CHENNAULT 2.0
AFTER ACTION REPORT

Air Operations Centers and the Targeting Process in the United States Air Force

Abstract

The ability to effectively target is a key element of the kill chain. A modern military requires a robust effective targeting process that employs and integrates weapons from all domains against all domains. This event examined the structure and processes of multi-domain targeting. It also explored targeting challenges when communications are degraded.

Mr. Allen Moore, Air Force Lessons Learned, ivan.moore.4@us.af.mil

Executive Summary

The Department of the Air Force provides management and command of the Theater Air Control System. Its central node is the AOC and one of the key functions of an AOC is targeting. The inability to target effectively or to be able to communicate those targets to forces will break the kill chain and render the AOC ineffective.

For targeting to enable the joint force campaign to succeed against a peer threat, the AOC targeting process has to develop targets that reside in multiple domains using weapons and capabilities that cross multiple domains. While multi-domain targeting does occur today, current targeting and weaponeering in the AOC is typically heavily weighted toward kinetic weapons.

Why should we care about joint all domain operations? If we accept that non-kinetic weapons and capabilities are just as important to deterring and defeating a peer threat as kinetic weapons, then it is apparent that we need to scrub our C2 processes to ensure that all capabilities are being considered and synchronized for optimum effect during the target development, weaponeering and current operations phases of the TACS. We have to be able to communicate the plan to the unit level, to ensure that we are able to execute effectively against the threat's critical elements.

The Curtis E. LeMay Center for Doctrine Development and Education Commander directed his staff to develop and execute a series of JADO events, capped by a wargame in the Summer 2021 to identify seams and shortfalls between current Air Force doctrine and the doctrine required for highly-integrated, effective JADO. The second JADO event, Chennault 2.0, was executed 11-13 February 2020, at the LeMay Warfighting Institute. For this event, 44 personnel from The LeMay Center, Air University, AFWIC, 363rd ISR Wing and other organizations around the Air Force gathered to execute Chennault 2.0. The purpose was to generate data and gather information necessary to write Air Force doctrine for Joint All Domain Operations, as pertains to the near term of 3-5 years.

There was general consensus that the Air Force is very good at targeting and execution of the kill chain with kinetic weapons while operating in a permissive environment. AOCs could do a better job of employing current doctrine and TTPs. There are manning, education, and training issues that impact both the AOC and the target development process. The software and processes are not designed for non-kinetic operations. Current Air Force, joint and joint targeting doctrine do not optimally consider non-kinetic operations. Battle rhythms, authorities, timelines and classification issues all contribute to non-kinetic malfunctions in the AOC. There was concern about the proper location of the COIPE, the Space Coordinating Authority and the JIPTL in the joint force. The participants believed that these three functions need to be co-located.

The AOC communications infrastructure, current systems and software are not able to ingest higher classification data. The current targeting systems require a lot of hands-on "massaging"

and are very communications intensive. For cyberspace operations, network access has to be developed to gain access to the target.

A new manpower study for manning AOCs that incorporated JADO was suggested. Current AOC billets under-represent non-kinetic operations. There exists a need for initial qualification training for JADO across all AOCs – even for experienced personnel. The current Joint Tasking Cycle needed to be updated to include JADO capabilities. The Theater Battle Management Core System and the Joint Targeting Tool are two systems that are common to all joint planners but have not been updated recently. The role of the Joint Fires Element needs to be better defined. The Air Operations Directive should be updated to reflect non-kinetic operations.

It was suggested the Air Force should automate ATO processes using Kessel Run processes to build modern software to generate ATOs. We perhaps should develop doctrinal approaches to planning with and without Kessel Run in the AOC.

The groups struggled with how to effectively execute JADO when communications are challenged. JADO by its nature requires extensive communications and reachback capabilities to plan and to execute. One group decided that the AOC should produce ATOs in groups of three, thus providing seventy-two hours of actionable guidance. It was decided by the group that too many changes occur to go beyond three ATOs. Others suggested that the AOC build a shell JADO Air Mission Task Orders that would be forwarded to Wing Operations Centers for execution.

The process for requesting space capabilities has never been established in doctrine. STO capabilities need to be accessible in the AOC. There needs to be a space capabilities menu in the AOC. We must develop doctrine that describes decision authorities for JADO. Extensive planning must occur during the competition phase for comprehensive targeting. CJCSI 3370.01C is not adequate for guiding JADO targeting.

Two groups identified different ways to modify the AOC construct to make it more open to JADO. The first was a domain centric AOC. In this design, the AOC is made up of domain-focused cells or divisions. Each division stays with the ATO process from the strategy to planning to target selection and development, weaponeering to execution and operational assessment.

The "ATO Football" Team concept is a simple variation of how the AOC operates to day. The group recommended a team, led by a Multi-Domain Warfare Officer, stay with the ATO from strategy to assessment. The larger the team the larger the ATO it can effectively support. The objective of the team is to implement strategy and planners' intentions on the combat operations floor.

The LeMay Center will execute Chennault 3.0 from 11-16 May 2020, with a focus on the cyberspace targeting and execution process within the AOC. Future events will focus on Space and EMS operations in the AOC. All the lessons will culminate in a major wargame during the summer of 2021.

Introduction

The Department of the Air Force (DAF) organizes, trains and equips forces and capabilities that are then employed by the joint force to deter and, if necessary, defeat threats from both nation-states and non-state actors. These forces are primarily of the air domain but also include space, cyberspace forces as well as capabilities that reside in the electromagnetic spectrum (EMS). The other services organize, train and equip forces in a similar fashion. For example, the Army primarily delivers forces in the land domain, but also provides some air, maritime, space and cyberspace capabilities. In a similar mode, each service supports the command and control system for its primary domain. For the Air Force, this is the Theater Air Control System (TACS). The principal node in this system is and has been for many years the Air Operations Center (AOC). The AOC has come under scrutiny in recent years, given its vulnerability when engaged by a peer threat.[1] Air Force doctrine directs a "centralized control, decentralized execution" command and control (C2) process for executing not just air, but also space, cyberspace and EMS[2] operations. Unfortunately, in a communications-degraded environment that a peer threat is able to generate, it becomes difficult to effectively control operations in air, space, cyberspace and EMS to generate integrated effects against threat targets.

One of the key functions of an AOC is targeting. The ability to target a threat's critical elements is a key component of the kill chain.[3] Inability to target effectively will break the kill chain. But even if targeting is effective, the inability to communicate those targets to forces will have the same effect. How does an Air Tasking Order (ATO) as well as the Joint Air Operations Plan (JAOP), Air Operations Directive (AOD) and special instructions (SPINS), to mention a few critical components of the air plan, get delivered to global forces in a communications-degraded environment? How do target folders, Joint Integrated Priority Target List (JIPTL), Restricted Target List (RTL) and changes in rules of engagement (ROE) or campaign objectives for example, get to the forces who require them? How does current intelligence, surveillance, and reconnaissance get to the forces tasked to execute the ATO?

[1] This report will use the word "threat" to describe a nation-state adversary. This terminology puts the report in synch with current joint targeting doctrine.

[2] EMS covers a broad area of activity that is characterized by light and energy and includes the frequency spectrum, Electro-Magnetic Pulse, space weather, quantum, directed energy and electronic warfare. Source: Electromagnetic Defense Task Force, April 2018 Report, Executive Summary, page 2

[3] Find, Fix, Track, Target, Engage and Assess or F2T2EA

For targeting to enable the joint force campaign to succeed against a peer threat, the AOC (and, in conjunction, the Joint Targeting Cycle) targeting process has to develop targets that reside in multiple domains using weapons and capabilities that cross multiple domains. While multi-domain targeting does occur today, current targeting and weaponeering in the AOC is heavily weighted toward kinetic weapons. There are multiple reasons for this. One is the culture of the AOC. Another is the types of personnel that are assigned to the AOC and the quality of their training. Also the doctrinal process is heavily weighted toward kinetic effects.[4] Lastly, the target development systems that reside both within and outside the AOC are also weighted toward kinetic weapons.

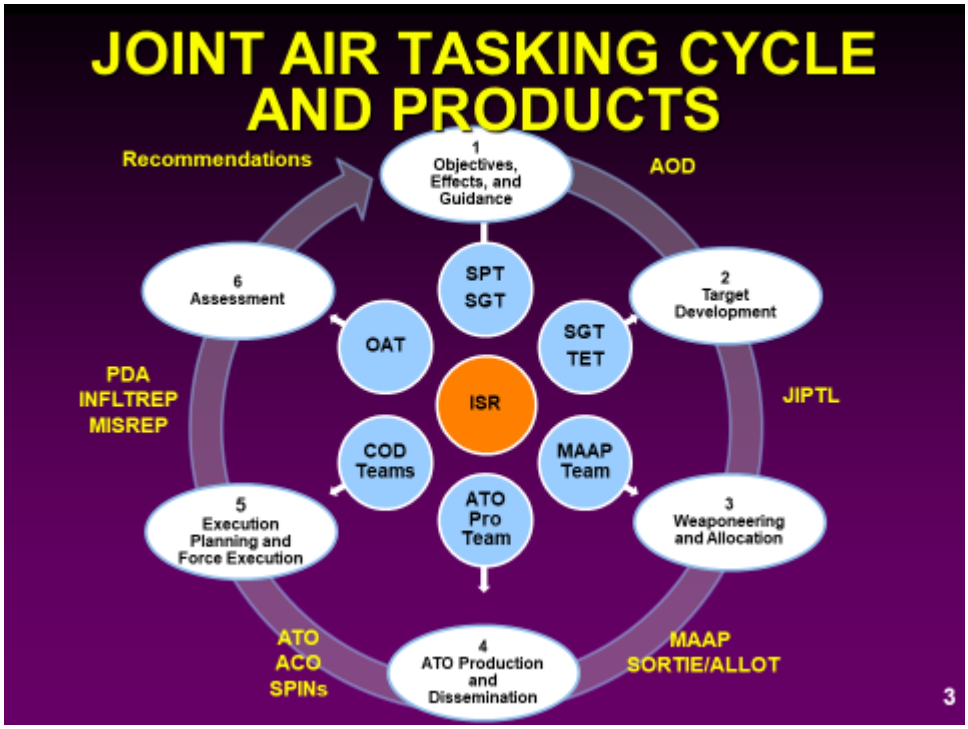

Figure 1: The Joint Air Tasking Cycle (Source: 505th CCTS)

[4] There is discussion in Annex 3-60 regarding Effects-Based Approach to Operations, para 3-5 as well as in the Weaponeering and Allocation Chapter, "The weaponeering stage of the tasking cycle is also where lethal and nonlethal effects may be planned against targets. Coordination with the non-kinetic operations coordination cell (NKOCC) is critical during this stage to ensure all multi-domain operations (space, cyberspace, information, electronic warfare, etc.) are deconflicted, appropriately resourced, and phased over the battle space. There are a variety of tools available to planners to attempt to summarize and quantify the assessed impact of nonlethal operations. Since these techniques and capabilities are not fully normalized in most AOCs, it may be necessary to leverage the assistance of specialized teams in the DOD and academic communities." EMSO doctrine i.e. JP 3-51, Annex 3-51 also discuss non-kinetic operations.

Of course, there is an important question to ask. Why do we care about joint all domain operations (JADO)[5]? Why is it important to value non-kinetic weapons and capabilities as much as kinetic ones? First off, there are not enough kinetic weapons available to service every target especially if precision weapons are required. Secondly, even if precision weapons are available, getting access to the target may be very costly. Also, some targets require non-kinetic capabilities, perhaps due to the Law of War, treaties[6] or our own rules of engagement. Additionally, some targets are more easily destroyed if they have first been disrupted and/or degraded, which is often done using non-kinetic means. Finally, if degrading or disrupting a target is just as good as destroying (against anti-access targets, for example, during a kinetic strike against other, deeper and more critical targets), then a quick cost-benefit analysis would possibly lead to a non-kinetic capability being the preferred weapon.

Therefore, if we accept that non-kinetic weapons and capabilities are just as important to deterring and defeating a peer threat as kinetic weapons, then it is apparent that we need to scrub our C2 processes to ensure that all capabilities are being considered during the target development, weaponeering and current operations phases of the TACS. A break down anywhere in these processes will significantly lessen the likelihood that non-kinetic weapons are planned for and employed. Also, we have to be able to communicate the plan to the unit level, to ensure that we are able to execute effectively against the threat's critical elements. Finally, it is important to emphasize that the DAF has to get JADO right in order to compete with a peer

[5] During the writing of this report, the term multi-domain operations (MDO) was replaced with joint all-domain operations (JADO) in the US Air Force Doctrine Note on same topic. Therefore this report will continue to use JADO where MDO has occurred previously.

[6] "The **Outer Space Treaty**, formally the **Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,** The Outer Space Treaty was considered by the Legal Subcommittee in 1966 and agreement was reached in the <UN> General Assembly in the same year (resolution 2222 (XXI))…The Treaty was opened for signature by the three depository Governments (the Russian Federation, the United Kingdom and the United States of America) in January 1967, and it entered into force in October 1967. The Outer Space Treaty provides the basic framework on international space law, including the following principles:

- the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind;
- outer space shall be free for exploration and use by all States;
- outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means;
- States shall not place nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies or station them in outer space in any other manner;
- the Moon and other celestial bodies shall be used exclusively for peaceful purposes;
- astronauts shall be regarded as the envoys of mankind;
- States shall be responsible for national space activities whether carried out by governmental or non-governmental entities;
- States shall be liable for damage caused by their space objects; and
- States shall avoid harmful contamination of space and celestial bodies**.**"

Source: UNITED NATIONS Office for Outer Space Affairs

threat. Our goal is to be a military that demonstrates the ability to execute across all domains to overwhelm and enforce our will upon all threats.

Chennault 2.0 Construct

The Curtis E. LeMay Center for Doctrine Development and Education Commander directed his staff to develop and execute a series of JADO events, capped by a wargame in the Summer 2021 to identify seams and shortfalls between current Air Force doctrine and the doctrine required for highly-integrated, effective JADO. Over 3-4 December 2019, personnel from within and outside the LeMay Center participated in Chennault TTX 1.0, at The LeMay Center Wargaming Institute, Maxwell AFB. The purpose was to survey and assess the US Air Force's ability to execute all-domain operations in a fully integrated fashion to generate all-domain effects.

The second JADO wargame, Chennault 2.0, was executed 11-13 February 2020, also at the LeMay Warfighting Institute. For this event, 44 personnel from The LeMay Center, Air University, Air Force Warfighting Integration Capability (AFWIC), 363rd ISR Wing and other organizations around the Air Force gathered to execute Chennault 2.0. This event purpose was to generate data and gather information necessary to write Air Force doctrine for Joint All-Domain Operations, as pertains to the near term of 3-5 years. The objective was to analyze AOC processes and products regarding kinetic and non-kinetic targeting, in order to infuse true all-domain capabilities, at scale, for a near-term (3-5 year) interim solution. The participants were divided into three groups, each provided with a facilitator, an Air Force Doctrine subject matter expert, an Air Force Lessons Learned analyst and a scribe. They were asked a series of questions that formed the basis of their assessment on how the Air Force should proceed to develop effective JADO doctrine. This AAR delivers the results of Chennault 2.0.

THE CURRENT STATE OF THE AOC AND TARGETING[7]:

What do we do well?

There was general consensus that the Air Force is very good at targeting and execution of the kill chain with kinetic weapons while operating in a permissive environment. Years of practice in the Middle East has honed our tactical skills to a level never before seen by a military. Targets that require low collateral damage and deliberate targets using kinetic weapons are managed very well in our current system. We also do well when operations are pre-planned and pre-approved. However, the Air Force has little recent experience against a peer threat, which would necessarily require operations in a non-permissive environment filled with anti-access capabilities such as jamming, missile systems, radars and other obstructions to our operations.

On 3 January, 2020 a late night airstrike occurred just outside the Baghdad airport that killed several Iraqi and Iranian military leaders, one of which was Qassem Soleimani, the leader of the Iran's elite Quds Force, known to be soldiers and spies that enable militias all over the Levant and Iraq. It appears that the kill chain for this strike worked to near perfection and was representative of similar strikes with similar results. The DOD is very good at this type of targeting.

The groups described the joint targeting cycle as the following: The Geographic Combatant Command/GCC (or the process may be delegated to the Joint Force Command/JFC) maintains a list of potential targets (Joint Target List/JTL and Restricted Target List/RTL). Nomination of those

[7] The participants were asked the following questions:

- Q1: How do our current targeting processes work and what do you see as the limitations in current processes with respect to conducting MDO?
  - Q1.1: How effective is the current AOC targeting process?
  - Q1.2: What are the left and right limits of the AOC targeting processes as it currently exists?
  - Q1.3: Does the current process incorporate space, cyberspace, EMS and other non-kinetic operations effectively? If not, what are the mechanisms for the Space and Cyberspace and EMS tasking cycles?
  - Q1.4: Based on your answer to Q1.3, is there overlap in the domain specific tasking cycles, or is there an inherent interoperability between cycles that can be exploited by the AOC in order to effectively conduct MDO?
  - Q1.5: What other limitations to the current AOC targeting process do you foresee with respect to MDO?

targets come from the service components, Functional Combatant Commanders or other agencies. These targets are developed, usually by the component, until a Electronic Target Folder (ETF) is developed and validated by the GCC or JFC. The Joint Force Commander's strategy propels the Air Component Commander (ACC) to develop an Air Component Strategy that goes out to the joint force via the Air Operations Directive (AOD). The AOD serves as the basis for air component objectives, their prioritization and the resultant effects necessary to complete the objectives. Basic, Intermediate and Advanced Target Development (BTD, ITD, ATD) are all conducted in coordination and in conjunction with the AOC and the JFC/J2T. Reachback for target development is required, due to inadequate manning in the targeting cell in the AOC and/or at the GCC/JFC, to produce quality target folders in a timely manner. Within the AOC, the ISR Division (ISRD) and the Information Operations Team (IOT) select targets from the JTL/RTL that meet the objectives laid out in the AOD. This generates the Air Component Target Nomination List (TNL). The Targeting Effects Team (TET), a member of the ISRD collects all the TNLs (often there is a kinetic TNL and a non-kinetic TNL) to be added to the Draft JIPTL. There should be only one TNL that incorporates both kinetic and non-kinetic targets. The JIPTL is presented to the Joint Target Coordination Board for JFC approval. After the target list is approved, the JFC determines force allocation to execute the targets within the ATO cycle. While this is the doctrinal process, in reality all the different AOCs execute the Joint Targeting Process differently. Bottom line, the process is reasonable, but resource- and time-intensive.

It was also noted by the participants that Air, Space and Cyberspace ATOs represent different lengths of time. For example, the Air ATO covers twenty-four hours. The Space "ATO" covers seven days while the Cyberspace "ATO" covers three days. The different battle rhythms are challenging but reflect the realities of the various weapons and capabilities the AOCs represent.

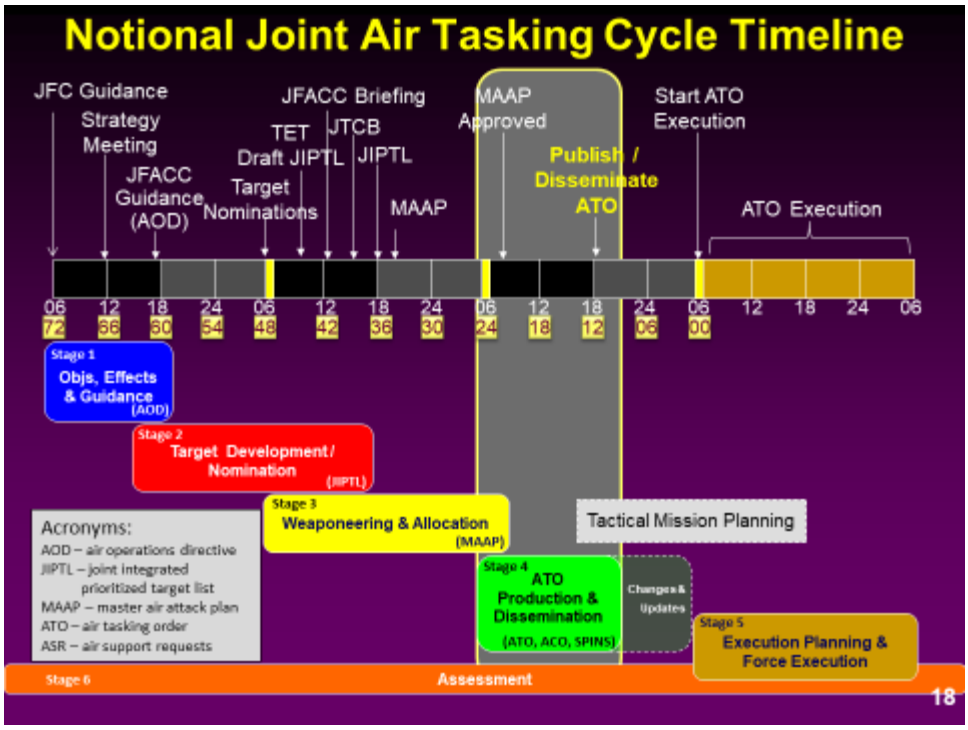

Figure 2: Joint Air Tasking Timeline (Source 505th CCTS)

What could we improve?

First and foremost, AOCs could do a better job of employing current doctrine and Tactics, Techniques and Procedures (TTPs). There exists a lack of fundamental education in how to do planning. Currently, target development is not integrated across all domains. Also, there is a consensus across the groups that dynamic target development in a contested environment would execute poorly. It was noted that the current target development process was resource-intensive and cannot be accomplished solely at the AOC level. It requires reachback to primarily the 363rd ISRW but other organizations as well. Processes for non-kinetic target development are no different than for kinetic targets, but the timelines and authorities needed are. To perform even BTD in the cyberspace domain requires network access, authority and capability; the resource demands increases as you move toward ATD. Even if we corrected targeting for JADO, the stovepiped nature of the AOC hinders the movement of plans to execution. Somewhere in that process, the weaponeering of all-domain capabilities is often dropped when it meets the current operations floor. Currently JADO is hit or miss. Our AOCs lack a JADO perspective. The AOCs do not exercise JADO enough to be proficient.

The number of targets that need to be developed, updated and maintained do not match the number of personnel assigned to the ISRD. The AOCs are weapons systems that are not currently manned to quickly engage a peer threat. Many personnel do not attend the *Joint Air*

Operations Command and Control Course.[8] Also, many personnel do not attend the specific courses for the position they are slotted to fill or they get moved by the commander after arrival at the AOC. There was consensus across the groups that most of the AOCs lack the manning depth, experience and appropriate training to plan and execute targets using all-domain weapons and capabilities. For day-to-day operations, the AOC is poorly manned. When the AOC surges with augmentees (sometimes by 150%) they tend to be poorly trained. The know-how of targeteers to accomplish operational assessments of targets is not adequate. Many AOC targeteers lack the knowledge and experience necessary to perform ATD. Non-kinetic expertise is minimally available in most AOCs today. Overall non-kinetic expertise is very limited for any targeting development. Non-kinetic personnel lack training to execute the TNL process. Target development is not being done in the AOC because the manning isn't available. Many non-kinetic personnel lack proper training on planning processes such that they fail to adequately advocate for the capabilities they represent in the cycle. Furthermore, non-kinetic capabilities and expertise are not adequately distributed across the AOC organizational construct. The non-kinetic personnel are often physically separated from their kinetic brethren in the AOC. This results in organizational stovepipes that often cause non-kinetic target solutions to be dropped in favor of kinetic ones as the target moves through the ATO cycle. Many personnel positions in AOCs have security classification levels that do not match the required classification access to plan and execute non-kinetic targets, significantly reducing productivity and further reducing the probability of a non-kinetic solution. There is an underlying presumption with assigned personnel that the AOC will get cut off early in a peer threat crisis thus development of additional targets does not provide much value added.

Air Components, GCCs and JFCs are not likely to have inherent capability and authority to conduct cyberspace and space operations, nor perform non-kinetic target development outside of Electronic Warfare. During recent exercises in the Pacific theater observers saw the impact of insufficient training and education and similar problems were observed in previous years' exercises.[9]

Cyberspace effects targeting requires coordination with the Cyberspace Operations Integrated Planning Element (COIPE). The COIPE currently resides with the JFC. Space effects targeting require extensive coordination with the Combined Space Operations Center (CSpOC) which

---

[8] Description: The Joint Air Operations Command and Control (C2) Course educates and trains personnel in joint air operations C2 with a primary focus on the Joint Air Operations Center (JAOC). Personnel receive education and training on joint and service doctrine at the operational level of war, Theater Air Ground Systems (TAGS), JAOC organization and processes, the Joint Air Tasking Cycle (JATC), Theater Battle Management Core Systems (TBMCS) applications, and other associated joint air operations C2 systems tools.

[9] A typical example is the 2018 PACIFIC SENTRY 18-2/KEEN EDGE 18 Lessons Observations Report produced by Air Force Lessons Learned – one entry in the report states "It appears limited manning requires allocation decisions and trade-offs which potentially compromise one or the other functional set, or in some cases both. It was apparent during the exercise that real-world demands (operational or administrative) had to trump operational training objectives. This was evidenced by continuous "real world" and "exercise update" briefings, and personnel dealing with real world issues. The command continues to refine the balance between MAJCOM OT&E and operational C-MAJCOM duties to build the most trained and experienced staff possible to support both the steady state (peacetime) and wartime operations. However, it may not be able to sustain the current training, exercise, and operational pace over the long term with current manning levels or meet the demands during major combat operations in certain functional areas and specialties." OBSERVATION 8, Page 6.

resides at Vandenberg AFB. Space target classifications are too high for effective domain integration with the geographic AOC. Most classification needs (SAP, STO, ACCM) and authorities to employ space capabilities reside at the CSpOC. Also adversely affecting target classifications are authorities retention requirements. Both cyberspace C2 and space C2 develop "ATOs". These ATO cycle processes are similar to a standard ATO, but the timelines and necessary authorities are not.

The AOC communications infrastructure (bandwidth/hardware/software), current systems and software are not able to ingest higher classification data (Sub-G/ACCM/SAP/etc). The result is often non-approved ETFs which creates additional challenges for AOC personnel. Also, the systems do not present target weaponeering for non-kinetics the same way kinetic weaponeering is done. Non-kinetic weapons have to be added to the remarks. This further reduces the probability that a non-kinetic weapon or capability will be chosen during target development. Also the current targeting systems require a lot of hands-on "massaging" to deliver the products needed. The systems are very time-intensive and not user friendly. A lot of the process could be automated.

The timeliness of TNL creation for integration with and creation of JIPTL is a current limitation. Current Cyberspace team capacity and Space/EW LNOs in the AOCs are not adequate for non-kinetic target planning and execution. Knowledge base of targeteers to do operational assessment is inadequate. Army targeting personnel have demonstrated limited access and knowledge of how to contribute to the Modernized Integrated Database (MIDB). The Army does not exercise MIDB to practice nominating land component commander targets. This will slow down the creation of the TNL.

How do you plan multi-domain targets if you don't have LNOs present in the AOC? Many LNOs representing varies domains only seem to be present when their assets are present.

The current targeting process is very communications intensive. The software systems are not conducive to multi-domain targeting. Also, the classification limitations within the software are not conducive to doing multi-domain target planning. Authority requirements are very difficult to integrate into the targeting software to do target development using non-kinetic weapons. For cyberspace, after a target is added to the JIPTL, network access has to be developed to gain access to the target. This is not part of the target development process and could take very long periods of time (a week, a month, 90 days). This delays the target in the ATO process and tempts targeteers to move to a kinetic solution.

Finally, each AOC is unique and does things a little differently. This may be true due to geographic and functional variations but this limits their ability to interoperate with each other.

HOW DO WE IMPROVE OUR AOCS AND THE TARGETING PROCESS?[10]

AOCs and Intelligence Recommendations

To summarize, the current targeting process is not effective for joint all domain operations due to shortfalls and inadequacies in expertise, manning, authorities, training, existing processes and software. While improvements in processes and software are important, the biggest improvement would occur by increasing the JADO knowledge of the assigned ATO personnel.

There are numerous opportunities to improve our AOCs and targeting processes for operations against a peer threat.

We do well when operations are pre-planned and pre-approved. However, the DAF has little recent experience against a peer threat, which would necessarily require operations in a non-permissive environment filled with anti-access capabilities such as jamming, missile systems, radars and other obstructions to our operations. One group provided considerations for targeting across domains with a focus on integration, synchronization and deconfliction. See Figure 3:

[10] The participants were asked the following questions:
Q2: Given these limitations identified in the previous section, what about the processes needs to change (structurally, procedurally, etc.) to enable seamless support of MDO in the next 3-5 years?
- Q2.1: What inputs/outputs to the targeting process will need to change?
- Q2.2: How do we change current AOC planning/execution to incorporate MDO when each domain has a unique timeline?
- Q2.3: How will prioritization of assets be determined?
- Q2.4: How will cross-team communication within the AOC need to change to accommodate MDO planning/execution?
- Q2.5: Are there any processes or products that need to be added IOT accommodate MDO planning/execution?

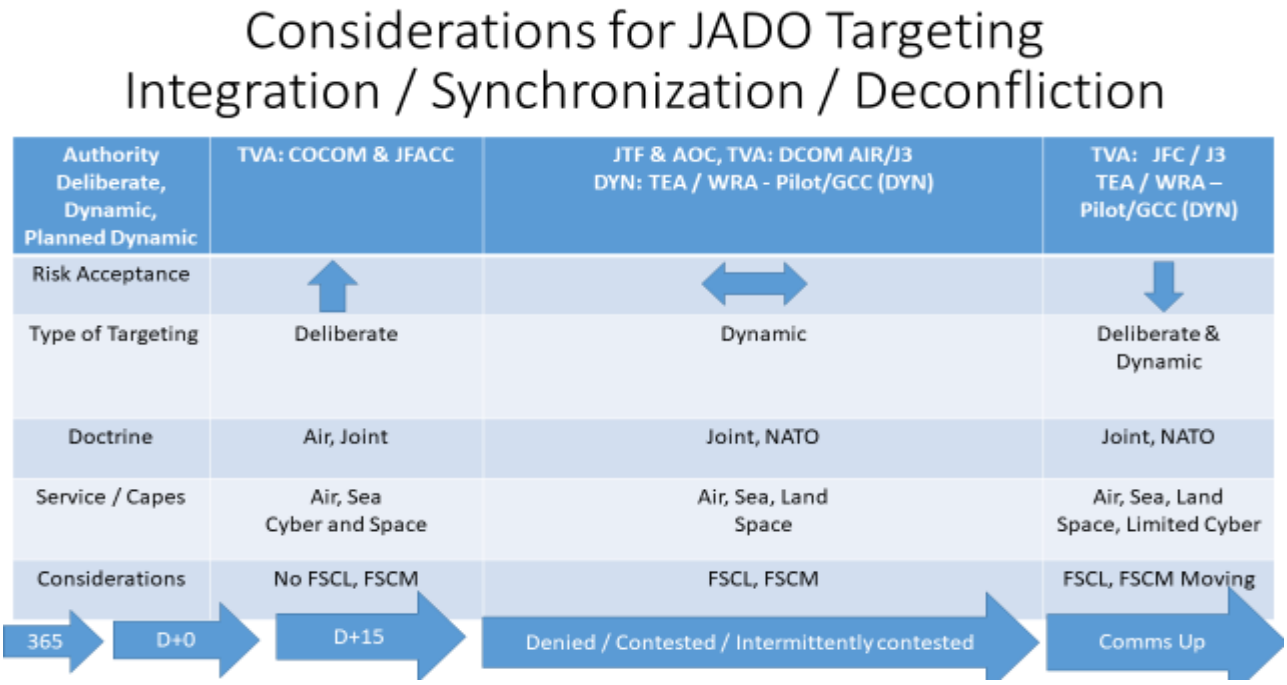

Figure 3. JADO Targeting Considerations

A new manpower study for manning AOCs that incorporated JADO was suggested. Current AOCs have billets that reflect kinetic operations while non-kinetic operations are under-represented. All the groups saw the need for initial qualification training for JADO across all AOCs – even for experienced personnel. This training reaches beyond current training to emphasize how joint all-domain weapons and capabilities could and should be employed. Also, it was recognized that most AOC personnel lacked a good understanding of non-kinetic capabilities, the authorities, battle rhythms and the types of effects that could be generated. The participants believed that even senior leadership at the general officer level lacked a good understanding. This misunderstanding manifests in types of effects the leadership requests in an operation. Often, degrading or disrupting a target is the best way to effect a target. However, for most targets, the guidance is to destroy, which further emphasizes kinetic solutions over non-kinetic ones. The current Joint Tasking Cycle needed to be updated to include JADO capabilities. JADO needs to have domain liaisons in the AOC full time and long term, more than 6 months, as an embedded planner. There was a suggestion in one of the groups to assign unclassified call signs to space, cyberspace, and EMS assets for use in the ATO. Another suggestion was to perform a JADO effects review prior to publishing of the Joint Air Operations Plan (JAOP). Joint targeting software needs updating to allow for JADO. The participants noted that the Theater Battle Management Core System (TBMCS) and the Joint Targeting Tool (JTT) are two systems that are common to all joint planners. They wanted to know why they have not been updated. The AOC has an interoperability problem. Different divisions employ different systems that do not work well with each other. The groups wanted to know the role of the Joint Fires Element (JFE) in the JFC or JTF. What fires belong in the JFE and what belong in the AOC? It might make sense to build JADO in a force package. The AOC needs a matrix that provides cross-domain prioritization of limited capabilities. That may be the best way other domains are employed to enable the air conflict. We need to change the tasking message to

deliver relevant information and priorities in the planning process to lessen the chaos during execution. Also, the groups suggested that senior leaders need additional training on how to implement centralized control, decentralized execution. Leaders should learn to accept risk, allowing subordinate units and forces as well as capabilities outside their command to execute the ATO using all-domain capabilities. Part of this training needs to focus on the creation of an AOD. The Air Component Commander's guidance is critical, especially if communications are degraded. The AOD must be robust to give subordinate commanders the guidance they need to execute the Air Component Commander's plan yet maintain capability to communicate in a contested environment and succinct enough to fit in 244 characters. Current AOD process needs to be updated to reflect the realities of a peer threat. Multi-day ADO may be a solution to help convey guidance with a MTO intent to continue operations when guidance is temporarily unavailable or limited.

It was suggested by one group that we should automate ATO processes using Kessel Run[11] processes to build modern software to generate ATOs. We perhaps should develop doctrinal approaches to planning with and without Kessel Run in the AOC.

The groups struggled with how to effectively execute JADO when communications are challenged. JADO by its nature requires extensive communications and reachback capabilities to plan and to execute. One group decided that the AOC should produce ATOs in groups of three, thus providing seventy-two hours of actionable guidance[12]. It was decided by the group that too much changes to go beyond three ATOs. For example, just the intelligence situation on the battlefield will change significantly when engaged with a peer threat. Once the degraded communications risk is removed or significantly lessened, the AOC could go back to maintaining only a single ATO. Other groups suggested that the AOC build shell JADO Air Mission Task Orders (MTOs) that would be forwarded to Wing Operation Centers (WOCs) for execution. They also recommended that the AOC produce an IAMD MTO. It was also recommended that MTOs be provided for alert aircraft. One of the groups recommend integrating air, space, cyberspace and IO to create a multi-domain air team that works through communications issues during degraded operations. It was suggested that the Multi-Domain Attack Plan (MDAP, which should replace the MAAP) needs to be built with unclassified call signs that enable the execution of the MDAP. Also, tailorable classification overlays for MDAP would improve execution. All the AOCs that may engage a peer-threat require a robust Primary Alternate Contingency Emergency Plan (PACE) ATO plan that provides ATOs when communications are degraded. These PACE plans need to be exercised regularly and resourced as part of an AOC Continuity of Operation or COOP plan. These plans must be taken seriously by the AOCs and updated often. The AOC planners must know and understand the Chairman of the Joint Chiefs of Staff-approved Global Integrated Base Plan (GIBP) and the associated Global Integrated Campaign Plan (GICP). They need to understand the associated Decision Support Tools (DSTs) and how those decisions will impact operations in the theater. The CJCS (with authority granted by the SECDEF) will likely apportion global forces (such as cyberspace and space) which will

[11] See https://kesselrun.af.mil/ for more information about the Kessel Run software initiative in the Air Force.
[12] The concept of a multi-day ATO was explored in Exercise PACIFIC SENTRY 20-2 but not executed. The exercise occurred 23-30 January 2020. However, the multi-day ADO was exercised.

impact AOC operations. Also prioritization will occur on a global scale for these non-kinetic capabilities in their respective operation hubs. Finally, one group recommended that subordinate units be guided by the Phased Air Targeting Scheme (PATS). The product normally is an appendix to the JAOP but could be attached to the AOD. It is codified by the AOC 3-3, TTPs. It provides Desired Points of Impact (DPIs), sortie rates operations objectives, tactical objectives and tactical tasks for the next 15 days. The product could help subordinate units to plan missions while communications are out if the situation still exists beyond three days. Anyone can operate under commander's intent by utilizing PATS and JAOP in a communications denied environment in absence of orders. This phase driven adversary degradation based approach to operations may be used in absence of an ATO (presumable after day D+2).

The Multi-Domain Warfare Officer (AFSC 13OX, sometimes called a "Thirteen Oscar") is a good idea that needs to be expanded. These officers need to be sprinkled throughout the AOC. If appropriate, placing these officers in leadership positions makes a lot of sense. It was noted specifically that the Combat Plans Division Chief should be a Thirteen Oscar. The Air Force is currently producing sixty of these officers per year with a planned population of about five hundred per year at full capacity. The participants agreed that sixty is way too few and that the program needs to be expanded.

There were several targeting recommendations. CJCSI 3170.01 needs to be updated to adopt joint all domain operations and targeting. ISRD and the IOT need to be merged into a new Information Warfare division that incorporates Space, Cyberspace, EMS as well as IO and Intelligence personnel. It was suggested that ISRD (or the new IWD) personnel be inserted into the Combat Plans Division. Additionally, establishing a Non-kinetics Effects Cell on the Current Operations floor appropriately manned with all applicable IW experts and led by the Non-kinetics Effects DO may prove beneficial to synchronizing effects during dynamic operations. Air Planners generally do not understand how the different domains interact at each step in the targeting process. The current targeting process works. It is just cumbersome and resource intensive. The process for producing vetted targets needs to be significantly reduced during combat operations. New targets need a quick vetting process then they should be treated as dynamic targets. Authorities during robust and challenging combat operations need to be pushed down to the lowest level possible. Joint targeting software needs updating to allow for JADO. It is not enough to update the targeting database. The whole system (software plus database) needs updating. It was noted that current software does not support current AOC processes. The MIDB has not been updated in over twenty years. It is time for an overhaul of the MIDB. Virtual, Equipment and Organizational responsible target producers need to be assigned. Who will be the primary for assigning targets and appointing persons or agencies as the lead for targets? This process must transcend combatant commands (CCMDs). Authorities, risk acceptance and ROE all need to be included in the AOD. A decision support matrix is needed. It was noted across all the groups that most personnel in the AOC lacked access to space and cyberspace subject matter experts that can identify which domains are capable to produce which effects. The process for requesting space capabilities has never been established in doctrine. STO capabilities need to be accessible in the AOC or they will never be used. There needs to be a space capabilities menu that resides in the AOC. It was suggested that such a document already exists but those who need the information do not know how to get access to it. It was suggested that the Space Coordinating Authority and the COIPE both reside with the JIPTL

process. Right now, the JIPTL is developed in the AOC. Pushing both organizations down to the AOC appeared unlikely. However, they also believed that these organizations needed to sit together. These suggestions require further analysis. USCYBERCOM and the CCMD J2s need to develop a better framework for conducting non-kinetic targeting. Currently Advanced Targeting Development (ATD) for non-kinetic weaponeering of targets is not done in the AOC. We must develop doctrine that describes decision authorities for JADO. After apportionment by the SECDEF and JFC, forces and capabilities must be prioritized. The prioritization needs to consider scope of capability, the mission and the targets. The Targeting Effects Team (TET) needs to be standardized as does the TNL process. Extensive planning must occur in the AOC during the competition phase for comprehensive targeting, as well as Joint Restricted Frequency List (JRFL) planning and integration. We need to educate AOC targeteers to what is written in CJCSI 3370. That said, CJCSI 3370.01C is not adequate for guiding JADO.

TWO NEW AOC DESIGNS:

Domain Centric AOC versus the Football AOC

Two groups identified different ways to modify the AOC construct to make it more open to JADO. The first was a domain centric AOC. **Figure 4** provides an illustration of this type of AOC. In this design, the AOC is made up of domain-focused cells or divisions. There exists an Air cell, Land cell, Maritime, Space, Cyberspace and EMS. Each division stays with the ATO process from the strategy to planning to target selection and development, weaponeering to execution and operational assessment. The advantage is that each ATO has advocates from across the domains from start to finish engaging the process. Domain experts are in adequate supply to ensure that plans do not drop when the plan meets combat. Manpower would flex between deliberate and dynamic focus pending the need during operations.

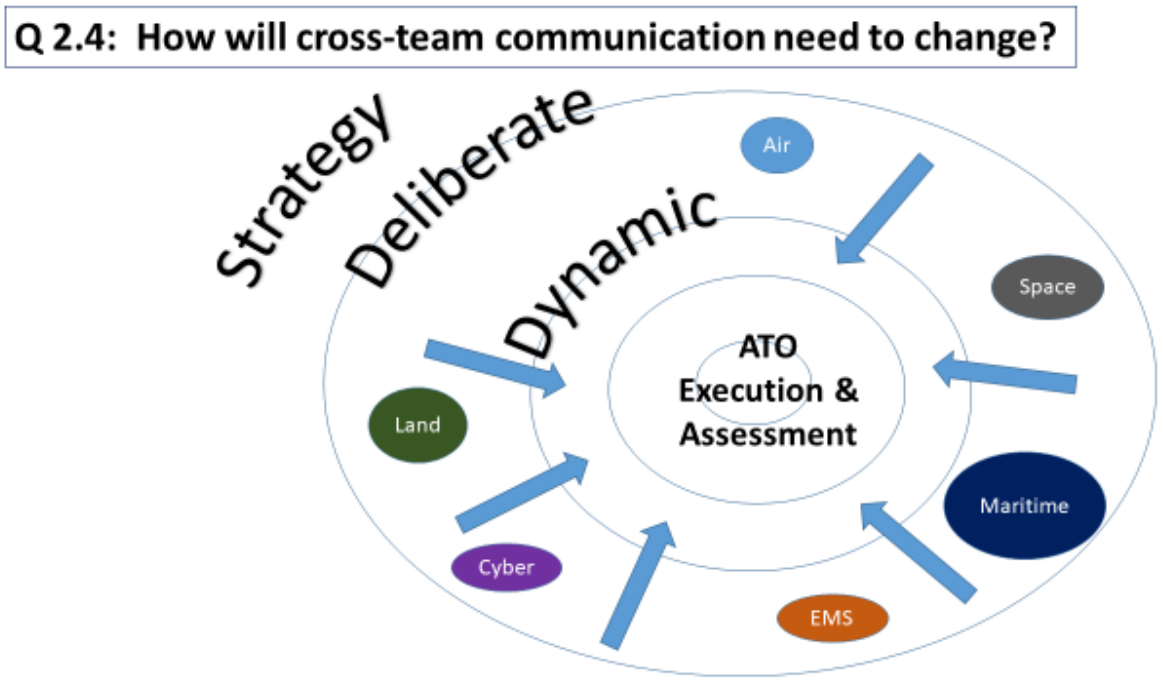

Figure 4: Group 2 Concept of ATO Development and Execution

The "ATO Football" Team concept is a simple variation of how the AOC operates today. The group recommended a team, led by a Thirteen Oscar, stay with the ATO from strategy to assessment. The team construct is described in **Figure 5**. The larger the team the larger the ATO it can effectively support. Importantly, the team needs to be led by a Thirteen Oscar and needs to include other domain experts. The objective of the team is make sure the strategy and planners' intent gets implemented on the combat operations floor. The ATO football team must integrate with the SADO, SIDO, JICO, SODO, (Four Horsemen) on the Combat Ops Floor. Planners would require proficiency on the 6+ databases and systems used in the ATO process. The Thirteen Oscar is not the sole AFSC proficient for the cradle to grave transition, so they will lead a team to maintain operational and tactical strategy. A Thirteen Oscar will help maintain the strategic sight picture. If we re-vector Thirteen Oscars as ATO coordinators and integrators using approximately 15 Thirteen Oscars, we could ensure JADO gets applied throughout the ATO and targeting process.

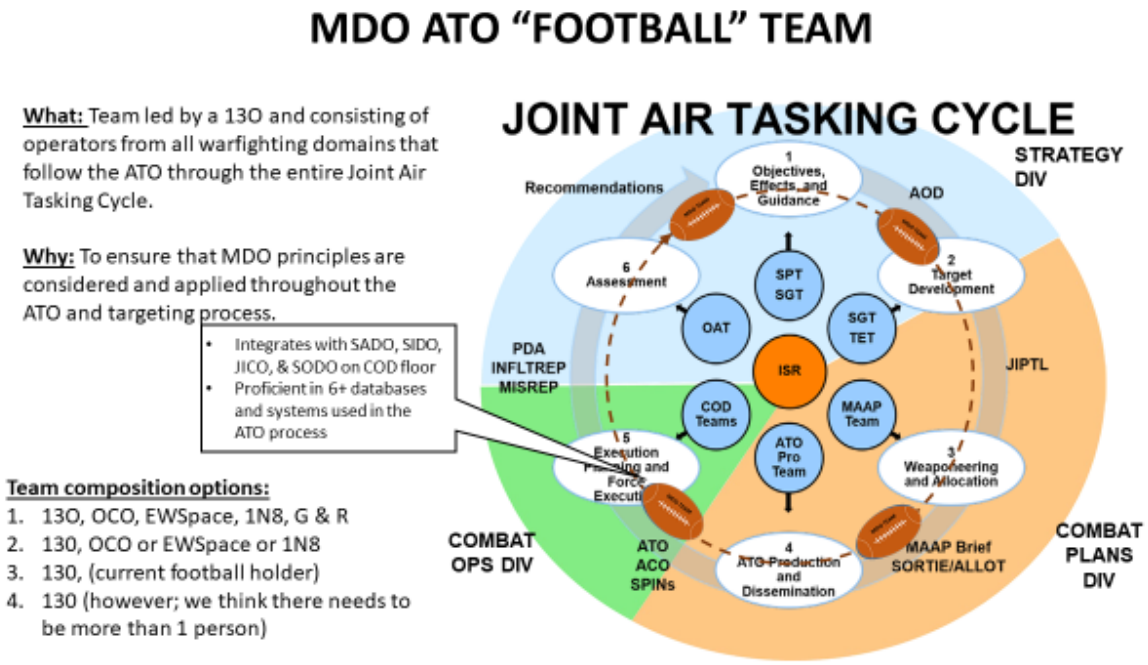

Figure 5: Group 3 Concept of ATO Planning and Execution

SUMMARY:

We don't need to throw the baby out with the bath water

Perhaps the most important thing that needs to be said is significant improvement in joint all domain operations would occur if we followed current doctrine and TTPs, trained AOC personnel properly and manned them closer to 100%. However, there are additional points that, if followed, would definitely improve JADO. These crossed a wide swath of topics. First, there are software and processes that inhibit JADO, both in operations and targeting. There are also organizational challenges that, if fixed would likely further improve JADO. There are doctrinal needs, both within the TACS and at the joint level. Our leadership needs to accept that JADO with a peer threat requires a higher level of risk acceptance that decentralizes control to the lowest level. There needs to be a mentality change that recognizes that the TACS must be able to fight tonight. Peer threats will give few indications and warnings. This means that AOCs must be fully manned and qualified upon arrival. There is no room for personnel to do on-the-job training. There was consensus among the participants that they would rather have 65% fully trained AOC personnel than billets filled with untrained personnel. The Thirteen Oscar AFSC has tremendous potential to improve JADO but it was believed that producing 60 per year was inadequate. It was believed that at least fifteen would be need in each AOC.

Targeting issues were similar to operations issues to improve JADO. There are a lot of training gaps but there are also many process and software issues that inhibit the use of weapons and capabilities across domains. The location of the JIPTL process was a concern as most participants believed that the JIPTL, COIPE and the Space Coordinating Authority need to be collocated. The doctrine experts will need to take a look at that.

Maintaining joint all domain operations while communications are degraded in a near-peer fight will be very challenging. Some ideas were provided but the best military planners could do is to figure out how to limit degradation to less than seventy-two hours. After that, the roadblocks for doing any targeting, much less JADO targeting become very formidable.

Way Ahead

Chennault 2.0 was the second in a series of events intended to inform future JADO doctrine. The intent is to use each subsequent event as a building block for future events. As such, The LeMay Center will execute Chennault 3.0 from 11-16 May 2020, with a focus on the cyberspace targeting and execution process within the AOC. Future events will focus on Space and EMS operations in the AOC. All lessons will culminate in a major wargame during the summer of 2021. The goal of the wargame and the Chennault series are to identify alterations to be made to the processes and products generated within the AOC which will facilitate a more synergistic effort and reduce the amount of time required to execute effectively.