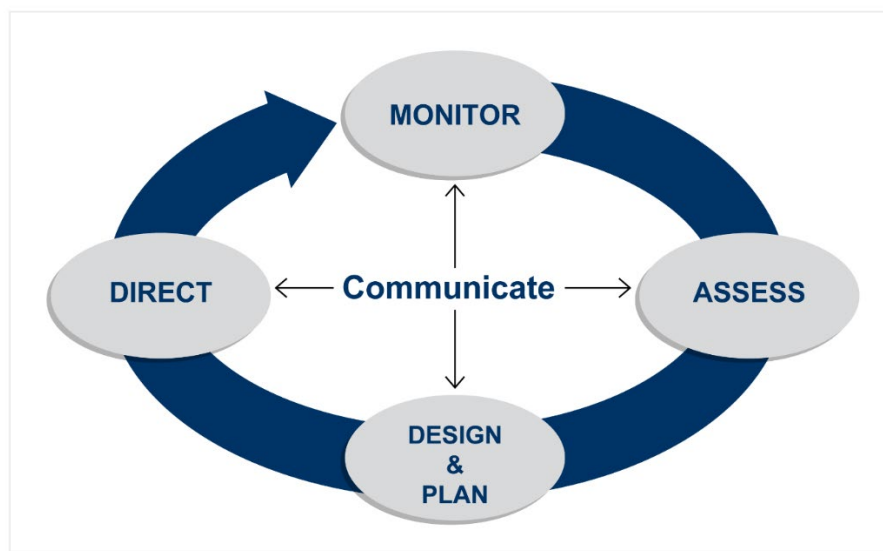


Figure 2-1. Commander's Decision-Making Cycle.

## COMMANDER'S OBJECTIVES, TARGETING GUIDANCE, AND INTENT

The mechanism that drives each phase of the targeting cycle is divided into inputs (i.e., injects), activities, and outputs. Information injects are provided to or sourced by the staff, who then execute activities that produce outputs. These outputs are the basis by which the targeting process enters the next phase. Phase 1 information injects are sourced from the commander and three staff functions, intelligence, operations, and plans. The injects, activities, and outputs of phase 1 enable the follow-on phases of the targeting methodology. Figure 2-2 displays phase 1 injects, activities, and outputs.

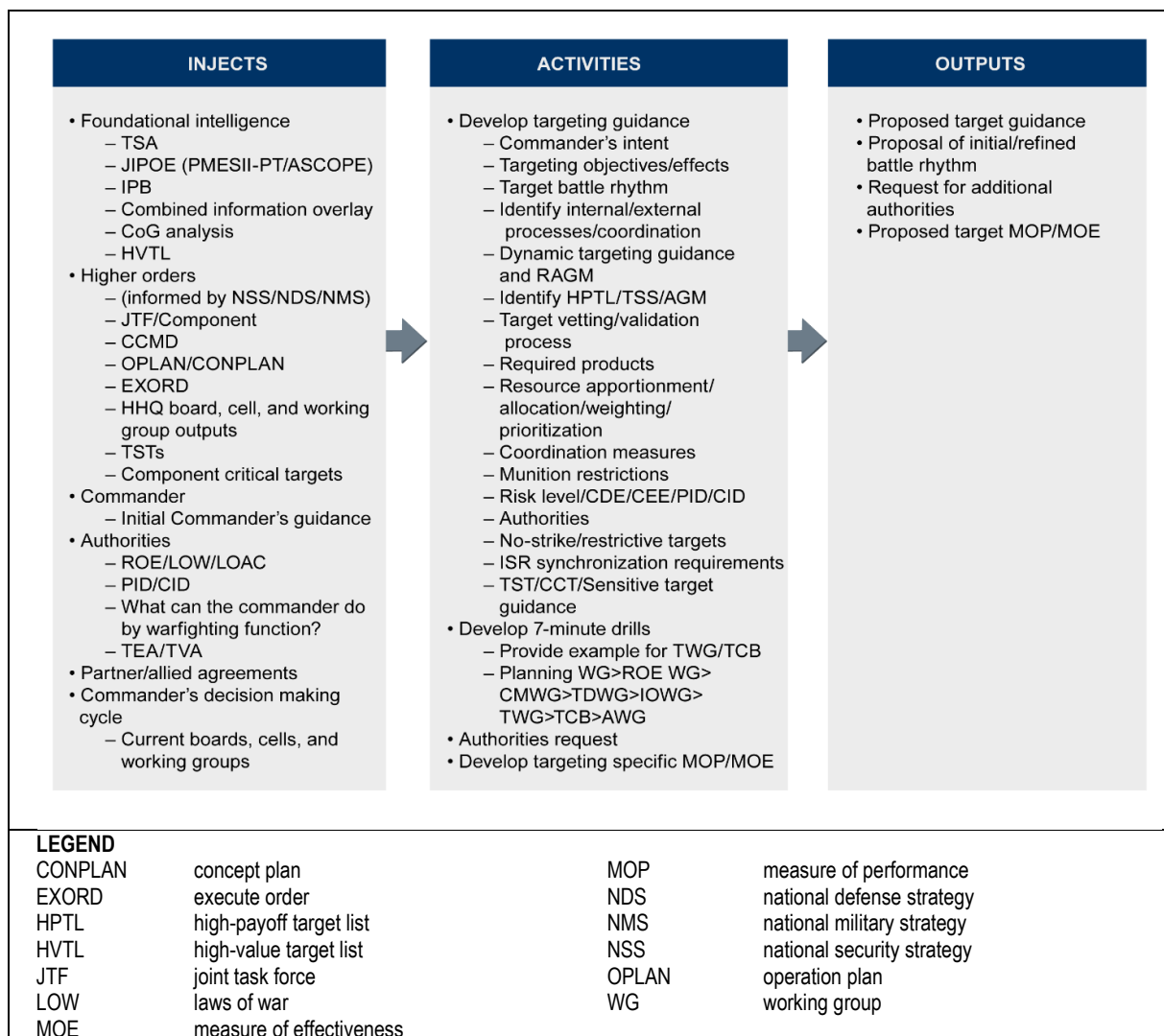


Figure 2-2. Phase 1 Injects, Activities, and Outputs.

## **INJECTS**

Converting injects into useable outputs in a timely manner is both an art and a science. It requires knowledge of what the product is, which staff section is usually responsible for providing the product, what repository usually holds the product, and how to incorporate the product into the appropriate activity to produce an output. Many phase 1 injects are also used in follow-on phases. The following paragraphs provide general guidance on common phase 1 injects.

### **Orders and Directives**

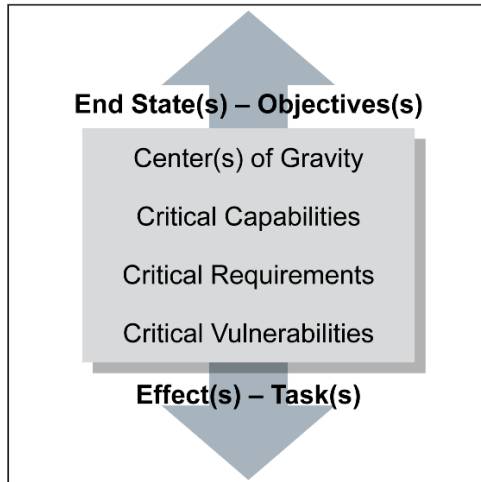
Orders are the basis of all targeting because orders provide objectives that allow targeting professionals to operationally align targets and ensure legal authorization for engagement. The staff can receive various types of order from different chain of command levels. The National Security Strategy, National Defense Strategy, and National Military Strategy provide strategic level policy and guiding framework for all military operations. See JP 5-0, *Joint Planning*, for additional information on joint planning. Other strategic documents include Presidential execution orders, Unified Campaign Plans, and Contingency Planning Guidance. At the operational level, the staff may see concept plans, operational plans, and OPORDs. At the tactical level, the staff might see an OPORD in the five-paragraph format. These documents include the necessary information to identify COAs, which assists targeting professionals in identifying, developing, and prioritizing HPTs and aligning resources to those targets. Information might be included in orders as high as two to three levels above your echelon and therefore a targeting professional might need to review those echelons' orders.

### **Foundational Intelligence**

Foundational intelligence products include:

- Joint intelligence preparation of the operational environment (JIPOE).
- Political, military, economic, social, information, infrastructure, physical environment, time (PMESII-PT).
- Areas, structures, capabilities, organizations, people, and events (ASCOPE) analysis.
- Combined information overlay.
- Center of gravity (COG) analysis.
- Target system analysis (TSA).
- Reported intelligence from intelligence disciplines.
- Real time information from ground units or entities.
- A developed HVT list.

See Figure 2-3 for the relationship between objects, COGs, effects, and tasks.



*Center of gravity analysis supports achieving objective(s) and helps determine the missions and tasks required to achieve desired effects.*

**Figure 2-3. Center of Gravity Analysis.**

Identifying and analyzing friendly, enemy, and adversary’s COG is an important planning task. The COG is “the source of power that provides moral or physical strength, freedom of action, or will to act” (*DoD Dictionary*). Centers of gravity are determined by their impact on the military end state. Success requires protecting the friendly COG while defeating the enemy COG.

Centers of gravity can exist at different levels. At the strategic level, a COG could be a military force, an alliance, political or military leaders, a set of critical capabilities or functions, or national will. At the operational level, a COG is often associated with the enemy’s military capabilities, such as a powerful element of the armed forces, but could include other capabilities in the operational environment.

Centers of gravity can change as the strategic or operational environment shifts with diplomatic, information, military, economic, or commercial conditions or objectives. A force’s will to fight might increase or decrease throughout an operation impacting the joint force’s success. Similarly, victories or defeats might cause adversaries or enemies to reassess their objectives or strategy thereby altering the COG.

Identifying the targeting tasks is accomplished by analyzing and deconstructing the COG within a three-component framework, critical capabilities, critical requirements, and critical vulnerabilities. A JFC must possess sufficient operational reach and combat power to take advantage of an enemy’s critical vulnerabilities while protecting friendly critical capabilities. Targeting professionals should seek opportunities to aggressively apply force against enemy critical vulnerabilities in as many dimensions as possible.

- Critical capabilities are the primary abilities essential to accomplishing the mission.
- Critical requirements are essential conditions, resources, and means that the COG requires to employ the critical capability.
- Critical vulnerabilities are aspects of critical requirements vulnerable to attack.

When identifying friendly and enemy or adversary critical vulnerabilities, planners often want to focus their efforts against the critical vulnerabilities that will do the most decisive damage to an enemy's COG. However, in selecting those critical vulnerabilities, planners must also compare their criticality with their accessibility, redundancy, resiliency, and impact on other military objectives to balance those factors against friendly capabilities.

### **Commander's Guidance**

Commander's guidance is vital for effective targeting, ensuring resources are allocated to create desired effects. The commander's guidance can be verbal or written, provided during planning sessions, sidebar discussions, or formal meetings like targeting working groups. Written guidance is found in operation plans or orders. Subsequent guidance is issued as needed. This guidance clarifies objectives, desired effects, and prioritization. Targeting professionals can assist by providing recommendations based on available data to ensure the commander's full understanding.

### **Authorities**

International law, law of war, LOAC, and federal law provides boundaries on the conduct of warfare. Therefore, the SJA or commander's legal representative must be involved when conducting targeting. The SJA ensures that the commander understands what actions and activities are authorized, when and where they can be conducted, and against what targets. Orders from HHQ will specify many of these authorities, but a targeting professional must understand that the SMEs may know of other authorities and who to integrate into the process to ensure the legal representatives can depict those authorities to the commander. If authorities are too restrictive, a commander may request specific authorities as necessary.

### **Partner and Ally Agreements**

Targeting professionals must abide by partner and ally agreements when operating internationally in the competition continuum. Many of these agreements are sensitive in nature and require the operations and plans section to coordinate identifying the agreements and how to incorporate partners and allies into the scheme of fires.

## **ACTIVITIES**

The staff performs activities to turn injects into outputs. The following subparagraphs provide general guidance on common activities a staff might perform during phase 1.

### **Develop Targeting Guidance**

The single most important document to efficiently conduct the commander's targeting process is the development of targeting guidance, which is compiled by the fires element targeting section. Previously, the discussion pointed out initial targeting guidance, which was meant to ensure that targeting professionals understand the overarching goal during planning. However, this activity is meant to identify the deliberate and dynamic process to create the commander's desired effects that will achieve the commander's objectives. The following paragraphs include recommended information to include in targeting guidance, however it can be customized depending on the commander's information requirements.

**Note:** Commanders and staffs might codify certain processes within their standing operating procedure (SOP) to increase efficiency and effectiveness.

**Targeting Processes.** The MAGTF targeting cycle, or D3A methodology at division (or equivalent) and below, details the iterative six-phase targeting process. The unit might have specific details that should be outlined in an additional SOP or TTP. For example, how an entity is developed into a target or how targets are databased. Staff processes codified in a SOP or TTP are not required in the targeting guidance document.

**Battle Rhythm Events.** See the commander's decision-making cycle paragraph for additional information on boards, centers, cells, and working groups.

**Required Products.** The following sections identify types of targeting products that might be required to inform the commander. Identify the process and products for each phase of the MAGTF targeting cycle early in the planning process to ensure effective staff work. Additional products may include target reports, operational reports, and a tactical field message book.

**Target Vetting Procedures.** Target vetting is not a requirement according to CJCSI 3370.01; however, the CCDR or JFC can require certain target types to be formally vetted during the deliberate targeting process. Target vetting is conducted with the intelligence community. The combatant command (CCMD) or JTF is responsible for interagency coordination. The staff should identify the pathway to nominate entities for the vetting process if the commander requires target vetting.

**Target Validation Process and Validation Authority.** Target validation is a part of the joint target development process that ensures candidate targets meet the objectives and criteria outlined in the commander's guidance, the law of war, LOAC, and ROE. Target validation authority "is the authority vested in the JFC to validate targets, approve changes to target lists, and approve target restrictions" (*DoD Dictionary*). The CCDR can delegate target validation authority to a subordinate JFC or designated authority who might reside at the CCMD level, JTF, MEF staff, or lower, depending on the competition continuum element, phase of operation, or area of operation. This authority cannot be further delegated to assigned, attached, or supporting organizations, except as otherwise stated in a plan, order, or CONOPS. When submitting a target development nomination (TDN), the staff must understand and comply with CCMD and JTF TDN procedures. They must know who has responsibility for what part of the development and nomination. Target validation does not include a requirement for engagement, only opportunity. For more information on target validation see JP 3-60 and CJCSI 3370.01.

During target validation processes, the staff must consider what information is required for target validation criteria. Some considerations for criteria include:

- Does target engagement contribute to achieving one or more JTF objectives, creating operational effects or supporting sub-tasks?
- Does target engagement support the end state?
- Does target engagement comply with JTF guidance and intent?
- Is attacking the target lawful? What are the LOAC and ROE considerations?
- Does the target contribute to the enemy's or adversary's ability and will to wage war?

- Is the target still operational? Is it still a viable element of a target system?
- Where is the target located?
- Will striking the target arouse political or cultural “sensitivities?”
- How will striking the target affect public opinion (enemy, friendly, and neutral)?
- Are there any entities on the no-strike list (NSL) or RTL collocated with the target being validated?
- What psychological impact will operations against the target have on the adversary, friendly forces, or coalition partners?
- What would be the impact of not conducting operations against the target?

***Delegated Authorities.*** Authorities may be delegated to lower echelons and responsible individuals. Prior to any board, the staff must compile a list of authorities that are required for the targeting process. Some of these authorities might be at the MAGTF level (i.e., MEF) or retained at the highest echelons (e.g., sensitive target approval). The targeting professional uses the SJA and staff to identify where each authority is held. They present the list to the commander and verify any required authorities to be delegated lower, and request delegation. In addition to target validation authority, target engagement authority and weapons release authority are other delegated authorities to consider in the targeting process.

***Target Engagement Authority.*** Target engagement authority denotes the individual that has the authority and responsibility to engage targets. This usually rests with the JFC but may be delegated to a subordinate commander. If delegated, the target engagement authority might not be the same entity that has target validation authority. This is important because multiple targeting working groups and targeting coordination boards might convene during the lifecycle of a target. The targeting professional must understand to who, what, and when a decision must be made by an authorized person. Marine air-ground task forces should clearly delineate authorities in orders and tactical standing operating procedures (TACSOPs).

***Weapons Release Authority.*** Weapons release authority is the responsibility of the firing unit operator or platform. As part of passing fire mission approval to the firing unit, the fire support element is also delegating individual mission weapons release authority to the firing unit. It is incumbent on the firing unit to ensure that the weapon’s aiming and firing parameters are checked and in accordance with the fire control planning. If the weapon is not correctly configured, regardless of human error or mechanical limitation, the firing unit shall not fire until the deficiency is corrected. Weapons release authority delegation implies that the weapon will perform as intended and communicated to the supported unit and fire support element. The supported unit, fire support element, or firing unit can pause or abort the fire mission if the weapon or its effects are not employed as expected.

As a best practice, MAGTFs should develop and disseminate a comprehensive authorities matrix tailored to specific operations. Such a matrix should clearly delineate authorities granted to MAGTF entities to engage specific types of targets, launch, or divert intelligence, surveillance, and reconnaissance (ISR) or engagement assets, etc. For more information on authorities, see MWCP 3-31 and Naval Warfare Publication 3-09, *Fleet Fires*

***Guidance for Acquisition and Intelligence, Surveillance, and Reconnaissance.*** The ability to conduct fires includes functions provided by the intelligence section (e.g., intelligence

support to targeting and combat assessment). The intelligence section uses acquisition, ISR, and reconnaissance capabilities to provide accurate and timely information to support justifying target engagement. These capabilities must support multiple activities throughout the execution period, so it is important to identify ISR resources and plan for their use. Planning considerations for using ISR resources and capabilities include:

- The battlespace.
- Dynamic targeting (find, fix, track, and assess steps).
- Target development.
- Positive identification (PID)
- Combat identification (CID).
- Target engagement.
- Combat assessment.
- Operation assessment.
- Future planning.

During the collection management working group or other venues, targeting professionals identify the collections requirements for target engagement. This is where ISR resources are prioritized to support the commander's priorities. The collection management working group produces collections products (e.g., collections synchronization matrix) that identify what ISR capabilities are allocated to information or intelligence requirement and which ones can be used for general purposes.

**Authorized Actions Against Targets.** The HPT list, TSS, and AGM provide the commander's approved actions and desired effects against a list of prioritized targets and target types. Additional notes or special instructions (SPINS) from the commander may be included.

**No-Strike List Considerations.** No-strike considerations are identified in the CJCSI 3160.01, *No-Strike and Collateral Damage Estimation Methodology*. Processes at the CCMD level implement measures to identify and list no-strike or protected entities or remove the protected status of no-strike entities when the CDR identifies an operational need or the entity's function changed. This targeting guidance section confirms where to find those protected entities, the process to nominate removal of protected status, and which echelon staffs and monitors no-strike entities. The SJA and G-2 or S-2 should be involved in identifying entities for nomination on the NSL.

**Targeting Restrictions.** During the planning process, the staff must read higher echelon's OPODs. They will include SPINS that provide guidance on what type of capabilities, munitions, and communication paths to target that are and are not approved for use during operations and different phases. This section must include those instructions and any additional guidance from the commander. It also allows for efficient understanding by the staff without additional research, as such research was already conducted by targeting professionals during the planning process.

An RTL is a list of validated targets with engagement restrictions. Actions that exceed specified restrictions are prohibited until coordinated and approved by the establishing HQ. Targets that have specific restrictions should be clearly documented in the electronic target folders.

**Collateral Damage and Effects Considerations.** The CJCSI 3160.01 identifies the joint procedures on how to conduct collateral damage estimation (CDE) and an overview of collateral effects estimation (CEE). Combatant command SOPs will determine the process for staffing and reviewing CDE and CEE. Additional considerations can be provided through orders and commander's guidance. The civilian harm mitigation response, known as the CHMR process, is held at the CCMD, Service component, joint task force, or MAGTF-level. The CCMD can request additional information capabilities.

**Objective-to-Task Approach.** Targeting professionals use an objective-to-task approach that directly links operational design elements to targeting objectives, desired effects, and targeting tasks. The objective-to-task approach is a continuous, iterative process that applies across the planning horizons. Planners ensure the MAGTF objective-to-task approach nests with and supports the HHQ and JFC approach.

The objective-to-task approach begins with targeting professionals identifying MAGTF mission objectives and desired end states. The MAGTF mission objectives and end state provide the basis for identifying MAGTF targeting objectives. Targeting objectives in turn provide the basis for identifying desired effects. Targeting objectives and desired effects provide the basis for developing targeting tasks. Targeting tasks direct MAGTF units or agencies to execute tactical fires and information activities to achieve targeting objectives and create desired effects.

**Targeting Objectives.** Developing targeting objectives is essential for achieving specific, measurable, achievable, realistic, and time-oriented outcomes. These objectives come from a comprehensive analysis of higher-level objectives and should support the operation plan or OPORD's operational objectives. Targeting professionals use targeting objectives and desired effects as the basis for developing targeting tasks. They also conduct analysis to address key questions including:

- Whose behavior do we want to modify? Identify the individuals, groups, or entities whose actions need to be influenced.
- What do we want to make them do? Define the specific actions or behaviors we seek to induce in the target.
- How much, and to what degree, do we want to affect enemy activity? Determine the desired level of impact on adversary actions or capabilities.
- What are the desired effects? Specify the outcomes or changes in behavior that are desired because of targeting efforts.
- When do we want to create the target effect and how long do we want it to last? Establish the timing and duration of the desired effects to achieve strategic or operational objectives.
- Where do we need to create the effect to best impact the adversary activity? Identify the geographic or operational areas where the effects need to be generated for maximum effectiveness.
- Why do we want to create a given effect on the target? Understand the strategic or operational rationale behind the desired effects and their contribution to mission success.
- What is the risk required to mission, force, and capability to create the desired effects? What are possible mitigation techniques? Assess the risks associated with targeting

operations and identify mitigation strategies to minimize potential negative impacts on mission, force, or capability.

Table 2-1 presents examples of targeting objectives, to include the tasks and assessment measures, answering all these questions in a single location.

**Table 2-1. Targeting Objective Example.**

<b>Objective 1. Gain and maintain air superiority initially over the lodgment areas followed by air superiority over all XXX by the end of Phase II.</b>
<u>Targeting Objective 1a.</u> Degrade enemy aircraft within the lodgment area by over 50% by end of phase II.
<u>Targeting Objective 1b.</u> Destroy enemy integrated air defense system function within lodgment area by end of phase II.
<u>Targeting Objective 1c.</u> Disrupt enemy air reinforcement capability to the lodgment area units by end of phase II.
<u>Targeting Objective 1d.</u> Deny the enemy air command and control nodes' ability to communicate on primary and alternate means of communication in lodgment area by end of phase I.
<u>Targeting Objective 1e.</u> Disrupt enemy air common operational picture in lodgment area by end of phase I.

When targeting objectives are approved, taskings are then developed for different entities within the MAGTF. One of the fires tasking mechanisms is an essential fire support task (EFST). An EFST provides guidance, time, and space for how fires support capabilities are assigned to produce desired effects against a target's critical vulnerability. The steps in creating an EFST are:

- Determine the critical event for the phase, stage, or part.
- Determine the conditions that must be set.
- Identify those events that cannot be achieved through maneuver.
- Identify the asset available.
- Develop task, purpose, method, and effect based on this entity set.

Commanders and staff communicate desired and undesired effects so they can create or avoid them. An improper or incomplete effect statement that does not clearly link the desired effect with the objective, can result in a mission that successfully engages the designated threat, neutral, or friendly entity, but does not achieve the objective. For more information on developing targeting objectives, see JP 3-60 and MCWP 3-31. For more information on how to develop EFSTs, see Marine Corps Tactical Publication (MCTP) 3-10F, *Fire Support Coordination in the Ground Combat Element*.

**Dynamic Targeting and Identification Requirements.** The dynamic targeting process is monitored and maintained on the COPS floor or section, depending on unit echelon. The commander identifies who needs to be notified, when they should be notified, what information should be provided, and if the COPS section has been delegated authority to engage dynamic targets by time and space. With the assistance of targeting products, the COPS section can

execute as dynamic targets present themselves, but the reallocation of fires capabilities to dynamic targets incurs risk.

**Target Prioritization.** With the working group products, the commander prioritizes targets and target types. They are codified in products in the next section. Some prioritized targets might be of such high importance that the commander is willing to assume risk to reallocate fires resources to engage them. Some targets might be identified by the JFC as a TST or by a component commander as a component critical target. Other targets might be identified through MAGTF commander SPINS. Target priority is usually established by prioritizing target tasks. Targeting professionals consider time and space factors required to create desired effects that support the CONOPS and prioritize targeting tasks in a sequential manner accordingly. They might choose to prioritize targeting objectives or assign weights of effort required to create desired effects for each objective. Additionally, targeting professionals might choose to assign priorities or weights of effort by geographic location. The prioritization process is included in the commander's battle rhythm early in the planning process to ensure these targets are allocated capabilities for engagement.

**Phase 1 Targeting Tools and Products.** Fleet Marine Forces develop and employ targeting decision support tools and products based on mission requirements and higher and adjacent headquarters targeting integration requirements. Major subordinate commands (MSCs) and major subordinate elements (MSEs) often develop and employ unique targeting products or tools. These tools should be consistent with, and interface with MAGTF fires processes. During the MCPP and battle rhythm, targeting professionals develop and disseminate targeting tools and products to appropriate agencies. Targeting decision support tools and products might include:

- Target lists (e.g., HPT list, MAGTF integrated prioritized target list).
- Integrated tasking order.
- Targeting prioritization and synchronization tools (e.g., TSS, AGM, targeting objective-task matrix, synchronization matrix).
- Firepower capacity predictive tools.
- Combat assessment tools (e.g., battle damage assessment [BDA] tracking).
- Relative combat power analysis and assessment tools.
- Targeting guidance tools.

Throughout battle rhythm activities, fires and effects planners refine targeting products to facilitate near-term targeting decisions and execution. These products help the staff identify how the commander wants to proceed with the battle. The MAGTF integrated prioritized target list is a tool to facilitate planning and executing the MAGTF targeting plan. The HPT list is a prioritized list, approved by the commander or delegated authority, that directly supports the scheme of maneuver and timing of maneuver. Combat assessment tools facilitate BDA tracking and fires and effects assessments. Relative combat power tools help determine fires and effects requirements. Disseminating targeting products during planning and execution enhances staff understanding. For more information on the MAGTF integrated prioritized target list see MCWP 3-31.

The MAGTF uses custom tools to develop and disseminate targeting guidance. It can develop matrices to show how targeting objectives and desired effects are prioritized and linked to targeting tasks (e.g., targeting priority and weight of effort matrices, objective-task matrices,

synchronization matrices). The tools are codified in the MAGTF OPOD Annex C (Operations) during planning. For phased operations, the tools should be tailored for each operation phase. During battle rhythm activities, targeting professionals refine targeting guidance and associated tools as required, often daily, and disseminate the tools to all units and agencies conducting or coordinating execution.

**High-Payoff Target List.** The HPT list identifies targets by time and space, within a given area of operation, that are vital to the commander to create effects that achieve tactical objectives. The HPT list usually changes from area of operation to area of operation, however, it must be informed by a HHQ HPT list. See Table 2-2 for an example of a HPT list.

**Table 2-2. High-Payoff Target List.**

Phase or Critical Event			
Priority	Category	Targets	
1	ADA	SA-15, SA-17, tracking radar, engagement radar	
2	Fire Support	HVY MLR, cannon artillery, CTR BTRY radar	
3	Enemy Reconnaissance	UAS GCS, scouts	
4	Lift	ATK Helo, FARP, utility Helo, airfields	
5	Sustainment	Bulk fuel, logistics, ammunitions, maintenance	
<b>LEGEND</b>			
ADA	air defense artillery	Helo	Helicopter
BTRY	Battery	MLR	multiple launch rocket
CTR	Counter	SA	surface-to-air
FARP	forward arming and refueling point	UAS	unmanned aircraft system
GCS	ground control station		

**Note:** Products can change deliberately or dynamically. The staff must be ready to incorporate changes into current execution and disseminate to the lowest echelons in a timely manner.

Once the HPT list is complete, the staff can create a TSS to identify the observer’s target location error and time of report allows for timely engagement of targets, depending on the engagement capability used. This data ensures that when the target is engaged it will still be in the reported general location, and the target report is accurate enough for targeting re-engagement. See Table 2-3 for an example of TSS. After the TSS is approved, the staff will create the AGM.

**Table 2-3. Target Selection Standards.**

High-Payoff Target	Timeliness	Accuracy	Size
Tor	15 minutes	200 meters	Battery
HVY MLR	30 minutes	100 meters	Battalion
Ammunition Holding Point	6 hours	200 meters	
UAS Ground Control Station	1 hour	100 meters	Individual
Counter-Battery Radar	30 minutes	200 meters	Section
Print Facilities	2 hours	50 meters	Individual
Forward Arming and Refuel Point	1 hour	200 meters	
Access Point (Internet activities)	10 minutes	50 meters	Individual
<b>LEGEND</b>			
HVY	Heavy	Tor	surface-to-air missile system
MLR	multiple launch rocket	UAS	unmanned aircraft system

The AGM is meant for the COPS floor as an approved tool and means to engage targets as they appear. Once approved, the watch officer, battle captain, or the delegated authority can execute the AGM as needed. There are multiple ways to create an AGM. See Table 2-4 for an example.

**Table 2-4. Attack Guidance Matrix.**

HPT	When	How	Effect	Remarks
BM-30	A	Field Artillery	Neutralize	Coordinate and ensure CFFZ and CFZ are emplaced and active.
Tor	A	UAS	Destroy	Maneuver engages target and calls in UAS strikes as necessary.
UAS Ground Control Station	P (1330Z)	Electromagnetic Attack	Neutralize	Jam communications at H-1.
WLR	I	SCAR	Destroy	Monitor for signals transmission to trigger engagement.
Print Facilities	A	AI/Cyber	Neutralize	Coordination required to synchronize lethal engagement with cyber effects.
<b>LEGEND</b>				
A	as required	I	Immediate	
AI	artificial intelligence	P	Planned	
BM	Boyeyaya Mashina	SCAR	strike coordination and reconnaissance	
CFFZ	call-for-fire zone	Tor	surface-to-air missile system	
CFZ	critical friendly zone	UAS	unmanned aircraft system	
FSCM	fire support coordination measure	WLR	weapons locating radar	
H	Hour			

Another option is to combine the HPT list, TSS, and AGM. See Table 2-5 for an example.

**Table 2-5. Combined HPT List, TSS, and AGM.**

Priority	1	2	3	4	5
Description	IDF (2S3, 2S12)	ARMOR (T-80)	MANEUVER (BMP-3, BRDM)	C2	AIR DEFENSE (2S6)
Artillery	1. 100m 2. Plt 3. Stationary 4. <30 min 1 S	1. 100m 2. > Plt 3. Stationary 4. <30 min 3 S	1. 100m 2. > Bn 3. Stationary 4. <1 hr 3 N	1. 100m 2. Plt 3. Stationary 4. <30 min 1 N	1. 100m 2. > Section 3. Stationary 4. <30 min 1 N
Mortars	1. 100m 2. Plt 3. Stationary 4. <30 min 4 S	1. 100m 2. Plt 3. Stationary 4. <30 min 4 S	1. 100m 2. Plt 3. Stationary 4. <1 hr 4 S	1. 100m 2. Plt 3. Stationary 4. <1 hr 2 S	1. 100m 2. Plt 3. Stationary 4. <30 min 2 S
RW CAS	1. 500m 2. Plt 3. Stat/Move 4. <1 hr 3 D	1. 500m 2. Plt 3. Stat/Move 4. <45 min 2 D	1. 500m 2. Plt 3. Stat/Move 4. <1 hr 2 D	1. 500m 2. Plt 3. Stat/Move 4. <1 hr 3 D	1. 500m 2. Plt 3. Stat/Move 4. <1 hr 4 D
FW CAS	1. 1km 2. Plt 3. Stat/Move 4. <1 hr 2 D	1. 1km 2. Plt 3. Stat/Move 4. <1 hr 1 D	1. 1km 2. Plt 3. Stat/Move 4. <1 hr 1 D	1. 1km 2. Plt 3. Stat/Move 4. <1 hr 4 D	1. 1km 2. Plt 3. Stat/Move 4. <1 hr 3 D
<b>LEGEND</b>					
CAS	close air support		min	minute	
FW	fixed-wing		Move	moving	
Hr	Hour		Plt	platoon	
IDF	indirect fire		RW	rotary-winged	
km	kilometer		Stat	stationary	
m	Meter				

**Battlespace Shaping Matrix and Reactive Attack Guidance Matrix.** The battlespace shaping matrix (BSM) and reactive attack guidance matrix (RAGM) are expanded AGMs. The BSM helps the staff prioritize targeting objectives and target categories within each concept, operations objective, or task. The RAGM is an updated BSM used to prioritize dynamic targets on the day the fire support coordinator (FSC) executes the associated ATO. The BSM is an estimate of the priorities for deliberate targeting and the RAGM is a modification of that estimate to reflect the current situation. See Table 2-6 for an example of a BSM and Table 2-7 for an example of a RAGM.

**Table 2-6. Battlespace Shaping Matrix.**

Time	H-6 to H-4		After PL A Crossed		After PL B Crossed		Continuous	
PRI	TGT Obj "A" PREVENT adversary forces from disrupting planned MAGTF river crossing in the vicinity of Smallville.  7 <sup>th</sup> Marine Regiment		TGT Obj "B" PROTECT III Corps eastern flank.  5 <sup>th</sup> Marine Regiment		TGT Obj "C" PREVENT 6 <sup>th</sup> ARM DIV escape to the north or entering Capital City.  6 <sup>th</sup> Marine Regiment		TGT Obj. "D" ISOLATE adversary in the vicinity of Haven in preparation for next phase.	
1	FS	MRL (N) FROG (D) DIVARTY (N)	FS	MRL (N) FROG (D) DIVARTY (N)	MN	HETS (N) Trucks (D) Mech (N) ARM (N)	MN	Mech (N) Armor (N) Mobility (N)
2	MN	Mech (N) ARM (N) Mobility (N)	MN	Mech (N) ARM (N) Mobility (N)	COM	Corps/DIV HQs (N) CSS (N)	FS	MRL (N) FROG (D) DIVARTY (N)
3	COM	Corps/DIV HQs (N) RSTA (N) CSS (N) FS (N)	COM	Corps/DIV HQs (N) RSTA (N) CSS (N) FS (N)	CSS	POL (N) CSS LOCs (N) SD (N)	CSS	FS (N) ARM (N) LOCs (N)
4	AD	SAM (N) ARM (N) LOCs (N)	AD	SAM (N) ARM (N) LOCs (N)	FS	SAM (N) AAA (N)	AD	Corps/DIV HQs (N) RSTA (N) CSS (N) FS (N)
5	CSS	FS (N) ARM (N) LOCs (N)	CSS	FS (N) ARM (N) LOCs (N)	AD	SAM (N) AAA (N)	COM	Corps/DIV HQs (N) RSTA (N) CSS (N) FS (N)
<b>LEGEND</b>								
AAA	antiaircraft artillery			ID	infantry division			
AD	air defense			Mech	mechanized			
ARM	Armored			MRL	multiple rocket launcher			
ARTY	Artillery			N	neutralize			
COM	command and control, communications systems and intelligence			Obj	objective			
D	Destroy			PL	phase line			
DIV	Division			POL	petroleum, oils and lubricants.			
FROG	free rocket over ground (unguided artillery rocket)			PRI	priority			
FS	fire support			SAM	surface-to-air missile			
HETS	heavy equipment transporters			SD	supply depot			
HQ	Headquarters			TGT	target			

**Table 2-7. Reactive Attack Guidance Matrix.**

PRIORITY	TST	1	2	3	4																																
<b>Area</b>	Any	Obj. Area Vegas Obj "C"	Obj Area Zulu BSM Obj "A"	Rear – Durango BSM Obj "D"	Obj Area Alpha BSM Obj "B"																																
<b>Target Category Priority</b>	WMD (D)	MRLS (D) Long-rng sys (D) Radar (N) AI (N)	MRLS (D) Long-rng Sys (D) Radar (N) AI (N)	Armor (D) Mech/Motor (N) Foot-Mob (N) SOF (N)	MRLS (D) Long-rng sys (D) Radar (N) C5ISR (N)																																
<b>Unit Priority</b>	Any	4th Marines	6th Marines	2nd Marines	8th Marines																																
<b>Intent</b>	Destroy all WMD assets when discovered.	Prevent 6th Corps indirect FS systems from interdicting link up point.	Prevent long range arty from interdicting forces.	Prevent remnant forces, SOF, and bypassed units from interfering from rear area ops.	Prevent forces from disrupting planned river crossing of the Heychu River.																																
<p><b>LEGEND</b></p> <table> <tr> <td>AI</td> <td>air interdiction</td> <td>MRLS</td> <td>multiple rocket launcher system</td> </tr> <tr> <td>Arty</td> <td>Artillery</td> <td>N</td> <td>neutralize</td> </tr> <tr> <td>BSM</td> <td>battlespace shaping matrix</td> <td>Obj</td> <td>objective</td> </tr> <tr> <td>C5ISR</td> <td>command, control, communications, computers, cyber, intelligence, surveillance, and reconnaissance</td> <td>Ops</td> <td>operations</td> </tr> <tr> <td>D</td> <td>Destroy</td> <td>Rng</td> <td>range</td> </tr> <tr> <td>FS</td> <td>fire support</td> <td>SOF</td> <td>special operations forces</td> </tr> <tr> <td>Mech</td> <td>Mechanized</td> <td>Sys</td> <td>system</td> </tr> <tr> <td>Mob</td> <td>Mobile</td> <td>WMD</td> <td>weapons of mass destruction</td> </tr> </table>						AI	air interdiction	MRLS	multiple rocket launcher system	Arty	Artillery	N	neutralize	BSM	battlespace shaping matrix	Obj	objective	C5ISR	command, control, communications, computers, cyber, intelligence, surveillance, and reconnaissance	Ops	operations	D	Destroy	Rng	range	FS	fire support	SOF	special operations forces	Mech	Mechanized	Sys	system	Mob	Mobile	WMD	weapons of mass destruction
AI	air interdiction	MRLS	multiple rocket launcher system																																		
Arty	Artillery	N	neutralize																																		
BSM	battlespace shaping matrix	Obj	objective																																		
C5ISR	command, control, communications, computers, cyber, intelligence, surveillance, and reconnaissance	Ops	operations																																		
D	Destroy	Rng	range																																		
FS	fire support	SOF	special operations forces																																		
Mech	Mechanized	Sys	system																																		
Mob	Mobile	WMD	weapons of mass destruction																																		

**Dynamic Targeting Guidance.** Dynamic targeting guidance provides information to the COPS section and other staff on how to conduct dynamic targeting. It uses approved targeting tools and products (e.g., HPT list, TSS, AGM) and other items like SPINS, to help the COPS section decide on the reallocation of ISR and fires assets to support current operations. Dynamic targeting guidance might include—

- Delegated authorities for reallocation.
- Prioritization of certain mission sets.
- Ammunition usage.
- Risk mitigation techniques.

Additionally, the guidance includes communication paths between entities and identifies if the COPS section has direct liaison authority with outside entities. Chapter 6 details the steps of dynamic targeting.

**Damage Criteria Matrix.** The damage criteria matrix (DCM) defines destruction and neutralization for each target set and subset by identifying measures of effectiveness (MOEs) and measures of performance (MOPs). Staffs also associate percentages to assist air agencies to determine types and amounts of ordinance for use during airstrikes. For more information on MOPs and MOEs see MCRP 5-10.1, *Multi-Service Tactics, Techniques, and Procedures for Operation Assessment*, for more information.

**Combat Assessment Process.** The CJCSI 3162.01 establishes the methodology for conducting combat assessment applicable to the joint staff, Services, CCMDs, joint forces, DoD

combat support agencies, and joint activities for use in joint or coalition operations. Marines use combat assessment during military operations to determine force employment effectiveness. During operations, MAGTFs can be tasked to report combat assessment information to HHQ. Commander's guidance may include assessment reporting requirements, which outline the time available for the collection of information associated with phase 6 assessment. It identifies the method, types of information, products, and timing associated with required combat assessment operations and is submitted to the G/S-5 to be included in the operation assessment process. The MAGTF targeting cycle outlines activities but does not prescribe times for reporting information. See MCRP 5-10.1 for more information on combat assessment.

**Special Operations Commander Guidance.** Because of the close relationship with special operations, the MAGTF might need to include guidance on how it will support forces during the joint targeting process.

### Targeting Boards, Centers, Cells, and Working Groups

Targeting is involved in every aspect of operations, including intelligence, logistics, and information. Figure 2-4 is an example of a targeting battle rhythm sequence with working groups and boards that help ensure the right stakeholders are included in identifying the ways and means to generate the commander's desired effects (see *Insights and Best Practices Focus Paper Joint Headquarters Organization, Staff Integration, and Battle Rhythm, 3d Ed*). The example shows the recommended board, center, cell, and working group sequence that best informs the commander's decision-making cycle. Based on the competition continuum phase, these events can meet monthly, weekly, daily, or on-call. Figure 2-4 is followed by brief descriptions of each working group or board.



**Note:** These boards and working group agendas and products are linked to a HHQ's battle rhythm. Subordinate units will have their own inputs into the MAGTF battle rhythm. Additional working groups and naming conventions vary by unit.

**Figure 2-4. Example Targeting Battle Rhythm Scheduling Flow.**

**Rules of Engagement Working Group.** The rules of engagement working group, known as the ROEWG, hosts discussions between operations, intelligence, fires, and information personnel with the other warfighting functions. The group's purpose is to identify what is authorized under ROE, law of warfare, and LOAC, and what additional requirements are needed to support operations. There are additional inputs from other working groups that might require SJA review and therefore the SJA needs to attend all the working groups when possible.

**Collections Management Working Group.** The collections management working group hosts discussions between intelligence SMEs to identify collections priorities. There is additional input from the target development working group (TDWG), information working group, targeting working group, targeting coordination board, and assessments working group that a collections manager is recommended to attend. These inputs might be additional identified

entities, additional information required for target nomination and validation, ISR assets to ensure pattern of life for engagement, or ISR assets needed to collect for combat or operational assessments.

**Target Development Working Group.** The TDWG hosts discussions between intelligence and fires personnel to identify entities that need to be vetted by the intelligence community, nominated for validation, and have full advanced target development completed. The outputs from this working group affect an estimated 40% of the targeting work group's efforts because entities can be identified for validation and the information ("baseball card") is presented to the target validation authority for a decision. That decision may be to add the entity as a target to a target list; send it back to the TDWG for further development; or nominate it for inclusion on the CCMD NSL as a no-strike entity.

**Information Working Group.** The information working group hosts discussions between all information stakeholders, including intelligence, operations, and fires, to pair capabilities with desired effects and to nominate the targeting working group. There may be a follow-on information working group to the targeting working group depending on discussions.

**Targeting Working Group.** The targeting working group hosts discussions between all stakeholders (all warfighting functions, interagency, civilian entities, and when classification is appropriate, partners and allies) to discuss prioritization of targets, resource allocation, and risk assessment. It is meant to discuss all aspects of the targeting methodology. Topics can include entities being nominated for validation, strike and mission packages nominated for engagement, and information actions requiring additional approvals.

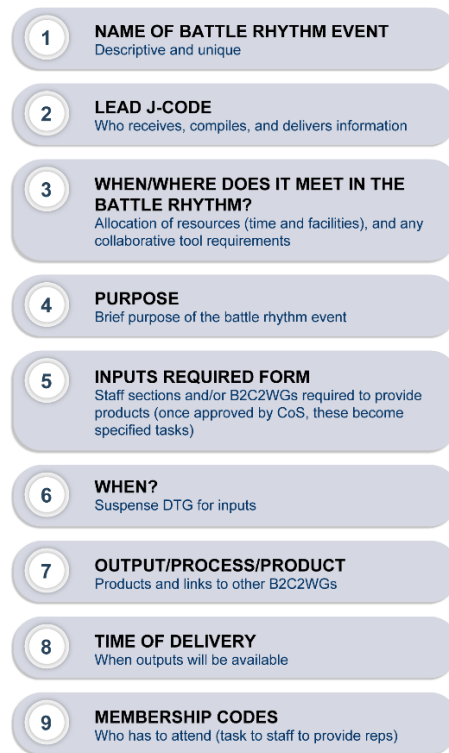
**Targeting Coordination Board.** The decisions from the targeting coordination board, both target validation and engagement, provide tasking to the assigned fires and effects capabilities. This is the deciding board that presents targets, strike and mission packages nominated for engagement, and information actions requiring additional approvals to the commander.

**Assessments Working Group.** The assessments working group conducts combat and operation assessments of the last operation with assessments continuing up to present operations. It shapes future activities in the current or future timeframe. For more on operation assessments see Appendix F.

The working group flow has been tested by many professionals, but this may not be the best way to inform the commander's decision-making cycle. Another scheduling aspect to consider is the HHQ battle rhythm. When HHQ conducts a targeting working group it may then require a targeting coordination board to ensure external assets required to generate the commander's desired effects are correctly nominated and requested through proper channels. One way to synchronize is to identify the commander's requirements, including when, with HHQ's schedule, and subordinate capabilities. This informs the staff on how to best nest the echelon's battle rhythm with all stakeholders, and ensures information is provided and decisions are made within the required timeframe. This informs the staff how to best nest the echelon's battle rhythm with all stakeholders, and that information is provided, and decisions are made within the required timeframe.

## 7-Minute Drill

The battle rhythm is designed to inform commanders so they can make timely decisions. Usually, the COS or executive officer approves what boards, centers, cells, and working groups are assigned to and conducted in the unit's battle rhythm. They hear requests to add events to the battle rhythm using 7-minute drills, also known as event charters. These drills help identify the need for an event, usually in seven minutes or less, that either require the commander's time or staff resources to execute. For example, a targeting working group requires a significant amount of staff attendance and input for a block of time that staff members might otherwise dedicate to other staff tasks. Figure 2-5 is an example of a 7-minute drill format.



**Figure 2-5. Example Of A 7-Minute Drill.**

### LEGEND

B2C2WG boards, bureaus, centers, cells, working groups

DTG date time group

## OUTPUTS

Phase 1 activities lead to codifying and approving the commander's targeting guidance and intent. The commander has several touchpoints to edit, modify, or change targeting guidance. One of the touchpoints is the targeting coordination board, discussed more in Chapter 5. The targeting guidance informs phase 2 by prioritizing the entities that the staff needs to develop to support operations. During phase 2, targeting professionals gain approval for additional battle rhythm events, requests for supplemental ROE and authorities, and targeting specific MOP and MOE.

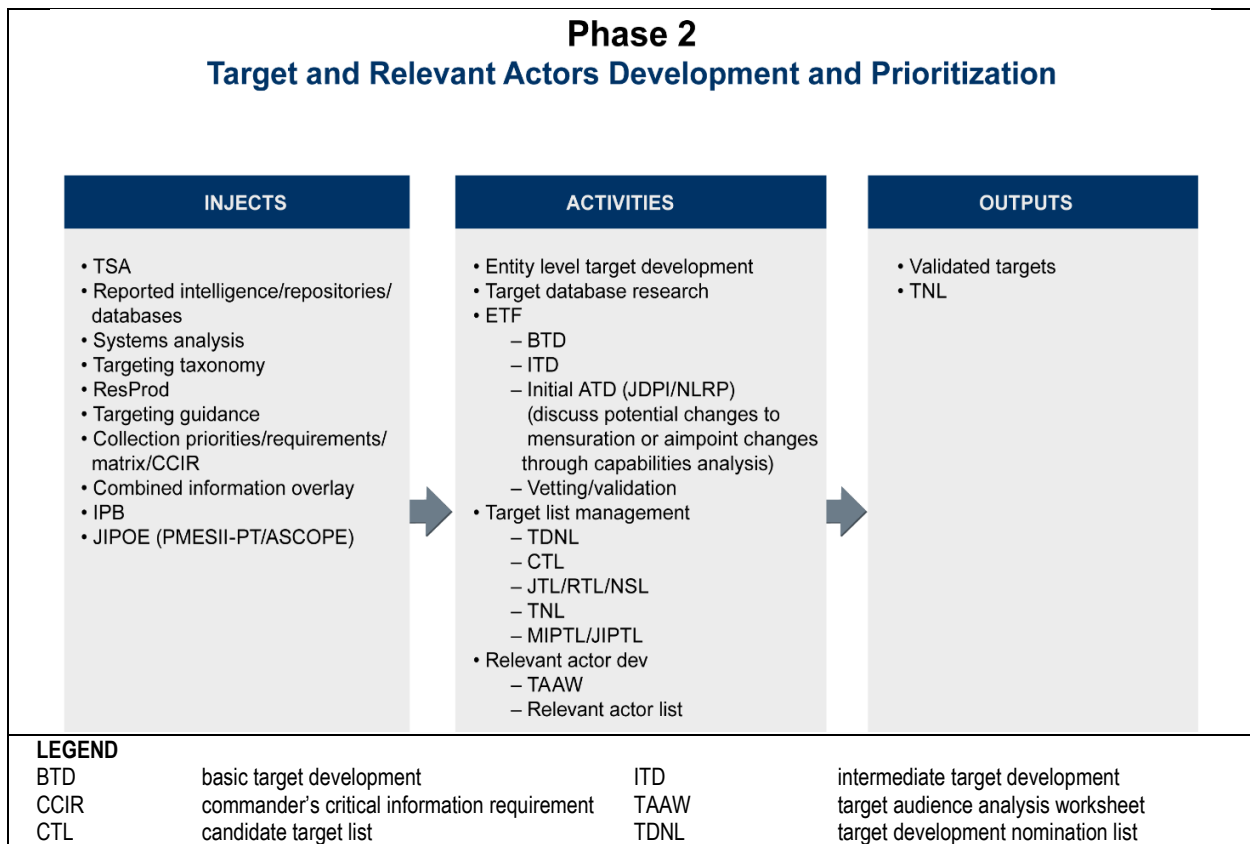
# CHAPTER 3

## PHASE 2: TARGET AND RELEVANT ACTOR DEVELOPMENT AND PRIORITIZATION

Target and relevant actor development is the systematic examination of potential entity systems and their components, individual entities, and elements of entities to determine the type and duration of an engagement. The purpose is to validate an entity as a military target in accordance with JFC objectives, ROE, and the law of war. Phase 2 encompasses the following three processes (not mutually exclusive, conducted in a coordinated manner):

- TSA.
- Entity-level target development.
- Target list management.

Phase 2 of the MAGTF targeting cycle starts with the outputs of phase 1 and other intelligence products. The outputs from phase 1 support the development of targets that if engaged, directly support achieving the commander's objectives. This phase produces validated targets and target lists to support the targeting objectives and target nomination lists, that when prioritized and paired with outputs from phase 3, are submitted to the commander for approval. Figure 3-1 displays the phase 2 injects, activities, and outputs.



**Figure 3-1. Phase 2 Injects, Activities, and Outputs.**

# INJECTS

## Target System Analysis

Target system analysis is “an all-source examination of potential target systems to determine relevance to stated objectives, military importance, and priority of attack” (*DoD Dictionary*) Target system analysis provides the foundational process of enemy or adversary system-level target development (see Figure 3-2). The term TSA refers to both a process and products. The process identifies, describes, and evaluates the composition of enemy or adversary target systems and components to determine various functions, capabilities, requirements, and vulnerabilities. Target system analysis is also the name given to products of the TSA process, such as modernized integrated database (MIDB) records and electronic target folders (ETFs). It exploits target system vulnerabilities (e.g., target development at the entity level) that weaken the enemy’s or adversary’s ability to engage in hostile activities.

Target system analysis is an all-source process managed by CCMDs. The MAGTFs do not have the capability to conduct formal TSA. Marine air-ground task forces informally use the TSA process to request TSA products and leverage those products to conduct target analysis. Fires and effects planners leverage TSA capabilities to facilitate a deeper understanding of enemy or adversary entities and systems, as well as assist in developing fires and effects objectives (ends), the sequence of military actions (ways), and military resources required (means).

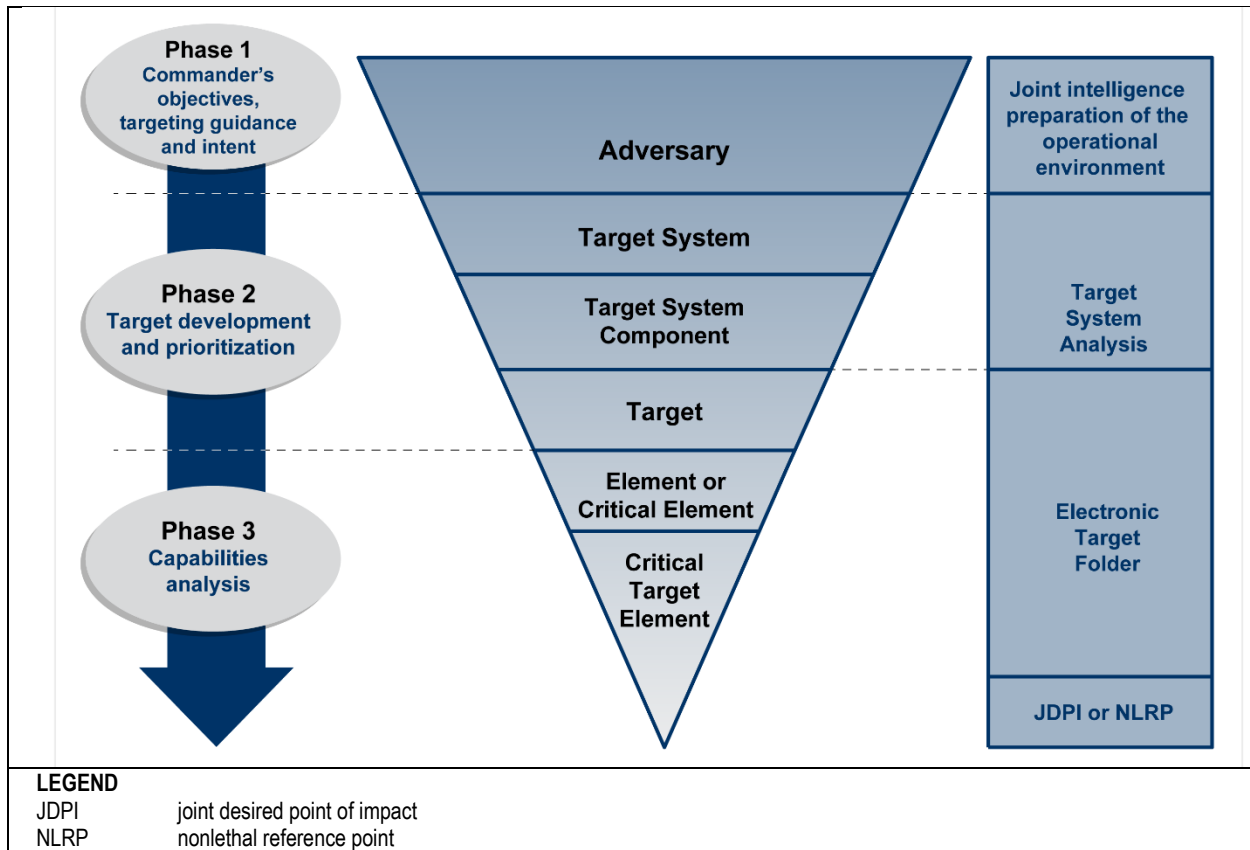


Figure 3-2. Target Development Relationships.

There are two categories of enemy and adversary TSAs: nation-state and non-state actor. Nation-state target systems include those systems associated with sovereign nation-states and their warfighting and war sustaining capabilities. Target system analysis products for nation-state target systems might include:

- Air defense forces.
- Air forces and airfields.
- Ballistic missile forces.
- Command, control, communications, computers, and intelligence.
- Electric power.
- Ground forces and facilities.
- Industry.
- Naval forces and ports.
- Petroleum industry.
- Space forces.
- Special operations forces.
- Transportation and lines of communication.
- Weapons of mass destruction.
- Cyberspace forces.

Non-state actors are non-sovereign entities that exercise significant economic, political, or social power and influence at the national and, in some cases, international level. Target system analysis can be conducted on ethnically or ideologically based terrorist groups, narcoterrorism gangs, local or regional insurgencies, other transnational criminal organizations, and modern-day piracy groups. Target system analysis products for identified non-state actor functions might include:

- Leadership.
- Safe havens.
- Finance.
- Communication.
- Movement.
- Intelligence.
- Weapons.
- Personnel.
- Ideology.

For more information on TSA, see CJCSI 3370.01 and JP 3-60.

### **Critical Vulnerabilities and Capabilities**

Marine Corps staffs conduct a COG analysis based on the understanding gained through design and task analysis to identify or refine adversary and friendly COGs, and to determine which friendly and adversary weaknesses may become critical vulnerabilities. To target threat forces and capabilities effectively, friendly forces must understand the construct, requirements, capabilities, and dependencies of the targeted threat systems, from the most general level to very detailed target elements (a macro to micro approach). Critical factors analysis (CFA) is an advanced structured analytic technique that assists analysts in identifying threat critical

capabilities, threat critical requirements, and threat critical vulnerabilities which they may integrate into their COG or analysis of the threat system. This assists friendly forces in effectively identifying windows of opportunity and threat vulnerabilities.

At echelons above the MEF, critical factors analysis assists in identifying threat COGs that friendly forces can use for operational planning:

- A critical capability is “a means that is considered a crucial enabler for a COG to function as such and is essential to the accomplishment of the specified or assumed objective(s)” (*DoD Dictionary*).
- A critical requirement is “an essential condition, resource, or means for a critical capability to be fully operational” (*DoD Dictionary*).
- A critical vulnerability is “an aspect of a critical requirement which is deficient or vulnerable to direct or indirect attack that will create decisive or significant effects” (*DoD Dictionary*).

To conduct a critical factors analysis successfully, analysts must identify threat critical capabilities. The more specific the threat critical capability, the more specificity analysts can apply to threat critical requirements and vulnerabilities. Critical factors analysis is most effective when conducted by a team of experienced analysts. Additionally, structured brainstorming can amplify this technique. Analysts can determine windows of opportunity by identifying the common denominator or entity that includes those identified threat critical capabilities, requirements, and vulnerabilities. The staff uses identified threat critical vulnerabilities to develop the HVT list during JIPOE, step 3, which is then prioritized by the fires cell and used to develop the HPT list. Table 3-1 briefly describes the functional analysis technique using critical factors analysis, as well as the value added, and potential pitfalls associated with using this technique.

**Table 3-1. Functional Analysis Technique Using Critical Factors Analysis.**

Functional analysis using critical factors analysis: The application of the knowledge of common and necessary military functions to specific threat capabilities.		
<b>When to Use</b>	<b>Value Added</b>	<b>Potential Pitfalls</b>
Analysts should conduct functional analysis using CFA when attempting to identify windows of opportunity and threat vulnerabilities. This is often completed when evaluating the threat during Step 3 of the IPOE process.	Functional analysis may also act as the catalyst for other analytical tools such as the criticality, accessibility, recuperability, vulnerability, effect, and recognizability (CARVER) matrix tool for prioritizing targets.	Units may not have enough experienced personnel to apply this technique effectively, as multiple analysts are optimal. There may not be enough time to conduct a thorough functional analysis.

The following outlines the necessary steps to conduct critical factors analysis.

**Step 1:** Create a quad-chart. Identify a specific threat mission objective.

**Step 2:** Identify all threat critical capabilities that are essential to achieve the threat mission objective and input them in the top-right quadrant of the chart. (Example-*Threat must be able to achieve X.*)

**Step 3:** Identify all threat critical requirements—conditions or resources integral to critical capabilities developed in Step 1—and input in the bottom-right quadrant of the chart. (Example-*To achieve X, the threat needs Y.*)

**Step 4:** Identify all threat critical vulnerabilities—elements related to threat critical requirements developed in Step 2 that appear exposed or susceptible (at risk)—and input in the bottom-left quadrant of the chart. (Example-*The threat cannot lose Z.*)

**Step 5:** Analyze the chart to determine the windows of opportunity by identifying the common denominator (or entity) that encompasses those identified threat critical capabilities, requirements, and vulnerabilities, and input in the top-left quadrant of the chart.

**Step 6:** Identify all listed critical factors that friendly forces can directly affect to identify potential targets or topics for further collection.

Table 3-2 gives an example of this quad chart.

**Table 3-2. Example Critical Factors Analysis Quad Chart.**

<p><b>Windows of Opportunity</b>  <u>Friendly force opportunities to attack:</u></p> <ul style="list-style-type: none"> <li>• During threat movement because threat command and control is limited during maneuver.</li> <li>• At night because threat air is limited to daylight.</li> </ul>	<p><b>Threat Critical Capabilities</b></p> <ul style="list-style-type: none"> <li>• Maneuver in depth to disrupt friendly main effort.</li> <li>• Mass combat fire against friendly light reconnaissance force.</li> <li>• Speed presents two options against which to defend.</li> <li>• Capability to seize windows of opportunity.</li> </ul>
<p><b>Threat Critical Vulnerabilities</b></p> <ul style="list-style-type: none"> <li>• Command and control limited during maneuver.</li> <li>• Maneuver space and routes can be interdicted.</li> <li>• Supply elements vulnerable to attack.</li> <li>• Threat air limited to daylight and visual meteorological conditions.</li> <li>• Special operations forces insertion phase is vulnerable to interdiction.</li> </ul>	<p><b>Threat Critical Requirements</b></p> <ul style="list-style-type: none"> <li>• Command and control.</li> <li>• Maneuver space and routes.</li> <li>• Long-range artillery and multiple launch rocket assets.</li> <li>• Available ammunition.</li> <li>• Available fuel.</li> <li>• Defensive counterair.</li> <li>• Available special operation forces support.</li> <li>• Available air transportation to support insertion operations.</li> </ul>

### Target and Entity Evaluation Criteria

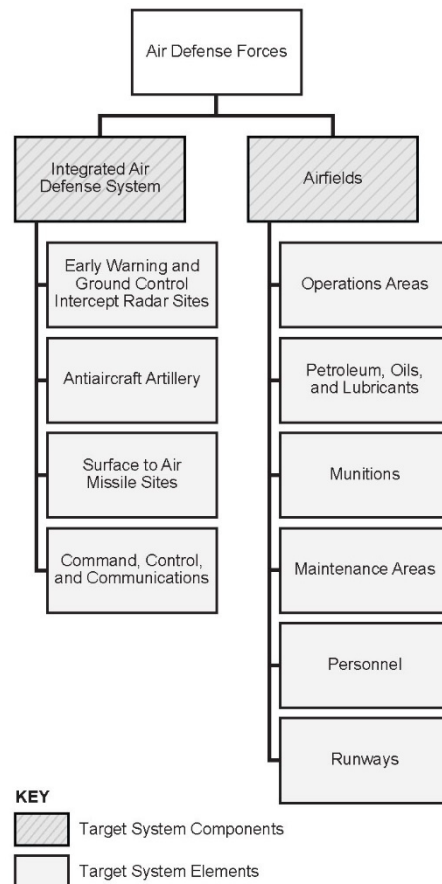
The network affiliation related criticality, accessibility, recuperability, vulnerability, effect, and recognizability (CARVER) method provides a graph-based numeric model for determining the importance of engaging a relevant actor based on network affiliation plus the six factors outlined in the method's name. The staff conducts CARVER collaboratively using quantitative analysis to apply the criteria, which results in a numerical score of importance for each relevant actor. See Table 3-3 for an example of the CARVER method.

**Table 3-3. Network Affiliation CARVER.**

<b>Network Affiliation</b>	<b>Value</b>	<b>Criticality</b>	<b>Accessibility</b>
Identify each relevant network the target/entity is affiliated with for evaluation.  Affiliation is determined by answering the following:  1) Is the target/entity a member of the network?  2) Does the target/entity fulfill a significant role in the network to be engaged?	9-10	Loss would stop (or nearly stop) the function of the network.	Easily accessible. Unrestricted access to the target or entity.
	7-8	Loss would considerably reduce the network's functionality.	Accessible with possible limitations (physical or temporal).
	5-6	Loss would reduce the network's functionality.	Limited access; known access limitations (physical or temporal).
	3-4	Loss may reduce the network's functionality.	Very limited access; significant access limitations (physical or temporal).
	1-2	Loss would not affect the network's functionality.	Inaccessible or minimally accessible.
<b>Recuperability</b>	<b>Vulnerability</b>	<b>Effect</b>	<b>Recognizability</b>
Extremely difficult to recuperate (> 1 year.)	Clear vulnerabilities and full capability to engage the target or entity.	The action taken completely fulfills the desired engagement effect(s) on the node and the network's structure, function, and/or sustainability.	Clearly recognizable with little or no training for recognition. Accurately identifiable using collection assets.
Difficult to recuperate. (6 months to 1 year).	Clear vulnerabilities and limited capability to engage the target or entity. External support will provide the needed capabilities.	The action taken results in the desired effect(s) on the node and partially fulfills the desired engagement effect(s) on the network's structure, function, and/or sustainability.	Easily recognizable with minimal training for recognition. Likely to be accurately identifiable using collection assets.
Can recuperate in a relatively short time. (2-6 months).	Potential vulnerabilities and limited ability to engage the target or entity. External support may provide the needed capabilities.	The action taken results in the desired effect(s) on the node and does not result in either a desired or an undesired effect on the network's structure, function, and/or sustainability.	Difficult to recognize; requires some training for recognition. Possibly identifiable using collection assets but may require non-organic collection support.
Easy to recuperate. (< 2 months).	Limited vulnerabilities and minimal ability to engage the target or entity. External support is not likely to provide the needed capabilities.	The action taken results in the desired effect(s) on the node and results in an undesired effect on the network's structure, function, and/or sustainability.	Difficult to recognize; requires extensive training for recognition. Possibly identifiable using collection assets but will require non-organic collection support.
Can be immediately replaced (days).	No clear vulnerabilities. No or minimal ability to engage the target or entity. No or very limited options for external support.	The action taken results in undesired or no effect(s) on the node and results in an undesired effect on the network's structure, function, and/or sustainability.	Extremely difficult to recognize without extensive training and additional information on the target or entity. Not likely to be accurately identified using collection assets.

## Systems Analysis

Target development often approaches adversary capabilities from a systems perspective. This includes physical, logical, and complex social systems and the interaction among them. While a single target may be significant because of its own characteristics, the target's real importance is in its relationship to other targets within a target system. A target system is most often considered as a collection of assets directed to perform a specific function or series of functions. Target systems are interdependent in support of threat capabilities (e.g., the electric power system may provide energy to run the adversary's railroads that are a key component of their military logistic system). System-level target development links these multiple target systems and their components to reflect both their interdependency that contributes to the adversary's capabilities. The JIPOE process helps target developers prioritize an adversary's target systems based on how much each contributes to the threat's ability to conduct operations. See CJCSI 3370.01 and Figure 3-3 for an example of a target system.



**Figure 3-3. Example Target System, Components, and Elements.**

## Targeting Taxonomy

Target development uses a systems approach to examine threats. Targeting taxonomy offers a clarifying framework that examines a target system from TSA to the individual target elements, hierarchically ordering the adversary, its capabilities, and those targets that enable the adversary's capabilities. See Figure 3-2 for more details on target development relationships.

**Adversary.** A party acknowledged as potentially hostile to a friendly party and against which the use of force may be envisaged.

**Target System.** "All the targets situated in a particular geographic area and functionally related or a group of targets that are so related that their destruction will produce some particular effect desired by the attacker" (*DoD Dictionary*).

**Target System Component.** "A related group of entities within a target system that performs or contributes toward a similar function" (*DoD Dictionary*).

**Relevant Actor.** "Individual, group, population, or automated system whose capabilities or behaviors have the potential to affect the success of a particular campaign, operation, or tactical action" (*DoD Dictionary*).

**Target.** "An entity that performs a function for the adversary or enemy considered for possible engagement" (*DoD Dictionary*).

**Target Element.** "Specific features of a target entity that enable it to function" (*DoD Dictionary*).

**Audience.** "In public affairs, a broadly-defined group that contains stakeholders and/or publics relevant to military operations" (*DoD Dictionary*).

**Target Audience.** "An individual or group selected for influence" (*DoD Dictionary*).

**Critical Target Element.** "A feature or part of a target that enables it to perform its primary function and, if effectively engaged, should achieve the commander's objective, or create a significant effect on that target" (*DoD Dictionary*).

## Responsible Producer

A responsible producer (known as RESPROD) is the organization responsible for views in the MIDB, by functional production area, to database and maintain currency of targets within the MIDB. This responsibility is usually held at the CCMD level but may be delegated based upon training and experience prerequisites. The staff must be able to identify who the responsible producer is to ensure that target development is run efficiently and effectively according to the responsible producer requirements.

## MIDB and Machine-Assisted Analytic Rapid-Repository System

The MIDB is "the national-level repository for the general military intelligence for the entire Department of Defense Intelligence Information System community and, through Global Command and Control System integrated imagery and intelligence, to tactical units" (*DoD Dictionary*). The MIDB's information is maintained in support of the CCMDs, Services, combat

support agencies, US Government departments and agencies, and international organizations. The MIDB and the future Machine-assisted Analytic Rapid-repository System (MARS) architecture consists of a group of component databases that continuously replicate worldwide 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. The MIDB provides a baseline source of intelligence on installations, facilities, military forces, population concentrations, command and control structures, and equipment, in addition to target details. It is the national database for all target lists, NSLs, and textual data in ETFs. The joint targeting database is part of the MIDB enterprise. The MARS is intended to eventually replace the MIDB, however the transition will be a multi-year evolution where both MIDB and MARS will work in tandem prior to the MIDB going off-line in the outyears. For more information on MIDB and MARS, see CJCSI 3370.01.

## **ACTIVITIES**

### **Entity-Level Target Development**

Entity-level target development builds on TSA and generally occurs in three stages: basic, intermediate, and advanced. Each stage is defined by a minimum set of essential data required to progress an entity from initial identification and functional characterization to execution-level detail. A target is considered fully developed when all three stages are complete and sufficient intelligence exists to support the operational and legal requirements necessary to proceed with military operations against the target.

Once an entity has been identified as a potential target (known as a TDN), targeting professionals start an ETF. Electronic target folders are a set of webpages and or links to metadata-tagged, target materials that are stored and maintained in central repositories. They are used to store entity-level target intelligence, operational, planning, and legal information and are catalogued by an entity identification (e.g., alphanumeric string in approved national databases). Target materials may be presentations of target intelligence and are stored in ETFs.

Target development nominations are further developed and, when intermediate target development and command quality control standards are met, the entity is placed on a candidate target list (known as a CTL). The target validation authority may require a candidate to go through intelligence community vetting, however intelligence community vetting is not a requirement according to CJCSI 3370.01. Next the candidate target is nominated for validation at the next available targeting coordination board. If the target validation authority validates the target, it is assigned to the JTL or RTL. The difference being that if assigned to an RTL, there are remarks associated with the target that inform anyone prosecuting the target that they must either do or not do some action to the target (i.e., Restriction Statement: Do not use dual-purpose improved conventional munitions due to high dud rate and high civilian traffic.). If the target validation authority does not validate the target, the target may either require more information or it will get assigned to the CCMD NSL and will require CCDR approval to remove the protection status of a no-strike entity. After a target is validated to the JTL or RTL, it then goes through the remainder of the targeting cycle and is developed to the advanced target development level where, depending on the need to engage because of the scheme of maneuver, the staff will start to align target resources and recommended prioritization. These actions allow the staff to place the target on the target nomination list (TNL) where it will be briefed to either

the commander, or the target validation authority and target engagement authority, at the targeting coordination board for approval and placement on the JIPTL. The JIPTL is where the tasking goes to resources to engage within the next tasking cycle.

Aimpoints are selected for targets based on critical target element analysis, which includes the ability to create the desired effects by an engagement. Aimpoint analysis and development, while part of target development, must also be linked to the capabilities analysis step in the targeting cycle. Aimpoints are usually expressed as geographic coordinates grid reference, logical reference, and radio frequency parameters, and can include a temporal aspect to applicability. Aimpoints include a desired point of impact usually associated with the use of precision-guided munitions, desired mean point of impact, and the joint desired point of impact (JDPI). The JDPI is a unique, alphanumeric-coded aimpoint identified by a three-dimensional mensurated point and is used as the standard for identifying aimpoints. For fires to create lethal effects, an aimpoint is for weapon impact or penetration. For fires to create nonlethal effects, a nonlethal reference point (NLRP) designates the location of the target. Nonlethal reference points are always associated with a target entity or element but may or may not correspond to a physical location. Unlike a JDPI, a NLRP does not represent a precise three-dimensional geocoordinate that has been measured by a certified analyst. For purposes of databasing, NLRPs are entered as aimpoints. See CJCSI 3370.01 and CJCSI 3505.01, *Target Coordinate Mensuration Certification and Program Accreditation*, for additional information regarding aimpoints and their analysis and development.

### **Target List Management**

Target list management is a process within phase 2 of the MAGTF targeting cycle and begins when a target is nominated for target development and ends with the creation and maintenance of a prioritized target list. This process includes:

- Target vetting.
- Validation.
- Listing.
- Nomination.
- Prioritization.

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

**Target Development Nomination List.** A list of nominated entities that meets basic target development criteria but require intermediate target development before submitting as a candidate target.

**Candidate Target List.** “A list of entities submitted by component commanders, appropriate agencies, or the joint force commander’s staff for further development and inclusion on the joint target list, restricted target list, or the no-strike list” (*DoD Dictionary*). Entities on this list are

undergoing target development and are not yet validated. Targeting professionals evaluate and analyze them to determine their suitability as targets.

**Joint Target List.** “A consolidated list of validated and unrestricted targets of military significance within a joint force commander’s operational area” (*DoD Dictionary*). The JTL is comprised of validated targets that have no target engagement restrictions. These targets have undergone a thorough analysis, validation, and approval processes and are available for engagement as needed.

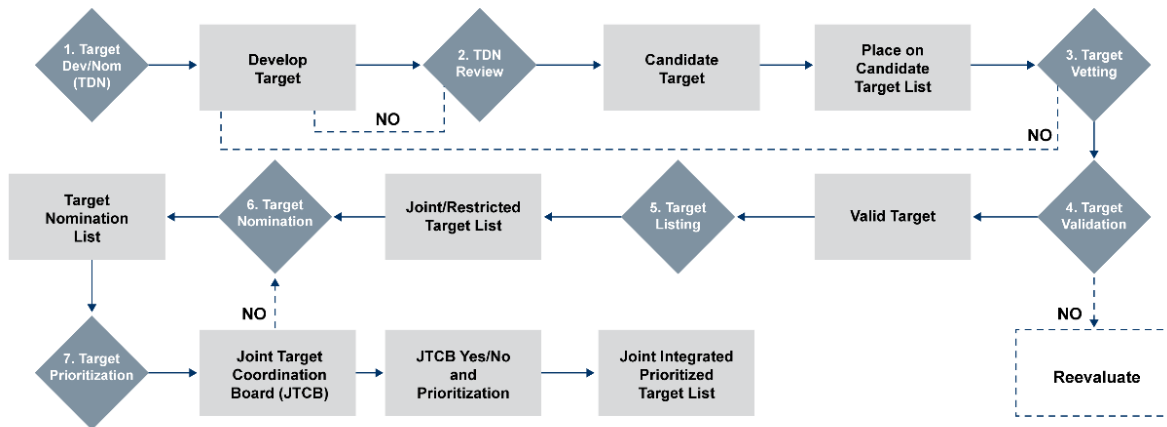
**Restricted Target List.** “A list of restricted targets nominated by elements of the joint force and approved by the joint force commander or directed by higher authorities” (*DoD Dictionary*). Validated targets on the RTL also undergo a rigorous validation process, but they have specific target engagement restrictions. These restrictions could be because of political sensitivities, collateral damage concerns, or other operational considerations.

**Target Nomination List.** “A prioritized list of targets drawn from the joint target list, or restricted target list, and nominated by component commanders, appropriate agencies, or the joint force commander’s staff for inclusion on the joint integrated prioritized target list” (*DoD Dictionary*).

**Joint Integrated Prioritized Target List.** “A prioritized list of targets approved by the joint force commander that feeds the integrated tasking order/air tasking order process” (*DoD Dictionary*). The JIPTL represents the highest priority targets for joint targeting operations and serves as a guide for allocating resources and conducting targeting activities.

**MAGTF Integrated Prioritized Target List.** The MAGTF integrated prioritized target list is like the JIPTL, but specifically on MAGTF HPTs. It includes HPTs identified throughout all domains and environments that are considered for targeting and engagement to support the MAGTF commander’s objectives. For more information on the MAGTF integrated prioritized target list see MCWP 3-31. For more information on target lists and target list management, see CJCSI 3370.01.

A target must go through the target development process to be validated. The staff follows several steps, involving multiple stakeholders, prior to designating the entity as a target. Figure 3-4 depicts the target development and target list management process. Additional information can be found in CJCSI 3370.01, Enclosure E.



**Figure 3-4. Target Development and Target List Management Process.**

### **Relevant Actor Development and Prioritization**

The MIG and other information capabilities are in constant contact prior to and during armed conflict. Therefore, information operations may require supplemental ROE and authorities to engage enemies during armed conflict, adversaries during competition, and neutral or friendly entities throughout the continuum.

Fleet Marine Forces maneuver in the operational environment and engage relevant actors and systems to gain an advantage. The integration of fires and effects is central to enabling the success of maneuver warfare. During execution, the aim of fires is not merely to attrite enemy and adversary physical strength; rather, relevant actors and targets are engaged throughout the battlespace in a unified manner to create desired effects in support of commander's objectives. Fleet Marine Forces concentrate strength against enemy or adversary critical vulnerabilities, striking quickly and boldly where, when, and in ways that will cause the greatest damage to the enemy's or adversary's ability and will to fight. Maneuver warfare often involves the extremely high attrition of selected enemy forces where combat power is focused against enemy weakness. Fleet Marine Forces seek to penetrate the enemy and adversary system and disrupt it from within to overcome information disadvantages and achieve or exploit information advantages in pursuit of objectives.

Relevant actor development includes the systematic examination of entities and systems in the operational environment to determine the necessary type and duration of action to exert on entities to create desired effects consistent with objectives. Relevant actors are developed, listed, and prioritized. Their development and prioritization are continuously refined throughout future plans and FOPS planning processes. Marine air-ground task force target lists and other relevant actor lists are generated during this phase. These lists facilitate execution of MAGTF fires and effects plans by providing the adequate granularity required to develop fires and effects taskings. Target development processes are relatively well established, however, development processes for neutral and friendly relevant actors and systems require continued evolution.

**Relevant Actor Analysis.** Relevant actor analysis includes the systematic examination of systems and entities in the battlespace, identifying potentially relevant actors, and determining military importance, engagement priority, and capabilities required to create desired effects.

These efforts include the conduct of all-source intelligence operations and engagement with partners to improve knowledge of friendly, neutral, and adversary actors, and how they work as systems and networks. Products and processes that can help identify and analyze relevant actor entities and systems in the battlespace and operational environment include:

- JIPOE.
- TSA.
- COG analysis.
- Network analysis.
- ASCOPE, PMESII-PT, and target audience analysis.
- Publicly available information.
- Area studies and assessments.

***MEF, MSC, and MSE Target Nomination Process.*** Joint Publication 3-60 states that federated support enables supported commanders to request assistance from outside an area of responsibility for such matters as target development, capability analysis, and combat assessment. Throughout the target development process, echelons below the MEF will inherently require assistance with target development or engagement. This can be because of an inability to develop targets to the CJCSI 3370.01 required detail or a lack of capability to create the desired effects. Therefore, echelons below the MEF may nominate entities, relevant actors, and targets through the battle rhythm process to the component or joint level. The lower echelons must understand how to conduct battle rhythm nesting to align commander's objectives.

## **OUTPUTS**

Phase 2 ends with a target validation authority validating a target and TNLs being nominated to the higher echelon battle rhythm. These targets are assigned to a target list and then are used to support operations when required. Once potential targets are identified, researched, developed, vetted, and validated, they are nominated by component commanders, national agencies, supporting commands, and the JFC's staff and placed onto TNLs. The TNLs are compiled into a draft JIPTL, coordinated with the components, and submitted to the JFC for approval. Once approved, the list is transmitted to all components and appropriate agencies as the JFC's approved JIPTL, which focuses targeting efforts for a designated period. For more detailed guidance and discussion on target development, see CJCSI 3370.01.

# CHAPTER 4

## PHASE 3: CAPABILITIES ANALYSIS

After target development is complete and the target is validated by a target validation authority, the fires element and intelligence section work on the capabilities phase. Capabilities analysis involves evaluating all available capabilities to engage entities and determining options available to create desired effects. During this phase targeting professionals—

- Consider target vulnerabilities and engagement capabilities in relation to available forces and resources.
- Estimate the most likely outcome and most likely effects from employing different capabilities to engage a target.
- Weigh the relative effectiveness and efficiency of capabilities to create desired effects, while considering risks to the force, collateral damage, and waste of resources.
- Analyze options and determine the best possible solution.

As with most targeting processes and procedures, joint force, component, and Service targeting professionals conduct capabilities analysis differently. Capabilities analysis usually consists of four steps:

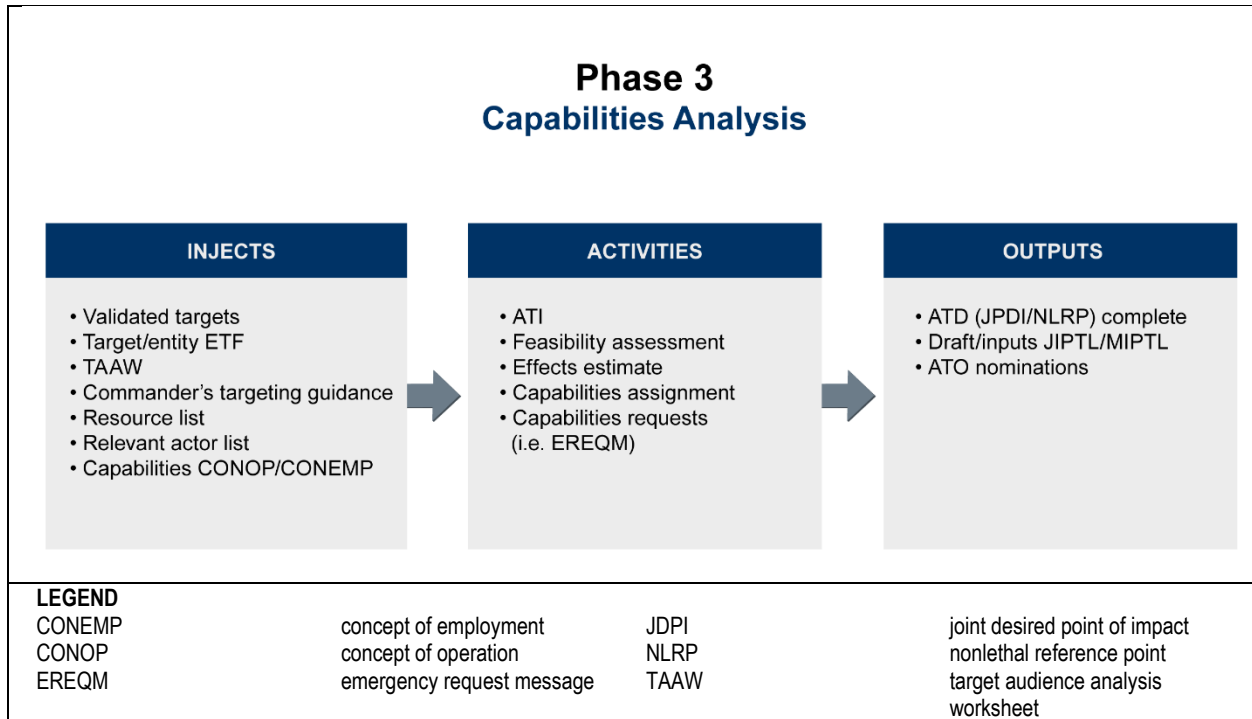
- 1) Target vulnerability analysis.
- 2) Capabilities assignment.
- 3) Feasibility assessment.
- 4) Effects estimate.

Integrating and synchronizing multiple target engagement capabilities often produces synergistic effects. Targeting professionals strive to integrate and synchronize target engagement capabilities in the physical domains, the information environment (including cyberspace), and the electromagnetic environment.

Analyzing engagement options and determining best possible solutions is typically a collaborative effort involving fires and effects planners from the MAGTF command element, the MSC and elements, and external agencies. Planners from the FECC, intelligence operations center (IOC), air center, and ICC have significant roles in the capabilities analysis process. Targeting professionals provide input from their area of expertise based on engagement capabilities and the type of entity being engaged. At the MAGTF level, the FECC coordinates the capability analysis process to facilitate unity of effort.

In this phase, the intelligence section provides current intelligence on the target, the ETF, and any relevant actor information. The operations section and fires element provide updated information on available resources. The fires element and the intelligence section identify the capabilities most likely to create the desired effects and project the most likely resources to use. The staff also identifies the scheme of maneuver and fires, and any SPINS (e.g., restrictions—no-strike criteria, collateral damage and effects considerations, path to target restrictions, capabilities restrictions). This information allows the fires element, with the intelligence section, to identify target vulnerabilities, the capabilities available that can create the desired effects, and

the feasibility of asset target interaction (ATI). Figure 4-1 depicts phase 3 injects, activities, and outputs.



**Figure 4-1. Phase 3 Injects, Activities, and Outputs.**

## INJECTS

### Validated Targets

After targets are validated, they are added to a JTL, RTL, or GITL. Validated targets are then considered for engagement to create the desired effects.

### Target and Entity Electronic Targeting Files

See the entity-level target development paragraph in chapter 3.

### Relevant Actor Analysis and List

See the relevant actor analysis paragraph in chapter 3.

### Commander's Targeting Guidance

See activities paragraph in chapter 2.

### Resource List

The COPS section maintains a status of available resources and their readiness. These resources are considered in phase 3.

### Capabilities Concept of Operation and Concept of Employment

Conducting phase 3 requires a targeting professional to be familiar with the capabilities' planning, employment, and effects. Every capability will have a concept of operation, concept of

employment, or both, to describe its characteristics. There are many repositories that hold this information; therefore, the targeting professional must use the capabilities' SME.

## **ACTIVITIES**

### **Target Vulnerability Analysis**

When a target is identified for engagement, the intelligence section conducts additional analysis to identify the critical links and nodes within the target's system that, if engaged, will create the desired effects. During the analysis the intelligence section asks:

- What are the things that, if engaged, would reduce enemy capability?
- Is there something in the system that can be engaged to create the desired effect?

The links or nodes are then analyzed to determine if they are vulnerable. From the analysis, the fires element creates an ATI recommendation through weaponeering and databasing.

### **Creating Asset Target Interactions**

Using the target vulnerability analysis, the fires element conducts weaponeering on the target ETF aimpoints developed during phase 2. The use of weaponeering software (i.e., Joint Munition Effectiveness Manual Weaponeering Software) assists in developing ATIs. Weaponeering software systems allow analysts to conduct mathematical predictions based on the percentage of damage or change modeling that a capability might create on a target with the associated aimpoints. Once weaponeering is complete, target coordinate mensuration allows for accurate aimpoint selection and is conducted via target mensuration only (TMO) or target materials production software. After aimpoint selection is complete, a 0245 Target Mensuration Analyst conducts target materials production by mensurating the geo-coordinates and produces a graphic. A TMO operator does the same for dynamic targets. With these two sets of data, a collateral damage analyst identifies collateral damage considerations that will affect the commander's risk calculus when reviewing a target package. Advanced target development is complete, and the data is stored once all three processes are complete – weaponeering, aimpoint selection, and CDE. The data is stored in two locations, the joint targeting toolbox and the National Production Workshop. Databasing allows other analysts, whether in the same command or elsewhere, to use the data when nominating an ATI for approval.

### **Feasibility Analysis**

There are many fires capabilities within the US and international arsenals (including information capabilities) that can produce the commander's desired effects. However, there are employment restrictions at all levels of war (tactical, operational, or strategic), depending on where fires are being executed within the competition continuum. This means targeting professionals must understand the commander's authorities, the ROE, law of war, LOAC, and the commander's stated limitations. Including a command SJA ensures deliberate or dynamic targeting is conducted in line with the listed concerns. During feasibility analysis, the staff must consider limitations and restrictions of joint, interagency, intergovernmental, and multinational agreements. The relationship between these entities must be fostered. The commander decides if fires plan is in line or against these agreements, based on the commander's authorities and HHQ directives. The periodic review of agreements, limitations, and restrictions might be necessary to ensure the staff understands them.

## **Conduct Collateral Damage and Effect Estimate**

Consideration of collateral damage and collateral effects are a significant part of targeting because of the risk management analysis provided to the commander. These two pieces of information inform the commander on potential civilian harm that the targeting package can inflict within and outside of their area of responsibility. Though the collateral damage methodology (see CJCSI 3160.01) does not consider actions after munition function, collateral effects analysis does. Therefore, an analyst must identify potential 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> order engagement effects. Also, civilian harm mitigation and response personnel at the CCMD level might need to conduct additional analysis. This is not a requirement at the MAGTF level unless directed, however it should be a consideration. For additional information on civilian harm mitigation and response see DoD Instruction 3000.17.

## **Sensitive Target Approval and Review Process**

Sensitive targets are discussed in phase 2; however, projected effects are not considered until phase 3. Therefore, the targeting professional should consider the need to nominate sensitive targets through the review and approval process to identify any follow-on triggers that have tripped.

## **Battle Rhythm Inputs and Outputs**

Capabilities analysis provides information to the commander and staff during multiple battle rhythm events. These events include the information working group, collection management working group, targeting working group, and targeting coordination board. The ATI analysis provides avenues to incorporate the entire staff in identifying the best ATI to create the desired effects, how to best conduct PID and CID, how to engage and from what path to target, and how to assess during phase 6. This analysis is socialized at the common access level (i.e., don't brief military deception execution during a targeting working group when the participants are not read into the appropriate compartmented information) with, at a minimum, the intelligence, operations, information, and plans sections. The mission packages developed during phase 3 are presented to a target engagement authority to approve the ATI to be engaged.

## **Nonlethal Pairing**

A NLRP is the desired point for information capabilities to create first-order effects. When developing ATI for information capabilities, the following must be considered:

- Authority to execute.
- Risk (i.e., intelligence gain-loss, loss of access, attribution, capability discovery, TTP discovery).
- Planning (i.e., joint military deception review and approval process length).
- Possible one-time use.
- Possible pairing with capabilities for lethal effects.

The combination of capabilities might produce the commander's desired effects while reducing expenditure of lethal munitions needed for later phases of conflict. However, there are risks the authorized decision maker must consider when integrating information capabilities.

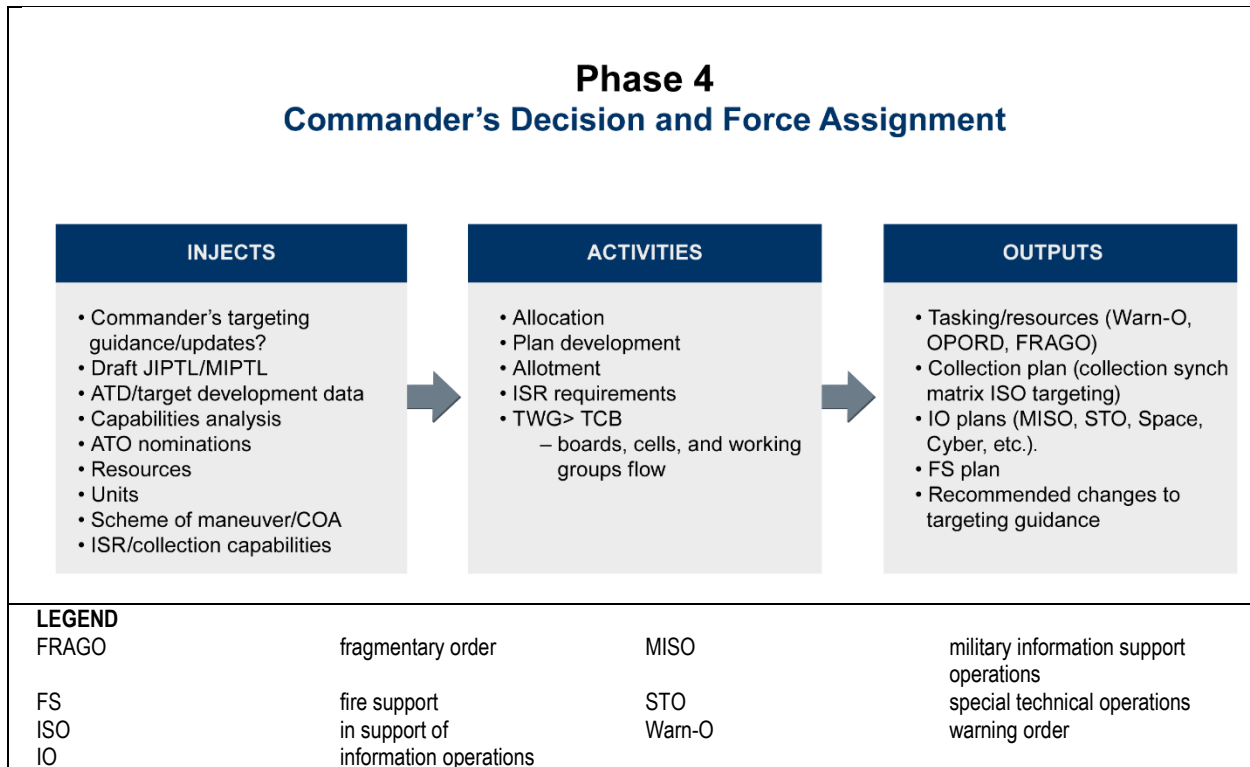
## **OUTPUTS**

The most significant output to phase 3 is the draft MAGTF integrated prioritized target list with the weaponeering solutions attached to targets. These solutions, like a menu, are used in resourcing discussions at a follow-on targeting working group. During the targeting working group, staff sections and subordinate HQs will rack and stack ATI and identify where resource duplication or overlap occurs. Any unresolved issues are decided at the targeting coordination board by the target engagement authority.

# CHAPTER 5

## PHASE 4: COMMANDER'S DECISION AND FORCE ASSIGNMENT

Phase 4 provides the commander an opportunity to review the completed staff work up to that point and make a decision. The decision might be to validate targets, engage targets, update, revise, or give guidance, or other required targeting decisions. Figure 5-1 shows the phase 4 injects, activities, and outputs.



**Figure 5-1. Phase 4 Injects, Activities, and Outputs.**

### INJECTS

At this point in the process, a targeting professional should have:

- Commander's targeting guidance.
- The draft MAGTF integrated prioritized target list.
- Advanced target development data.
- ATO.
- Targeting and ISR resources and units available.
- CONOPS and scheme of maneuver.

These injects will inform phase 4 by identifying what is available, risk to force and mission through lack of capability, and what additional information requirements are needed.

## ACTIVITIES

The staff presents the commander with the target and capability pairings they are working on. Depending on how developed the target is within the target lifecycle, the staff might present:

- Targets that need validation.
- A draft MAGTF integrated prioritized target list needing approval.
- Restrike recommendations that require the commander's decision.

Due to other resource requirements (e.g., ISR assets to support PID, CID, and combat assessment), such as logistics (e.g., moving munitions, personnel, or equipment) or operations (e.g., displacing forces), decisions are accompanied with the linked targeting product requiring approval.

The decisions made will assist in the codification of—

- Tasking.
- Collections plans.
- Information plans.
- Targeting and other fires plans.
- Air plans.
- Assessment plans.
- Other required coordination products.

These decisions then shift the staff's effort from planning to executing approved targets and plans. Because of the restrictions placed on some fire support and information assets, planners from supporting capabilities must be involved in the review and approval process. There can be additional steps because of unique authority requirements.

### Apportionment and Allocation

Apportionment is “the quantities of force capabilities and resources provided for planning purposes only, but not necessarily an identification of the actual forces that may be allocated for use when a plan transitions to execution” (*DoD Dictionary*). Allocation is “the distribution of limited forces and resources for employment among competing requirements” (*DoD Dictionary*). Air apportionment determines and assigns the percentage or priority of the total expected effort that should be devoted to the various air operations for a specific period. It includes priority or percentage of effort devoted to assigned mission-type orders, objectives, or other categories significant to the operation. This decision is then translated into air allocation, which is the total number of available sorties by aircraft for each operation or task. Joint, air-capable component, and MAGTF commanders use the air apportionment and allocation process to ensure priority of air effort is consistent with operational phases and objectives.

Air apportionment decisions are among the most important decisions made by a MAGTF commander. Aviation contributes to all warfighting functions and directly affects MAGTF operations. Employing aviation capabilities in an efficient and effective manner is critical as there are finite MAGTF aviation assets. For more information on the details of air tasking cycle, apportionment, allocation, and air asset incorporation into the targeting cycle, see MCWP 3-20, *Aviation Operations*; MCTP 3-20D, *Offensive Air Support*; and MCWP 3-31.

## Plan Development

The next task is to identify how to integrate the outputs from the previous and current phase into the scheme of maneuver through a scheme of fires or other product. During plan development, targeting professionals must also identify and coordinate ISR capabilities to support pre-, during, and post-strike events. The staff presents the plan to the commander throughout the planning process and receives approval during the targeting coordination board.

## Targeting Coordination Board Agenda

Table 5-1 is an example of an agenda for a targeting coordination board.

**Table 5-1. Sample Targeting Coordination Board Agenda.**

<p><b>Prior to Decision Maker Arriving:</b></p> <ul style="list-style-type: none"><li>• Take attendance</li></ul>
<p><b>Upon Decision Maker's Arrival:</b></p> <ul style="list-style-type: none"><li>• Opening comments.</li><li>• Agenda.</li><li>• Review rules of engagement.</li><li>• Assessments from the day prior.<ul style="list-style-type: none"><li>○ Reattack recommendations. *</li></ul></li><li>• Current intelligence picture.</li><li>• Targets that need to be validated. *</li><li>• Current force picture.</li><li>• Draft JIPTL/ MAGTF integrated prioritized target list for approval. *</li><li>• Strike and mission packages approval. *</li><li>• Future fires picture.</li><li>• Review of authorities.<ul style="list-style-type: none"><li>○ Recommendations to request changes to authorities. *</li></ul></li><li>• Targeting guidance review. *</li><li>• Wrap up of decisions made.</li></ul> <p><i>* Represents possible decision points for the decision maker.</i></p>

Once the decision maker answers the request for approval, the fires element works with the operations section to issue orders. Forces act upon these orders through phase 5 and the fires element will transition to the next cycle and hand off the planning to COPS. Current operations execute the plan with additional guidance for the current fight.

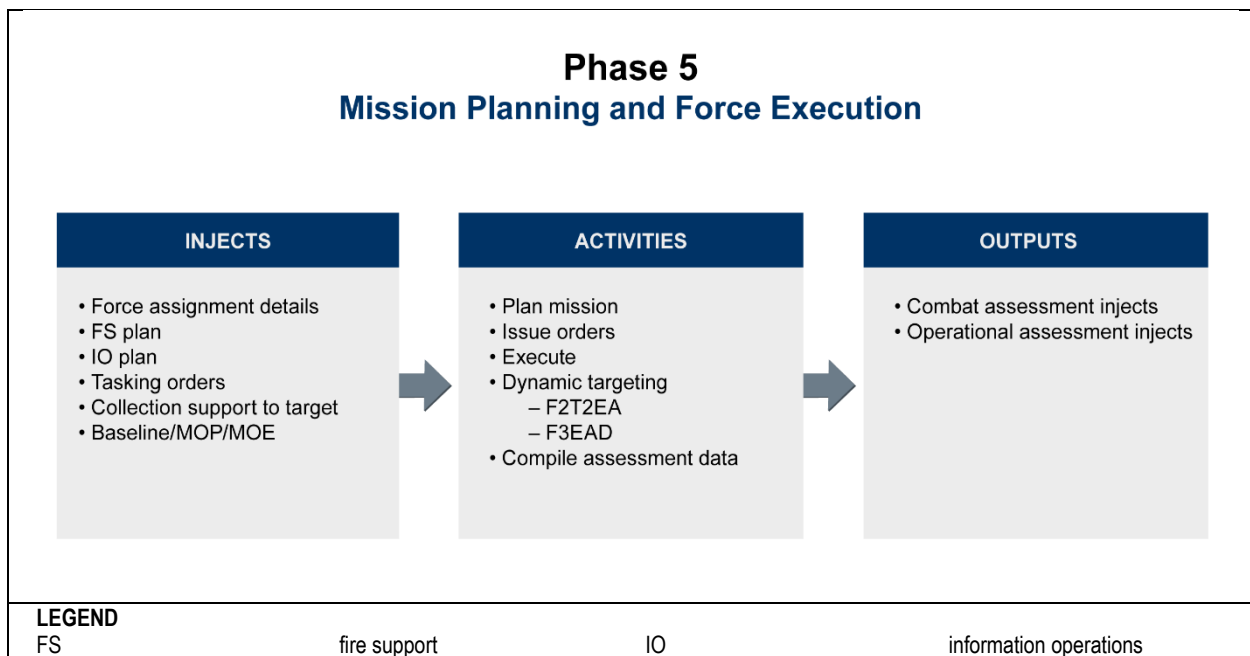
## OUTPUTS

Through formal tasking (i.e., TASKORD), the staff then stage their forces to fulfill the tasking. During phase 5, tasks are integrated into capability planning.

# CHAPTER 6

## PHASE 5: MISSION PLANNING AND FORCE EXECUTION

In phase 5, the activities move from plans and planning to execution. Higher headquarters provided all the plans to subordinate units. Also, execution activities required to execute the plan are scheduled and aligned with the CONOPS. During the execution, the COPS section within the watch floor coordinates all fires (i.e., air and cyberspace deconfliction). During execution, the battlespace continually changes. Fires and effects personnel monitor these changes and collaborate to seize and maintain the initiative. The FOPS and COPS fires and effects personnel collaborate to validate and adjust planned actions ensuring tasks executed during COPS are consistent with MAGTF fires and effects objectives and the commander’s guidance. Figure 6-1 shows the phase 5 injects, activities, and outputs. Execution of the plan, including dynamic targeting when unscheduled or unanticipated targets are encountered in the battlespace, is most important and exercised in this phase to ensure the transition from plans to planning to execution.



**Figure 6-1. Phase 5 Injects, Activities, and Outputs.**

### INJECTS

Planning up to phase 5 identifies which targets to engage, how to create effects, and which capability or unit is tasked to execute the required activities. The targeting professional collects all approved and issued plans and orders to synchronize with the overarching execution plan. They then coordinate with the COPS floor to ensure orders are issued and executed. Current operations personnel at all echelons employ collaboration tools and procedures to synchronize dynamic targeting.

## ACTIVITIES

### Planning and Execution

Targeting professionals develop and employ fires and effects execution TTP that support and execute the fires and effects tasks by coordinating engagement actions among applicable agencies and combat operations centers. During execution, the FECC's principal roles include coordinating, tracking, and assessing MAGTF fires and effects in the battlespace, directing dynamic targeting, and coordinating counterfire. Battle rhythm events and planning cycles facilitate MAGTF targeting planning and coordination. The FEC is responsible for coordinating fires and effects battle rhythm events with the COS or deputy MAGTF commander. The MAGTF can form a dedicated targeting cell (consisting of fires and effects planners from the FECC, ICC, information operations center, air center, and aviation combat element) to facilitate coordination and synchronization of MAGTF fires and effects. Targeting cell activities include—

- Facilitating MAGTF targeting, information, collection, and air plan synchronization.
- Identifying HPTs and associated critical target elements.
- Refining, synchronizing, and sequencing targeting tasks.
- Coordinating targeting task detail with MSCs and major subordinate elements.
  - Coordinating incorporation of ISR targeting collection and assessment requirements into the collection plan.
  - Coordinating MAGTF integrated prioritized target list cut line and incorporating targeting information into the ATO.

Targeting planning is focused on a period of several days. After targeting decisions are made, targeting professionals and decision makers continue to monitor current battlespace conditions, review planned actions, and adjust targeting plans as appropriate. In general, targeting during the battle rhythm should remain flexible to the maximum extent possible.

### Engagement Capabilities and Lethal Effects

During battle rhythm events, the FECC is primarily responsible for coordinating engagement capabilities that create lethal effects. Planners should use objective information to determine MAGTF organic firepower capacity in relation to targeting and fire support requirements. Targeting professionals develop custom targeting tools to predict MAGTF firepower capacity in an objective manner. The MAGTF's targeting capabilities that create lethal effects primarily consist of surface fires, strike capable aviation platforms, and associated ordnance. During planning, the FECC coordinates with aviation planners to develop MAGTF aviation firepower capacity predictive tools (see Figure 6-2). Targeting professionals likewise develop surface fires capacity predictive tools.

	A	B	C	D	E	F	G	H	I	L	M	N	O
1	Type AC	Total # AC	AC Avail Rate	Sust Sorties/day	Surge Sorties/day	DAS Apportion %	Pri SCL Description	Pri SCL PGMs	Pri SCL PH	DAS Tgt Elms hit-Sust	DAS Tgt Elms hit-Surge	CAS-Sust	CAS-Surge
11	FA-18C/D	60	0.70	2.50	4.00	0.60	4xJDAM	4	0.60	151	242	101	161
12	F-35	32	0.70	2.50	4.00	0.60	4xJDAM	4	0.60	81	129	54	86
13	AH-1W	54	0.70	2.50	4.00	0.60	4xHellfire	4	0.75	0	0	284	454
14										232	371	438	701
15													
16													
17			Predictions:			- DAS Sustained			- DAS Surge		-CAS Sustained		-CAS Surge

**NOTE**

This spreadsheet is an example planning tool that can be used to rapidly determine aviation firepower capacity and predict the daily number of enemy target elements that can be damaged. For example, such a tool can be used in the deliberate targeting planning process to rapidly predict the number of enemy target elements (DPIs) damaged by MAGTF aviation assets per day. In this example, column L represents a predicted number of DAS aviation ordnance hits on the target elements/DPIs per day using a sustained sortie rate, employing PGMs; column M shows DAS surge numbers; column N shows CAS sustained numbers; and column O shows CAS surge numbers.

Development and use of such tools can be useful in many ways during planning (particularly useful in battle rhythm planning). E.g., factors values, such as apportionment, can be changed to rapidly view objective information useful for decision making.

Tools such as this should be developed and tailored to any given specific scenario/mission. This example uses probability of hit (PH) factors only. Spreadsheet factors (# AC, sortie rates, PH, etc.), can be adjusted as required to improve utility, increase prediction accuracy, etc.

**LEGEND**

AC	aircraft	PH	probability of hit
Avail	availability	Pri	primary
DAS	deep air support	SCL	standard conventional load
Elms	element	Sust	sustained
JDAM	Joint Direct Attack Munition	Tgt	target
PGM	precision-guided munition		

**Figure 6-2. Example Aviation Firepower Capacity Prediction Tool.**

Numerous analytical models are available to predict munitions effectiveness (e.g., Joint Technical Coordinating Group for Munitions Effectiveness products). Firepower capacity predictive tools can combine objective information from munitions effectiveness analytical models with platform employment information to predict organic MAGTF firepower capacity that can be employed daily. Marines can custom-tailor tools to reflect mission requirements and planned capabilities. For example, targeting professionals might determine that MAGTF targeting engagement platforms primarily consist of MAGTF tactical air and surface fires assets for a given period because of range, munitions, survivability, and other considerations. They subsequently tailor firepower capacity prediction tools to reflect tactical air and surface fires employment capabilities, considering available munitions, logistic considerations, and surge and sustainment rates. These tools can facilitate rapid cut line predictions, air apportionment recommendations and decisions, surge or sustain aviation capabilities decisions, and the determination of external support requirements.

During battle rhythm events, targeting professionals use MSC air requests for close air support to determine aviation fire support requirements. The number of HPTs and planned critical target element engagements determines MAGTF targeting requirements. For phased operations, targeting professionals consider time factors associated with operational phases, steps, and associated transition criteria.

**Cut Line**

A cut line reflects the targets on a prioritized target list that will most likely be engaged for a given targeting cycle period or ATO day. The MAGTF cut line reflects targets on the MAGTF

integrated prioritized target list that will most likely be engaged for a given targeting cycle period or ATO day. During battle rhythm events, the FECC employs a sequential process to determine the MAGTF integrated prioritized target list cut line. For more information on cut lines see MCWP 3-31.

### **External Support**

During battle rhythm events, targeting professionals determine external support requirements to address shortfalls in organic targeting capabilities based on MAGTF targeting requirements and the MAGTF integrated prioritized target list cut line for a given targeting cycle period. They collaborate to determine external support means best suited to address shortfalls and can request external support through several processes. To avoid duplicating efforts, MAGTF external support requirements should be consolidated by the fires and effects working group. The FECC, intelligence operations center, ICC, air center, Marine liaison element, and aviation combat element planners should coordinate subsequent requests.

### **Targeting Products**

During the MCPP, targeting professionals develop and disseminate targeting products and tools to appropriate agencies for use during battle rhythm events. These related products and tools include:

- Target lists (e.g., HPT, TST, MAGTF integrated prioritized target list).
- MAGTF integrated tasking order.
- Targeting guidance tools (e.g., TSS, AGM).
- Targeting prioritization and synchronization tools.
- Firepower capacity predictive tools.
- Combat assessment tools (e.g., BDA tracking).
- Relative combat power analysis and assessment tools.
- Current list of authorities and decision makers.
- Available resources for both fires and intelligence.
- SOPs to re-task assets to conduct PID, CID, target engagement, and combat assessment.

Throughout battle rhythm events, targeting professionals refine targeting products to facilitate near-term targeting decision making and execution. The MAGTF integrated prioritized target list is the primary tool to facilitate planning and execute the MAGTF targeting plan. Combat assessment tools facilitate BDA tracking and fires and effects assessments. Relative combat power tools are useful to determine fires and effects requirements. Disseminating targeting products enhances staff understanding during planning and execution.

### **Command and Control**

To ensure efficient and timely coordination and collaboration within the MAGTF, an appropriate command and control structure should be part of the MAGTF's SOP. Planners should create the command and control structure prior to operations and identify specific systems designed to support fires and effects tasks and associated procedures. Fires and effects communication and collaboration systems vary by operation and theater. Targeting professionals should strive to maintain proficiency in various fires and intelligence systems. For more information on fires systems and collaboration structure, see MCWP 3-31 and MCRP 3-31.7, *Fire Support Systems for MAGTF Operations*.

**Surveillance and Reconnaissance Coordination Center.** The IOC typically establishes a targeting cell to coordinate dynamic targeting functions. The IOC coordinates the dynamic targeting “find” function with internal and external collection agencies to cue ISR assets and monitor designated named areas of interest, target areas of interest, and points of interest. Internal collection agencies include the surveillance and reconnaissance coordination center (SARCC), operations control and analysis center, Marine tactical air command center (TACC), air combat intelligence, and ICC. The SARCC usually serves as the primary element for the supervision of MEF collection operations. It directs, coordinates, and monitors intelligence collection operations conducted by organic, external, attached, and direct support collection assets. Once collection assets identify potential targets, the IOC continues coordinating dynamic targeting “fix” and “track” functions. The IOC evaluates TSS to validate the accuracy and timeliness of ISR target reporting, and coordinates target coordinate mensuration when required. The IOC considers dynamic targeting guidance, analyzes the evolving situation, and provides dynamic targeting recommendations to the FECC current fires officer via collaboration tools. The SARCC considers ISR asset persistence capabilities when identifying assets to support the find, fix, track, and assess steps.

## **Collaboration**

During phase 5 execution, fires and effects agencies—

- Coordinate fires and effects plans.
- Build and maintain battlespace situational awareness.
- Acquire, identify, and track targets and relevant actors.
- Evaluate targets and relevant actor validity and priority.
- Make engagement decisions.
- Identify engagement options and select appropriate engagement capabilities and assets.
- Coordinate engagement details and facilitate rapid coordination and engagement of targets.
- Assess engagements.
- Coordinate re-engagements

The MAGTF agencies that participate in fires and effects collaboration include:

- FECC.
- IOC: operations control and analysis center, SARCC, and targeting cell.
- ICC.
- Force artillery headquarters.
- Marine TACC: deep battle cell, close battle cell, air defense cell, airspace control cell, and air combat intelligence.
- Marine air command and control system agencies and entities: direct air support center and tactical air operations center.
- MSC or major subordinate element fires and effects agencies: ground combat element (GCE) fire support coordination center (FSCC), logistics combat element fires element, and rear area operations center fires element.
- Fires and effects liaison elements: air and naval gunfire liaison company and Marine liaison element.

- External fires and effects agencies.

Fires and effects collaboration networks and procedures are tailored to meet operational requirements. The FECC is responsible for establishing collaboration mediums to coordinate targeting and counterfire; however, MAGTFs can establish other fires and effects collaboration means.

As part of the battle rhythm, fires and effects planners collaborate to ensure MAGTF fires and effects requirements are coordinated and integrated into the ATO, and appropriate MAGTF coordination and control measures are integrated into the airspace control order. Personnel from the MAGTF FECC, IOC, ICC, air center, and Marine TACC collaborate to establish a MAGTF integrated prioritized target list cut line. These agencies also collaborate with the Marine liaison element to coordinate requests for joint aviation support. The Marine TACC ATO development section refines ATO details (e.g., conducts weaponeering, assigns missions to squadrons, establishes strike packaging). The MAGTF fires and effects agencies collaborate with higher, adjacent, and subordinate agencies to execute the daily plan. The MAGTF integrates tools and systems into collaboration networks to facilitate fires and effects coordination and execution.

The MAGTF can integrate quick-fire nets into collaboration networks to support dynamic targeting and other fires and effects tasks (e.g., counterfire, fire support, interdiction). Quick-fire nets establish direct links to facilitate rapid coordination and engagement of targets using available fires assets. An effective quick-fire net rapidly provides target engagement information to fires agencies and assets. Elements within the IOC, such as the SARCC, targeting cell, and operations control and analysis center, participate in dynamic targeting collaboration and quick-fire nets to facilitate rapid coordination and engagement of targets. Employment of quick-fire nets into fires and effects tasks requires detailed planning to include—

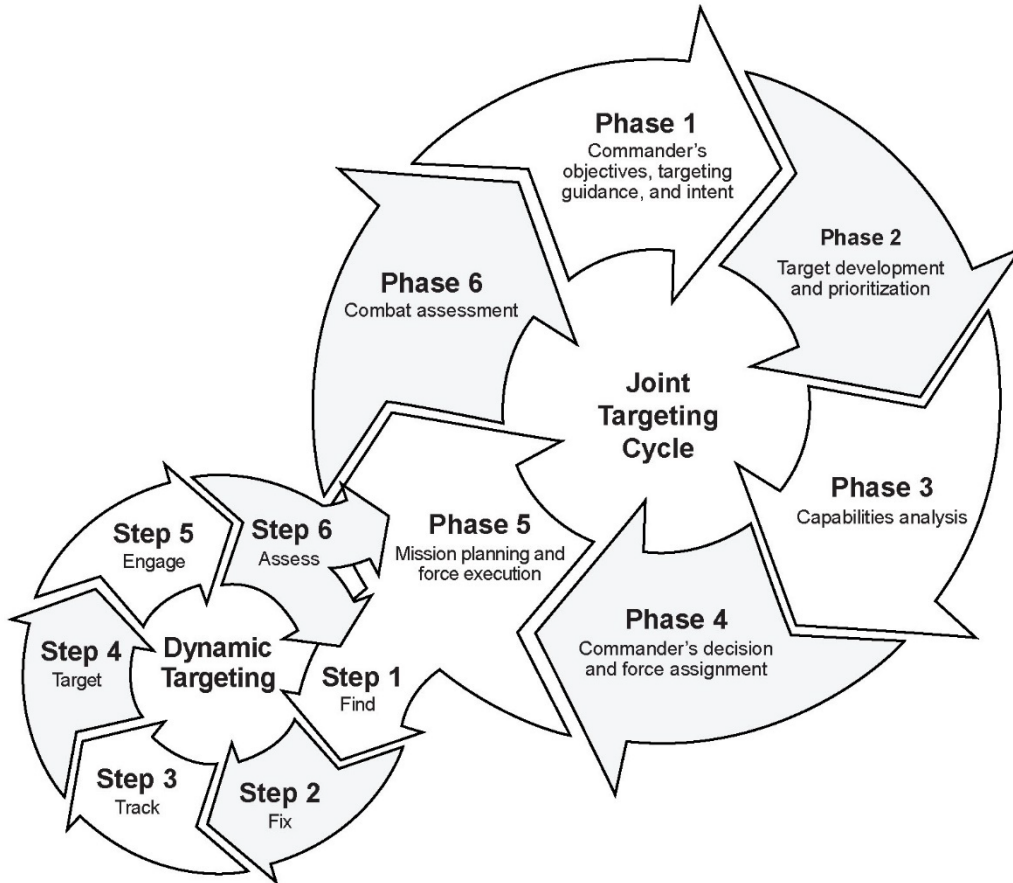
- Command and control systems employment.
- Integrated TTP.
- Control and coordination measures.
- Fires and acquisition asset placement.

The MAGTF must establish appropriate target engagement authorities and procedures to employ quick-fire nets (i.e., decentralized execution authorities, procedures to decrease target engagement response time).

### **Dynamic Targeting**

Effective dynamic targeting emphasizes decentralized execution. In some situations, targeting steps are delegated to tactical-level control elements, on-scene commanders, or engagement assets. For example, the MAGTF commander can choose to employ decentralized dynamic targeting procedures for certain target types. In a communications-contested environment, MAGTFs might employ an alternative dynamic targeting command and control construct or delegate target engagement authority to subordinate commands or elements. As decentralized dynamic targeting often carries a relatively high level of risk, targeting professionals should clearly articulate dynamic targeting guidance to enable decision making, and ensure subordinate commanders understand the intent when accelerated coordination is required.

Figure 6-3 shows the relationship between the joint targeting cycle and the dynamic targeting process known as F2T2EA. Dynamic targeting is part of the targeting cycle, executed in phase 5, mission planning and force execution. During dynamic targeting, targets are engaged using the F2T2EA process.

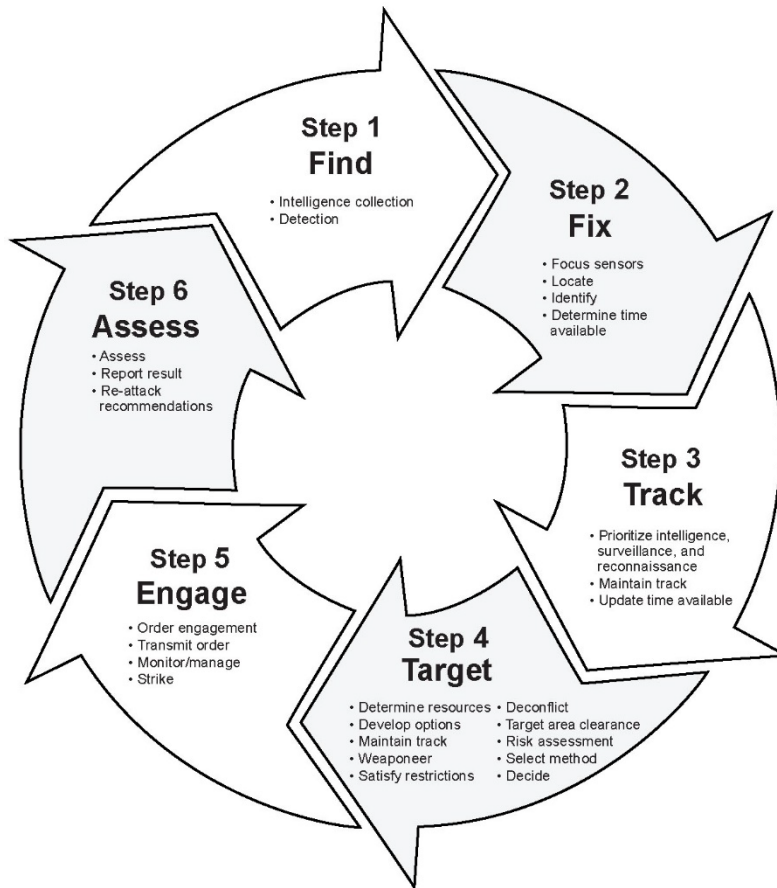


**Figure 6-3. Dynamic Targeting and the Joint Targeting Cycle.**

The six-step F2T2EA dynamic targeting process:

- 1) Find. Emerging targets are detected and characterized for further prosecution.
- 2) Fix. The location (fix) and identification of the potential target is determined.
- 3) Track. The target is observed, and its activity and movement are monitored.
- 4) Target. 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.
- 5) Engage. Action is taken against the target.
- 6) Assess. Initial assessment of action against the target is performed.

See Figure 6-4 for a visual depiction of F2T2EA.



**Figure 6-4. F2T2EA Dynamic Targeting Cycle.**

The following are planning considerations for executing the deliberate targeting plan and reacting to dynamic targets that present themselves in the battlespace during execution of COPS. Dynamic targeting is a process within a process. Like deliberate targeting, dynamic targeting identifies targets that align to the commander’s objectives and engages targets to create the desired effects. See MCRP 3-31.5 for more details on dynamic targeting procedures.

As the current fight is fought, dynamic re-tasking to engage dynamic targets will occur. With targeting products, a watch officer or battle watch captain can identify how to make decisions on behalf of the commander based on target priority and operational needs.

**Dynamic Targeting Guidance.** Dynamic targeting guidance is developed during phase 1 of the deliberate targeting process and the outputs of phase 4 assist the COPS section in executing the current fight. Dynamic targeting guidance should provide succinct direction indicating authority levels based on collateral damage and mission risk. The MAGTF commander, the staff, and MSCs or major subordinate elements develop dynamic targeting guidance in a collective manner that aligns with HHQ guidance as part of the battle rhythm. Prior to each execution period, dynamic targeting guidance is disseminated to MAGTF targeting agencies. There is no single dynamic targeting guidance format, as guidance will vary by mission requirements. Marine air-ground task force dynamic targeting guidance might include a synchronization matrix or other tools that delineate fires and effects objectives and prioritized targeting tasks. In addition

to tools, dynamic targeting guidance should include written instructions. Dynamic targeting guidance should not be limited to a prioritized list of target types and categories. Dynamic targeting guidance may include the following:

- Fires and effects objectives and desired effects for the execution period.
- Targeting priorities in relation to time and space (e.g., sequencing, when and where targeting tasks and activities should occur during the execution period).
- Unique target types to be engaged under specified conditions.
- Actions to address threats to MAGTF forces, lines of operation, or lines of effort.
- ISR priorities and re-tasking guidance.
- Target or munitions restrictions.
- Engagement authorities and responsibilities.
- Acceptable risk.

**Integration Process.** The transition from deliberate to dynamic targeting typically occurs in conjunction with the submission deadline of MAGTF's input to the ATO. Once submitted to the joint air operations center (JAOC), the MAGTF has a limited ability to change deliberate targeting products. As such, targets nominated or desired to be engaged after this time are processed via dynamic targeting. The FECC watch officers, led by the FECC current fires officer, direct the Marine dynamic targeting process. The FECC collaboratively integrates efforts of higher, adjacent, and subordinate agencies.

The FECC or force artillery headquarters' watch officers coordinate surface-delivered fires during dynamic targeting. The MAGTF might employ a force artillery headquarters to facilitate coordination of surface-delivered deep fires and counterfire. The force artillery headquarters might provide a liaison team to the battlefield coordination detachment in the JAOC to facilitate surface-fires airspace coordination. The MAGTF often integrates counterfire and dynamic targeting procedures (e.g., employ quick-fire nets) to rapidly detect and engage enemy fires systems and weapons. Targeting professionals ensure MAGTF dynamic targeting procedures are consistent with HHQ procedures and coordinate with Marine Corps liaison officers to ensure appropriate MAGTF high-payoff targets are nominated for inclusion on the joint force commander's TST or component critical target list(s). Fires and effects watch officers maintain current HHQ targeting guidance, target lists, and matrices.

**Positive Identification and Combat Identification.** The COPS section will also coordinate all ISR requirements to support PID and CID. Positive identification is "an identification derived from observation and analysis of target characteristics, including visual recognition; electronic support systems; non-cooperative target recognition techniques; identification, friend or foe systems; or other physics-based identification techniques" (*DoD Dictionary*). Combat identification is "the process of attaining an accurate characterization of detected objects in the operational environment sufficient to support an engagement decision" (*DoD Dictionary*). The staff conducts PID and CID during different steps of the deliberate and dynamic targeting processes. During deliberate targeting, PID is conducted during phases 2 and 3, and CID is conducted in phase 5. However, during dynamic targeting, PID is conducted during the fix step of F2T2EA, while CID is conducted prior to the engage step. During the PID and CID processes, a TMO operator can conduct target coordinate mensuration as required. Each process is vitally important to ensure the right target is engaged to create the desired effects.

## **Aviation Roles in Execution**

Aviation has a significant role in MAGTF dynamic targeting. The MAGTF's single battle concept exploits deep air support to create desired effects in the battlespace. Marine aviation strike-capable assets can provide the preponderance of MAGTF organic fires capability. The Marine TACC is the primary Marine air command and control system agency responsible for managing airspace and aviation assets that support MAGTF dynamic targeting. The FECC watch officers collaborate with the Marine TACC center deep battle cell to maintain situational awareness of the evolving situation. The Marine TACC's deep battle cell coordinates with the tactical air operations center's deep air operations section to command and control organic and joint air assets in the MAGTF deep battlespace. The Marine TACC agencies coordinate with other air command and control entities to enhance MAGTF dynamic targeting capabilities.

Armed reconnaissance and strike coordination and reconnaissance (SCAR) missions are often significant elements of MAGTF dynamic targeting. The MAGTF employs SCAR aircraft to reconnoiter designated areas, provide near-real-time battlespace updates, and coordinate target engagement. When employing SCAR or armed reconnaissance, the FECC current fires officer collaborates with the Marine TACC's deep battle cell regarding weighting the MAGTF deep air support effort. The current fires officer provides dynamic targeting guidance in terms of locations, times, and types of targets to engage to create desired effects. The Marine TACC's deep battle cell collaborates with tactical air operations center's deep air operations section to focus the SCAR or armed reconnaissance effort, coordinating and redirecting aviation assets as appropriate. The tactical air operations center, air combat intelligence, ICC, IOC, and other MAGTF agencies participate in this dynamic targeting collaboration to facilitate battlespace awareness, provide target priority updates, conduct ISR management, and conduct assessments. The air command element can establish a flight line intelligence center to facilitate rapid two-way flow of target intelligence (e.g., pre-mission target update information to pilots and reconnaissance, BDA information to assessment personnel). For more information on ATOs, and the MAGTF and joint air tasking cycles, see Appendix B.

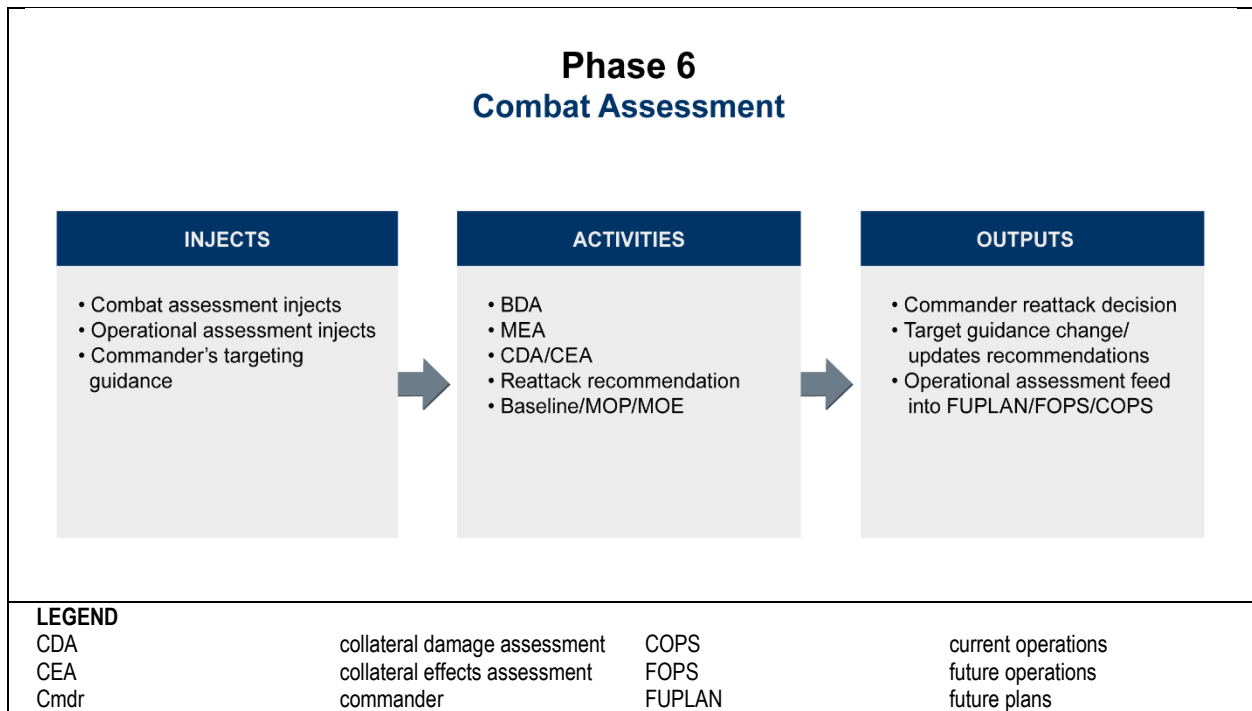
## **OUTPUTS**

The COPS floor will collect all assessment data (e.g., battle damage assessment) and compile the data to use in phase 6, combat assessment.

# CHAPTER 7

## PHASE 6: COMBAT ASSESSMENT

During phase 6, activities move from execution to assessing whether forces are achieving the commander's desired effects. Phase 6 has three products and one recommended decision output. The three products are BDA, munitions effectiveness assessment (MEA), and collateral damage and collateral effects assessment, which are guided by CJCSI 3162.01, *Methodology for Combat Assessment*. The one recommended decision output is whether to reattack. Figure 7-1 shows the phase 6 injects, activities, and outputs.



**Figure 7-1. Phase 6 Injects, Activities, and Outputs.**

### INJECTS

Targeting professionals collect the data from phase 5 and start formalizing recommendations for the commander. The data includes:

- Target post-strike information.
- System post-strike (e.g., status of connected nodes) information.
- The effect on friendly, neutral, and enemy operations.
- Assessment on how targeting guidance assisted or hindered operations.

## ACTIVITIES

### Who and How to Conduct Battle Damage Assessment

Battle damage assessment is “the estimate of damage composed of physical and functional damage assessment, as well as target system assessment, resulting from the application of fires” (*DoD Dictionary*). The staff determines how combat assessment relates to specific targets by completing the BDA. Producing the BDA is primarily an intelligence cell responsibility, but requires coordination across the staff, like JIPOE and most steps of intelligence support to targeting. Battle damage assessment requirements should be captured as priority intelligence requirements or as similar high-priority information collection requirements. It provides commanders with an assessment of the target’s mission effectiveness, overall status, capabilities (whether full or partial), and likely reactions or any change to their intent. This assists the staff in determining if the engagement is meeting the targeting guidance and is critical to any recommendation to reengage the target. It also provides important analysis used to conduct quick target development and decide on the allocation or redirection of assets or weapon systems for reengagement. Battle damage assessment has three assessment components (see Table 7-1).

**Table 7-1. Assessments.**

Component	Description
Physical damage and change assessment (Phase One)	<ul style="list-style-type: none"><li>• Quantitative physical damage from munitions blast, fragmentation, or fire.</li><li>• Based on observed or interpreted damage.</li></ul>
Functional damage and change assessment (Phase Two)	<ul style="list-style-type: none"><li>• Estimates the effects on the target’s capability to perform its mission.</li><li>• Assessment based on all-source intelligence.</li><li>• Includes a time estimate required to reconstitute or replace the target.</li><li>• Temporary assessment, compared to a target system assessment, used for specific missions.</li></ul>
Target system damage assessment (Phase Three)	<ul style="list-style-type: none"><li>• The overall effect on an entire target system’s capability.</li><li>• Applicable against a threat’s combat effectiveness.</li><li>• Might address significant subdivisions of a target.</li><li>• A more permanent assessment.</li></ul>

**Physical Damage and Change Assessment.** Known as phase one, the staff estimates the physical damage and change to a target, based on observed or interpreted damage. It is a post-attack target analysis coordinated among all units.

**Functional Damage and Change Assessment.** Known as phase two, all-source intelligence analysts assess the threat’s remaining functional or operational capability. The assessment focuses on measurable effects and estimates, including the threat’s ability to reorganize or find alternative means to continue operations. The targeting cell and staff integrate analysis with external sources to determine if the commander’s intent for fires has been met.

**Target System Damage Assessment.** Known as phase three, the CCMD or JTF staff conducts a broad assessment of the overall impact and effectiveness of all types of engagement

against an entire target system capability (e.g., threat air defense artillery systems). All-source intelligence analysts assist the staff in assessing the threat's combat effectiveness and capabilities the threat needs to accomplish its mission. This is a relatively narrow assessment, compared to functional damage assessment, that can be used for more than one mission.

Battle damage assessment requirements for specific targets (e.g., HPTs, HVTs, high-payoff entities) are determined during combat assessment. Often information collection assets can answer either target development and target acquisition requirements or BDA, but not both. An asset used for BDA might be unavailable for target development and target acquisition requirements. The intelligence cell receives, processes, and disseminates results that are analyzed based on desired effects.

The targeting team should consider the following BDA principles:

- BDA should measure what is important to commanders, not make what is easily measurable important.
- BDA should be objective. When receiving a BDA product from another echelon, the conclusions should be verified, when time permits, to identify and resolve discrepancies among BDA analysts at different headquarters.
- The degree of reliability and credibility of BDA relies largely on information collection assets.
  - The quantity and quality of information collection assets influence whether the assessment is highly reliable (e.g., concrete, quantifiable, precise) or has low reliability (e.g., estimation).
  - Effective BDA uses more than one intelligence source to verify each conclusion.
- BDA is more than just determining the number of casualties, or the amount of equipment destroyed. The targeting team can use other information such as—
  - Whether the targets are moving or hardening in response to the attack.
  - Changes in deception efforts and techniques.
  - Whether the damage created is affecting the threat's combat effectiveness as expected.

Battle damage assessment can simply be compiled information about a particular target or area (e.g., the area's cessation of fires). The targeting team gives the collection management team and operations cell adequate warning of BDA that they have developed. This allows the staff to task information collection units and prepares the staff to orient intelligence collection systems to the right target at the right time. Outcomes may require changes in plans and earlier decisions. During combat assessment, the targeting team periodically updates earlier decisions on:

- IPB products.
- HPT lists.
- TSS.
- AGMs.
- Collection management tools.
- Operation plans or OPORDs.
- ASCOPE and PMESII products.

## **Who and How to Conduct Munitions Effectiveness Assessment**

The intelligence section is not usually involved in the MEA but should track it to better understand the unit targeting effort. The J/G-3, in coordination with the fires cell and targeting working group, conducts the MEA concurrent with the BDA. The MEA is “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” (*DoD Dictionary*). The fires cell uses specific weaponeering software to conduct MEA. The J/G-3 and fires cell conducts the MEA to increase the effectiveness of—

- Targeting methodology.
- Tactics.
- Weapon systems.
- Munitions.
- Weapon delivery patterns.

Based on the assessment, the targeting working group might recommend modifying the commander’s guidance on the unit basic load and supply rates.

## **Who and How to Conduct Collateral Damage Assessment**

The intelligence section usually conducts the collateral damage assessment because of the required intelligence to complete the assessment. The intelligence section identifies, through imagery and other means, any collateral damage and additional damage created by executing the mission or strike package. Collateral damage is “a form of collateral effect that causes unintentional or incidental injury or damage to persons or objects that would not be lawful military targets in the circumstances ruling at the time” (*DoD Dictionary*). Additional damage is unintentional or incidental injury, death, or damage to combatant persons or objects that would otherwise be lawful military targets in the circumstances at that time. Collateral damage assessment will identify if either or both occur post-strike.

## **Reengagement Recommendation**

The intelligence cell is involved in recommending reengagement. When delivery of fires does not create a pre-decided effect or reach a preset BDA criterion, a decision from the commander is necessary. The targeting team and COPS cell must assess the operational risk associated with reengaging or not reengaging an HPT. Based on the BDA and MEA, the J/G-2, in conjunction with the FSC and J/G-3, consider what degree the targeting objective was achieved and makes a recommendation to the commander. Reengagement and other recommendations should address objectives relative to:

- Targets.
- Target critical elements.
- Target systems.
- Enemy combat strength.
- Friendly maneuver.

## Combat Assessment Checklist

Combat assessment checklist elements are covered in CJCSI 3162.01. The following considerations will assist in the effective and efficient execution of combat assessments and their integration into operational assessments by the plans section. When conducting a combat assessment, the targeting professional should ask:

- Who conducts and how to conduct BDA?
  - What information do they need and from whom? What assistance is needed?
  - What are the timelines that the commander and other decision makers need to facilitate decision making?
- Who conducts and how to conduct MEA?
  - What information do they need and from whom? What assistance is needed?
  - Discussion on bomb hit assessment.
- Who conducts and how to conduct collateral damage assessment and collateral effects assessment?
  - Is there an existing system to use?
  - What intelligence requirements have been levied to feed the assessment?
  - What format is required to inform the decision maker and retain knowledge?
- Who and how to provide a reattack recommendation to the commander or other delegated authority? Coordinate with J/G-3 fires.
- What timeframe is associated with each combat assessment element?

**Information Capabilities Combat Assessment.** Staffs use approved information products to conduct combat assessments and pursue nonlethal effects. New doctrine in supporting joint and Marine Corps information references allow information capabilities SMEs to conduct combat assessments, aligning their processes and products with lethal effects products and assessments. For example: when an offensive cyberspace operation occurs, the BDA graphic might include a network diagram before execution and a second one after execution with a logical diagram instead of imagery.

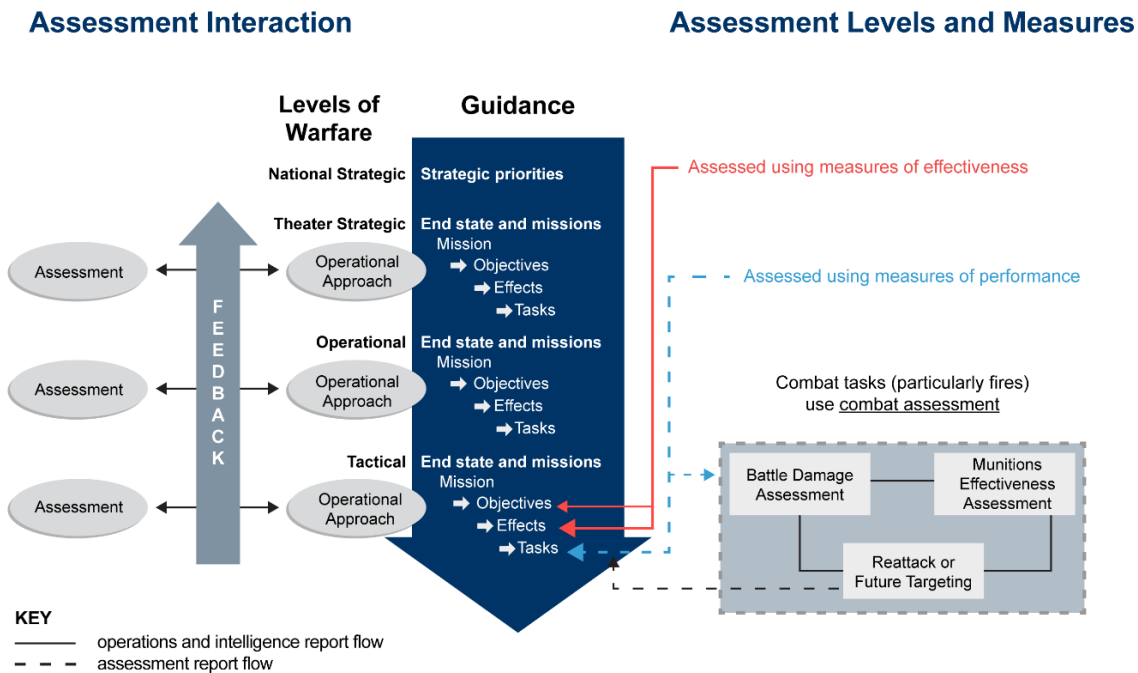
Combat assessment of information capabilities is conducted holistically relative to the desired effect. It considers all capabilities employed to achieve that effect whether lethal, nonlethal, or a combination of both. While the effectiveness of some information capabilities or activities, such as electronic attack and cyber, may be assessed in a short period of time, cognitive effects in the information environment are often assessed over long periods of time – particularly for entities targeted for influence. Targeting planners should consider the following when developing an assessment plan for information capabilities:

- Combat assessment of information capabilities must be a collaborative effort with the FECC, ICC, and IOC.
- MOPs and MOEs.
  - MOEs should clearly describe the desired change, or lack thereof, in the information environment, or a target's behavior.
- Combat assessment of information capabilities requires a baseline from which to assess. The baseline is established prior to the employment of information capabilities.
- Coordinating with the intelligence collection manager to integrate assessment requirements, both for baselining and for MOEs, into the collection plan.

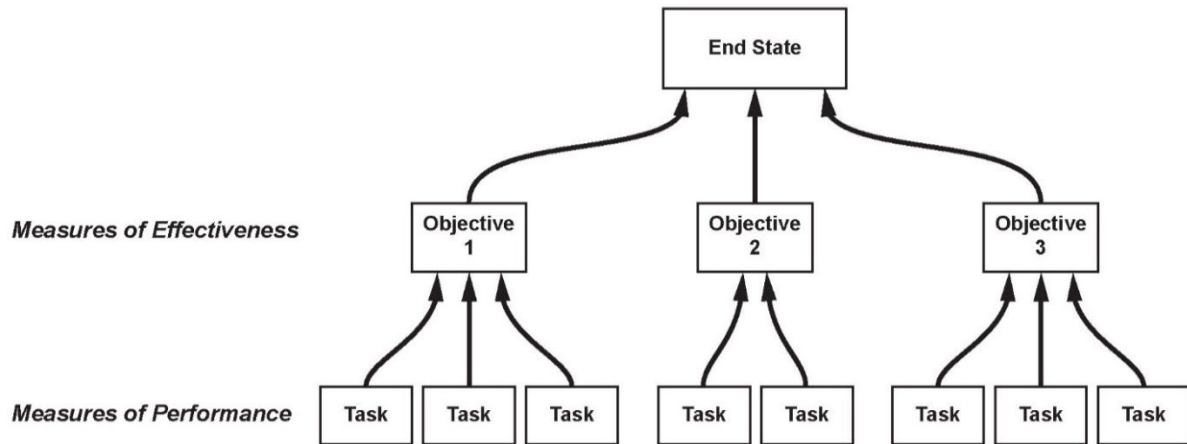
For more details on information capabilities and measuring information capability effectiveness see JP 3-04, MCWP 8-10, and Appendix E. For more information on operation assessment, see Appendix F.

## OUTPUTS

Combat assessment is not an exclusive event. Phase 6 is one link to the joint planning process identifying gaps in the overarching plan to achieve the commander's objectives. When the combat assessment is complete, the fires and intelligence elements must synchronize with the plans element to provide information. Additionally, the fires element must continuously work with the plans element to ensure all fires related MOP and MOE are current with quantitative data from daily operations and reflect the commander's desired effects. Additional information on operation assessment can be found in MCRP 5-10.1. Figure 7-2 depicts how combat assessments interact with operation assessments. Figure 7-3 shows how to link MOPs and MOEs to the end state.



**Figure 7-2. Assessment Interaction.**

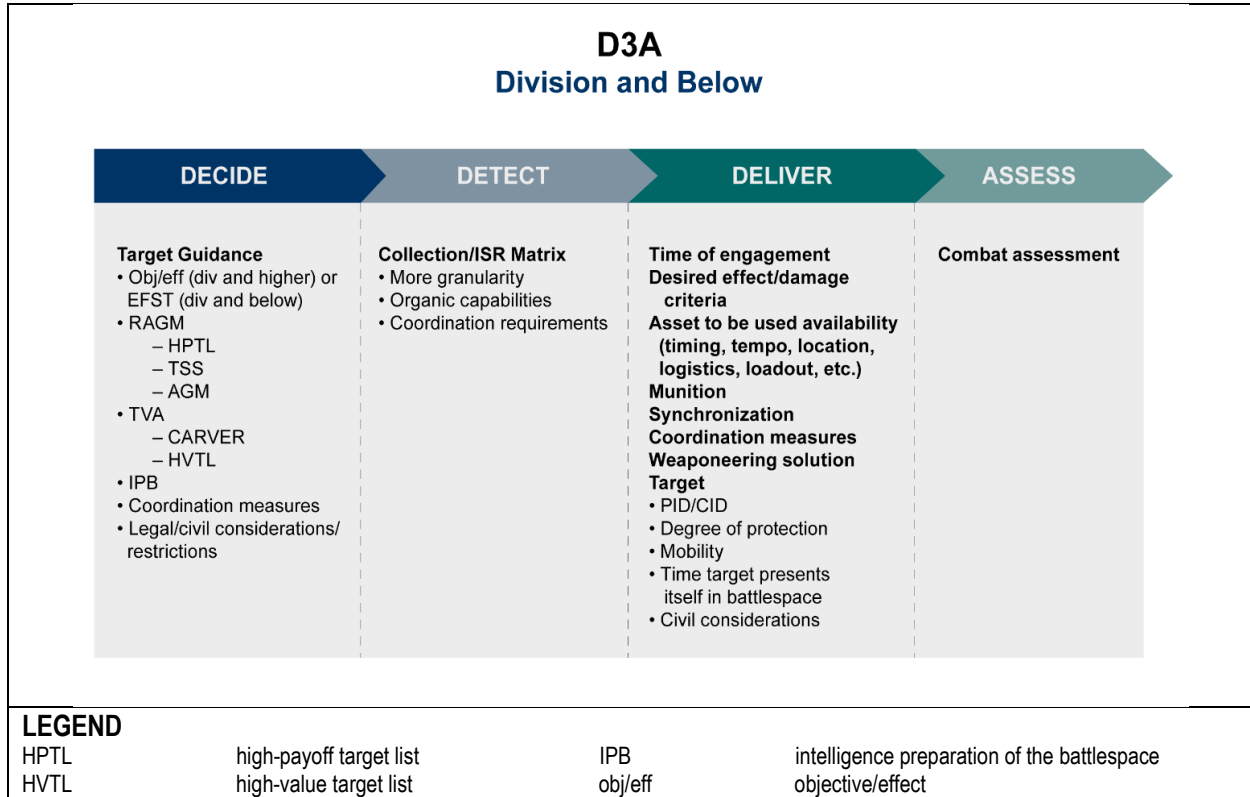


**Figure 7-3. Linking MOP and MOE to End State.**

After targets are engaged, the execution information is disseminated to the staff and provided to the commander at the next decision board. The execution information will be used to inform FOPS and future plans for follow-on activities.



- Deliver: Create the appropriate effects, whether lethal or nonlethal, to achieve the desired outcome against the selected targets.
- Assess: Evaluate the effects of the engagement to determine the success of the operation and inform future decision-making.



**Figure A-2. D3A Phases.**

**Decide**

The decide function starts the engagement process and translates the commander’s intent into priorities and engagement guidance. It provides focus and sets priorities and criteria for intelligence collection, production and dissemination, and engagement planning. This function draws heavily on the staff’s knowledge of the operational environment, planning and network analysis products, and continuous assessment of the situation. The staff uses a combination of information models, such as PMESII-PT, ASCOPE, and CARVER, to evaluate the operational environment because these models illustrate a correlation between operational and mission variables. The commander bases initial guidance on IPB, civil preparation of the battlespace, and network analysis products that are a foundation for the rest of the engagement process. See MCRP 2-10B.1 and MCTP 3-02A, *Network Engagement: Targeting and Engaging Networks*, for more details on information models and network analysis products. See Appendix C for descriptions of possible lethal and nonlethal effects.

Engagement priorities and decisions are reflected in the products developed during the decide function. The staff incorporates those products into Annex C (Operations) of the Appendix 17

(Fire Support) and Annex I (Information) of the OPORD and updates them as required. These products could include—

- JIPOE, IPB.
- Combined information overlay.
- ASCOPE, PMESII-PT, and civil preparation of the battlespace.
- HVT lists and HPT lists.
- High-value entity lists and high-payoff entity lists.
- TSS.
- Target precedence list (battalion and below).
- AGM (battalion to regiment or division).
- Engagement guidance matrix.
- Target and engagement synchronization matrixes.
- BSM and RAGM (ground combat element headquarters).
- DCM.
- Decision support template.

The decide phase aligns closely with the problem framing, COA development, COA wargaming, and COA comparison and decision steps of the MCPP. The procedures and products associated with the decide phase are detailed in MCWP 5-10, *Marine Corps Planning Process*.

### **Detect**

The detect phase is designed to validate known and suspected HPTs and high-payoff entities based on guidance from the decide phase, as well as identifying and locating new relevant actors that meet high-payoff criteria. Detection is accomplished by executing the collections plan. The staff tasks ISR assets to collect information for analysis and production focused on the commander's critical information requirements (known as CCIRs). Intelligence collectors focus on the relevant characteristics of the collections plan and TSS. Priorities identified in the decide phase expedite information processing and rapid production of pertinent intelligence products to support engagement. The operations officer is responsible for directing the effort to detect HPTs and high-payoff entities requiring coordination with special staff officers and information operations enablers. These enablers include:

- Communication strategy and operations.
- Interagency coordination.
- Civil military operations.
- Cyberspace operations.
- Space operations.
- Military information support operations (known as MISO).
- Intelligence.
- Military deception.
- Special access programs and special technical operations.
- Operations security.
- Electromagnetic warfare operations.
- Military and civil engagements, such as key leader engagements (known as KLEs).

The GCE G/S-2 have a critical role in both deliberate and dynamic targeting by developing and executing the intelligence collection plan. To support engagement efforts, the collection plan considers all assets available to the GCE. Organic assets are generally limited to reconnaissance units, combat patrols, weapons locating radars, and unmanned aircraft system.

Relevant actor information comes from the G/S-2 in the combat operations center, observers (e.g., joint fires observers, joint terminal attack controllers, sensor tasking authority, reconnaissance), or other target acquisition systems organic and attached to the GCE. At all echelons of the GCE, the G/S-2 and FSCC evaluate the acquisitions against the HPT list, high-payoff entities list, TSS, and DCM, which are FSCC products. Once the G/S-2 conducts its initial validation, they forward a list of relevant actors to the FSCC via collaborative command and control systems for vetting and processing. These two sections establish and rehearse unit SOP's and TTP to make the process effective.

The G/S-2 is the primary manager of the intelligence collections plan and validates the effectiveness of intelligence support to engagement. Commander's critical information requirements drive intelligence collection, production, and dissemination plans and incorporates engagement requirements. Intelligence personnel work with the FSCC to determine target location error and dwell time requirements for collection systems to produce valid relevant actors. The result is clear, concise tasking of acquisition assets. As information is collected and intelligence is produced, intelligence personnel disseminate the information to the appropriate staff personnel with collaborative command and control tools in accordance with approved engagement guidance. The FSCC and appropriate staff sections further vet relevant actors, acquired or developed, that the commander specified for engagement in accordance with the AGM and BSM. The staff forwards suspected relevant actors to the FSCC for tracking and correlation with other information for development. The G/S-2 can dynamically re-task ISR assets if the relevant actor is of a high enough priority for engagement. Additionally, the FSCC can determine that the relevant actor is of a high enough precedent to engage without additional confirmation.

To access multiple assets, the FSC works with the G/S-2 who can request support from collection resources at higher levels of command. Sources of information, which are available to the GCE, include:

- Communications collection and direction finding from radio battalion and Intrepid Tiger II.
- Visual reconnaissance (reconnaissance elements).
- Videotape and handheld imagery. Primarily Marine unmanned aerial vehicle squadrons (known as VMU), but also the Marine light attack helicopter squadrons, ground reconnaissance units, and light armored reconnaissance battalion.
- Multi-sensor imagery (Marine unmanned aerial vehicle squadron and F/A-18D squadron).
- Marine fighter/attack squadron (F35C).
- Ground remote sensors (intelligence battalion's ground sensor platoon).
- Visual ground reconnaissance (division and force reconnaissance units).
- Prisoner of war interrogation (interrogation platoon, intelligence battalion).
- Pilot debriefs (conducted by the aviation command element G-2).

- Civil information management.
- Interagency interactions and working groups.
- Working groups.
- Key leader engagement reports.
- Open sources.

Other acquisition assets exist at battalion level and below. Their primary mission is to support their parent units with efforts focusing on planned targets and entities or targets and entities of opportunity. The FSCC develops targets in zone by monitoring calls for fire, close air support requests, counter battery radar reports, and various intelligence reports. They use available collection assets, including civil affairs Marines and patrols that meet the local population, to detect and track relevant actors for engagement. The staff ensures collection processes are in place to keep up with the pace of data collection.

### **Deliver**

The deliver function executes the engagement guidance when the staff has accumulated enough actionable intelligence to support the commander's battle plan. The interrelationships of networks can mean that an engagement on one relevant actor causes second or third order effects on adjacent relevant actors. This could lead to unforeseen outcomes that might require mitigation or exploitation. The process is flexible, allowing the staff to accelerate or defer an engagement, as the tactical situation requires. Tactical patience pays off and the advantage of a disciplined engagement process is the ability to nest or synchronize operations and intelligence along multiple echelons and event horizons. The staff selects the appropriate delivery method to engage. For planned targets and entities, the FSCC makes this decision in the decide phase. The staff verifies that the selected delivery system is still available and can conduct the engagement. If not, the staff determines the best delivery system available to engage, subject to the commander's approval.

The key to success in the deliver phase is well-established procedures to ensure the engagement meets all coordination and execution requirements. All FSCC personnel, staff sections, and external commands and agencies conduct rehearsals to understand their roles and responsibilities within the engagement process.

### **Assess**

Assessing engagement efforts nests with and support the overall combat assessment process. It also provides the commander with feedback to support decision-making. To assess engagement effectiveness, the staff determines the relevant actor's reaction to the lethal or nonlethal effects. Combat assessment reveals if the engagement met the commander's guidance and determines the overall effectiveness of force employment. In the decide phase, the commander may designate critical targets that require immediate BDA in the DCM, and the desired type of surveillance. The G/S-2 and fire support planners identify how the effects assessment is captured, considering limited assets and continued requirements for the detect phase. The degree of reliability and credibility of BDA depends largely on relevant actors and their operations, collection resources, and the scope of analysis and production needed to produce the required intelligence. The DCM will identify the MOPs required to create the desired effects. Battle damage assessment, when analyzed with the effectiveness of the engagement tactics, weapon systems, munitions, fusing and delivery systems, and MEA, leads to one of three recommendations: target re-engagement,

further relevant actor selection, or modifying commander's guidance. Collectively, BDA, MEA, and re-engagement recommendations comprise combat assessment. For more information on assessments, see Appendix F.

## **D3A CHECKLIST**

Specific considerations for the FSC during engagement help the fire support planning process by identifying concerns within the framework of the D3A engagement methodology. The commander's planning guidance and intent are critical to facilitate effective engagement.

### **Decide**

Some considerations for the decide phase include:

- What HVTs or high-value entities (known has HVEs) have been nominated as HPTs or high-payoff entities?
- What are the desired effects for each HPT or high-payoff entity?
- When and how to engage each HPT or high-payoff entity?
- Are there any restrictions or constraints from higher authority or under international law?
- Which HPTs require BDA?
- What are the applicable ROEs?
- Are streamlined clearance procedures present to ensure responsive fires and force protection?
- What engagement assets (e.g., organic, attached, supporting) are available to detect and engage HPTs or high-payoff entities?
- What detect, deliver, and assess support does HHQ need?
- When should the staff submit requests for support to HHQ?
- What detect, deliver, and assess support is required from subordinate units? When is reinforcement required?
- What detect, deliver, and assess support requests are from subordinate units and what did the staff do with them?
- Has the staff synchronized the AGM with the decision support template and maneuver and fire support plans?
- Is common data used by all concerned units? If not, are procedures in place to correct differences?

### **Detect**

Some considerations for the detect phase include:

- Did the staff incorporate HPTs and high-payoff entities in commander's critical information requirements?
- What accuracy, timeliness, and validity standards are in effect for detection and delivery systems?
- Has the FSC fully employed all acquisition assets?
- Has the staff tasked the appropriate unit for detecting each HPT or high-payoff entity?
- Has the staff established verification procedures using backup systems when necessary?
- Has the staff properly distributed acquisition and BDA requirements among systems that can accomplish both?

## **Deliver**

Some considerations for the deliver phase include:

- Has the staff established communication links and necessary procedures among the detection systems, the decision maker, and the delivery systems?
- Has the staff tasked the appropriate unit for the engagement of each HPT or high-payoff entity?
- Has the staff identified a backup engagement system for critical HPTs or high-payoff entities in case the primary system is unavailable at the time the HPT or high-payoff entity is verified?
- Has the staff established fire support coordination measures (known as FSCMs) and clearance procedures for firing across boundaries?
- Has the staff established coordination procedures for firing beyond the fire support coordination line (known as an FSCL)?
- Has the staff identified potential friendly fire situations and established procedures to control each potential situation?
- Has the staff tasked the appropriate unit for providing BDA on specified HPTs?
- What are the procedures to update the HPT list and synchronize the AGM and decision support template if it becomes necessary to change the concept of maneuver and fire support as the tactical situation changes?

## **Assess**

Some considerations for the assess phase include:

- Has the staff linked the assessment assets to specific HPTs or high-payoff entities? Are they still available?
- Has the staff notified assessment asset operators of the relevant actor engagement requiring assessment? Do they know the relevant actor's location?
- Has the staff accomplished all coordination for assessment, particularly airborne assets?
- Is the mission underway?
- Has the staff delivered mission information to the appropriate unit for evaluation?
- Has the engagement team reviewed the results of the attack to determine re-attack requirements?

## **ELECTROMAGNETIC ATTACK FIRE 7-LINE REQUEST AND PROCESSING GUIDE**

The following information and formats are meant to provide a standardized procedure for requesting electromagnetic attack (EA) fires and processing these requests for execution from both ground-based and aerial EA assets. There are two EA fire 7-line request formats below, which are used to request aerial and ground-based EA fire systems. Staffs can use both formats to request pre-planned EA fire missions in coordination with mission planning. However, only the ground EA 7-line is used to request dynamic EA fires on emerging targets within the battlespace.

The coordination and processes are different for air and ground-based systems. With any aerial asset, the request goes through the ATO cycle to coordinate the availability and preparation of the aerial platform. The supported unit sends their request to the air wing EA representative. For ground-based assets, the EA firing agency will draft and submit the EA 7-line for their own EA fires. The ground-based EA fires 7-line is developed and submitted from the bottom up, originating with the EA firing agency. An EA-capable signals intelligence/electromagnetic warfare team will work with their supported unit to identify targets in the electromagnetic spectrum (EMS) against which to conduct EA fires. These requests are then submitted to HHQ for processing and final approval with the appropriate entities.

Within the EMS, signals intelligence/electromagnetic warfare teams use organic collection capabilities or analytical support using non-organic external collection capabilities or signals intelligence/electromagnetic warfare reporting to identify targets prior to submitting a ground EA fire 7-line. For this reason, the bottom up method is used to request ground EA fires. Since the signals intelligence/electromagnetic warfare team identifies the target in the EMS, a ground EA fire 7-line cannot come from an external entity requesting EA fires. In the case of an aerial EA fires request, the ground signals intelligence/electromagnetic warfare team and analytical element can draft the request to the aerial EA asset and provide the specific targeting data. The initial determination for EA fires is informal coordination to the signals intelligence/electromagnetic warfare team from the supported unit to determine whether the target is observed in the EMS and within range. The signals intelligence/electromagnetic warfare team then drafts the ground EA fire 7-line to submit for approval. While the EA fire process does not translate exactly to the standard fires request process, every effort is made to use common terminology and requirements for understanding and standardization across all formations.

**Table A-1. Ground EA Fire 7-Line Format.**

<p><b><u>Line 1: Signals Intelligence/Electromagnetic Warfare Team Callsign and Supported Unit</u></b></p> <ul style="list-style-type: none"><li>• Teams will always be attached to a supported unit.</li><li>• Supported unit identification required for AO boundary coordination and proper processing of requests at echelon.</li></ul>
<p><b><u>Line 2: Position Report/Location</u></b></p> <ul style="list-style-type: none"><li>• Location of the EA firing asset in 10-digit, military grid reference system format.</li><li>• Required for accurate plotting and propagation modeling of requested fires to determine effects during processing (see EA request processing checklist below).</li></ul>
<p><b><u>Line 3: EMS Target and Target Description</u></b></p> <p>EMS Target</p> <ul style="list-style-type: none"><li>• Frequency.</li><li>• Frequency Range.</li><li>• Specific Signal Type.</li></ul> <p>Target Description</p> <ul style="list-style-type: none"><li>• Characterization of the source of the emitter such as:<ul style="list-style-type: none"><li>○ Enemy command and control node.</li><li>○ Enemy mechanized infantry platoon.</li><li>○ Enemy small unmanned aerial system.</li></ul></li><li>• Required for spectrum manager and FECC coordination.<ul style="list-style-type: none"><li>○ Multiple EMS targets may be included in one request due to EA system capabilities.</li><li>○ Inclusion of specific EMS targets and descriptions may classify the request at a level higher than controlled unclassified information.</li></ul></li></ul>
<p><b><u>Line 4: Trigger</u></b></p> <ul style="list-style-type: none"><li>• Start time (can be used for both pre-approved and dynamic targeting).</li><li>• Specific adversary actions; commonly referred to as be prepared to.</li><li>• On order.</li></ul>

**Table A-1. Ground EA Fire 7-Line Format (continued).**

**Line 5: Duration and Method**

Duration

- Up to 20 minutes.
- Usually for ground-based EA systems currently fielded by the Marine Corps, the maximum time is 20 minutes because of equipment power requirements and overheating.

Method

- May be omitted. If omitted, it is understood that EA fire mission will be continuous for the provided duration.
- Used for assessing effectiveness during EA fire mission and or adjusting orientation (see Line 6) during approved EA fires if the target attempts to move.
- Provided as “4-1” or “3-2” format.
  - 4-1: 4 minutes fire, 1 minute off and assess.
  - 3-2: 3 minutes fire, 2 minutes off and assess.

**Line 6: Orientation**

Required for propagation modeling to determine validity of desired effects and to assess fratricide risk.

Given in one of two forms:

- “Omni” for omni-directional EA fires.
- “### DEG MAG” for directional EA fires along a specific azimuth to the target.

**Line 7: Power**

- Provided in Watts (W).
- Required for propagation modeling to determine validity of desired effects and to assess fratricide risk.
- Inclusion of power settings may classify the request at a level higher than controlled unclassified information.

**Example**

**Line 1:** MONGOOSE 1, PALEHORSE

**Line 2:** 11S NU 45573 67435

**Line 3:** 143.45, 144.52, 146.45 MHz, Enemy C2 Node Comms

**Line 4:** TOT 40

**Line 5:** 20, 4-1

**Line 6:** 156 DEG MAG

**Line 7:** 50W

**Table A-2. Aerial Fire 7-Line Format.**

<b>Line 1: Callsign. Identification of Platform Callsign during EA Fire Mission</b>
<b>Line 2: Flight Pattern/Speed/Altitude</b>  Flight Pattern <ul style="list-style-type: none"><li>• Linear Start Points</li><li>• Orbital Center Point<ul style="list-style-type: none"><li>○ Speed estimated and provided in knots.</li><li>○ Altitude should be provided specifically for accurate propagation modeling prior to the sortie and provided in mean sea level.</li></ul></li></ul>
<b>Line 3: EMS Target and Target Description</b>  EMS Target <ul style="list-style-type: none"><li>• Frequency</li><li>• Frequency range</li><li>• Specific signal type</li></ul> Target Description <ul style="list-style-type: none"><li>• Characterization of the source of the emitter such as:<ul style="list-style-type: none"><li>○ Enemy command and control node.</li><li>○ Enemy mechanized infantry platoon.</li><li>○ Enemy small unmanned aerial system .</li></ul></li><li>• Required for Spectrum Manager and FECC Coordination.<ul style="list-style-type: none"><li>○ Multiple EMS targets may be included in one request due to EA system capabilities.</li><li>○ Inclusion of specific EMS targets may classify the request at a level higher than controlled unclassified information.</li></ul></li></ul>
<b>Line 4: Start Time</b> <ul style="list-style-type: none"><li>• Aerial EA fires can only be pre-approved targeting and coordination due to pre-flight requirements to mount and prepare the EA firing asset.</li><li>• Provided in both Local and Zulu time.</li><li>• Based on estimated flight times to target area and time on station, this is subject to adjustment during flight operations once launched.</li></ul>

**Table A-2. Aerial EA Fire 7-Line Format (continued).**

<p><b>Line 5: Duration and Method</b></p> <p>Duration</p> <ul style="list-style-type: none"><li>• Specific to aerial EA platforms, the duration is not limited to 20 minutes.</li><li>• Duration will almost always be determined by time on station and can change based on flight time and deviations required to get to the target area.</li></ul> <p>Method</p> <ul style="list-style-type: none"><li>• May be omitted. If omitted, it is understood that EA fire mission will be continuous for the provided duration.</li><li>• Used for assessing effectiveness during EA fire mission and or adjusting orientation (see Line 6) during approved EA fires if the target attempts to move.</li><li>• Provided as “4-1” or “3-2” format.<ul style="list-style-type: none"><li>○ 4-1: 4 minutes fire, 1 minute off and assess.</li><li>○ 3-2: 3 minutes fire, 2 minutes off and assess.</li></ul></li></ul>
<p><b>Line 6: Orientation</b></p> <ul style="list-style-type: none"><li>• If linear is used for Line 2, state antenna direction based on airframe.</li><li>• If orbital is used for Line 2, state “clockwise” or “counterclockwise” and pod position “port” or “starboard.”</li></ul>
<p><b>Line 7: Power Output</b></p> <ul style="list-style-type: none"><li>• Provided in Watts (W).</li><li>• Required for propagation modeling to determine validity of desired effects and to assess fratricide risk.</li><li>• Inclusion of power settings may classify the request at a level higher than controlled unclassified information.</li></ul>

**Example**

**Line 1:** TIGER 2

**Line 2:** Orbital, 11S NU 45573 67435, 125 Knots, 500 MSL

**Line 3:** FH2343, Enemy C2 Node Comms

**Line 4:** 1100L, 1800Z

**Line 5:** One hour, 5-5

**Line 6:** Clockwise

**Line 7:** 75W

**Table A-3. EA Request Processing Checklist.**

<p><b>Receive EA 7-line.</b></p> <ul style="list-style-type: none"><li>• As transmitted by the EA firing agency following pre-coordination with the supported unit.</li></ul>
<p><b>Plot EA fires request.</b></p> <ul style="list-style-type: none"><li>• Utilize propagation modeling software such as Builder or Speed.</li><li>• Used to identify any possible EMS issues early in the process to make corrections prior to continued processing for final approval.</li></ul>
<p><b>Cross check targets with joint restricted frequency list and communications plans.</b></p> <ul style="list-style-type: none"><li>• The joint restricted frequency list is disseminated by the spectrum managers and/or the S-6 and is a required document for all signals intelligence/electromagnetic warfare teams conducting signals intelligence/electromagnetic warfare or specifically EA operations.</li><li>• This check ensures EA firing agencies have deconflicted EA fires with known restricted or taboo frequencies.</li><li>• This step should also include a check of friendly and adjacent unit communications plans to ensure EMS fratricide is not committed.</li></ul>
<p><b>Electromagnetic spectrum operation center and spectrum manager coordination.</b></p> <ul style="list-style-type: none"><li>• Submit EA 7-line to electromagnetic spectrum operation center and spectrum manager for review.</li><li>• Include all prior deconfliction conducted.</li><li>• Pre-coordination and pre-approvals for various operating environments can reduce this step to a notification.</li></ul>
<p><b>FECC coordination and deconfliction at appropriate echelon and HHQ.</b></p> <ul style="list-style-type: none"><li>• The primary output of this step is to ensure EA fires are captured in the overall lethal and nonlethal effects matrix to ensure desired effects are achieved in concert with all fire assets available.</li><li>• Coordination with the FECC may result in additional fires assets coordinated to maximize EA effectiveness or exploit EA effectiveness.</li></ul>

**Table A-3. EA Request Processing Checklist (continued).**

<p><b>Assign serial.</b></p> <ul style="list-style-type: none"><li>• As determined by unit SOP for assigning fire mission serials.</li><li>• The serial is of particular importance for pre-planned, on order fire missions.</li></ul>
<p><b>Assign control authority.</b></p> <ul style="list-style-type: none"><li>• Depending on the EA fire mission, the “BUZZER ON/OFF” control authority may rest at different echelons.</li><li>• This will be determined during FECC coordination based on the overall combination of fires against a target or series of targets.</li></ul>
<p><b>Transmit approve/modify/deny/control authority to EA firing agency.</b></p>
<p><b>Monitor EA fire mission.</b></p> <p>EA fire missions have specific requirements for added controls.</p> <ul style="list-style-type: none"><li>• Specifically for CONUS training, two “Emergency STOP BUZZER” frequencies are provided by the Federal Aviation Administration as a safety measure for aircraft.</li><li>• These FAA frequencies must be always monitored during the EA fire mission, and, if the beacon signal transmits and emergency STOP BUZZER, all EA must cease immediately.</li><li>• This is a known pre-coordination measure which must be adhered to by multiple echelons for safety and redundancy.<ul style="list-style-type: none"><li>○ HHQ must monitor the EA fire mission for BUZZER ON, BUZZER OFF, Emergency STOP BUZZER, as well as monitoring the status of the fire mission and any measures of effectiveness.</li></ul></li></ul>
<p><b>Receive jamming report from EA firing agency.</b></p> <ul style="list-style-type: none"><li>• At the conclusion of an EA fire mission, the EA firing agency is required to submit a jamming report.</li><li>• The jamming report documents the EA fire mission and any deviations.</li><li>• It may also record the early BUZZER OFF. For example, if 20 minutes duration was requested and only 10 minutes were used, the jamming report would document this deviation.</li><li>• Another example is adjusting the orientation of a directional antenna to a new azimuth to track a target moving away from the effect of the EA fire mission.</li><li>• This report is also used to record any EMS observed or physically observed BDAs regarding the effectiveness of the EA fires.</li></ul>

**Table A-3. EA Request Processing Checklist (continued).**

**Record EA fire mission.**

The original EA 7-Line and associated jamming report will be recorded together and saved. The combination of these documents may be used later to measure the effectiveness of fires. These documents may also be used to explain, confirm, or deny later indications of EMS fratricide as reported by subordinate or adjacent units. These documents are important for determining either EA fires did not commit fratricide, or fratricide did occur, and further investigation must be conducted using the memorialized reports to avoid future fratricide in the EMS.

When joint spectrum interference reports are submitted by subordinate and adjacent units, these recorded EA fire missions should be submitted as part of the overall fact finding to determine the nature and cause of the interference described in the joint spectrum interference report and help differentiate between unintentional fratricide and adversary interference.

# APPENDIX B

## INTEGRATION OF THE AIR TASKING ORDER AND THEATER AIR GROUND SYSTEM

### AIR OPERATIONS

The JFC usually designates a joint force air component commander (JFACC) to establish unity of command and unity of effort for joint air operations. Joint air operations are performed by forces available for joint air tasking. Joint air operations do not include those air operations that a component conducts as an integral and organic part of its own operations. The JFC will usually assign JFACC responsibilities to the component commander having the preponderance of forces to be tasked and the ability to effectively plan, task, and control joint air operations. The JFACC conducts joint air operations in accordance with the JFC's intent and CONOPS. The JFACC will usually exercise tactical control over forces made available for tasking. Service component commanders usually retain operational control over their assigned and attached Service forces.

The JFACC is usually the supported commander for the JFC's overall air interdiction and airborne ISR efforts. The land and maritime forces commanders are supported commanders for interdiction in their designated areas of operation and have the authority to designate target priority, effects, and timing of fires within their areas of operation.

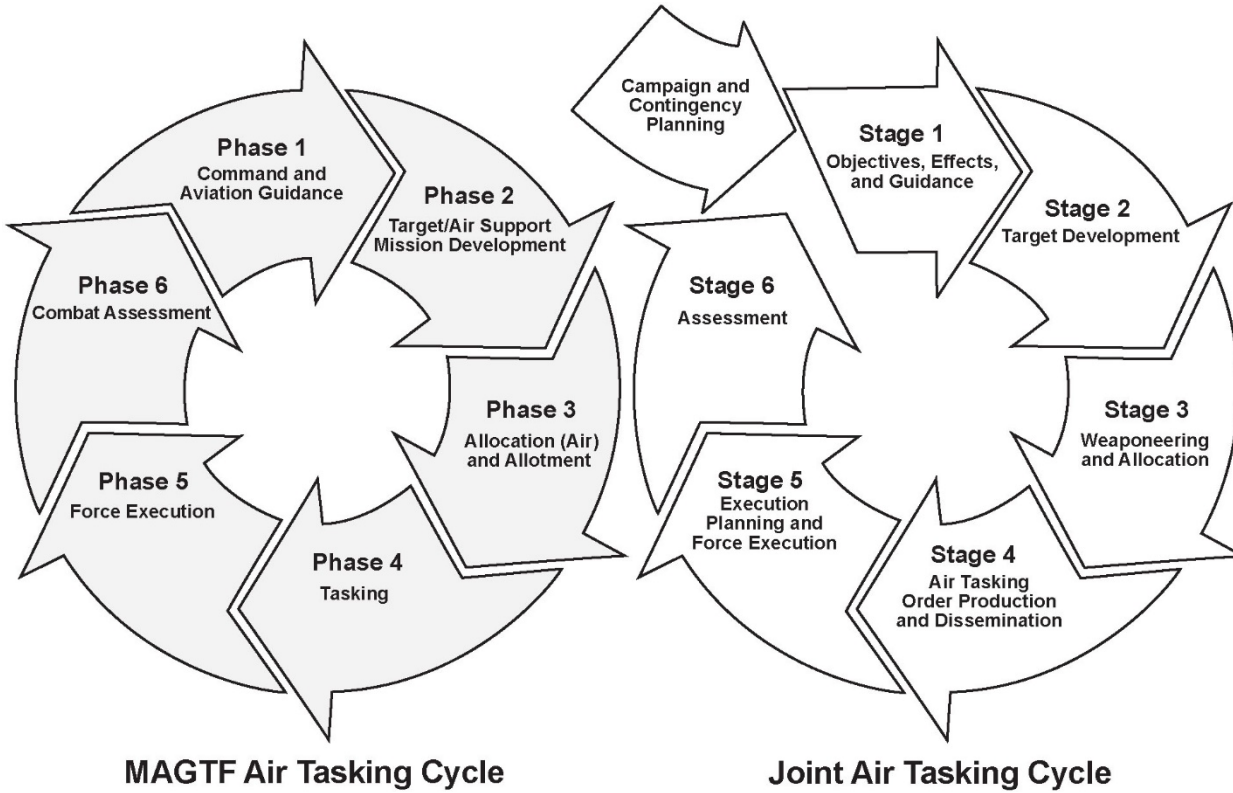
The ATO articulates the tasking for joint air operations for a specific execution timeframe, usually 24 hours. The joint air tasking cycle is synchronized with the JFC's battle rhythm. The JAOC usually establishes a 72- to 96-hour ATO planning cycle. As a matter of controlling joint air operations, the JFC may require all air missions, including fixed-wing, rotary-wing, tiltrotor, and unmanned aircraft systems (except Group 1 and 2 systems), to appear on the ATO.

Once the timeframe of the ATO cycle is determined, the process is like the JTC where:

- The JFC produces guidance and air apportionment.
- The target effects team aligns effects to targets and MOE from the air operations directive.
- JAOC personnel conduct weaponing.
- The master air attack plan team produces its plan with allocation and allotment numbers.
- The ATO is produced and disseminated by the ATO production team with SPINS.
- The joint force air component commander directs execution with the JAOC while monitoring for TSTs.
- The force air component commander J3 and J2 conduct assessments.

The joint air tasking cycle provides for the effective and efficient employment of joint air capabilities and forces available. This provides an iterative, cyclic process for the planning, apportionment, allocation, coordination, and tasking of joint air missions and sorties within the guidance of the JFC. The cycle accommodates changing tactical situations or JFC guidance, as well as requests for support from other component commanders. The joint air tasking cycle

consists of six stages. Unlike the joint targeting cycle, the joint air tasking cycle is time-dependent, built around finite time periods to plan, prepare for, and conduct joint air operations. For more information on the joint air tasking cycle, see JP 3-30. Figure B-1 presents a comparison of MAGTF and joint air tasking cycles.



**Figure B-1. The MAGTF and Joint Air Tasking Cycles.**

The battle rhythm or daily operations cycle articulates briefings, meetings, and report requirements. It provides suspense for targeting, air support requests, and friendly order of battle updates to produce the air battle plan that includes the ATO and other products. The battle rhythm is essential to ensure information is available to provide products necessary for the synchronization of joint air operations with the JFC’s CONOPS and to support other components’ operations. Nonetheless, air operations must be responsive to a dynamic operational environment and the joint air tasking cycle must be flexible and capable of modification during ATO execution. For more information on a JAOC ATO battle rhythm see JP 3-30.

The targeting effects team is a typical functional team in the JAOC. Its responsibilities are essential to the targeting process. The targeting effects team validates targets for engagement by joint air forces per the JFC’s targeting guidance, links targets to appropriate tactical tasks in the air operations directive, conducts target weaponing to create desired effects, and verifies MOEs and MOPs. It also deconflicts and coordinates target nominations based on estimates of what targets can be attacked and provides other targeting support requiring component input at the JFACC level. If the JFC delegates joint targeting coordination authority to the JFACC, the

targeting effects team receives all target nominations that have not been addressed by other components and prioritizes them in accordance with the air operations directive to form the draft JIPL.

## **THEATER AIR GROUND SYSTEM**

The theater air ground system (TAGS) refers to organizations, personnel, equipment, and procedures that participate in planning and executing all air-ground operations. The TAGS combines each service's C2 and airspace control system into a multi-domain framework, allowing each service to operate as part of a unified effort in support the JFC. The TAGS is a large group of stakeholders. The early identification of the routing processes for deliberate and dynamic joint tactical airstrike requests, DD Form 1972, is essential to effective and efficient delivery of capabilities to create effects. It is described in MCRP 3-20.1, *Multi-Service Tactics, Techniques, and Procedures for the Theater Air-Ground System*.

# APPENDIX C

## EFFECTS

Before discussing effects, it is important to discuss some terminology and gain a better understanding of the critical relationship between end states, missions, objectives, effects, and tasks. Missions are accomplished, objectives are achieved, and effects are created or generated. Figure C-1 graphically depicts this relationship.

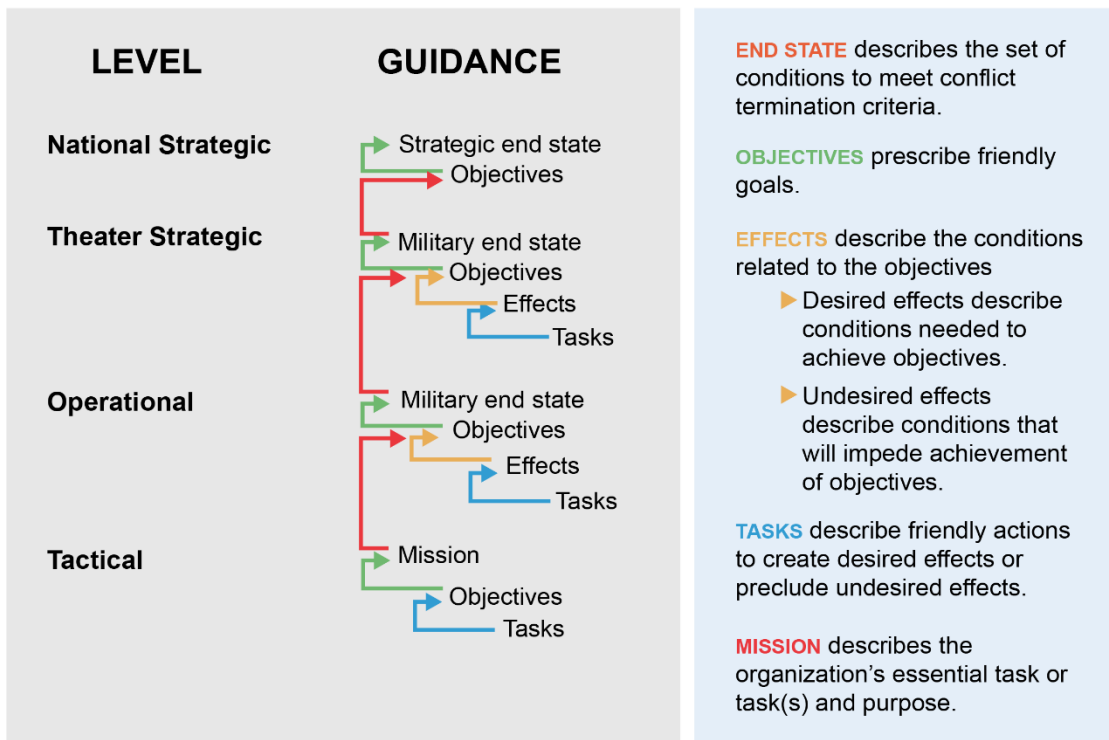


Figure C-1. End State, Objectives, Effects, Tasks, and Mission.

### END STATE

End state describes the set of required conditions that define achievement of the commander's objectives.

End state example: *All enemy forces south of the Green River are destroyed or blocked, isolated, and captured.*

### OBJECTIVES

Objectives are clearly defined, decisive, and attainable goals toward which an operation is directed. They require detailed analysis of the battlespace relative to the objectives, mission, and

capabilities at the commander's disposal. They also describe what aspects of the enemy's capability or parts of the battlespace system the commander wishes to affect. To be valid they are observable, quantifiable, and achievable. Achieving a single objective may require creating more than one desired effect.

Objective example: *Neutralize or destroy enemy counterair and short-range ballistic missile forces in sector.*

## **TASK**

A task is an action executed by tactical fires or information capabilities units to achieve objectives, create desired effects, or preclude undesired effects. Tasks are assigned based on unit capabilities. A unit often executes multiple tasks to achieve a single objective or create a desired effect. A task may contribute to more than one objective or desired effect.

Task example: *Disrupt enemy air defense C2 systems covering the sector.*

## **MISSION**

The mission is the task, together with the purpose, that clearly indicates the action to be taken and the reason.

Mission example: *O/O the 1<sup>st</sup> Battalion, 12<sup>th</sup> Marines supports offensive operations in zone to secure Obj 1, isolate enemy forces, and block remaining enemy forces from retrograding into western mountains to retain friendly maneuver freedom of action.*

## **EFFECT**

An effect is a change in the physical or behavioral state of a system (i.e., condition) that results from an action, a set of actions, or another effect. These are efforts to quantify the successful accomplishment of a task and are an MOE. This is the basis for the assess function in the D3A methodology and the decision to reattack.

### **Desired Effect**

A desired effect is a condition that supports the achievement of an associated objective. A desired effect can support more than one objective. Desired effects statements—

- Link directly to one or more objectives.
- Are distinguishable from the objective it supports as a condition for success, not as another objective or a task.
- Are measurable.
- Are not specific ways and means for accomplishment.

Example: *Friendly forces capable of conducting air operations without interference from enemy counterair forces.*

### **Undesired Effect**

An undesired effect is a condition that can inhibit progress toward the achievement of an objective. Commanders and staff communicate desired and undesired effects so they can create

or avoid them. An improper or incomplete stated effect, that does not clearly link the desired effect with the objective, can result in a mission that successfully engages the designated threat, neutral, or friendly entity, but does not achieve the objective.

Engagement outlines several terms to describe the desired effect needed to achieve or facilitate the accomplishment of the objective. Commanders and staff use terms like disrupt, delay, or limit to describe desired lethal effects on threat entities. They use terms like influence, corrupt, usurp, manipulate, and protect to describe nonlethal effects on threat, neutral, or friendly entities. Table C-1 offers terms that commanders and staffs may use when describing objectives, effects, and tasks.

**Table C-1. Terms to Describe Objectives, Effects, and Tasks.**

<b><u>Term</u></b>	<b><u>Description</u></b>
<b>Advise</b>	To improve the individual and unit capabilities and capacities of partner security forces or authorities through the development of personal and professional relationships between the US and partner force personnel.
<b>Assess</b>	Systematic analysis to provide an understanding of the context, conditions, partner capabilities, and requirements to inform security cooperation planning and implementation. Assessments are generally conducted in advance of security cooperation activities but may be repeated to update analysis and identify mid-course corrections of security cooperation activities.
<b>Assist</b>	To provide designated support or sustainment capabilities to partner security forces or authorities to enable them to accomplish their objectives.
<b>Atritt</b>	To destroy or kill an adversary's capabilities using firepower.
<b>Block</b>	To deny an adversary access to an area or prevent an adversary's advance in a direction, along an avenue of approach, or through an engagement area.
<b>Build</b>	To construct, rebuild, or repair local infrastructure to support the host nation and gain or maintain the cooperation of the local population.
<b>Capture</b>	To take possession of or control of adversary forces, terrain, or infrastructure.
<b>Compel</b>	To force, drive, constrain, or make necessary. To maintain the threat, or actual use, of lethal or nonlethal force to establish control and dominance, effect behavioral change, or enforce cessation of hostilities, peace agreements, or other arrangements.
<b>Contain</b>	To stop, hold, or surround adversary forces or to cause the adversary to center activity on a given front and to prevent the withdrawal of any part of the adversary's forces for use elsewhere. To prevent or halt elements of a population or designated party from departing or projecting physical influence beyond a defined area.

**Table C-1. Terms to Describe Objectives, Effects, and Tasks (continued).**

<b>Control</b>	Physical or psychological pressures exerted with the intent to assure that an agent or group will respond as directed. To maintain physical influence by occupation or range on weapon systems over the activities or access in a defined area. To use physical control measures and information capabilities to influence elements of the population or designated actors to respond as desired. To establish public order, safety, and civil security; secure borders, routes, sensitive sites, population centers, and individuals; and physically occupy key terrain and facilities.
<b>Convince</b>	To bring to belief or consent.
<b>Co-Opt</b>	To absorb or assimilate individuals and networks by appropriating different causes and roots of instability into friendly, allies, and partner networks.
<b>Coordinate</b>	To interact with, maintain communication, and harmonize friendly military activities with those of other interorganizational agencies and coalition partners to achieve unity of effort. The action necessary to ensure adequately integrated relationships between separate organizations located in the same area.
<b>Corrupt</b>	To change, debase, or otherwise alter information from its original or correct form or version by intentionally introducing errors or alterations, thereby rendering it useless.
<b>Damage</b>	To reduce the soundness, effectiveness, or perfection of.
<b>Deceive</b>	To influence an adversary into believing what is not true. To mislead adversary decision makers by manipulating their perception of reality. To manipulate an adversary into believing and acting on something that is not true for a selected period or at a particular location to create a friendly advantage.
<b>Defeat</b>	To cause an adversary to lose the physical means temporarily or permanently or will to fight. To disrupt or nullify the adversary commander's plan and overcome the will to fight, thus making the adversary commander unwilling or unable to pursue the adopted course of action and yield to the friendly commander's will.
<b>Degrade</b>	To permanently damage portions, but not all facets, of a function's operation. To diminish the effectiveness or efficiency of an adversary's command and control systems, communications systems, or information collection efforts or means; lower the morale of an adversary unit; reduce an entity's worth or value; or impair an adversary's decision-making capability.
<b>Delay</b>	To alter the time of arrival of adversary forces or capabilities or alter the ability of the adversary to project forces or capabilities.
<b>Deny</b>	To hinder, prevent, or deny an adversary the use of terrain, space, personnel, supplies, critical information, information capabilities, systems, services, or facilities.

**Table C-1. Terms to Describe Objectives, Effects, and Tasks (continued).**

<b>Destroy</b>	To ruin the structure, organic existence, or condition of adversary forces, combat systems, funding sources, and civic infrastructure, that could be used to the advantage of an adversary. Ruin so badly that it cannot perform its primary function or be restored to a usable condition without being entirely rebuilt.
<b>Deter</b>	To prevent action through the existence of a credible threat of unacceptable counteraction or belief that the cost of action outweighs the perceived benefits.
<b>Diminish</b>	To make less or cause to appear less. To reduce the effectiveness of an activity.
<b>Disengage</b>	A tactical mission task where a commander has the unit break contact with the enemy to allow the conduct of another mission or to avoid decisive engagement. To separate or release a force from its mission.
<b>Disintegrate</b>	To exploit the effects of dislocation and destruction to shatter the adversary's coherence.
<b>Dislocate</b>	To compel the adversary to expose forces by reacting to a specific action. It requires adversary commanders to either accept neutralization a part of their force or risk its destruction while repositioning. To cause neutral or friendly entities to move.
<b>Disorganize</b>	To disrupt the systematic order or functioning of an organization or system.
<b>Disrupt</b>	To upset an adversary's formation or tempo, interrupt the adversary's timetable, or cause adversary forces to commit prematurely or attack in a piecemeal fashion. To cause the adversary force to break up its formation and tempo, interrupt its timetable, commit breaching assets prematurely, and attack in a piecemeal effort. To prevent efficient interaction of systems by inflicting damage over the short term to specific facets of the system's operation.
<b>Dissuade</b>	Persuade (someone) not to take a particular course of action.
<b>Divert</b>	To restrict the adversary's capabilities to pursue a path or course of action. To draw the attention of adversary forces away from the principal or critical friendly operation and prevent adversary forces and their support resources from being employed for their intended purpose.
<b>Enable</b>	To facilitate the eventual accomplishment of the mission. To support or assist local or national host nation government or other civil entities to effectively govern in their respective jurisdictions or to carry out other legitimate functions.
<b>Enhance</b>	To increase or make greater the capabilities of a force or a people.

**Table C-1. Terms to Describe Objectives, Effects, and Tasks (continued).**

<b>Evaluate</b>	A systematic collection and analysis of information and evidence about the characteristics and outcomes of an ongoing or completed initiative, and its design, implementation, and results. Evaluations determine relevance, value, effectiveness, efficiency, sustainability, and impact as a basis for improving effectiveness and to inform decision makers regarding future plans, programs, and activities. Evaluation, distinct from assessment and monitoring, focuses on documenting the achievement of outcomes and results, in some cases, the value of continuing the investment.
<b>Exploit</b>	To extend the initial success of an attack by preventing the adversary from disengaging, withdrawing, and reestablishing an effective defense. To gain access to an adversary's command and control systems to collect adversary information and to employ, to the greatest possible advantage, adversary information that has come into friendly hands.
<b>Expose</b>	To make known or cause to be visible to public view. To reveal something undesirable or injurious.
<b>Feint</b>	To make contact with an adversary for the purpose of deceiving them as to the location and/or time of the actual main offensive action. To cause the adversary to employ reserves improperly, shift supporting fires, or reveal defensive fires.
<b>Fix</b>	To prevent the adversary from moving any part of their forces, either from a specific location or for a specific period, by holding or surrounding them to prevent their withdrawal for use elsewhere. To slow an attacker within a specified area. To prevent movement of local population with the intentions of settling, permanently or temporarily, from one place to another.
<b>Harass</b>	To disturb the rest of the troops, curtail their movement, and lower morale by threat of loss.
<b>Influence</b>	To cause the adversary to behave in a manner favorable to friendly forces. To persuade the local population, including potential adversaries, within the operational area to support, cooperate with, or accept the friendly force presence, and to dissuade the local population from interfering with friendly operations. To earn the trust and confidence of the people through the constructive capabilities inherent to combat power, not through lethal or coercive means.
<b>Inform</b>	To impart information or knowledge. To release accurate information to audiences to assure the trust and confidence of friendly forces, and to deter and dissuade adversaries.
<b>Interdict</b>	To divert, disrupt, delay, or destroy the adversary's military potential before it can be used effectively against friendly forces or to achieve enemy objectives. To prevent, disrupt, or delay the adversary's use of an area or route.
<b>Isolate</b>	To seal off, both physically and psychologically, an adversary from sources of support, deny the adversary freedom of movement, and prevent their forces or followers from having contact with each other. To limit the adversary's ability to conduct operations effectively by marginalizing critical capabilities or limiting the adversary's ability to influence events thus exposing them to continued degradation through the massed effects of other defeat mechanisms.

**Table C-1. Terms to Describe Objectives, Effects, and Tasks (continued).**

<b>Kill</b>	To get rid of or destroy completely. To cause the death of.
<b>Leverage</b>	To exploit action, power, or influence from an external source to gain a relative advantage in combat power or other circumstances against an adversary across any variable within or impacting the operational environment sufficient to exploit that advantage. To influence a person or situation to create a particular outcome.
<b>Limit</b>	To reduce the options or courses of action available to an adversary commander. To disrupt adversary plans by precluding effective interaction or the cohesion of adversary systems.
<b>Manipulate</b>	To control or influence a person or situation cleverly, unfairly, or unscrupulously.
<b>Mislead</b>	To create a false perception that leads the opposition to act in a manner detrimental to mission accomplishment while benefiting accomplishment of friendly objectives.
<b>Monitor</b>	A continuous process designed to provide regular feedback on the extent to which expected outputs and outcomes are being created to inform decisions or corrective actions. In general, results measured in monitoring are the direct and near-term consequences of initiative activities that provide opportunities to validate the theory of change throughout implementation and an early indication of the likelihood that expected results will be attained.
<b>Mitigate</b>	To make less severe, serious, or painful. To lessen the gravity of.
<b>Neutralize</b>	To render adversary personnel or materiel ineffective, invalid, unusable, or unable to perform a particular task or function for a specific period, thereby degrading their ability to accomplish a mission or incapable of interfering with friendly operations.
<b>Partner</b>	To pair up with neutral or friendly entities for the purpose of working together towards common objectives.
<b>Prevent</b>	To deprive of hope or power of acting or succeeding. To keep from happening, to avert.
<b>Promote</b>	To further the progress of something, especially a cause, venture, or aim. To support or actively encourage.
<b>Protect</b>	To take action to cover or shield from observation, exposure, damage, harm, attack, injury, capture, exploitation, destruction, or interference from an adversarial force, system, capability, or location. To preserve the effectiveness and survivability of mission-related military and nonmilitary personnel, equipment, facilities, information, and infrastructure deployed or located within or outside the boundaries of a given operational area.
<b>Reassure</b>	Say or do something to remove the doubts or fears of (someone).
<b>Resource</b>	To stock or supply with money, materials, staff, and other assets that can be drawn on by a person or organization to function more effectively.

**Table C-1. Terms to Describe Objectives, Effects, and Tasks (continued).**

<b>Respond</b>	To react quickly to an adversary's operation or intrusions. To say something in reply or react quickly or positively to a stimulus or treatment.
<b>Restore</b>	To bring back a previous right, practice, custom, or situation, to reinstate. To return someone or something to a former condition, place, or position.
<b>Shape</b>	To influence or direct events in a manner that changes the situation to a friendly force's advantage. To influence the adversary commander's decision making. To modify behavior by rewarding changes that tend toward a desired response.
<b>Support</b>	To aid, protect, complement, or sustain another force in accordance with a directive requiring such action to enable a function or act. To coordinate and cooperate closely with host nation civilian agencies and assisting aid organizations as necessary to secure humanitarian access to vulnerable populations and address the immediate needs of the host nation and local populace. To reestablish security and control, restoring essential civil services to the local populace, and helping to secure humanitarian access necessary for aid organizations to function effectively.
<b>Suppress</b>	To temporarily degrade an adversary force's weapon system for the purpose of reducing its performance below the level needed to fulfill its mission objectives at a specific time for a specified duration.
<b>Train</b>	To teach designated skills or behaviors to improve the individual's and organization's capabilities and capacities.
<b>Usurp</b>	To seize and hold, as the power, position, or rights of another, by force and without any right or authority. To take over or occupy physically, as territory or possessions.
<b>Warn</b>	To inform entities in advance of an impending or possible danger, problem, or unpleasant situation. To give an entity forceful or cautionary advice about the implications of their actions or conduct.

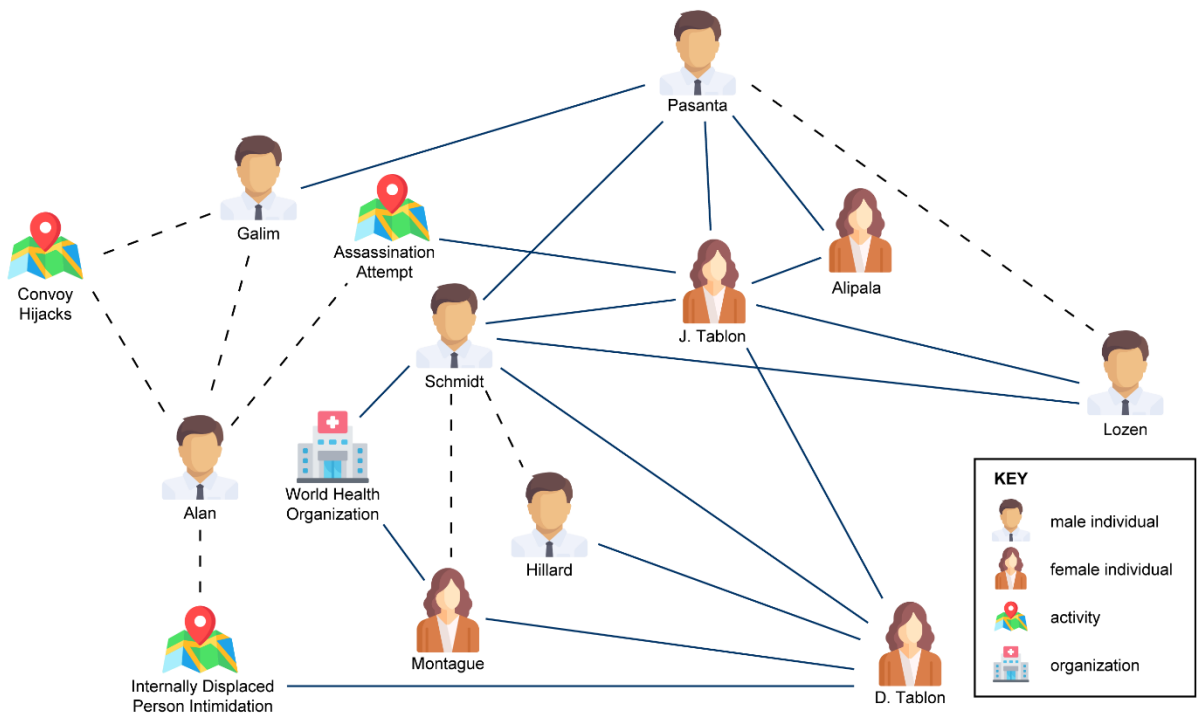
# APPENDIX D

## SYSTEMS THINKING

Targeting is linear when using the targeting taxonomy methodology to identify a threat to aimpoint linkage. A targeting professional can link the threat or adversary to aimpoint in a logical manner. However, the true creation of desired effects is conducted using systems thinking, which is a manner of not only looking at the target and its aimpoints, but also the system. A target system, according to CJCSI 3370.01, is “a broad set of interrelated, functionally associated components and linkages that produce a common output or have a shared task or mission.”

A system is an interconnected set of elements that is coherently organized in a way that achieves something. Anything can be a system. For example, using a global look from the International Space Station with a systems lens, we can link all things within the bounds of Earth as a system. When considering what effects our activities have on Earth, the system is too large to comprehend. A targeting professional must bound the system in some way to comprehend and analyze the activities that are ongoing within that system. Figures D-1 and D-2 are examples of bounded systems with a specific function.

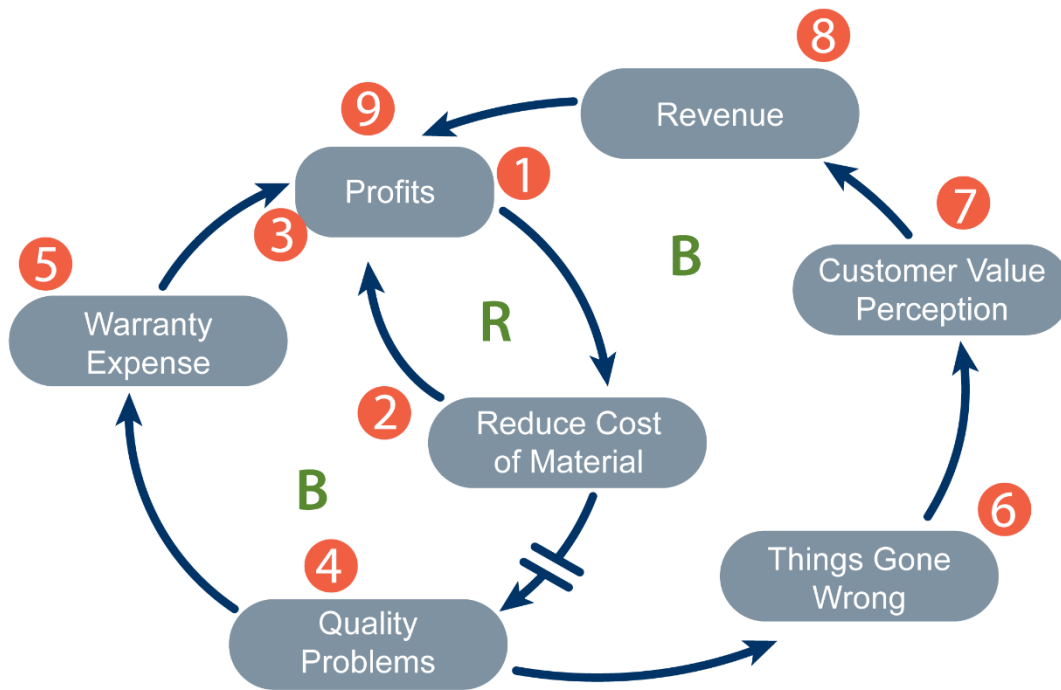




**Figure D-2. Example of Local Government System with Nongovernmental Organization Assistance.**

System interconnectivity is driven by some sort of motivator, which can allow a targeting professional to identify vulnerabilities to create effects. However, these vulnerabilities might not be easy to identify. One reason is that systems continue in existence because of the motivator. The motivator reinforces movement or balances the movement within the system. Figure D-3 depicts a supplier quality system that shows nodes and how the nodes are motivated through a reinforcing loop or balancing loop.

## Supplier Quality System Diagram



### LEGEND

B balancing loop

R reinforcing loop

1. Profitability at a major auto manufacturer is falling short of expectations.
2. Pressure is applied to the supply base to reduce the cost of purchased materials. In this case, a remote entry key fob is involved (remote lock/unlock).
3. The short-term impact of the material cost reduction initiative is favorable, leading to an improvement in the profit margin. This is a reinforcing loop.
4. However, in the rush to squeeze cost out, the engineering changes that led to reduced material cost were not subjected to the proper durability tests. Internal switch contacts were changed from copper to tin. After a time lag, virtually 100% of the parts fail.
5. Warranty expense increases (balancing loop).
6. Customers experience the product failure (things gone wrong).
7. Reliability problems have a negative impact on customer's product value perceptions.
8. Revenue is impacted adversely as less customers are satisfied with product value due to poor reliability (balancing loop).
9. Profits suffer from two things: revenue is depressed while warranty expense increases. This is the opposite of the intention's original action - an unintended consequence that puts further pressure on cost reductions to boost profits.

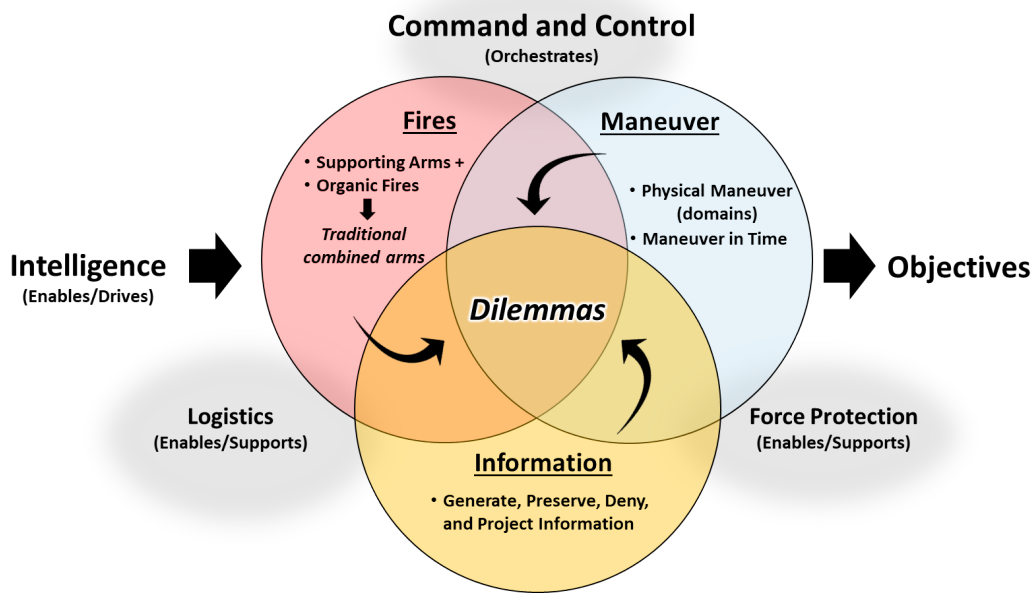
**Figure D-3. Example of an Automobile Manufacturing Plant's Supply System.**

Using intelligence and SMEs, a targeting professional looks at a system for what it is, a group of nodes that are interconnected to perform a function that is bounded in some way. When the staff can identify what the system is and how it performs, then they can better understand the systems COG and how to attack its critical vulnerabilities. The idea that any one system can be degraded through a single strike of a target is elementary and the staff must be educated to better depict how target engagement will influence the system. This system thinking perspective considers the formulation of a collateral effects estimate. For additional information on networks and systems refer to MCTP 3-02A.

# APPENDIX E

## INFORMATION INTEGRATION

The speed, reach, and persistent nature of information in the modern information environment not only makes the world a “smaller place,” it compresses the levels of warfare and erases the traditional notion of battlespace boundaries. Information in today’s hyper-connected world also impacts the foundational concept of combined arms. MCDP 1, *Warfighting* states “Combined arms is the full integration of arms in such a way that to counteract one, the enemy must become more vulnerable to another. Marines pose the enemy not just with a problem, but with a dilemma, —a no win situation.” The concept of combined arms remains as applicable today as in any previous century. The current framework for understanding a combined arms functional approach must involve combining supporting arms and organic fires with maneuver and information capabilities to create dilemmas across the competition continuum. Figure E-1 illustrates a model of a functional approach to information in a combined arms operation.



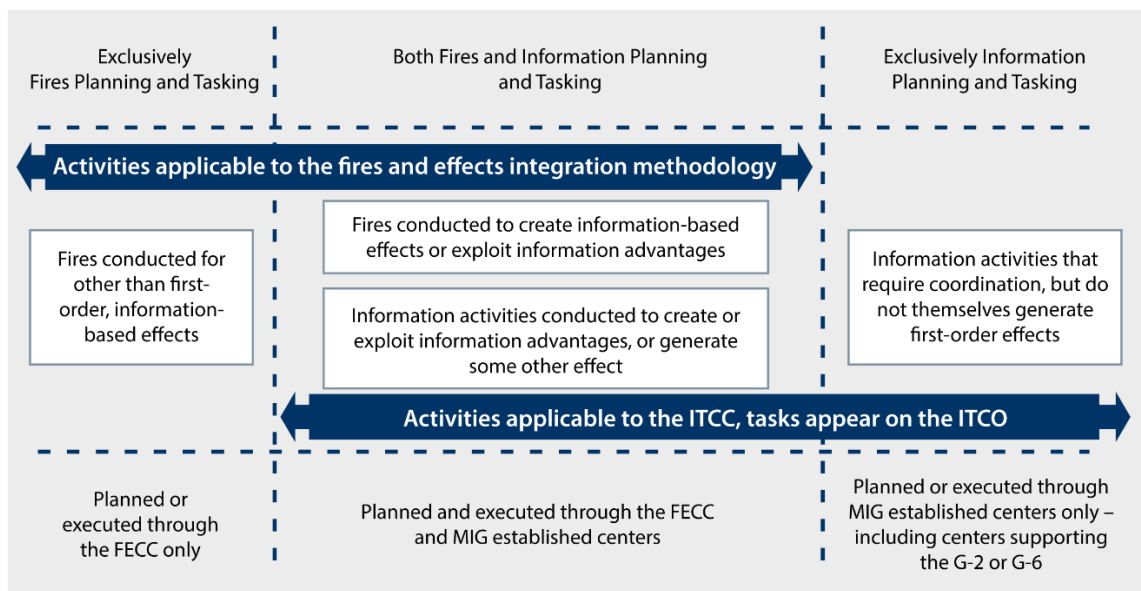
**Figure E-1. Information in a Combined Arms Functional Approach.**

Marines should understand that an expanded concept for combined arms is to use a functional approach to competition and warfare that involves all warfighting functions in all the domains to create, enable, or support a wide array of dilemmas. At the model’s core are the fires, maneuver, and information warfighting functions. These functions reside at the center of the model because they provide direct first-order effects when applied in operations. Intelligence sits at the left side of the model to indicate its role in identifying opportunities to create dilemmas, therefore effectively driving or critically enabling the creation of dilemmas and the activities of the other warfighting functions. Command and control sit atop the model because it is the function used to orchestrate and harmonize the timing, tempo, and focus of combining the other warfighting functions to create dilemmas. Logistics and force protection sit at the flanks of the model to

illustrate their enabling and supporting roles in creating dilemmas. Objectives are indicated at the right side of the illustration to denote the purpose and orientation of the entire model.

As noted, information sits at the core of Figure E-1 because, like the other core warfighting functions in the model, information is used to deliver first-order effects (particularly information denial and information projection activities). Combining information activities with fires and maneuver at the right time and place can create dilemmas. For example, when TSA reveals an exploitable vulnerability in an enemy integrated air defense system, Marines could execute a combined electromagnetic and cyberspace attack at a specific time to blind the enemy and cover friendly maneuvering forces in the attack. The dilemma begins with the cascade of events which starts with degraded enemy situational awareness, and then leads to increased uncertainty and a paralyzed enemy vulnerable to destruction. The dilemma posed to the enemy is: *react while blinded and increase visibility and exposure to additional forms of attack or do nothing and await destruction by the maneuvering force in the attack.*

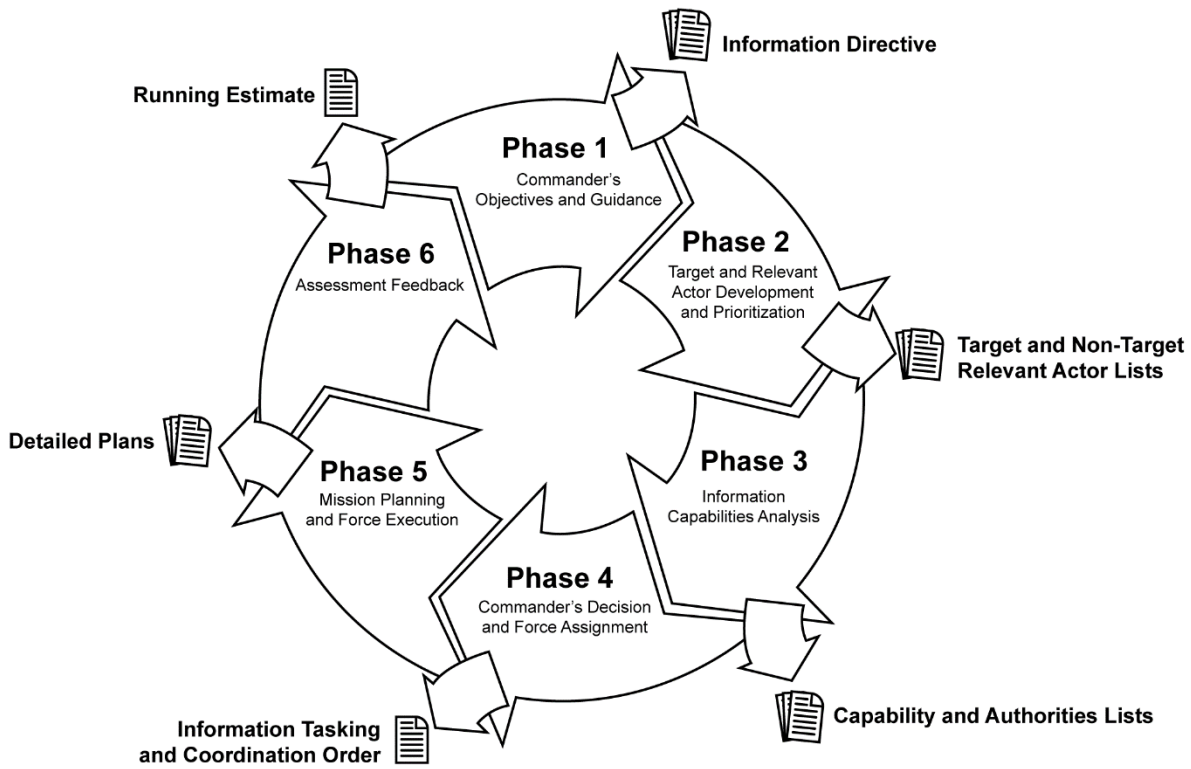
Executing information engagements is done through the MAGTF targeting cycle. This is a new approach, described in MCWP 3-31, that provides the commander an additional tool to engage actions against an adversary or enemy. Fires and effects tasks use two different but equal processes. For tasks that require input or action from the FEC, the staff uses the MAGTF targeting cycle. For actions that do not require direct input from the FEC, the information tasking and coordination cycle (ITCC) is used. Figure E-2 outlines how and when each is used. For more details on the ITCC see MCWP 8-10.



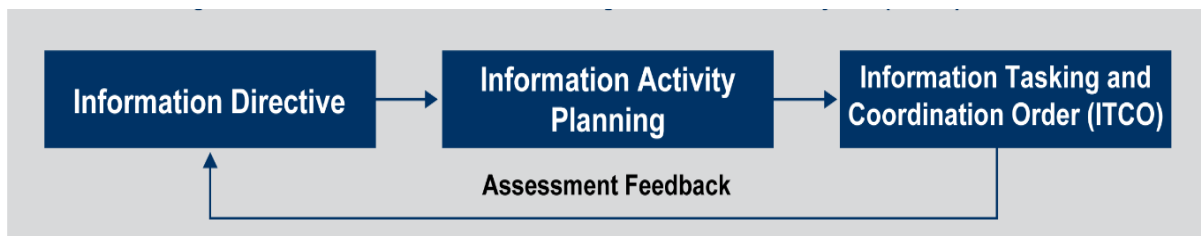
**Figure E-2. Scope and Applicability of the Information Tasking and Coordination Cycle.**

While the implementation of the MAGTF targeting cycle represents a change in how fires are engaged in the Marine Corps, the methodology remains aligned with joint doctrine. The ITCC represents a significant doctrinal change in how we engage information tasks, brought about by the designation of information as a warfighting function.

Figure E-3 illustrates the six phases of the ITCC. The end state of the ITCC is commander's guidance through mission planning and represents the activities conducted to develop the information tasking and coordination order (ITCO). The planning activity is informed by the information directive, which is found in Annex I, Information, of the basic order. The information directive and ITCC result in developing the ITCO. Figure E-4 illustrates the development of the ITCO. For more information about the ITCO, see MCWP 8-10.



**Figure E-3. Six Phases of the Information Tasking and Coordination Cycle.**



**Figure E-4. Information Tasking and Coordination Cycle.**

# APPENDIX F

## OPERATION ASSESSMENTS

### TARGETING METHODOLOGY AND ASSESSMENTS

Operation assessments are fed through multiple means of information and intelligence. Owned by the plans section (J/G/S-5), operational assessments are an important activity during the fires process and specifically within targeting. Phase 6 of the MAGTF targeting cycle feeds this process through tactical actions that are taken on targets. During the process of combat assessment, results are fed into the operational assessment process to identify if the unit is achieving the commander's objectives and creating the desired effects. The following is a discussion on where in the MAGTF targeting cycle operational assessments have input and outputs, and how to formulate targeting specific to recommended MOPs and MOEs with associated indicators.

### SUPPORTING INDICATORS, MOP, AND MOE

The commander and staff will identify the military end state and objectives that nest within HHQ objectives. With the objectives identified, the staff recommends desired effects that are needed to support the objectives. Then the staff develops tasks that units must perform to create the desired effects. The assessment cell develops a framework for assessing the accomplishment or efficacy of the tasks, desired effects, and objectives. There are multiple ways to conduct operation assessment but one of the most used is through the development of MOPs and MOEs that directly support assessing tasks and effects, respectively.

A MOP is an indicator used to measure a friendly action that is tied to measuring task accomplishment.

A MOE is an indicator used to measure a current system state, with change indicated by comparing multiple observations over time.

### OPERATION ASSESSMENT PROCESS

According to MCWP 5-10.1, *Operation Assessment*, the operation assessment process is a way of conducting operation assessments. There is no single way to conduct an assessment. Each mission and operational environment has its own set of challenges, and every commander assimilates information differently, making every assessment plan unique. The following are the recommended steps of the operation assessment process:

1. Develop assessment approach.
2. Develop assessment plan.
3. Collect information and intelligence.
4. Analyze and synthesize the feedback.
5. Communicate the assessment and recommendations.
6. Adapt plans.

During step 2, the staff, with commander’s guidance, develops a framework for operation assessments. The framework includes developing indicators that assist the staff in presenting the commander with how the operation is conducted and if the desired effects are achieved to support objectives. Creating MOPs, MOEs, and supporting indicators provides a simple method to create the assessment framework that helps outline causal relationships. Table F-1 characterizes the development of MOP, MOE, and supporting indicators.

**Table F-1. Assessment Measures and Indicators.**

<b>MOE</b>	<b>MOP</b>	<b>Indicator</b>
Answers the question, “Are we doing the right things?”	Answers the question, “Are we doing the right things?”	Answers the question, “What is the status of this MOE or MOP?”
Measures purpose accomplishment.	Measures task completion.	Measures the data inputs to inform the MOEs and MOPs.
No hierarchical relationship to MOPs.	No hierarchical relationship to MOEs.	Subordinate to MOEs and MOPs.
Often formally tracked in formal assessment plans.	Often formally tracked in execution matrices.	Often formally tracked in formal assessment plans.
Typically challenging to choose the correct ones.	Typically, simple to choose the correct ones.	Typically, as challenging to choose as the supported MOE or MOP.

**LINKAGE**

The MOP and MOE development process is only effective when linked to tasks and effects they support and are directly linked back to the military objective. Figure F-1 depicts a way to link MOPs and MOEs under an objective, effect, and task. The linkage allows an assessor to identify the strengths and weaknesses of the assessment framework.

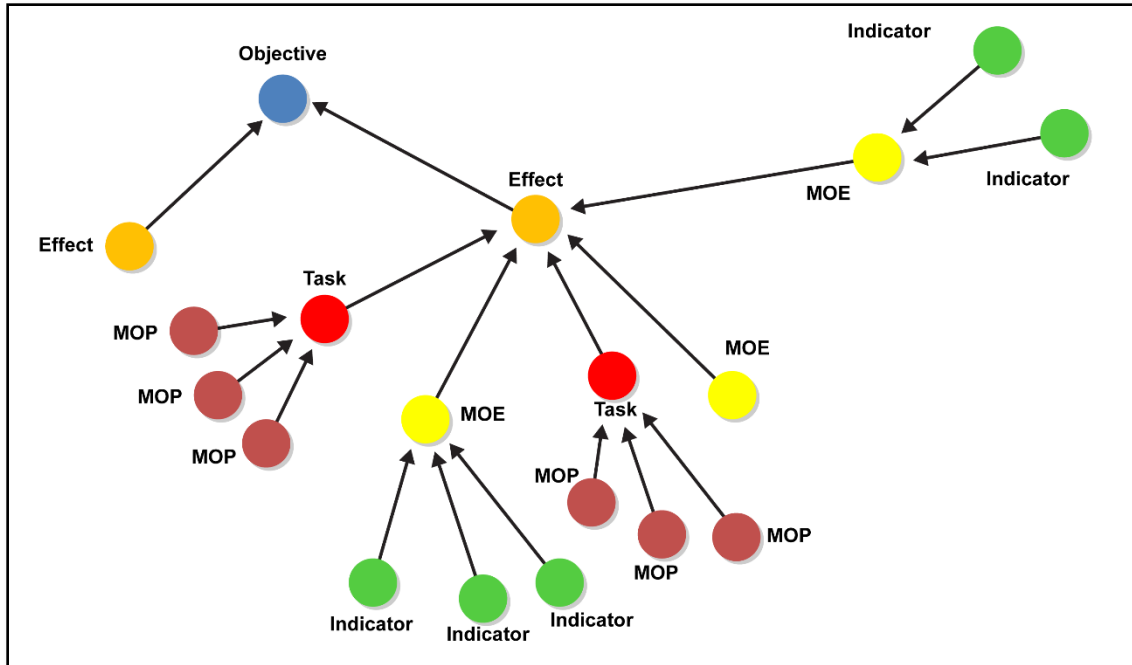
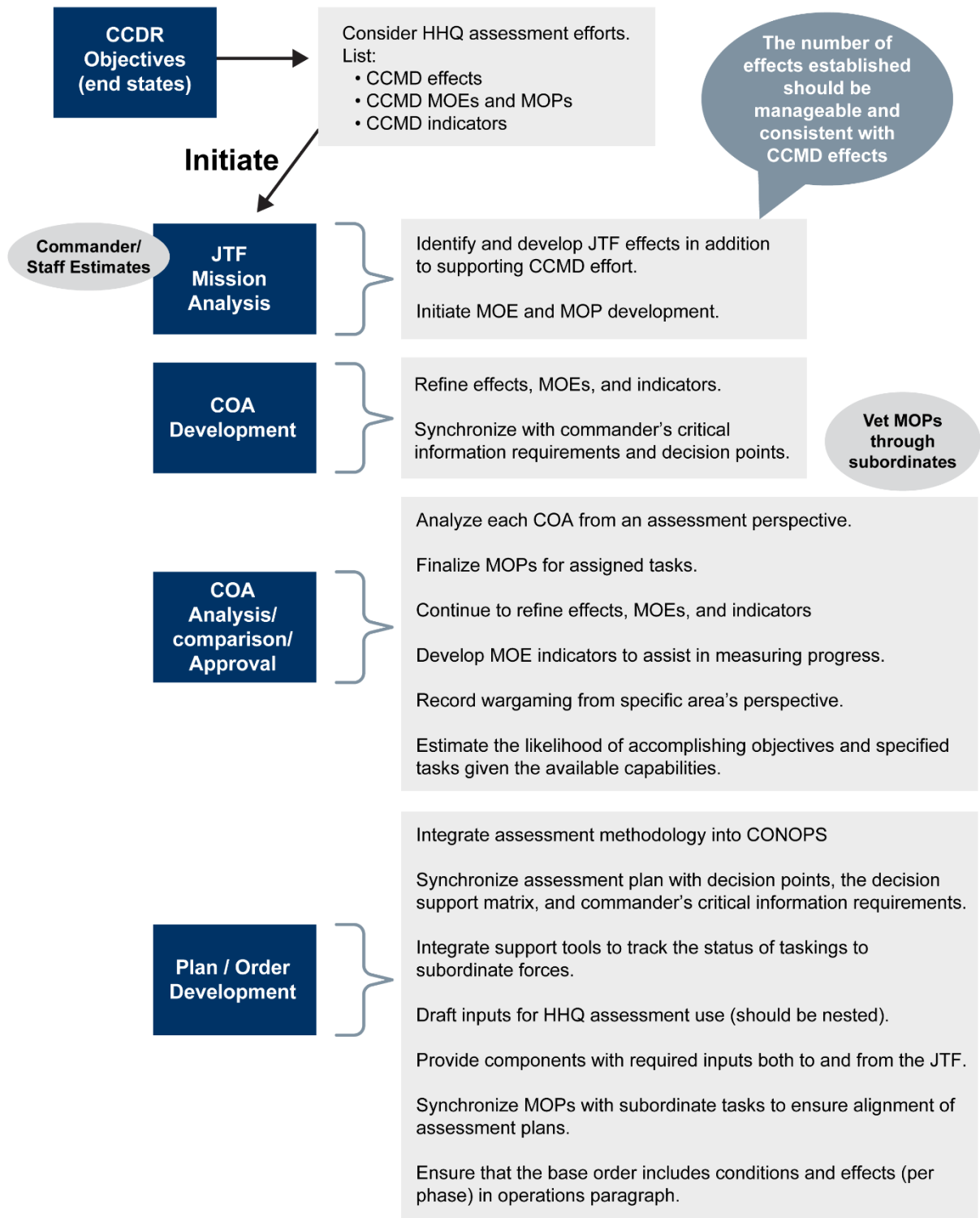


Figure F-1. Notional Assessment Structure.

## PLANNING PROCESS INTEGRATION

The development of assessments starts during the planning process. The MOP and MOE development process starts during the joint planning process mission analysis phase. Figure F-2 shows how the staff develops MOPs and MOEs that support military objectives and then refines them throughout the planning process. Once codified in an order, the assessment annex becomes a tasking statement to the staff on what to collect, how to collect, and what data is required to conduct an assessment. One idea to keep in mind throughout the process is that assessments are constantly changing because of the dynamic environment and must be constantly reassessed and edited to ensure validity and transparency. Figure F-2 shows a way to integrate operation assessment using MOPs and MOEs during the joint planning process, however, it can be aligned to any Service's planning processes.



**Figure F-2. MOP and MOE Development Steps During Planning.**

## **Planning Initiation**

As outlined in JP 5-0, planning starts when a commander identifies a problem or a desired future state that is different from the current state. An example is indications and warnings of a violent extremist organization attacking a US, partner, or ally's base within a theater of operations. The planning authority provides planning guidance to the staff. With this guidance, the assessment cell, usually within the J/G/S-5, starts to develop the assessment approach. With the assistance of the staff intelligence and information functions, a baseline is identified and used to make future assessments. The MOPs, MOEs, and supporting indicators are not started during this phase of planning.

## **Baseline**

Prior to the development of MOPs and MOEs, the commander identifies a baseline that describes the current state conditions. To effectively measure change, a baseline measurement is established prior to execution to facilitate accurate assessment throughout the operation. The baseline is defined by environmental conditions when the assessment starts. The staff can use historical data to help establish a baseline if that data can be used in a relevant, measurable, responsive, and resourced manner. If there is no historical data, the staff may start from receipt of mission to initiate assessments. Baseline sources include JIPOE, country studies, political and military assessments, TSA, open-source information, and intelligence sources. The intelligence and information sections provide most of these products.

A baseline example is a unit tasked to secure a country's borders, which have been under attack by proxy forces for two years. The data from the past two years provides a baseline to measure change as military forces are conducting operations.

## **MISSION ANALYSIS**

Once the commander reviews the staff developed list of effects, the assessment cell develops a framework, MOPs, MOEs, and initial supporting indicators, and identifies collection requirements for each supporting indicator. The assessment cell then works with the operations section to identify the commander's priorities and how to best integrate assessments into the planning process. The assessment cell also develops MOPs, MOEs, and supporting indicators in coordination with the staff intelligence and information sections. This integration ensures collection resource requirements are properly identified. The MOPs and MOEs can either be quantitative or qualitative.

## **Quantitative Indicators**

During an assessment, a quantitative indicator is an observation-based (objective) information item that provides insight into an MOE or MOP. Someone observes an event and counts it. For example, tallying gallons of diesel fuel provided monthly to host-nation security forces. The commander can use the number to assess whether there was a change in providing the resource. The change data tells the commander if resources are still required to support desired effects.

Inevitably, some subjective judgment becomes a factor when dealing with quantitative indicators. Choosing which quantitative indicators to collect requires judgment. Prior to collection, the staff identifies collection, resource, and information requirements. During collection, the choice of sources, methods, and standards for observing and reporting the events

also requires judgment. After collection, the commander or staff decides whether to use the number as an indicator in a formal assessment plan, and for MOEs or MOPs.

### **Qualitative Indicators**

During assessment, a qualitative indicator is an opinion-based (subjective) information item that provides insight into a MOE or MOP. A high degree of human judgment is involved with collecting qualitative indicators. These indicators are opinions. For example, the division commander estimates the effectiveness of the host-nation forces on a scale of 1 to 5. Qualitative indicator sources include SMEs' judgments, as well as subordinate commanders' summaries of the situation.

Qualitative indicators can account for real-world complexities that cannot be feasibly measured using quantitative indicators. Qualitative indicators are also more readily available as commanders have access to staff, key leaders, and SMEs to solicit opinions. In some cases, the only available indicator for a particular MOE or MOP is an expert opinion. For example, determining changes in the size and number of enemy sanctuaries may prove impossible without asking local commanders, partners, and stakeholders. Without large amounts of objective data, subjective indicators can be used to give a relatively informed picture. However, subjective measures have a higher risk of bias. Opinion is capable of considerable insight, but also vulnerable to hidden assumptions that may prove false. Through a quality assurance and quality control process, observers use training and experience to provide assessments.

The MOP and MOE statements should ask, was there a change in the direction of the indicator, who are we measuring, what state of a system are we measuring, where are we measuring data, and the time measured from. These statements attempt to answer, where are we, how did we get here, and what's next. The format used: change direction, subject of indicator, action of the indicator, location (logical, physical, etc.), and baseline in time are determined when the assessment starts.

Examples include:

**MOP 1:** Change or no change in the number of friendly sorties flown against approved targets in the vicinity of (IVO) city A since D-Day.

**MOP 2:** Change or no change in the amount of friendly military information support operations messages delivered to approved target audiences IVO city A since D-Day.

**MOP 3:** Change or no change in the number of missions conducted against approved targets IVO city A since D-Day.

**MOE 1:** Change or no change in the amount of enemy contacts IVO city A since D-Day.

**MOE 2:** Change or no change in the adversary momentum through combat action IVO city A since D-Day.

**MOE SI 1:** Change or no change in the number of pessimistic signals from one enemy to another IVO city A since D-Day.

**MOE SI 2:** Change or no change in the number of enemy combat patrols IVO city A since D-Day.

**MOE SI 3:** Change or no change in the number of enemy contacts with platoon or larger forces IVO city A since D-Day.

**MOE SI 4:** Change in amount of enemy IEDs on main supply route IVO city A since D-Day.

As written, the MOPs support a task that assists in achieving the desired effect. One difference between the above MOP and MOE examples is that MOE 2 has several supporting indicators (SI). The reason is that MOE 2 is qualitative when compared to the quantitative MOP 1 and MOE 1. Qualitative statements require quantitative supporting indicators to produce a word picture based on the data.

### Nesting

Measures of performance support assessing task accomplishment while MOEs support assessing effects created. Table F-2 depicts the association of MOPs and MOEs and nests with the process presented previously in Figure F-2.

**Table F-2. Example of Objective to Effect to Task Nesting with MOPs and MOEs.**

<b>Objective 1.</b> Combined forces achieve air superiority IVO the capital city by phase 4.	
<b>Effect 1.1.</b> Enemy air forces are degraded to less than 30% IVO the capital city by phase 3.2.	
	<b>MOE 1.1.1:</b> Change or no change in amount of adversarial contacts IVO capital city since end of phase 2.
	<b>MOE 1.1.2:</b> Change or no change in the adversary momentum through combat action IVO capital city since end of phase 2.
	<b>MOE SI 1.1.2.1:</b> Change or no change in the number of pessimistic signals from one adversary to another IVO capital city since end of phase 2.
	<b>MOE SI 1.1.2.2:</b> Change or no change in the number of enemy combat patrols IVO capital city since end of phase 2.
	<b>MOE SI 1.1.2.3:</b> Change or no change in the number of adversarial contacts with platoon or larger forces IVO capital city since end of phase 2.
	<b>Task 1.1.1.</b> Combined forces conduct air interdiction missions on enemy airfields IVO the capital city through phase 3.
	<b>MOP 1.1.1.1:</b> Change or no change in friendly air interdiction sorties on enemy airfields IVO capital city since end of phase 2.
	<b>MOP 1.1.1.2:</b> Change or no change in friendly ISR tracks of enemy air IVO capital city since end of phase 2.

As the table depicts, the nesting of MOPs and MOEs with tasks and effects is an efficient and effective way to develop an assessment plan. Each subordinate item after the objective is linked numerically back to the senior element using a number scheme (i.e., MOE 1.1.1 is linked back to Effect 1.1 or MOP 1.1.1.1 is linked to Task 1.1.1 then to Effect 1.1 then to Objective 1). Another way of accomplishing this is by using an alphanumeric scheme (i.e., MOE 1.a.1 nests under Effect 1.a).

## **COURSE OF ACTION DEVELOPMENT**

As the staff develops the COA, the assessment cell works with the staff to refine MOPs, MOEs, and supporting indicators to align with unit objectives, effects, and tasks.

## **COURSE OF ACTION ANALYSIS AND WARGAMING**

During COA analysis and wargaming, the assessment cell refines the assessment plan as the staff refines the developed COA. The assessment cell and staff view each COA differently. There may be similarities, but the approach to assessing operations and collecting intelligence to support assessments, is different.

## **COURSE OF ACTION COMPARISON**

During COA comparison, the staff reviews each COA and weighs them against the attributes provided by the commander at the end of COA analysis and wargaming. The assessment cell provides input to the staff's comparison process and analyzes their own assessment plan.

## **COURSE OF ACTION APPROVAL**

Upon COA approval, the assessment cell provides feedback to the commander on whether the assessment plan supports the commander's decision-making process and where the commander might assume risk.

## **PLAN OR ORDER DEVELOPMENT**

The assessment cell develops the assessment appendix to the order. As the environment changes, the assessment cell reviews the assessment plan to identify any changes required to better assist the commander's decision-making process. If changes are required, the assessment cell works with the staff to change the assessment plan. The operations assessment plan is captured in Appendix 22 (Operations Assessment Plan) to Annex C (Operations) of the basic plan or order.

## **CONSIDERATIONS**

### **Bias**

Assessments try to identify change whether positive, neutral, or negative. The wording of MOPs and MOEs may sway the assessment in one direction or another. Numbers can become subjective because the data they are derived from or the data that is excluded influences the value. For these reasons, assessment professionals attempt to remove bias using the following approaches.

**Ask Disconfirming Questions.** After the assessment cell identifies MOPs, MOEs, and supporting indicators, it should ask the opposite before and during data analysis. For example, the intelligence supports that stealth aircraft are being shot at by enemy air defenses at an increased rate. The original analysis might indicate that enemy integrated air defense radar is better at tracking stealth aircraft. The assessment cell should ask itself a disconfirming question such as “is radar the source of enemy tracking?”.

**Develop and Test Multiple Hypothesis.** Systems are not black and white. When attempting to identify the source of a change in a system (or no change), an analyst attempts to reduce errors when drawing conclusions between cause and effect. Therefore, an analyst should develop hypotheses even when they are implausible.

**Engage in Contrary Analysis.** The human dimension will naturally favor one hypothesis or COA. If the staff size is large enough or has a red team, the assessment cell should look to identify ways that their favored hypothesis is wrong. For example, the intelligence seems to indicate the enemy will initiate attacks against the eastern front. Contrary analysis would consider why the enemy would not attack the eastern front and would attack a different front.

**Assess Other People’s Metaknowledge.** Within working groups, the most “confident” person usually runs the group. However, other members of the working group have the knowledge and experience to assist. Therefore, each staff members must ask themselves, how do I know what I assert to know, what process did I use to arrive at my conclusions, and what evidence supports or invalidates those conclusions. Each staff member should not rely on face value information, but instead ask the hard questions on why they are so confident in their assessment.

The human dimension is dynamic so the staff should avoid anchoring on an initial assessment. They should remain open to considering new information. The observe, orient, decide, act loop concept depicts that everything an actor does within the environment changes the environment. The changes will then force an analyst to reassess their understanding of the situation. The reassessment, if done in an objective manner without introducing anchoring bias, will identify the true cause and effect of a changing system.

## **Transparency**

While developing and conducting operation assessments, transparency with the commander is vital to the commander’s decision-making process. Bad news does not get better over time. The commander needs to be informed of positive, neutral, and negative activities within the operational environment that impacts the COA. This information allows the commander to make a risk decision on dedicating resources to improving a situation, sustaining COPS, reducing resources allotted to task, or stopping effort towards a task because of task accomplishment or lack of cost benefit. These decisions are made throughout the commander’s battle rhythm, most likely at the AWG or targeting coordination board.

# GLOSSARY

## Section I—Acronyms and Abbreviations

AGM	attack guidance matrix
ASCOPE	areas, structures, capabilities, organizations, people, and events
ATI	asset target interaction
ATO	air tasking order
BDA	battle damage assessment
BSM	battlespace shaping matrix
CARVER	criticality, accessibility, recuperability, vulnerability, effect, and recognizability
CCDR	combatant commander
CCMD	combatant command
CDE	collateral damage estimation
CEE	collateral effects estimation
CFA	critical factor analysis
CID	combat identification
COA	course of action
COG	center of gravity
COPS	current operations
COS	chief of staff
D3A	decide, detect, deliver, and assess
DCM	damage criteria matrix
DoD	Department of Defense
EA	electromagnetic attack
EFST	essential fire support task
EMS	electromagnetic spectrum
ETF	electronic target folder
F2T2EA	find, fix, track, target, engage, and assess
FEC	fires and effects coordinator
FECC	fires and effects coordination center
FOPS	future operations
FSC	fire support coordinator
FSCC	fire support coordination center
G-2	assistant chief of staff, intelligence/intelligence staff section
G-3	assistant chief of staff, operations and training/operations and training staff section
G-5	assistant chief of staff, plans/plans staff section
GCE	ground combat element
GITL	global integrated target list

HHQ.....	higher headquarters
HPT.....	high-payoff target
HVT.....	high-value target
ICC.....	information coordination center
IOC.....	intelligence operations center
IPB.....	intelligence preparation of the battlespace
ISR.....	intelligence, surveillance, and reconnaissance
J-2.....	intelligence directorate of a joint staff
J-3.....	operations directorate of a joint staff
JAOC.....	joint air operations center
JDPI.....	joint desired point of impact
JFACC.....	joint force air component commander
JFC.....	joint force commander
JIPOE.....	joint intelligence preparation of the operational environment
JIPTL.....	joint integrated prioritized target list
JP.....	joint publication
JTC.....	joint targeting cycle
JTL.....	joint target list
LOAC.....	law of armed conflict
MAGTF.....	Marine air-ground task force
MARS.....	Machine-assisted Analytic Rapid-repository System
MCPP.....	Marine Corps Planning Process
MCRP.....	Marine Corps reference publication
MCTP.....	Marine Corps tactical publication
MCWP.....	Marine Corps warfighting publication
MEA.....	munitions effectiveness assessment
MEF.....	Marine expeditionary force
MIDB.....	modernized integrated database
MIG.....	Marine expeditionary force information group
MOE.....	measure of effectiveness
MOP.....	measure of performance
MSC.....	major subordinate command
MSE.....	major subordinate elements
NLRP.....	nonlethal reference point
NSL.....	no-strike list
OPORD.....	operation order
PID.....	positive identification

PMESII-PT ..... political, military, economic, social, information,  
infrastructure, physical environment, time

RAGM..... reactive attack guidance matrix

ROE..... rules of engagement

RTL .....restricted target list

S-2.....intelligence officer/office

S-3.....operations and training officer/office

S-5.....plans officer/office

SARCC ..... surveillance and reconnaissance coordination center

SCAR..... strike coordination and reconnaissance

SJA..... staff judge advocate

SME ..... subject matter expert

SOP..... standing operating procedure

SPINS.....special instructions

TACC ..... tactical air command center

TACSOP..... tactical standing operating procedure

TDN .....target development nomination

TDWG..... target development working group

TMO.....target mensuration only

TNL..... target nomination list

TSA..... target system analysis

TSS..... target selection standards

TST ..... time-sensitive target

TTP ..... tactics, techniques, and procedures

## Section II. Terms and Definitions.

**attack guidance matrix**—A list of targets that can be attacked along with specifics such as when, how, and priority of attacks as well as desired effects on each attack. Also called **AGM**. (USMC Dictionary)

**battle damage assessment**—(See DoD Dictionary for core definition. Marine Corps amplification follows.) The timely and accurate estimate of the damage resulting from the application of military force. Battle damage assessment estimates physical damage to a particular target, functional damage to that target, and the capability of the entire target system to continue its operations. Also called **BDA**. (USMC Dictionary)

**collection**—(See DoD Dictionary for core definition. Marine Corps amplification follows.) The gathering of intelligence data and information to satisfy the identified requirements. (USMC Dictionary)

**combat assessment**—The determination of the overall effectiveness of force employment during military operations. (DoD Dictionary)

**deliberate targeting**—The methodical identification, compilation, and analysis of potential fixed or semifixed targets followed by the decision of which potential targets will be attacked, when, and/or by what weapon and ordnance. It is practiced primarily during the planning phase of an operation, when planning for an attack, or when the tempo of combat is slow. (USMC Dictionary)

**entity**—Within the context of targeting, a term used to describe facilities, individuals, virtual (nontangible) things, equipment, and organizations. (DoD Dictionary)

**fires**—(See DoD Dictionary for core definition. Marine Corps amplification follows.) Those means used to delay, disrupt, degrade, or destroy enemy capabilities, forces, or facilities as well as affect the enemy's will to fight. Fires is one of the seven warfighting functions. (USMC Dictionary)

**fire support**—(See DoD Dictionary for core definition. Marine Corps amplification follows.) Assistance to elements of the Marine air-ground task force engaged with the enemy rendered by other firing units, including (but not limited to) artillery, mortars, naval surface fire support, and offensive air support. (USMC Dictionary)

**fire support coordination center**—A single site in which are centralized communications facilities and personnel incident to the coordination of all forms of fire support for Marine forces are located. Also called **FSCC**. See also **fire support**. (DoD Dictionary)

**fire support coordination measure**—A measure employed by commanders to facilitate the rapid engagement of targets and simultaneously provide safeguards for friendly forces. Also called **FSCM**. See also **fire support coordination**. (DoD Dictionary)

**fire support coordinator**—(See DoD Dictionary for core definition. Marine Corps amplification follows.) The officer in charge of the fire support coordination center who is the direct representative of the landing force commander for the planning and coordination of all available fire support. Also called **FSC**. (USMC Dictionary)

**fire support plan**—A plan on how indirect fires and target acquisition will be used to support an operation. It should include a portion for each means of fire support involved. (USMC Dictionary)

**information environment**—The aggregate of social, cultural, linguistic, psychological, technical, and physical factors that affect how humans and automated systems derive meaning from, act upon, and are impacted by information, including the individuals, organizations, and systems that collect, process, disseminate, or use information. Also called **IE**. (DoD Dictionary)

**information requirements**—(See DoD Dictionary for core definition. Marine Corps amplification follows.) All information elements the commander and staff require to successfully conduct operations, that is, all elements necessary to address the factors of mission, enemy, terrain and weather, troops and support available—time available. Also called **IRs**. (USMC Dictionary)

**measure of effectiveness**—An indicator used to measure a current system state, with change indicated by comparing multiple observations over time. Also called **MOE**. (DoD Dictionary)

**measure of performance**—An indicator used to measure a friendly action that is tied to measuring task accomplishment. Also called **MOP**. (DoD Dictionary)

**mensuration**—The process of measurement of a feature or location on the Earth to determine an absolute latitude, longitude, and elevation. (DoD Dictionary)

**munitions effectiveness 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. Also called **MEA**. See also **battle damage assessment**. (DoD Dictionary)

**no-strike list**—A list of objects or entities characterized as protected from the effects of military operations under international law and/or rules of engagement. Also called **NSL**. (DoD Dictionary)

**physical damage assessment**—The estimate of the quantitative extent of physical damage to a target resulting from the application of military force. See also **battle damage assessment**. (DoD Dictionary)

**reattack recommendation**—An assessment, derived from the results of battle damage assessment and munitions effectiveness assessment, providing the commander systematic advice

on reattack of a target. Also called **RR**. See also **assessment; battle damage assessment; munitions effectiveness assessment; target**. (DoD Dictionary)

**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**. See also **law of war**. (DoD Dictionary)

**sortie**—In air operations, an operational flight by one aircraft. (DoD Dictionary)

**synchronization**—The arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time. (DoD Dictionary)

**target analysis**—An examination of potential targets to determine military importance, priority of engagement, and capabilities required to create the desired effect. See also **target acquisition**. (DoD Dictionary)

**target development**—The systematic examination of potential target systems—and their components, individual targets, and even elements of targets—to determine the necessary type and duration of the action that must be exerted on each target to create an effect that is consistent with the commander’s specific objectives. (DoD Dictionary)

**target engagement authority** — The authority and responsibility to engage targets, which may be delegated to subordinate commanders responsible for operational areas. (DoD Dictionary)

**target folder**—A folder, hardcopy or electronic, containing target intelligence and related materials prepared for planning and executing action against a specific target. See also **target**. (DoD Dictionary)

**target intelligence**—Intelligence that portrays and locates the components of a target or target complex and indicates its vulnerability and relative importance. See also **target**. (DoD Dictionary)

**target list**—Those targets maintained and promulgated by the senior echelon of command that are to be engaged by supporting arms, as distinguished from a “list of targets” (confirmed, suspected, or possible) maintained by any echelon for informational and planning purposes. (USMC Dictionary)

**target location error**—The difference between the coordinates generated for a target and the actual location of the target. Also called **TLE**. (DoD Dictionary)

**target materials**—Graphic, textual, tabular, digital, video, or other presentations of target intelligence, primarily designed to support operations against designated targets by one or more weapon(s) systems. (DoD Dictionary)

**target of opportunity**—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. See also **dynamic targeting; target**. (Part 1 of a 2-part definition) (DoD Dictionary)

**target selection standards**—A list of requirements (time, location accuracy, posture) that must be met before attacking a specific target. Also called **TSS**. (USMC Dictionary)

**target system assessment**—(See DoD Dictionary for core definition, Marine Corps amplification follows) A combination of physical damage assessment and function damage assessment, it is a more permanent assessment of whether desired effects on a given target have been produced. (USMC Dictionary)

**time-sensitive target**—A joint force commander-validated target or set of targets requiring immediate response because it is a highly lucrative, fleeting target of opportunity or it poses (or will soon pose) a danger to friendly forces. Also called **TST**. (DoD Dictionary)

**track**—To display or record the successive positions of a moving object. (DoD Dictionary)

**validation**—A part of target development that ensures all candidate targets meet the objectives and criteria outlined in the commander's guidance and ensures compliance with the law of war and rules of engagement. (Part 2 of a 4-part definition) (DoD Dictionary)

**vetting**—A part of target development that assesses the accuracy of the supporting intelligence to targeting. (DoD Dictionary)

**weaponizing**—The process of determining the specific means required to create a desired effect on a given target. (DoD Dictionary)

# REFERENCES AND RELATED PUBLICATIONS

## Department of Defense Issuances

### Department of Defense Instruction (DODI)

3000.17 Civilian Harm Mitigation and Response

### Miscellaneous

Department of Defense Dictionary of Military and Associated Terms

## Joint Issuances

### Joint Publications

3-0 Joint Operations  
3-04 Information in the Joint Operations  
3-26 Joint Combatting Terrorism  
3-30 Joint Air Operations  
3-60 Joint Targeting  
5-0 Joint Planning

## Joint Chiefs of Staff Issuances

### Chairman of the Joint Chiefs of Staff Instructions (CJCSI)

3122.06 Sensitive Target Approval and Review Process (Secret)  
3162.01 Methodology for Combat Assessment (Confidential)  
3370.01 Target Development Standards  
3505.01 Target Coordinate Mensuration Certification and Program Accreditation

## Joint Staff J7 Issuances

### Insights and Best Practices Focus Paper

Joint Headquarters Organization, Staff Integration, and Battle Rhythm, 3d Ed, September 2019

## Department of the Navy Issuances

### Navy Warfare Publication

3-09 Fleet Fires  
3-60 Maritime Targeting

## Marine Corps Publications

### Marine Corps Doctrinal Publications (MCDPs)

1 Warfighting

### Marine Corps Warfighting Publications (MCWPs)

2-10	Intelligence Operations
3-20	Aviation Operations
3-31	Marine Air Ground Task Force Fires and Effects
5-10	Marine Corps Planning Process
8-10	Information in Marine Corps Operations

### Marine Corps Tactical Publications (MCTPs)

3-02A	Network Engagement: Targeting and Engaging Networks
3-10F	Fire Support Coordination in the Ground Combat Element
3-20D	Offensive Air Support

### Marine Corps Reference Publications (MCRPs)

2-10B.1	Intelligence Preparation of the Battlespace
3-31.5	Multi-Service Tactics, Techniques, and Procedures for Dynamic Targeting
3-31.7	Fire Support Systems for MAGTF Operations
3-20.1	Multi-Service Tactics, Techniques, and Procedures for the Theater Air-Ground System
5-10.1	Multi-Service Tactics, Techniques, and Procedures for Operation Assessment

### Miscellaneous Marine Corps Publications

Marine Corps Supplement to the DoD Dictionary of Military and Associated Terms

## **United States Air Force Publications**

### Air Force Doctrine Publications (AFDP)

Air Force Doctrine Publication 3-60, Targeting