The introduction of new doctrine is always met with skepticism and trepidation by entrenched bureaucracies. AirLand Battle had its critics. The introduction of multi-domain operations (MDO) is no different. This paper capitalizes on the experiences of four joint and coalition command post exercises (CPXs) where MDO effects were planned. The primary focus of the CPXs was to incorporate space, cyber and electronic warfare (EW) effects into the scheme of maneuver. This article focuses on the targeting experiences during those exercises and the integration of multi-domain effects.

On the surface MDO just looks like what a corps or equivalent level staff integrates every day in operations. Some of these processes are indeed similar, however it is important to recognize the differences. One of the primary differences is there is a difference between cross-domain Fires and multi-domain Fires.

Cross-domain Fires in its simplest form is just affecting one domain from another. An example would be surface-to-air missiles or using a shore-based artillery piece to attack a ship. This is what most commanders grew up understanding. Planning an air defense plan for a critical asset on the ground or requesting a Navy EA-18G to provide jamming effects are things Army staffs regularly plan and are other common examples of cross-domain Fires.

Multi-domain Fires takes those cross-domain assets and synchronizes them in time and space to create synergistic effects in windows of convergence. An example
might be creating a space-based effect which has an impact in the land or maritime domains, while an electronic warfare attack (EA) delivers a cyber effect, rendering an adversary’s defensive electronic counter measures inoperable for a window of time which a Navy strike package can exploit to deliver lethal effects.

As warfare has evolved into the modern era, cross domain Fires have begun to leverage the domains of space and cyberspace. During the War on Terror the increased use of the information environment by violent extremist organizations hinged on leveraging space-based transport layers to move information over cyberspace. Joint task forces and special organizations began to target space and cyber nodes in an attempt to disrupt their command and control as well as their ideological dissemination media. All these efforts previously have been conducted isolated from each other. The Multi-Domain Task Force (MDTF) is different in that it’s the first formation in the Army which brings all five domains under one command.

The novelty of the MDTF is its ability to provide effects in all five warfighting domains synchronized in time and space. As adversaries establish anti-access area-denial (A2/AD) bubbles which outrange conventional U.S. munitions, this formation provides a joint force commander (JFC) a delivery platform which can effectively shrink down those A2/AD bubbles and achieve lethal parity or overmatch, tipping the scale in their favor. In order to conduct MDO, the MDTF uses a targeting process very similar to the joint targeting cycle as described in JP 3-60 “Joint Targeting.”

**Joint targeting in multi-domain operations**

The targeting cycle for MDO is not much different than what joint doctrine currently calls for. Give an Army targeting officer a target and a desired effect and nine times out of ten they are going to figure out how to effect that target with either artillery, close combat attack or close air support. This is

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Figure 1. Target development relationships (Rick Paape/Courtesy information).

**Target Development Relationships**

![Target Development Relationships Diagram](http://sill-www.army.mil/firesbulletin)
because generally the Army focuses on what is within the lethal targeting distance of their longest range weapon systems and that is what the land component historically does.

Traditionally targeting occurs in a service-centric mind frame. The Army prepares and targets the enemy’s land order of battle, the Navy targets the maritime domain, and the Air Force targets the air and space domains. There has always been an element of cross-domain Fires. The Army cares about air threats because they can strike ground targets. The Navy keeps an eye on the air domain as threats have evolved to be carrier-based aircraft and anti-ship cruise missiles. The Air Force has always had to be concerned with land-based anti-air artillery. A major change with peer adversaries is now space and cyberspace are contested domains and the services must factor these into their targeting calculus.

Thinking non-lethally during the joint targeting cycle

The army traditionally thinks of targets as static or linear-motion entities on the land. A commander’s attack guidance matrix might prescribe firing a certain number of battery or battalion level volleys of a munition to achieve an effect on a target. This approach works fine in a traditional peer-on-peer fight or other well defined threats. The shift which needs to occur is to focus on what effect the commander wants to achieve on the threat system as a whole, not the specific piece of equipment.

The recently revised JP 3-60 does an excellent job of highlighting the difference between Army targeting and joint targeting. The Army is generally an executer of targets and focuses on the detect, decide, deliver, assess model. This level is associated with the “threat” of the joint targeting taxonomy. The MDTF needs to focus more on the lower portions of the taxonomy in order to mitigate the lethal engagement range overmatch of adversary systems. Therefore it is a fundamentally more in-depth targeting analysis which must occur, making joint targeting doctrine more applicable to MDTF missions.

JP 3-60 states “Achievement of clear, measurable and achievable objectives is essential to the successful attainment of the desired end state. The ability to generate the type and extent of effects necessary to achieve the commander’s objectives distinguishes effective targeting.” Instead of saying “Deny Integrated Air Defense Systems (IADS)” or “Destroy short-range ballistic missiles;” we need to shift to the system we wish to effect. A multi-domain commander’s intent might look like “Deny IADS the ability to engage air targets” or “Delay IADS ability to target aircraft for two hours.” This guidance provides the ability to tailor deny, delay, disrupt, de-
ststroy, or manipulate (D4M) effects to meet the commander’s intent. This is achieved leveraging ends, ways and means and conducted by following the joint targeting cycle.

The target working group must follow the joint targeting cycle while looking at all warfighting domains. Typically Army targeting is synchronized with an air tasking order cycle which prioritizes and allocates air and space domain capabilities against a commander’s Joint Integrated Prioritized Target List (JIPTL). This is how national level assets are allocated. A key difference in the MDTF is some of those capabilities now reside at a brigade-sized Army organization which has organic assets capable of delivering effects normally found at the operational and strategic levels. Despite this, the joint targeting cycle still provides a common framework with which the Army can target and provide complimentary effects with the joint environment. Attempting to create a new targeting process has proven to just create confusion and resistance from joint partners.

**Multi-domain targeting through the joint targeting cycle**

The six phases of the joint targeting cycle provide a sufficient framework to analyze multi-domain targets. Phase I – commander’s objectives, targeting guidance, and intent is crucial in providing clear and realistic expectations. Having a clear and concise intent within the D4M framework gives the targeting team the maximum amount of latitude to meet the commander’s intent. This is essential to enable the centers of gravity (CoG) analysis and identifying the decisive points; or as described in JP 3-60, Target System Analysis (TSA).

In order to properly conduct a TSA the targeting team must have access to a robust repository of intelligence data. The intelligence team needs to be able to find relevant information across all warfighting domains. During the competition phase, it is vital to the targeting enterprise and essential to the joint targeting cycle to identify intelligence gaps, develop priority intelligence requirements and develop a competition phase intelligence, surveillance and reconnaissance (ISR) collection plan. Once identified, these gaps and requests for information (RFI) must be resolved before the conflict phase. These processes enable the non-lethal targeting team to fully develop a target and validate the engagement plan of adversary systems. Key outputs from phase one include clear and concise commander’s guidance, an initial TSA of JIPTL items, and refined RFIs.

After the CoGs are identified the targeting team can move to Phase II – target development and prioritization. The non-lethal world is best characterized by viewing the threat as a system of systems. JP 3-60 even describes this: “Target systems are typically a broad set of interrelated, functionally associated components that generally produce a common output or have a shared mission. Target development often approaches adversary capabilities from a target systems perspective.” These enabling processes are where the MDTF and specifically the Intelligence, Information, Cyber-space, Electronic Warfare Space (I2CEWS) Battalion (BN) is tailored to address. The planning expertise found in the battalion enable operational and strategic level analysis to be completed in a tactical formation. Key outputs of this phase are the TSA with supporting intelligence and combat assessment criteria for each node.

**Unique MDO targeting planning considerations in Phase II of the joint targeting cycle**

A planning factor for non-lethal effects is the amount of time and effort which are required to validate a target. In order for an MDTF commander to conduct the necessary intelligence gathering in this phase they must have the required authorities to conduct national technical means ISR or cyberspace surveillance and reconnaissance (C-S&R) and ultimately to produce effects in gray or red space. For example, a national level asset may derive signals intelligence (SIGINT) which provides an exploitable access point for cyberspace to begin conducting C-S&R, requiring the formation to be legally authorized to conduct the activity.

Once this process is complete, a different set of authorities may be required to refine the TSA of that system through cyberspace ISR. Once established, a cyber-support team will have to develop a tool which meets the commander’s intent for that specific system. All of this can take months to years and cost millions of dollars in asset time and man hours. This places an additional calculation on the targeting team to provide the commander a cost-benefit analysis estimation of whether using a specific tool for the mission is worth the expense. The assumption is once the tool is delivered it will not be able to be used again.

The MDTF is a hybrid organization which blends all three levels of war, especially through non-lethal targeting with the I2CEWS battalion. Non-lethal targeting at the operational and strategic levels elevates the amount of de-confliction which must take place. Intel-gain/loss has always been a calculation between SIGINT and electronic warfare (EW), however the addition of cyber extends this to the cyber domain and involves other government agencies which have a stake in the domain. This phase also raises the specter of the Law of Armed Conflict the Rules of Engagement. Cyberspace and electrons in the Electromagnetic Spectrum (EMS) aren’t confined by geographical boundaries. Adversary systems often leverage this ambiguity by using dual-use systems which service both civil and military systems. As with the example above in the JP, sometimes the CoG is a dual-use system which requires even more

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tailored effects to minimize impact on the civilian population.

Phase III of the targeting cycle, capabilities analysis, is where a clear definition of the commander’s intent allows for maximum flexibility in the I2CEWS’ ability to deliver effects. During TSA, targeteers determine which capabilities in which domains are required to achieve the commander’s intent. Depending on which state the conflict lies defines which methods of effect delivery are suitable, feasible and acceptable. For example, during competition phase a kinetic strike is less likely to be used for the risk of triggering a shift to conflict phase, whereas C-S&R provides anonymity and reversibility to achieve an effect and may be used as a deterrent to conflict.

With the analysis and capabilities assessment completed, the MDTF commander would then inform into the fourth phase of the joint targeting cycle – commander’s decision and force assignment. A novelty with the MDTF is it is a brigade-sized unit directly supporting a geographic combatant command (GCC) and acts on the same level as a joint force air component commander, which is typically commanded by a two-star general officer. Inherent in the MDTF’s mission, they are a direct support unit to a GCC or a JFC if one is present. Through both competition and conflict phases the MDTF commander would be sending nominated targets to the JFC for inclusion to the JIPTL.

More than one unit may be required to service a target. The MDTF may not even be the best unit for striking a target they nominate. For example, if the MDTF discovers a CoG which lays outside the lethal effects range of their long-range artillery, an Aegis cruiser may be able to engage with a Tomahawk Land Attack Missile. The MDTF may still service a portion of the target packet by providing a cyber or space effect at the same time in order to enhance the lethality of the strike.

Just like lethal Fires, non-lethal effects need an observer to watch effects on target. For an EW mis-
the MDTF receives the WARNORD tasking to service a target, the individual units of the MDTF must begin their troop leading procedures (TLPs). Each has their own considerations, however the I2CEWS BN units are nascent in their TLP development. A space detachment will have different mission planning requirements than the CEMA teams. As with all targets, each unit has to validate the assumptions and facts used to plan the mission are still valid. For example, a cyberunit will need to verify the target is still being held at risk or that they can still gain end-point access in order to hold it at risk. Key outputs for this phase are a completed military decision-making process (MDMP) cycle and company-level operations orders (OPORDs).

The final phase, combat assessment, is crucial. For the I2CEWS units whose effects exist in domains which aren’t immediately visible, it is imperative during Phase II the planners included combat assessment criteria for what success looks like. Unlike kinetic effects where the damage is physically apparent by looking at an ISR feed, effects delivered in the EMS and cyberspace don’t always lead to visible indicators. Often the non-lethal team is asked to achieve effects the JFC can’t reach physically with lethal munitions. Thus the mission of the non-lethal team is to create a window of convergence with non-lethal effects which sufficiently provides D4M effects to minimize risk to a kinetic strike package. Timely, well thought out combat assessment criteria allows the MDTF to quickly determine if the intended effects were delivered, which may serve as a trigger for a ship or aircraft to maneuver into contested space and deliver lethal effects. **Bringing it together**

The MDTF is a novel organization which cobbles together elements of the traditional Army with new units found in the I2CEWS BN. With this addition, the MDTF is able to create windows of convergence across all five war-fighting domains simultaneously in order to enable joint maneuver in contested A2/AD environments. This requires commanders and staffs to change their frame of thinking from kinetic targeting as the primary method of engagement to include non-lethal means. It also requires them to think across the continuum of operations and realize targeting now must take place all of the time, not just during conflict. The means to conduct targeting are handled in the joint environment through the joint targeting cycle.

This article looked at each phase of the joint targeting cycle and highlighted key similarities and differences for MDO. After exercising the MDTF in four multi-national and joint exercises, the joint targeting cycle has proven to be an effective method. The skillsets exercised by the I2CEWS BN and MDTF targeting staffs require broadening to actively include non-lethal target systems analysis. When combined, the joint targeting cycle enables the MDTF to seamlessly integrate into joint operations. This is essential as the A2/AD fight is inherently joint in nature.

The next step in developing MDO doctrine needs to look at how joint targeting feeds into the tactical level of war. The staffing processes have been tested and with an experienced cadre of Soldiers many of the higher level processes have a strong foothold on doctrinal development. Translating these processes down to a tactical maneuver unit to begin discerning the “how” to deliver multi-domain effects needs to be tested and bottom-up refinement given to the staff to polish processes.

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