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ANALYSIS OF RAPID ACQUISITION PROCESSES TO FULFILL FUTURE URGENT NEEDS

December 2015

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The objective of this project is to analyze rapid acquisition processes in order to evaluate the current organization, structure and regulations within the Department of Defense (DOD). This analysis helps determine if the rapid acquisition process used for two programs is repeatable for future endeavors. Additional analysis of identified DOD regulations and organizations shows how the rapid acquisition process expedited these systems and how it benefited the warfighter. The project reviews statutory and regulatory requirements covering the rapid acquisition process in the DOD and compares current DOD processes and the effects of their implementation. The project also reviews the warfighters' actions when DOD entities do not address critical needs within reasonable timelines. The analysis results indicate that the current DOD organization and regulations do not provide an effective means for future rapid acquisition requirements, do not effectively promote the agility needed for rapid acquisition, and actually encumber the rapid acquisition process.

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ABSTRACT

The objective of this project is to analyze rapid acquisition processes in order to evaluate the current organization, structure and regulations within the Department of Defense (DOD). This analysis helps determine if the rapid acquisition process used for two programs is repeatable for future endeavors. Additional analysis of identified DOD regulations and organizations shows how the rapid acquisition process expedited these systems and how it benefited the warfighter. The project reviews statutory and regulatory requirements covering the rapid acquisition process in the DOD and compares current DOD processes and the effects of their implementation. The project also reviews the warfighters' actions when DOD entities do not address critical needs within reasonable timelines. The analysis results indicate that the current DOD organization and regulations do not provide an effective means for future rapid acquisition requirements, do not effectively promote the agility needed for rapid acquisition, and actually encumber the rapid acquisition process.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACAT	Acquisition Category
AEO	Adapted Execution Office
APS	Army Prepositioned Stock
AR	Army Regulation
ASA(ALT)	Assistant Secretary of the Army for Acquisition, Logistics, and Technology
AT&L	Acquisition Technology & Logistics
CAE	Component Acquisition Executive
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
COTS	Commercial off-the-Shelf
CTTTF	Combating Terrorism and Technology Task Force
DA	Department of Army
DARPA	Defense Advanced Research Projects Agency
DepSecDef	Deputy Secretary of Defense
DO	Priority Rating Symbol (Critical to National Defense)
DOD	Department of Defense
DODD	Department of Defense Directive
DODI	Department of Defense Instruction
DOT&E	Director, Operational Test and Evaluation
DX	Priority Rating Symbol (Highest National Defense Urgency)
EFP	Explosive Formed Penetrator
FY	Fiscal Year
FSR	Field Service Representative
GWoT	Global War on Terrorism
HMMWV	High Mobility Multipurpose Wheeled Vehicle
IED	Improvised Explosive Device
IPT	Integrated Product Team
IWN	Immediate warfighter Needs
J&A	Justifications and Authorizations
JCIDS	Joint Capabilities Integration and Development System

JIEDDO	Joint Improvised Explosive Device Defeat Organization
JLI	Joint Logistics Integrator
JLTV	Joint Light Tactical Vehicle
JPO	Joint Program Office
JRAC	Joint Rapid Acquisition Cell
JROC	Joint Requirements Oversight Council
JUONS	Joint Urgent Operational Needs Statement
LOOs	Lines of Operation
MDAP	Major Defense Acquisition Program
MRAP	Mine Resistant Ambush Protected
MTOE	Modified Table of Organization and Equipment
OCO	Overseas Contingency Operations
OCU	Operator Controller Unit
OEF	Operation Enduring Freedom
OEMs	Original Equipment Manufacturers
OIF	Operation Iraqi Freedom
ONS	Operational Needs Statement
OSD	Office of the Secretary of Defense
Pam	Pamphlet
POM	President's Objective Memorandum
REF	Rapid Equipping Force
RFI	Rapid Fielding Initiative
RIRS	Rapid Integration of Robot Systems
SecDef	Secretary of Defense
SES	Senior Executive Service
SIG	Senior Integration Group
TRADOC	Training and Doctrine Command
UAV	Unmanned Aerial Vehicle
VCSA	Vice Chief of Staff of the Army
WWII	World War II

EXECUTIVE SUMMARY

This project conducted an analysis of the rapid acquisition processes for the purposes of evaluating the current organization, structure and regulations within the Department of Defense (DOD) to understand if the rapid acquisition process used for two rapid acquisition programs is repeatable for future endeavors. The project examined the outputs of two programs that are most identified with rapid acquisition, the Mine Resistant Ambush Protected (MRAP) and Unmanned Aerial Vehicle programs.

Research analyzed these two programs against the objectives of DOD organizations such as the Rapid Equipping Force, the Rapid Fielding Initiative, Defense Advanced Research Projects Agency, Joint Improvised Explosive Device Defeat Organization (JIEDDO), and the Joint Rapid Acquisition Cell (JRAC). Analysis of identified DOD organizations and the two programs together with the analysis of DOD regulations will show how the rapid acquisition process expedited these systems and what the benefits to the warfighter were. The evaluated DOD documents included Department of Defense Instruction 5000.02 (DODI 5000.02), Army Regulation 70-1 (AR 70-1), Department of Army Pamphlet 70-3 (DA PAM 70-3) and Under Secretary of Defense (Acquisition, Technology and Logistics) Memorandum: Use of Secretary of Defense's Rapid Acquisition Authority.

Findings from this research indicate that DOD key leader involvement is essential to a successful rapid acquisition process. Findings also indicate that the organizations such as the JRAC and JIEDDO contribute greatly to processing requirements and set the stage for rapid acquisition to occur, but only if they can maintain the same abilities demonstrated during the earlier years of the Iraq and Afghanistan missions. Research also found that organizations that have some autonomy and control over funding, contracting priority and use of waivers make the procurement actions needed for rapid acquisition possible. Without senior leaders enabling those critical functions, organizations are limited in their abilities to quickly and efficiently acquire and field capabilities to the warfighter, resulting in individual attempts to procure critical needs through unconventional methods. The final finding focuses squarely on fielding requirements to

the warfighter. Without a process that is motivated on fielding requirements quickly to the warfighter, the benefits from rapid acquisition are quickly lost.

The results from the analysis and the findings point toward a DOD organization supported by regulations that do not provide an effective means for future rapid acquisition requirements. In addition, leadership changes do not effectively promote the agility needed for rapid acquisition and actually encumbers the rapid acquisition process.

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I. INTRODUCTION

A. THE FUTURE CAPABILITY OF RAPID ACQUISITION

During the years supporting warfighter missions in Iraq and Afghanistan, Department of Defense (DOD) organizations and acquisition program offices used rapid acquisition as a means to quickly acquire and field capabilities. Critics viewed the derived rapid acquisition process with some skepticism; as a means of supporting warfighter needs, however, senior DOD leadership and others generally agreed that rapid acquisition was successful and meaningful. As a means to preserve that capability, DOD leadership has reorganized certain rapid acquisition groups and revised DOD regulations. The acquisition program offices involved in rapid acquisition have transitioned, reorganized and downsized to meet the needs of a more traditional program set-up. As the missions in Iraq and Afghanistan have diminished, the need for rapid acquisition has also diminished. As the DOD continues to reorganize and reshape its capabilities, can it maintain a rapid acquisition ability and successfully meet the future urgent needs of the warfighter?

B. SCOPE

This research identifies elements that made rapid acquisition a successful possibility during the Iraq and Afghanistan missions. These elements should be present in the current DOD organization with enough rigor to meet any future urgent requirement without the need of added legislation or added regulation. Through a study of DOD organizations, regulations and policies, the research focuses on past versions of certain organizations, regulations and policies, and notes changes that are in place on the most recent versions and whether those changes facilitate or hinder a rapid acquisition process. The study also analyzes rapid acquisition programs and how those programs worked in the past within the framework devised by senior DOD leadership.

The scope of the research is contained within certain DOD organizations, regulations and acquisition programs. For the organizational aspect, research focused on DOD entities that facilitate rapid acquisition as a core mission function. The

organizations for this paper were limited to the Joint Requirements Oversight Council (JROC), Joint Rapid Acquisition Cell (JRAC), Rapid Equipping Force (REF), Rapid Fielding Initiative (RFI), Joint Improvised Explosive Device Defeat Organization (JIEDDO), and the Defense Advanced Research Projects Agency (DARPA) agencies. These organizations have provided a foundation for the most recent rapid acquisition efforts and they will more than likely be the foundation in any future attempts in rapid acquisition programs. Policy research focused on regulations that include rapid acquisition as part of their contents.

For acquisition programs, this paper reviews two of the largest rapid acquisition programs for the DOD during the Iraq and Afghanistan missions, the Mine Resistant Ambush Protected (MRAP) and the Unmanned Aerial Vehicle (UAV) programs. The two selected programs were large in scale and key leaders within the DOD noted these two programs as representative of the rapid acquisition process. As such, these two programs had more readily available information that facilitated research.

C. BACKGROUND

According to logistics management specialist Jim Farmer, "Rapid acquisition is defined as the procurement of critical military capabilities in support of current operations, where those capabilities cannot be provided through standard 'traditional' acquisition" (2012, p.46). More traditional acquisition programs proceed from the requirements phase through the actual procurement and fielding of the capability, which can take up to 12 years or longer (Farmer, 2012). Most acquisition programs do not tie themselves to an actual wartime effort and simply proceed at a pace that is more calendar driven rather than event driven. The calendar-driven pace contributes to the perception that the warfighter has what he needs to accomplish his mission. Rapid acquisition, on the other hand, takes a critical current need and translates that into an immediate procurement action that focuses explicitly on the needs of the warfighter and how best to serve him. Both processes provide capability to the warfighter. The more traditional approach is meant more to identify future requirements and slowly, but steadily, works toward procuring and fielding those requirements. If that happens to coincide with a major

wartime engagement, so much the better for the warfighter. Rapid acquisition, as the name implies, is immediate in nature. Rapid acquisition does not follow a traditional timeline and seeks to field some measure of capability to the warfighter in as short a time as possible.

Due to the advances in technology, battlefield tactics and the availability of advanced weaponry for its adversaries, the U.S. military faces new battlefield threats and scenarios that have identified a need for faster alternatives to the traditional acquisition process. In Iraq and Afghanistan, 75 percent of the casualties were from improvised explosive devices (IED) (Sullivan, 2008). In an effort to combat these challenges, the DOD looked to a rapid acquisition process that focused on providing our military the equipment needed outside the scope of the standard acquisition process (Gates, 2014). Rapid acquisition's focus is on delivering a supportable capability to the warfighter that fills a critical need as quickly as possible. Acquisition program offices can perform a rapid acquisition process in as little as four months, as seen with the MRAP, or up to two years, which is the maximum allotted timeframe, with a 75 percent solution to the requirement as the objective (Farmer, 2012). The standard acquisition process can take from 12–25 years before a functional system is in the hands of the users (Farmer, 2012). During the last decade, the development of several high-profile rapid acquisition systems validated the need to incorporate standard guidance for rapid acquisition into DOD regulations and institutionalize organizational elements that facilitate the process. The MRAP family of vehicles and the UAV are two examples of large-scale rapid acquisition processes.

In 2002, the U.S. Army was engaged in battlefield operations in Afghanistan for Operation Enduring Freedom (OEF). In the following year, 2003, the United States entered into Iraq for Operation Iraqi Freedom (OIF) (Whaley, 2014). Over the next few years, from 2003–2007, capability gaps occurred that required the defense acquisition community to engage in a rapid acquisition process not seen since the Second World War (WWII). While the process evolved from 2007–2012, the basic intent to rapidly procure and field capabilities to the warfighter remained relatively unchanged. No uniform process was in place to cover urgent-need fulfillment at the pace needed and on the scale

seen during the wars in Iraq and Afghanistan. The prevailing understanding was that whatever it took to get the piece of equipment into the warfighter's hands is what the acquisition community would go to great lengths to perform (JPO MRAP, 2008–2011). From 2012 to the present, elements within the acquisition, community remained engaged, with the rapidly fielded systems continuing to not only deliver support to the warfighter, but also to push their related systems through the materiel release process and turn their systems into programs of record. The services did not fully integrate the fielded systems into a modified table of organization and equipment (MTOE), which complicated the materiel release and program of record process. The bulk of the Army's enduring MRAP fleet is heading for fielding to Army Prepositioned Stock locations, and the systems are still in use in Afghanistan. As MRAP vehicles provide better protection from IEDs than other vehicles, like the High Mobility Multipurpose Wheeled Vehicle (HMMWV) or the basic Army 5-ton truck, for troop movement and convoy operations there remains a strong possibility that MRAP vehicles will fill future operational needs. In spite of the current and future needs of MRAP vehicles, no single MRAP platform has attained a Full Materiel Release.[1]

For the time period from 2007–2012, the MRAP and UAV acquisition communities relied on the JROC, JIEDDO, REF, RFI, and the JRAC organizations to provide direction on requirements and to quickly vet operational needs statements (ONS) and joint urgent operational needs statements (JUONS). Additionally, individual procurement and DARPA's refocused efforts post-September 11, 2001 were two methods used to offset the lag between the urgent need approval processes and equipping units. Continuous senior leadership involvement proved advantageous to MRAP and UAV rapid acquisition programs. Decisions for more traditional programs that could take months to achieve would take mere days for the MRAP and UAV rapid acquisition programs. Decisions such as designating MRAP a DX-rated (Manufacturing and

[1] See AR 700-142 for Materiel Release requirements, there are over 40 documented requirements for Full Materiel Release, most of which are sustainment related.

Industrial Base Policy, 2011) program[2] and reprogramming $5.4 billion to immediately put on contract in 2007 pushed the MRAP program into the top three major defense acquisition programs (MDAPs) behind only missile defense and the Joint Strike Fighter. These two decisions allowed the MRAP program to move to the head of the line for priority of contracting actions and were only possible with this level of oversight (Carter, 2014).

From 2012 to the present, the sense of urgency for fielding MRAPs and flying UAV missions has substantially decreased. With the reduction of forces in Afghanistan and the almost complete withdrawal of U.S. forces in Iraq prior to 2015, there simply has not been the volume of urgent needs to substantiate continuing MRAP under rapid acquisition authority. In the case of MRAPs no new fielding requirement has been initiated since September 2012 with the last vehicle upgrades shipped into Afghanistan and completed in the last quarter of FY13 (JPO MRAP, 2012). The JROC, JIEDDO, REF, RFI and JRAC organizations are still in place but the pace of ONS and JUONS in the early part of 2015 has diminished to almost completely nothing. The direct access to the senior leadership from the Secretary of Defense (SecDef), Office of the Secretary of Defense (OSD), and Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)) organizations has evaporated and while MRAP has a strong budget it still only receives overseas contingency operations (OCO) funding. The Army MRAP program office did not request OCO funding beyond FY17 and to date has not initiated any actions to pursue future funding beyond FY17.

This analysis of these rapid acquisition organizations and policies are important. The study of the DOD structure and organization is important if the DOD wants to retain the gains from the most recent rapid acquisition programs and translate that effort into saving warfighter lives and covering capability gaps. The acquisition community should meet the next engagement with its own capability to meet urgent warfighter needs with

[2] Defense Priorities and Allocations System (DPAS)—DX is the highest priority rating placing that program's contracts and parts orders ahead of other programs that do not carry that rating (Manufacturing and Industrial Base Policy, 2011).

potentially life-saving equipment. Without this study, the potential exists that these rapid acquisition processes will be lost and the DOD will simply go back to business as usual.

D. METHODOLOGY

As a lens through which to review these regulations and policies, this research shows how the MRAP and UAV programs might have benefitted or been hindered from the changes. Research identifies the changes in regulatory, procurement and engineering processes that could have made past acquisitions easier and could make future rapid acquisition more effective and efficient.

Through research of the MRAP and UAV acquisition programs with focus oriented on the rapid acquisition process, the study determines if retaining a rapid acquisition process separate from the more traditional process is possible. This question focuses more on keeping the functionality to rapidly acquire and field capabilities for the warfighter. In stepping through the histories of the MRAP and UAV programs and their relationships with DOD leadership, the impact from DOD organizations and changes in subsequent organizations and regulations, research shows that having a separate rapid acquisition process can provide capability to the warfighter faster than a more traditional program. Given the special circumstances that delivered the MRAP and UAV capabilities to the warfighter, evidence will show that it will take another unconventional war or a never before perceived capability gap coupled with an urgent need to jump start the rapid acquisition process again.

As events in the world continue to evolve, the SecDef, OSD, ASA(ALT), JROC, JRAC, JIEDDO, RFI, and REF organizations continue to update their processes to meet the future demands of what might be the next rapid acquisition program. Research will review these organizations and whether or not there remains enough of a mission to continue their efforts and if there is a process in place to meet future urgent needs. As the formations of JIEDDO, JRAC, RFI and REF organizations were similar to an integrated product team (IPT), without a requirement or urgent need to fuel their efforts research will indicate that these organizations could focus their attentions elsewhere and divert resources to other purposes.

As regulations, policies, committees and organizations remain in their current states, research in these areas will indicate that the rapid acquisition gains from the MRAP and UAV programs may not be repeatable. As emerging urgent needs continue to from combatant commands, the study of organizations and regulations and how the DOD translates those urgent needs into rapid acquisition requirements could indicate that the current DOD organization and structure may not be able to address current urgent needs.

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II. LITERATURE AND ORGANIZATION REVIEW

A. URGENT NEED PROCUREMENT METHODS, THE WARFIGHTER AND THE INITIAL DEVELOPMENT OF THE RAPID EQUIPPING FORCE

During recent conflicts in Iraq and Afghanistan, units, as well as individual warfighters, bought after-market flash suppressors, muzzle covers, magazines, commercial body armor and clothing (Cerre, n.d.). These acquisition efforts were well intended and meant to supplement or complement the performance of the equipment at hand or to gain some increased level of protection that was not readily available through the supply system ("Soldiers in Iraq," 2015). On the extreme side, some National Guard members rummaged through landfills and scrapyards looking for bulletproof glass and metal plates to make improvised armor improvements or "Hillbilly Armor" for their High Mobility Multi Wheeled Vehicles (HMMWVs) (Schmitt, 2004) (see Appendix B for examples of self-procured equipment). When then-Secretary of Defense Donald Rumsfeld responded to a question from a concerned soldier with, "You go to war with the army you have, not the army you might want or wish to have at a later time" (Schmitt, 2004, Para. 2) he provided a clear indication of why some service members elected to purchase or make their own gear. The United States Army and Marine Corps recently banned the use of some gear used during recent conflicts essentially cutting off this potential for buying added or increased performance for the individual warfighter.

Another reason that warfighters had to acquire gear in this manner was due to the lengthy timelines involved and supply shortages. In preparing for overseas deployments, U.S. forces took it upon themselves to procure protective gear for personal use and to upgrade their equipment. Rather than wait on a lengthy process for acquiring adequate gear, the warfighter simply improvised and came up with his own solution. The following examples, such as the use of remote control model cars, improvised armor and the purchase of Dragon Skin, expresses some of the urgency that U.S. forces had regarding the lack of protective gear or specialized equipment (Baglole, n.d.; Cerre, n.d.; "Soldiers in Iraq," 2015; Stump, 2015). While units were conducting combat missions, they fell

prey to multiple threats from enemy forces and terrorists. Effective countermeasures, through either equipment or tactics, were not available or in place due to the unconventional methods used against U.S. forces. The extensive approval process required for any requested urgent need was simply too long to be effective against these emerging threats. The threats to U.S. forces in those early years coupled with the lengthy urgent needs process simply forced the warfighter to choose between sticking with the ineffective gear issued or procuring a perceived safer and more reliable piece of equipment. Some individuals even created their own weapon modifications and vehicle armor to supplement the delay in receiving new gear and equipment (Baglole, n.d.). For the individual who deployed for six to twelve months, any delay was unacceptable.

Prior to 2013 and the inclusion of Enclosure 13 in DODI 5000.02, the Army did not have a formal acquisition strategy in place to fill critical battlefield requirements.[3] Commands used several different methods to field urgent equipment to its warfighters. The Vice Chief of Staff of the Army (VCSA) created the Rapid Equipping Force (REF) in 2002 and used current and emerging technologies to meet urgent challenges for deployed forces ("Rapid Equipping Force," n.d.).

> The VCSA authorized the formation of a Robotic Tiger Team, known as the Rapid Integration of Robot Systems (RIRS) to find a robot that addressed the shortfall of cave clearing and place it into theater quickly …. In September 2002, the Tiger Team partnered with the DARPA and industry partner's, and in less than 30 days, procured the PackBot, the Marcbot and the M7 operator controller unit (OCU) and subsequently deployed them to Afghanistan. ("Rapid Equipping Force," n.d., Para. 3)

The success of this joint effort led to the establishment of the REF, which provided several critical contributions to the battlefield. These achievements include the Live Aerial Intelligence, Surveillance, and Reconnaissance Link, a commercial off-the-shelf (COTS) radio receiver used to receive communications from multiple UAVs, and the Containerized Weapon System, an unmanned weapon system controlled from a central control station similar to UAVs ("Rapid Equipping Force," 2015). The REF is

[3] See Appendix A. DODI 5000.02 enclosure 13 comparison.

currently active but the program is now under Training and Doctrine Command (TRADOC).

B. DEFENSE ADVANCED RESEARCH PROJECTS AGENCY INVOLVEMENT SUPPORTING URGENT NEEDS OF THE BATTLEFIELD

Post September 11, 2001, directives from then Secretary of Defense Donald Rumsfeld ended DARPA's focus on dual use or generic technologies. DARPA's new focus was military research, which ironically happened to be its original function (Thompson, 2013). DARPA's unique ability to operate outside the confines of bureaucracy and its ability to pool resources outside of normal research and development fields proved valuable in addressing urgent needs in Iraq and Afghanistan (Thompson, 2013) DARPA provided immediate solutions to several battlefield challenges that could not have been resolved through the normal processes. DARPA created the Adapted Execution Office (AEO) in order to accelerate its technology's into usable capabilities on the battlefield (Thompson, 2013). The AEO Leverages DARPAs unique organization and skill sets to increase progress on projects that have a critical impact on the battlefield (Thompson, 2013).

Some of these efforts include increasing the robotics program with the assistance of non-traditional roboticists. This effort fast tracks the robotics program in an effort to find quicker solutions for immediate problems. DARPA also inspired a program to host a site that invites "non-traditional roboticists to help bolster national security" (DARPA, 2015, p. 1). DARPA changed the formulation of battlefield strategies by improving UAV reconnaissance and surveillance capabilities and devising new methods to eliminate high profile targets through drone attacks. Senior leadership within the DOD was able to combine DARPA's ability to quickly develop these game changing capabilities with the REF's capability to deliver critical equipment to the warfighter and was used extensively from 2001–2010. The success of this effort was an increase in UAV missions, and subsequent successful mission accomplishments, on the battlefield through this timeframe.

While the SecDef had to change DARPA's focus, as an organization it was able to quickly provide solutions utilizing unique technologies and continues to provide results for warfighter's needs today. In its ability to adapt quickly and change focus, DARPA has a potential weakness. Should senior leadership be less capable or less willing to change DARPA's focus to meet urgent needs the warfighter could potentially be cut off from a valuable solution generating organization.

C. THE RAPID EQUIPPING FORCE IN GREATER DETAIL AND THE RAPID FIELDING INITIATIVE

In 2002, the Vice Chief of Staff of the Army was looking for a way to reduce casualties from booby traps and grenade blowback as Soldiers cleared and searched caves in Afghanistan ("Rapid Equipping Force," n.d.). The Army looked to robots. Robots were an emerging DARPA and commercial industry technology ("Rapid Equipping Force," n.d.). The VCSA formalized the Robot Tiger Team and, when partnered with DARPA, was able to produce three capable robot designs within 30 days that addressed the urgent need. The three designs eventually became the PackBot, Marcbot and M7 OCU robots ("Rapid Equipping Force," n.d.). Due to the REF's success in providing quick effective solutions in fulfilling the highest priority capability gaps, DOD senior leadership extended their mission into Kuwait and Iraq where they teamed up with JIEDDO in their efforts to combat IEDs ("Rapid Equipping Force," n.d.). In 2004, the Army embedded an ASA(ALT) program manager within the REF to formalize an acquisition process for the projects they were supporting ("Rapid Equipping Force," n.d.).

> REF is structured to integrate three distinct functions to provide the Army with a responsive, rapid acquisition organization. First, the REF Director has the unique authority to validate requirements. Second, REF has acquisition authority provided by the Assistant Secretary of the Army for Acquisition, Logistics and Technology chartered Project Manager housed within REF's chain of command. Finally, the REF receives funding from a variety of sources, allowing it the flexibility to support Soldiers deployed around the world. ("Rapid Equipping Force," 2015, Para. 8)

The REF's unique structure eliminated unnecessary bureaucracy opening the door for delivering capabilities to warfighters within as little as 72 hours ("Rapid Equipping Force," n.d.). The REF has transitioned to TRADOC and its deployment of equipment

processes has become standard for rapidly equipping the warfighter ("Rapid Equipping Force," n.d.). The REF continues to this day to provide capability to the warfighter, but the program is now under TRADOC. Its current organization under TRADOC adds additional layers of bureaucracy and provides it less independence to its earlier organization when it reported directly to the VCSA.

The REF under the VCSA was able to rapidly field counter sniper capability, counter IED capability and other warfighter focused items. One criticism of the REF is the lack of backend supportability needed to sustain the supplied gear and equipment. Much like when warfighters buy non-standard equipment for their missions the REF does not have the capability to address supportability needs and has to rely on quickly transferring the fielded items to program management teams for the item's sustainment. The REF still has the ability to respond quickly to urgent needs, but with its current organization under TRADOC may not have the ability to transfer the sustainment of fielded items as readily as it was able under the VCSA. This change in organization makes it less effective for future rapid acquisition needs.

Senior DOD leadership developed the RFI in the beginning of the global war on terrorism (GWoT) to fulfil supply shortages in Afghanistan. Without equipment, a Soldier cannot accomplish his mission. The RFI's sole purpose was to supply equipment to those in need. With the increase in troops on the ground scattered to remote locations with restricted lines of communication, a lack of supplies was inevitable. Because the equipment was designed to support urgent needs, one can see how difficult providing this critical gear was to the DOD's supply system (Gourley, 2012).

> Prior to RFI being put into place, soldiers and units purchased commercial items they needed in Iraq/Afghanistan to supplement items the Army issued them, they added. As a result, the Chief of Staff of the Army tasked Program Executive Office Soldier with equipping soldiers as a system to support both Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). The soldier as a system model allows for soldiers to receive integrated products instead of piece parts. RFI provides an equitable distribution of capabilities across our force and facilitates soldier modernization in a systematic and integrated manner. (Gourley, 2012, p.1)

The RFI, as a result of that leadership direction, grew into a juggernaut distribution network with over 50 suppliers and industry providers staging and packaging

equipment into sets that were designed to provide each warfighter the most up-to-date equipment (Gourley, 2012). The RFI updated the list of items per package on a continual basis, eliminating older equipment and adding items as needed. Table 1 provides an example of a kit. Kitting gear was an effective process that ensured each warfighter received exactly what he needed; because gear was not ordered piece by piece, it also minimized the logistics footprint (Gourley, 2012). The RFI was so successful that by September 2007 it had issued its one-millionth kit to its customers (Gourley, 2012). The RFI's ability to adapt to the needs of the warfighter through ten years of conflict by continually improving its ability to deliver critical gear and equipment has changed its temporary program status to an essential resourcing requirement for future combat operations (Gourley, 2012).

Table 1. Example RFI Kit (after Gourley, 2012)

RFI individual deployment kit	NEEDED
Advanced combat Helmet and accessories	1
Lightweight Global Positioning System	1
M4/M16 magazines	6
Black fleece bibs	2
Silkweight underwear	4
Hydration system	1
Goggles	1
Glove System	2 pair
Cold weather cap	2
Infantry combat boot type II	2 pair
Improved hot weather desert boot	2 Pair
COTS socks	4 pair
Moisture wicking TG-shirts	4 pair
Combat belt	2
M68 close combat optic	1

Currently, there are no provisions in DOD regulations that can match the supply support RFI provided in fulfilling urgent needs. Other DOD rapid fielding initiatives can utilize the RFI's combat proven processes to ensure efficient delivery of critical items where and when needed.

D. JOINT IMPROVISED EXPLOSIVE DEVICE DEFEAT ORGANIZATION

JIEDDO is an organization created in 2006 to provide IED threat training and countermeasures, new IED defeating equipment and systems training in order to defeat IEDs as weapons (Martin et al., 2013). JIEDDO's three lines of operation (LOOs) include attack the network, defeat the device, and train the force. These three LOOs complimented the REF and RFI organizations by providing rapid training as the equipment was fielded (Martin et al., 2013). This joint effort to supply countermeasures to IEDs while simultaneously training the force was critical in battling IEDs resulting in a reduction in lost lives and injuries. JIEDDOs budgetary authority was another example of how effective streamlining bureaucracy and standard processes can be in support of approved JUONS. JIEDDO received "colorless" money allowing JIEDDO the flexibility to obligate and spend the dollars as needed without restrictions (Martin et al., 2013). JIEDDO conducted over 69 percent of its mission in support of an approved JUONS to combat the asymmetric threat of IEDs on the battlefield. Enemy insurgent forces used IEDs extensively as the main threat to convoys and patrols (Martin et al., 2013). Senior DOD leadership created JIEDDO to combat IEDs. Due to JIEDDO's success, future planning should include similar models to combat other asymmetric or contingency-based threats.

E. JOINT RAPID ACQUISITION CELL

On 3 September 2004, the Office of the Secretary of Defense established the Joint Rapid Acquisition Cell to meet immediate warfighter needs (IWN) by improving delivery of equipment and services to the warfighter due to structural inefficiencies in the normal delivery processes (Clagett, 2007). JIEDDO's success in combating IEDs highlighted the need for a similar method to provide a solution for other battlefield threats. The JRAC fulfilled that need. The JRAC consists of a core group; OSD comptroller, general

counsel, joint staff, AT&L, defense procurement & acquisition policy, combating terrorism and technology task force (CTTTF) an advisory group; operational test & evaluation, other AT&L offices national assessment group, combatant groups and representatives from each of the services (Clagett, 2007). Derived from Bob Stump National Defense Act of 2003 (Bob Stump, 2003), the JRAC is an extension of the Rapid Acquisition Authority, and has provided over 19 materiel solutions and resolved four major equipment maintenance support and training issues. These success stories include assessing flexible signal intelligence capability for the GWoT, successfully securing funding for coalition jammers, providing recommendations on management and transfer of stay behind equipment and sponsoring the Joint Rapid Acquisition Conference in 2006 (Clagett, 2007). JRAC's success hinged on the authority it was given to waive statutes and regulations, move money regardless of the color and its flexibility to respond to IWN concerning combat fatalities (Clagett, 2007). JRAC also played a significant role in drafting changes incorporated into DODI 5000.02 specifically with the Rapid Acquisition process.

F. DEPARTMENT OF DEFENSE INSTRUCTION 5000.02

In its 2002 version, Department of Defense Instruction 5000.02 (DODI 5000.02), Operation of the Defense Acquisition System, provided one paragraph pertaining to rapid acquisition. Paragraph C2.7.1, which references open systems, provided basic instructions to program managers on the open systems approach for upgrading systems without conducting major design changes (Department of Defense, 2002). In the 2008 version, on page 13, the DODI 5000.02 minimally expanded the language regarding rapid acquisition process to include "Evolutionary acquisition is the preferred DOD strategy for rapid acquisition of mature technology for the user." In its interim 2013 version, DODI 5000.02 included Enclosure 13, covering in detail the strategy for the rapid acquisition process. In its most recent 2015 version, DODI 5000.02 retains enclosure 13 on the rapid acquisition strategy with little changes from the 2013 version. Program offices should consider and evaluate these new guidelines to rapid acquisition as the guidelines going into effect influence the acquisition of future systems.

The document DODI 5000.02 transitioned twice since 2008. The document in its original 2008 format did not fully address rapid acquisition and continued to reinforce instructions for more traditional acquisition strategies that functioned on timelines that are more traditional. DODI 5000.02's purpose is to establish policy for the strategy and management of all acquisition programs. The fact that DODI 5000.02 in 2008 did not have adequate provisions for rapid acquisition meant that from a strategic standpoint the acquisition community had little recourse but to follow the more traditional acquisition strategies.

After the drawdown in Iraq and before the eventual drawdown of U.S. forces in Afghanistan, DODI 5000.02 had an iterative version published in 2013. In this version, DODI 5000.02 mentioned rapid acquisition and provided an alternative to the other more traditional management strategies for acquisition programs in its own enclosure. In the 2013 iterative version, as well as in the current 2015 version of DODI 5000.02, rapid acquisition is specifically mentioned for all ACAT programs below the cost thresholds of ACAT I and IA programs. As a means for rapid acquisition for programs that do fall into the categories of ACAT I and IA, DODI 5000.02 does not apparently offer any quick reaction capability strategies to fulfill urgent operational needs or other quick reaction capabilities for fielding major weapon or vehicle systems in less than two years. DODI 5000.02, Enclosure 13, Rapid Fielding of Capabilities does step through the JUONs process at a high level. The enclosure directs the reader toward using Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01I, Joint Capabilities Integration and Development System (JCIDS), and DOD Directive (DODD) 5000.71, Rapid Fulfillment of Combatant Commander Urgent Operational Needs, as needed to facilitate the processing of an urgent need.

The fact that DODI 5000.02 does not address rapid fielding of ACAT I and IA programs could be a weakness of the document. Both the MRAP and UAV programs were ACAT 1 rapid acquisition programs. Given the funding requirements for these types of programs, it would take specific direction from senior DOD leadership to provide funding through normal channels. For the MRAP and UAV programs, it took senior DOD leadership involvement to secure funding for these programs. Funding for MRAP

and UAV was almost 100 percent OCO and as of September 2015, Army MRAP programs had not entered the President's Objective Memorandum (POM) cycle for funding, continuing instead to rely almost exclusively on OCO funding until 2017. This would suggest that other ACAT I programs in the future that are rapidly acquisition programs will not be typical and therefore will not follow a typical program execution and rely on strategies outside the scope of the current version of DODI 5000.02.

G. DODD 5000.71 RAPID FULFILLMENT OF COMBATANT COMMANDER URGENT OPERATIONAL NEEDS

On August 12, 2012, then Deputy Secretary of Defense (DepSecDef) Ashton Carter implemented Department of Defense Directive (DODD) 5000.71, Rapid Fulfillment of Combatant Commander Urgent Operational Needs, to address the "rapid fulfillment of combatant commander urgent operational needs …. This directive established policy, assigned responsibilities, and provided direction to facilitate the rapid delivery of capabilities in response to UONs, consistent with all applicable laws and governing regulations."

This directive also established the warfighter senior integration group (SIG), which is "a standing DOD-wide forum with the mission of leading and facilitating agile and rapid response to UONs and recognizing, responding to, and mitigating the risk of operational surprise associated with ongoing or anticipated near-term contingencies" (Department of Defense, 2012, p. 12). Enclosure 3 of this directive provides guidance on the formation of the warfighter SIG to include membership and responsibilities. The warfighter SIG is to be chaired by the DepSecDef and Co-Chaired by the VCJCS. This forum also includes multiple General/Flag Officers or Senior Executive Service (SES) level representatives from numerous organizations. As the current number of UONs has not challenged the warfighter SIG, it is still too premature to designate this command and control mechanism as an attribute or detriment to the rapid acquisition process.

H. USD (AT&L) MEMORANDUM: USE OF SECRETARY OF DEFENSE'S RAPID ACQUISITION AUTHORITY

On November 22, 2013, Under Secretary of Defense (USD), Frank Kendall, released a memo that provides procedures for requesting rapid acquisition authority (RAA) and defines criteria for the use of Secretary of Defense's RAA. An information paper attached to this memorandum identifies procedures for use of RAA. The information paper addresses responsibilities, RAA document staffing, and RAA procedures. Congress provided the SecDef with special authority too rapidly fulfill Combatant Commander UONs, in accordance with section 806 of the Bob Stump National Defense Authorization Act for FY 2003 the SecDef can make a RAA determination without delegation. This document is crucial because it emphasizes that a SecDef RAA determination allows for waivers of "any provision of law, policy, directive, or regulation," with certain limitations, to support rapid acquisition.

I. AR 70-1 AND DA PAM 70-3

Army regulation (AR) 70-1 and Department of Army (DA) pamphlet (Pam) 70-3 implement the Army's acquisition policy for ACAT I through III programs. AR70-1 is the Army's acquisition policy and DA Pam 70-3 is the Army acquisition procedures. The Army last updated AR 70-1 on July 22, 2011, and the AR does not provide any specific guidance for rapid acquisition other than referencing DODI 5000.02. The DA Pam 70-3, updated on March 11, 2014, does not incorporate the rapid acquisition changes from the November 2013 Interim DODI 5000.02. This DA Pam still references rapid acquisition guidance from the 2008 DODI 5000.02, page 13, which only addresses rapid acquisition by stating: "evolutionary acquisition is the preferred DOD approach for rapid acquisition of mature technology to satisfy operational needs."

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III. DATA ANALYSIS

A. MRAP

1. MRAP Background

The MRAP is a mine-resistant vehicle made with a "V"-shaped hull that is able to take the energy from the explosive effects of an IED and transfer that energy away from or around the vehicle occupants. The Rhodesian Army first built an MRAP-like vehicle in the 1970s with further development from South Africa through the 1980s. African forces used the MRAP-like vehicle as a defensive measure against roadside bombs and had the traditional "V"-shaped hull seen today (MRAP, 2014). In 2004, Britain Manufactured a MRAP for the United States Marines, the TSG/FPI Cougar, that encountered over 300 IED attacks with no lives lost in 2004 (MRAP, 2014). In 2007, the then SecDef Robert Gates placed the acquisition of MRAPS as DODs highest priority, earmarking 1.1 billion dollars toward the program. The Services ordered 10,000 MRAPS in 2007 from several manufacturers: BAE, Britain, Navistar, Force Protection, and General Dynamics to fill a critical need for our military, providing protection from IEDs (MRAP, 2014). The MRAP vehicle platforms proved an effective countermeasure against IEDs, and by 2009, the DOD had spent 20 billion dollars on the MRAP program (MRAP, 2014).

2. Rapid Acquisition in MRAP

In 2007, due to ongoing operations in Iraq (Operation Iraqi Freedom) and Afghanistan (Operation Enduring Freedom), efforts related to safe troop transport and security were not meeting warfighter needs. The efforts from roughly 2003 through 2008 were working primarily with older existing U.S. Forces equipment such as HMMWVs seeking to increase the protection level for the soldiers and Marines from IEDs and Explosive Formed Penetrator (EFP) devices. While the efforts were producing some results, the threats were easily defeating the up-armored HMMWVs. However, U.S. forces could not wait for the next generation of vehicles, the Joint Light Tactical Vehicle (JLTV), proceeding on its relatively traditionally long acquisition cycle. Then-SecDef

Robert Gates recognized these shortcomings and implemented what would become termed as rapid acquisition. Rapid acquisition on the scale seen from 2007 until 2012 was relatively new to the acquisition community. The program offices involved in the initial procurement reduced a typical five to ten year introduction of new material to something that the program office fielded to the warfighter in as little as six to eighteen months, depending on the system. The DOD has not seen rapid acquisition on this scale since World War II. If the acquisition workforce had followed the traditional path following regulations and standard practices, programs such as MRAP and UAVs would never have reached the levels that they did. Given the speed at which events occur across the globe, a traditional acquisition strategy that sacrifices capabilities and pays little attention to current events and has more to do with long term spending and strategy puts U.S. warfighters at greater risk.

Defining rapid acquisition in MRAP, the program management team managed to get money on contract quickly. It was more than having the funding available and having the means to get the necessary requirement on contract in a timely manner. The program management team had priority of contracting resources, a DX rating, and the ability to process justifications and authorizations (J&As) through to the SecDef level efficiently.

For MRAP, the Services used five different original equipment manufacturers (OEMs) and placed on an indefinite delivery/indefinite quantity[4] contract with J&A's supporting sole source contracts for all five OEMs. In MRAP, competition would play out on a different level as OEMs received contract awards with a base vehicle that was COTS and rapidly transitioning to block upgrades installing additional engineering change proposals providing additional capabilities for the warfighter. In addition to the contracts with the OEMs were the contracts for field service representative (FSRs) and the joint logistics integrator (JLI). The FSRs provided critical support for the fielded systems. Without them, the vehicles would quickly fall into disrepair, as warfighters did not have enough organic sustainment support[5] to maintain the vehicles. Contracting with the JLI was equally challenging as requirements for fielding and support were constantly

[4] Indefinite Delivery/Indefinite Quantity—("Indefinite Delivery," 2015)

[5] Organic sustainment support—Soldiers being able to perform routine maintenance without assistance from FSRs.

changing. As the requirements and the levels of support needed were changing with the missions in Iraq and Afghanistan contracts received constant attention with modifications to cover the warfighter, the contractors and the DOD acquisition workforce. Without the DX rating priority of effort in contracting, other programs' contracting efforts would delay the rapid acquisition, as all contracting actions would go in the queue with all the other contracting actions from other programs. DODI 5000.02 does not address this priority of contracting effort. It takes direction and focus from the OSD through to the contracting commands to make this occur and to maintain this level of effort.

While this effort was unprecedented, it was not an individual effort on the part of the program office. It took the combined efforts from the SecDef, DepSecDef, Joint Chiefs of Staff, JIEDDO, REF, RIF, DARPA and other organizations assisting and directing the joint program office (JPO) in their efforts delivering this capability to the warfighter. The organization received constant attention and support with small details such as strategic phone conversations, face-to-face encounters and well placed timely emails from key members from these supporting organizations that helped to facilitate the program. Assistance in removing roadblocks to attaining air priority, attaining surface shipment priority, accessing facilities from foreign nations and sidestepping foreign nations' immigration policies were just a few of the major toe tripping issues that the unseen conversations helped to mitigate and solve. Without this assistance to removing problematic barriers, the delivery of any capability to the warfighter would be hamstrung and the program office far less capable of executing their program objectives.

DOD regulations and supporting documentation do little to structure a program for labor to cover the responsibilities for rapidly fielding vehicles within short periods. The SecDef heavily bolstered the organization and structure with his influence. With the SecDef's emphasis and backing, the MRAP and UAV programs were able to overcome bureaucratic obstacles more readily. One prime example of this was priority of air assets to fly vehicles into Afghanistan. Normally, flying vehicles, especially heavy ones like MRAP vehicles, would be considered cost prohibitive and would have been shipped with ships and ground transport. For several years, MRAPs were third in priority for air assets behind food and fuel. Without senior DOD influence, air assets would have followed a

heavily bureaucratic process with flights often cancelled or redirected to other seemingly more important requirements.

3. Fielding of Vehicles

MRAP fielded over 20,000 vehicles to the theaters in Iraq and Afghanistan. This would not have been possible without using every available means of transportation and most if not all transportation assets. Without OSD and SecDef involvement, movement of vehicles would have been much more constrained. The actual priority of effort regarding transportation assets is an additional detail that does not enter into peoples' thoughts when it comes to fielding. The wait time on ships could be more than two–three months with lead times that can extend beyond 30 days. Without air priority and money, programs would have extreme difficulty in fielding their systems to theaters such as Iraq and Afghanistan. Without the SecDef involvement in these affairs requests for arrangements in air assets and the ability to make changes as necessary when production did not meet expectations would be too risky for programs and most programs would trend toward less risky options for fielding. Options that would take more time and delay delivering capability to the warfighter.

4. Upgrades

Due to the speed at which DOD fielded MRAPs, program offices conducted testing in parallel to fielding assets. Again, DOD regulations and structure does little to provide guidance when it comes to this sort of tact. While not recommended, fielding systems concurrently with testing offers fielding capability to the warfighter in less time, but with considerable risks. All base vehicles fielded under MRAP went through a block upgrade at some time in their lifecycles. For MRAP, there were significant upgrades for such items as independent suspension systems and engines that delivered better ride characteristics and more power. Minor upgrades included safety-related placards and ammunition storage capabilities. As program offices fielded the vehicles to units, they devised plans that had to coordinate for facilities. Whether or not an upgrade had a bolt-on solution versus a weld-on solution could jeopardize if the upgrade could be installed in Afghanistan or it would have to wait until the vehicle was redeployed CONUS.

5. Testing

For the years 2007–2012, the MRAP program office had priority when it came to testing at the test centers. The priority allowed the program to jump the line in many cases and push testing for other programs to later dates. This priority was also instrumental in pushing the test centers to work significant amounts of overtime to shrink the amount of time necessary to complete tests. The MRAP program office embedded personnel and other assets at the test centers. The focus of these embedded personnel was to schedule testing, arrange logistical support, and ensure that funding was in place to support the test centers. Funding needed to cover testing and the test centers overtime requirements as well. Another important aspect of maintaining a personnel presence at the test centers was to be the eyes and ears for the program office to manage the test results and work with the test centers to publish their findings. While the findings were not always positive, the program office was able to get ahead of the issues found during test much more quickly and put resources into action to resolve the item of interest.

While testing was underway at the test centers, the program office was fielding assets to the warfighter. With concurrent testing, the program office accepted large risks as results sometimes yielded results that significantly influenced fielding. While this caused significant issues within the program office, the issues were mostly transparent to the warfighter. Often the resultant engineering change was able to meet the vehicle in theater before the program office delivered it to the warfighter. While logistically challenging for the program office, this was best for the warfighter waiting for the capability.

B. UAV

1. UAV Background

Unmanned Aerial Vehicles (UAVs) have accumulated multiple names: remotely piloted vehicle, drone, robot plane, and pilotless aircraft are a few such names. Most often called UAVs, the DOD defines UAVs as “powered aerial vehicle that does not carry a human operator; use aerodynamic forces to provide lift; can be autonomously or

remotely piloted; can be expendable or recoverable; and can carry a lethal or nonlethal payload" (Curtin, 2004, p. 3).

The United States has used some form of aerial reconnaissance since the early 1900s starting with manned hot air balloons and advancing to drones an earlier version of UAVs. During World War I, unmanned aircraft were being developed and tested but never saw the battlefield. In 1930, the British Navy developed the Queen Bee a UAV capable of speeds up to 100-mph. World War II saw a Nazis developed UAV used to target civilians. In the 60s and 70s, the United States conducted over 34,000 surveillance missions with the AQM-34, Ryan Firebee, and Firebugs (Shaw, 2014). In the70s through the 80s, Israel developed lightweight UAVs, the Scout and the Pioneer, which the U.S. also used in the Gulf War (Scheve, 2014). UAVs saw minimal use until the DOD developed the Predator to fill a requirement of providing "persistent intelligence, surveillance and reconnaissance information combined with a kill capability to the warfighter" (Shaw, 2014, Para. 1).

Abraham Karem was the designing force behind the Predator. He built a UAV that could fly for 56 hours and conduct extensive missions, while other UAVs could only fly on average two hours. The durability and maintainability of Mr. Karem's UAVs far exceeded any military UAV at the time as well. After several successful demonstrations DARPA picked up the UAV program and funded Mr. Karem's research, which evolved into the UAVs used today. During the Bosnian War a need for extensive overhead surveillance due to the atrocities happening created an urgent need for UAVs, the drawn out military acquisition process used at the time was the key problem getting UAVs into action (Shaw, 2014). The Central Intelligence Agency used its capability to operate outside of the military as grounds to use a method that skipped the traditional acquisition process and had a GNAT UAV flying over Bosnia in one year (Shaw, 2014).

2. Rapid Acquisition in UAV

In order to understand the scope of rapid acquisition as applied to the UAV it is necessary to review the timelines and initial acquisition strategy implemented to meet the joint forces requirements of providing day and night reconnaissance surveillance and

target acquisition (Department of Defense, 1993). On 11 March 1985, the Navy and Air Force signed a memorandum of agreement to jointly develop unmanned tactical vehicles the Air Force accepted responsibility to develop the electro-optical imagery sensors and the Navy would develop the unmanned tactical reconnaissance vehicles (Department of Defense, 1993). On 8 July 1985, the Secretary of the Navy promulgated a program decision memorandum to procure a mid-range remotely piloted vehicle that led to the approved acquisition plan on 13 May 1986 (Department of Defense, 1993). In 1986, the DOD released a request for proposal covering competitive prototype development. In 1987, the DOD modified the prototype development into two sub-phases, phase 0, consisted of engineering analysis, and a follow-on phase, which would continue through milestone III (Department of Defense, 1993). In 1989, the DOD awarded the first fixed priced incentive contract to Teledyne Ryan Aeronautical for engineering and manufacturing development (Department of Defense, 1993). From 1993 to 2003, the DOD contracted from concept to production 163 UAVs (Bone, 2003). From 2004 to 2006, contractors only produced an additional 2332 UAVs for the missions in Afghanistan and Iraq. The additional UAVs had a minimal impact on overall mission accomplishment (Department of Defense, 2005).

In 2007, then SecDef Robert Gates expedited the UAV program, as he understood the value they could bring to the battlefield if used correctly. With his influence, Service acquisition offices started a rapid acquisition process for all UAVs and UAV missions. SecDef Gates directed the Air Force to expand its UAV program despite the resistance from Air Force leadership resulting in a 228 percent increase in production from 2007 to 2013. SecDef Gates commitment to his vision of UAVs on the battlefield was evident as he broke down political barriers and requested an equivalent to a blank check funding from Congress. The Services challenged SecDef Gates on this front in an effort to retain minimal funding for their other active acquisition programs. SecDef Gates pushed his agenda forward and finally brought the Services together as the UAV programs expanded to include lethal capabilities while maintaining a commanding battlefield presence through operators, some of whom were remotely located, conducting surveillance and reconnaissance missions.

3. Asset Acquisition and Utilization

The UAV saw minimal use and procurement prior to the SecDef intervention. The intervention from SecDef Gates triggered a massive push in development and purpose for several versions of the UAV. The UAVs potential was well known but its progress was extremely slow due to push back from the Service organization. The Pioneer, a UAV deployed during the Gulf War in 1991, flew over 300 combat missions and took 13 years to reach 100,000 flight hours. The military only deployed 13 UAVs in March of 2003 at the beginning of the Iraq War. This was due to the lack of interest shared by military aviation, specifically the Air Force who did not want to move pilots from flying standard aircraft to flying unmanned drones. SecDef Gates championed the UAV program and directed the services to provide resources and personnel into the UAV program. This rapid acquisition format transformed modern warfare by increasing the UAV platforms from 13 to 333 variations, which flew over 500,000 hours in a two-year period. UAVs currently clock over 24,000 hours each month providing over 360 hours of reconnaissance, surveillance and target acquisition data per day (Team, 2010).

UAVs increased lethality roles by the United States according to "Blowback from the New American Way of War," and have gone through four phases since 2001 (Hudson, 2011). These phases and increased roles of the UAVs correlates with the implementation of the rapid acquisition process. In phase one, UAV's saw limited action on high value targets. Early UAV missions in 2002 and 2004 resulted in the termination of two high profile targets: al-Qaeda leader Salim Sinan al-Harethi, and Taliban leader Nek Mohammad (Hudson, 2011). In phase two, UAVs saw increased utilization due to their early success, but were still limited to high value terrorist targets (Hudson, 2011). Phase three consisted of an eight-fold increase in number of phase two strikes seen which was the result of the rapid acquisition process started in 2007 (Hudson, 2011). The rapid acquisition process also contributed to phase four's increase in strikes and total deaths from UAVs and its success seen in Table 2.

Table 2. High-Value Targets Ratio (after Hudson, 2011)

Phase	Strikes	High Value Targets Killed	Total Deaths	HVT-to-Deaths Ratio
1(2002-2004)	2	2	11	1 to 5
2(2005-2007)	6	2	53	1 to 26
3(2008-2009)	48	5	333	1 to 66
4(2009-2010)	161	7	1029	1 to 147

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IV. FINDINGS

A. KEY LEADER INVOLVEMENT

For the MRAP and UAV programs, the SecDef and his staff were the true driving force in creating the successful atmosphere. From that level of senior leadership within the DOD, the SecDef and his staff were able to set the tone for how the organizations within the DOD would relate to not only the MRAP and UAV programs but how they relate with one another. The program offices have to have tremendous support during rapid acquisition and fielding. Without the SecDef's influence, the program office will have more of a bureaucratic challenge fielding capabilities to the warfighter. This is in large part due to risk management and how willing the program office is willing to accept risk and the mitigation strategies that it can employ to manage the risk down to an acceptable level. Other entities within DOD, because of the their independence, such as Director, Operational Test and Evaluation (DOT&E), have to share in the same objective, otherwise those independent agencies cannot or will not accept the risk that may be necessary to field the item in question.

The Component Acquisition Executive (CAE) also plays a role as the conduit to the SecDef for information relating to the program as well as the signature authority for spending limits as defined by the component agency. In 2007, then SecDef Robert Gates understood the issue as ground forces in Iraq and Afghanistan were facing threats unforeseen as warfighters were dealing with IEDs and EFPs on more than a frequent basis. The IEDs and EFPs were the chosen methods that insurgent forces were using to counter U.S. Forces that could swiftly outgun and out maneuver their actions, whether it be toe-to-toe, force on force or simple raids meant to disrupt lines of communication and base operations. The IEDs and EFPs could be placed and either remotely detonated, command wire detonated, or mechanically operated through the use of pressure plates strategically placed in the road. The enemy placed IEDs and EFPs where U.S. forces were likely to travel and when triggered were often devastating. To counter the threat a new capability to increase the warfighters survivability was required; the issue was how to do it quickly.

Commanders in Iraq and Afghanistan were calling for something that would provide some level of protection that was better than the up-armored HMMWV. By using ONS and JUONs, commanders created the requirement from which the SecDef could respond direct resources and better serve the warfighter. With the requirements statements in hand the SecDef was able to focus on what was needed and quickly determine his approach to find a solution to meet the warfighter's needs. For the SecDef, his answer was not in DODI 5000.02. Using that document and following its direction would not provide a solution in anything less than four to five years. Instead, the SecDef pulled his resources and quickly determined that there were solutions readily available from within the United States and from outside as well. Program offices could quickly purchase COTS solutions for the warfighter, ship and deliver the capability within months as opposed to years of development followed by years of testing and subsequently followed by production and fielding.

The SecDef through his direction created the JPO MRAP headed by the Marine Corps. Within months of formulating the concept, the warfighter was driving vehicles that could withstand the effects of IEDs and EFPs. Had the SecDef relied solely on then existing regulations and direction U.S. Forces may still be suffering under the constant threat of IEDs and EFPs and the acquisition workforce would be struggling to keep upgrading existing technologies that did little to keep the warfighter out of harm's way. Politics aside, while it took considerable resources to put MRAPs in place, it also took a SecDef that was willing to place his political capital on the line.

B. EFFECTIVENESS OF THE JRAC AND JIEDDO ORGANIZATIONS

The JRAC and JIEDDO organizations abilities to recolor money and apparent ability to act without undue interference during the Iraq and Afghanistan missions provided the foundation for rapid acquisition successes. JIEDDO's efforts to supply countermeasures to IEDs while simultaneously training the force was critical in battling IEDs resulting in a reduction in lost lives and injuries. JIEDDO's budgetary authority was a standard that was effective in supporting approved JUONS. JIEDDO's ability to re-

color money provided the flexibility to obligate and spend the dollars as needed without restrictions (Martin et al., 2013).

As the JRAC was able to leverage success from JIEDDO's earlier efforts, the JRAC's earlier organization was a critical rapid acquisition success. In its earlier version the JRAC consisted of a core group and existed as an extension of the RAA and provided over 19 materiel solutions and resolved four major equipment maintenance support and training issues. JRACs success hinged on the authority it received in waiving statutes and regulations, moving money regardless of the color and its flexibility to respond to IWN concerning combat fatalities (Clagett, 2007). JRAC also played a significant role in drafting changes incorporated into DODI 5000.02 specifically with the rapid acquisition process. Given JRAC's ability to influence and shape rapid acquisition, future rapid acquisition efforts should be able to benefit from a similarly organized effort.

As senior DOD leadership continues to push the JIEDDO and JRAC organizations into a more bureaucratic and controlled process it will reduce the effectiveness of those organizations. Without the flexibility and funding to pursue urgent needs these organizations will become less effective for rapid acquisition.

C. FUNDING AND COLORS OF MONEY

As stated earlier in the JIEDDO and JRAC findings, funding and the ability to re-color funds is vital to any rapid acquisition program. Not only did the JIEDDO and JRAC organizations have the ability to re-color money, senior DOD leadership extended that privilege to the MRAP and UAV programs. With that ability, those organizations had the flexibility to spend money where to the dictates of their respective missions. While rapid acquisition was occurring, these programs and organizations did not the luxury to wait on Congressional approval as that takes time. For these organizations involved in rapid acquisition, time was more critical than cost and types of funding.

Congress will control the flow of money for rapid acquisition. Without senior leader involvement, these teams would not have had the ability to direct funds. As the MRAP, UAV and other rapid acquisition organizations move toward standard practices, the knowledge gleaned from those programs will continue to dissipate.

D. CONTRACTING AND ORDERING PRIORITY

As a designated rapid acquisition program, having priority when it comes to contracting and placing orders for spare parts is part of the process. Without that priority, the MRAP and UAV programs would have languished waiting to let their contracts. As a rapid acquisition program, it would have meant little for DOD senior leaders to designate them as such if it meant going into the contracting queue like any other program. It would slow the process down and would not provide the benefit needed for the warfighter. Without senior DOD leadership willing to commit to designating programs with a DX rating, program management teams for rapid acquisition items will be fall into line with everyone else.

E. RAPID ACQUISITION AUTHORITY AND WAIVERS

The RAA signed by USD Kendall was a large step forward in the rapid acquisition process but it is not enough. Without the authority to seek waivers, program offices will run into unnecessary roadblocks on their rapid acquisition programs. The ability to run concurrent testing with procurement can save time in fielding capabilities to the warfighter. The RAA is the one true bright spot in the withering rapid acquisition capability. However, it cannot be the only tool left for the program management teams.

F. FOCUSING FIELDING PRIORITIES ON THE WARFIGHTER

The warfighter was the focus on rapid acquisition programs. For the JRAC, JIEDDO, REF, RFI and acquisition program offices, the warfighter was the ultimate benefactor in their missions. The organizations have to have the resources and the direction from senior leadership to maintain that focus. Maintaining that focus is an absolute. As program offices that were once rapid acquisition oriented become more traditionally minded the programs become more focused on costs and performance and less concerned about warfighter's urgent needs. Current DOD senior leadership is mindful of rapid acquisition capability, but without an ongoing urgent need program offices and other DOD entities will focus on other priorities.

V. RECOMMENDATIONS

A. KEY LEADER PROGRAM ADVOCATE

We recommend that DOD senior leadership identify roles and responsibilities for the rapid acquisition processes. Throughout our research, it was evident that bureaucracy among the branches made it difficult to support key program functions. The Services were reluctant to support non-traditional acquisition programs and they did not want to reallocate funds from approved programs to new projects resulting from JUONS submitted by field commanders. This created a challenge for then SecDef Robert Gates who took it upon himself to champion two major programs, the UAV and MRAP. SecDef Gates involvement was paramount in establishing full congressional and Service support for these major programs. SecDef Gates implemented the blank check and colorless money strategies that revolutionized rapid acquisition processes. DOD should utilize the actions taken by the Honorable Robert Gates by incorporating them into training doctrine for future leaders to study and implement as needed.

B. RAPID ACQUISITION FUNDING

DODI 5000.02 does not sufficiently address funding rapid acquisition programs. From our research, evidence suggests DOD should prioritize funding and reprogram funding as necessary to expedite the acquisition process. Programs approved for rapid acquisition should not have to compete for funds with traditional acquisition programs. Earmarking annual funds to support rapid acquisition contingency plans is an optimal method that increases programs success rates.

In a hearing conducted by the House of Representative Armed Services Committee on 8 October 2009, the panel on defense acquisition recommended that the executive and legislative branch create a fund for rapid acquisition and fielding. The recommendation suggested that 0.5 percent of the DOD budget be the baseline with a cap of three billion non-expiring dollars be available and replenished annually (*DOD's Rapid Acquisition Process,* 2009). After evaluating our data from the UAV and MRAP programs, which both exceeded 10 billion dollars within the first year, it would be

advisable that this fund be at a minimum five billion dollars. We did not think that in the future two major programs would be designated DX programs at the same time nor would they require excess funding as these programs did. If the DOD applied the lessons learned in funding the MRAP and UAV programs correctly, five billion dollars of non-expiring dollars would be able to support every critical need approved for rapid acquisition and fielding until additional funding can be redirected by DOD or allocated by congress.

C. IMPROVEMENTS TO DODI 5000.02

Our research also supports recommending that DOD should include ACAT I and IA acquisition program guidelines into the DODI 5000.02. As our research showed, applying the rapid acquisition principles to ACAT I & IA programs is an effective way to streamline the normal processes required to fill critical needs identified by users. Once approved, the MRAP & UAV programs provided users several systems utilized on the battlefield in as little as four months. These capabilities enhanced battlefield operations in reconnaissance, surveillance, protection and lethality.

MRAPs provided protection from IEDs immediately improving the warfighters' moral and confidence in their equipment. The initial success of the MRAP vehicles justified the need for additional platforms, which the program office developed through the rapid acquisition process. *USA Today* estimated that 40,000 service members' lives were saved by MRAPs, Defense secretary Robert Gates stated that "MRAPs have saved thousands of lives and limbs" (Brook, 2012, Para. 6). Without the rapid acquisition process, these life and limb saving vehicles would not have been available at all.

Lessons learned from these programs should be included into DODI 5000.02 and used to provide guidance for future ACAT I & IA programs identified to fill critical needs. At a minimum, DOD should address the following areas. First, an approval process that identifies the chain of command and requirements for rapid acquisition of ACAT I & IA programs. Second, identify how DOD will fund rapid acquisition programs. Third, identify who in DOD will designate milestone requirements and milestone guidelines for ACAT I & IA programs.

D. RAPID ACQUISITION PROCUREMENT PERIOD

We recommend reducing the requirement from two years down to 12 months for fielding rapid acquisition capabilities. This takes into consideration the fact that requirements in DODI 5000.02 limits rapid acquisition to technologies that are proven and available, that technologies do not require substantial development effort and DOD entities acquire these technologies under a fixed price contract. As research indicated, fulfilling warfighter urgent needs through the traditional acquisition process has historically been a lengthy process that has left our forces with few options to combat threats on the battlefield.

Research showed that the warfighter would create their own solutions to combat these challenges with Special Forces soldiers going as far as modifying their M4s with COTS items to increase its reliability (Scarborough, 2014). Prior to 2007, the average Navy/Marine deployment was seven months with the typical Army deployment averaging twelve months and the Air Force deployment averaging four months. Army deployments after 2007 increased to fifteen months (Powers, 2015). In 2011, the Army reduced its rotation to nine months (Shaughnessy, 2011). The average deployment across the Services is roughly eight months. Given this average typical deployment it makes more sense to re-evaluate the two-year requirement and reduce it to twelve months.

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VI. CONCLUSION

While Army MRAP and UAV programs contend with the future of their programs, there does not exist a current requirement for a rapid acquisition process on the scale of MRAP or UAV. It is important to remember that the DOD has not seen rapid acquisition processes on this size and scale since WWII, but U.S. Forces have been in three major conflicts before the most current conflicts in Iraq and Afghanistan.

While laws and regulations governing acquisition processes place demands on the program management teams, direct oversight from Secretary of Defense (SecDef) and his staff provide the emphasis needed for rapid acquisition success. That oversight extends to contracting, organization and maintaining a warfighter focus. Without that key leadership involvement, the DOD does not have the capability entrenched enough to maintain the lessons learned from the MRAP and UAV programs and other organizations such as the JRAC and JIEDDO teams and will not be able to meet the next rapid acquisition requirement readily.

Throughout our research into the rapid acquisition process, several key findings were evident. First, the DOD needs a rapid acquisition process to support the warfighters who are at risk and suffer the most from inaction or delayed procurement actions as resolutions to critical needs navigate through the approval process. Sometimes requirements force warfighters to improvise and take matters into their own hands until an official decision has been made and implemented, a process that can take several years under our current system. We agree that DODI 5000.02 Enclosure 13 is a step in the right direction in improving our critical needs resolution process. DODI 5000.02 provides guidance to accelerate the acquisition processes for urgent acquisitions by reducing timelines required for mandatory documents or eliminating documents altogether.

Second, acquisition culture is a critical driver for implementing an effective rapid acquisition system and it is imperative that leaders understand and support the directives established in DODI 5000.02. Changing the culture of acquisition to embrace these new directives is challenging but necessary.

Third, organizational structure must remain in place to support the rapid acquisition process, we must be able to design it, make it and field it to be successful. JROC, JRAC, REF, RFI, JIEDDO and DARPA are organizations that supported urgent needs throughout the scope of our research and it is realistic to say that DOD will not be able to keep these organizations intact. The REF has already transitioned to TRADOC and DARPA's role has diminished as urgent need submissions diminish.

Fourth, SecDef influence was the biggest driver for the programs we researched. If it was not for SecDef Gates intervention to the process it is difficult to speculate if the MRAP and UAV roles would have been as paramount to battlefield safety and operations as they were. SecDef Gates leadership, vision, and resource allocation guidance set the example of how the DOD could implement rapid acquisition. Consistent with our recommendations it is crucial that DOD be able to replicate the processes that worked for the UAV and MRAP into other programs identified for rapid acquisition to be successful. In our opinion, rapid acquisition in DODI 5000.02 will burden the processes. DODI 5000.02 does not cover ACAT 1 and 1A programs, the timeline of two years is too long, and it only allocates 200 Million per fiscal year in funding for rapid acquisition. The SecDef should address these critical shortfalls as a system improvement measure. We strongly feel it is imperative that DOD initiates cultural change through training, leadership appointments, and command influence; these intangible efforts will provide the foundation for resolving future urgent needs.

Our analysis of current rapid acquisition organizations, policies, and prior programs has led to four major recommendations. First, we want to emphasis the importance of a key leader program advocate. Secondly, we recommend increasing the RAA budget of only 200 million dollars per fiscal year to 400 million dollars or higher. Third, we recommend including ACAT I and IA Acquisition program guidelines into the DODI 5000.02. Lastly, we recommend changing the rapid acquisition procurement period from two years to one year. These recommendations may warrant additional research and may be advantageous to pursue in future joint applied projects.

APPENDIX A. DODI 5000.02 ENCLOSURE 13 COMPARISON

The 2008 and previous version of DODI 5000.02 minimally address rapid acquisition. These versions only suggest, "Evolutionary acquisition is the preferred DOD strategy for rapid acquisition of mature technology for the user." The interim DODI 5000.02 November 2013 version adds enclosure 13, which specifically addresses rapid acquisition of urgent needs. The 2015 version also includes enclosure 13 with a few modifications. Table 3 shows enclosure 13 changes from the 2013 interim version to the current DODI 5000.02 January 2015 version. The first column shows enclosure 13 from the 2013 interim version and the second column highlights the updates in the 2015 version.

Table 3. Enclosure 13 Comparison

(Interim DODI 5000.02 November 2013)	**(DODI 5000.02 January 2015)**
RAPID ACQUISITION OF URGENT NEEDS	The title has been updated to RAPID FIELDING OF CAPABILITIES.
1. PURPOSE. This enclosure provides policy and procedures for acquisition programs that provide capabilities to fulfill urgent needs that can be fielded in less than 2 years and which are below the cost thresholds of Acquisition Category (ACAT) I and IA programs.	1. The purpose has been updated to also include "other quick reaction capabilities."
2. URGENT NEEDS a. DOD's highest priority is to provide warfighters involved in conflict or preparing for imminent contingency operations with the capabilities urgently needed to overcome unforeseen threats, achieve mission success, and reduce risk of casualties, as described in DOD Directive 5000.71 (Reference (ci)). The objective for the rapid acquisition of urgent needs is to deliver capability	

quickly, within days or months. DOD Components will use all available authorities to expeditiously fund, develop, assess, produce, deploy, and sustain urgent need capabilities for the duration of the urgent need, as determined by the requesting DOD Component. b. Approval authorities for each type of urgent need will be delegated to a level that promotes rapid action. This enclosure applies to the following types of urgent needs: (1) A validated Urgent Operational Need (UON). UONs include: (a) Joint Urgent Operational Needs (JUONs) and Joint Emergent Operational Needs (JEONs). For JUONs and JEONs, the validation approval will be by the Joint Staff in accordance with Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01H (Reference (j)). Program execution for JUONs and JEONs will be assigned in accordance with DOD Directive 5000.71 (Reference (ci)). The Milestone Decision Authority (MDA), for JUONs and JEONs will be determined at the DOD Component level except in very rare cases when the MDA will be designated in an Acquisition Decision Memorandum (ADM) by the Defense Acquisition Executive (DAE). (b) DOD Component-specific UONs, as defined in CJCSI 3170.01H and further discussed in DOD Directive 5000.71. Approval authorities for DOD Component UONs, including their validation, program execution, and the designation of the MDA will be at the DOD Component level. (2) Critical warfighter issues identified by	(a) Added explanation of a UON. (2) Changed from Chairman to Co-Chair

the warfighter Senior Integration Group (SIG) in accordance with DOD Directive 5000.71, hereafter referred to as warfighter SIG urgent needs. The Chairman of the warfighter SIG will approve the urgent need and provide instructions to DOD Component(s) on program execution and management.	for approving critical warfighter issues and provide instructions to DOD Component(s) on program execution and management.
(3) A Secretary of Defense Rapid Acquisition Authority (RAA) Determination, in accordance with section 806(c) of P.L. 107-314 (Reference (p)). Secretary of Defense RAA Determinations task a DOD Component to fulfill the urgent need and will be handled in accordance with DOD Directive 5000.71 (Reference (ci)). The MDA for RAA Determinations will be designated at the DOD Component level except in very rare cases when the MDA will be designated in an ADM by the DAE.	(3) Changed language to: This is a Secretary of Defense signed determination that is made in response to a documented deficiency following consultation with the Joint Staff. RAA should be considered when, within certain limitations, a waiver of a law, policy, directive, or regulation will greatly accelerate the delivery of effective capability to the warfighter in accordance with section 806(c) of P.L. 107-314
c. DOD Components will designate a single official responsible for DOD Component UON validation and nomination to the Component Acquisition Executive (CAE) for execution as an urgent need, as defined in CJCSI 3170.01H (Reference (j)). UONs will be validated in accordance with procedures established by the Chairman of the Joint Chief of Staff for JUONs and JEONs in CJCSI 3170.01H or the DOD Component for Component UONs.	
d. MDAs and program managers will tailor and streamline program strategies and oversight. This includes program information, acquisition activity, and the timing and scope of decision reviews and decision levels. Tailoring and streamlining should be based on program complexity	

and the required timelines to meet urgent need capability requirements consistent with applicable laws and regulations. e. DOD Components will employ, to the extent possible, parallel rather than sequential processes to identify and refine capability requirements, identify resources, and execute acquisitions to expedite delivery of solutions. Formal milestone events may not be required. Acquisition decision making and associated activity will be tailored to expedite acquisition of the capability. Development will generally be limited and the MDA can authorize production at the same time development is approved. f. DOD Components will ensure that financial, contracting, and other support organizations (e.g., Defense Contract Audit Agency, Defense Contract Management Agency, General Counsel) and prime and sub-tier contractors involved with aspects of the urgent need acquisition program are fully aware of the urgency of the need and will ensure expedited action. g. Generally, funds will have to be reprioritized and/or reprogrammed to meet urgent needs and to expedite the acquisition process. If a need can be satisfied within an acceptable timeline through the normal Planning, Programming, Budgeting, and Execution System, it would not be considered appropriate for rapid acquisition. h. Consistent with the emphasis on urgency, if the desired capability cannot be delivered within 2 years of	g. Changed from satisfied to fielded within an acceptable timeline. h. changed from chairman to co-chair. Critical warfighter issues identified by the warfighter SIG, per DOD Directive

identification of the urgent need, the MDA will assess the suitability of partial or interim capabilities that can be fielded more rapidly. In those cases, the actions necessary to develop the desired solution may be initiated concurrent with the fielding of the interim solution. warfighter SIG urgent needs or Secretary of Defense RAA determinations will be addressed as determined by the Chairman, warfighter SIG, or by the official designated for action in the Secretary of Defense RAA Determination. 3. RAPID ACQUISITION ACTIVITIES. The following paragraphs describe the main activities associated with the Rapid Acquisition of Urgent Needs: Pre Development, Development, Production, and Operations and Support. The activities detailed in this enclosure are not separate from or in addition to activities performed as part of the acquisition system but are a highly tailored version of those activities and are intended to expedite urgent needs by tailoring the documentation and reviews normally required as part of the deliberate acquisition process. a. Pre-Development (1) Purpose. The purpose of Pre-Development is to assess and select a course or courses of action to resolve an urgent need and develop an acquisition approach. (2) Initiation. Pre-Development initiation requires approval of an urgent need statement: a validated UON, warfighter SIG urgent need statement or a Secretary of Defense RAA determination document. (3) Pre-Development Activities.	5000.71 (Reference (cc)), will be addressed as determined by the Co-Chairs of the warfighter SIG. Changed from expedite urgent need to expedite fielding of capability.

(a) A validated UON statement, approved warfighter SIG urgent need statement, or the Secretary of Defense RAA Determination serves as the validated or approved requirements document until such time as the disposition action discussed in paragraph 3.f.(5) of this enclosure is complete. (b) Upon receipt of an approved urgent need, the designated CAE will immediately appoint a Program Manager and an MDA. If the DAE has retained MDA authority, he or she will either appoint a Program Manager or task a CAE to do so.	
(c) The Program Manager in collaboration with the intended user: 1. Reviews the urgent need requirement and any recommended non-materiel options and, if not adequately stated in the validated UON, the RAA Determination, or SIG designated issue, will determine the performance thresholds for the minimal set of performance parameters required to mitigate the capability gap. 2. Performs an analysis of potential courses of action (COAs) that consider:	(c) updated to include the requirements validation authority
a. The range of feasible capabilities, to include consideration of an existing domestic or foreign-made system.	a. combined with bullet d. The range of feasible capabilities, near, mid, and/or long term, to include consideration of an existing domestic or foreign-made system.
b. The acquisition risk (cost, schedule, and performance) and the operational risk of each solution.	
c. The operational risk to the requesting Commander if an effective solution is not deployed by the time specified in the urgent need.	c. changed from specified in the urgent need to specified by the Commander
d. Multiple, simultaneous, near, mid, and/or long term capabilities to fulfill the urgent need.	
3. Develops a recommended COA for review by the MDA.	3. changed from develops to presents

4. If the Program Manager is unable to identify an effective solution, the Program Manager will notify the MDA. The MDA will in turn notify the DOD Component validation authority. If it is a JUON or JEON, a warfighter SIG urgent need, or a Secretary of Defense RAA Determination, the MDA will notify the DAE and the Deputy Director of Requirements, Joint Staff, through the Director, Joint Rapid Acquisition Cell.	
(d) The Program Manager will present the recommended COA(s) to the MDA for a COA selection. Once the MDA selects the COA(s), this decision will be documented in an ADM. More than one COA may be selected by the MDA to provide the phased or incremental fielding of capabilities.	Presents recommended COA to MDA and requirements validation authority.
(e) Following the selection of the COA(s) by the MDA, the Program Manager will develop a complete acquisition approach (or acquisition approaches if more than one COA has been approved by the MDA), and an abbreviated program baseline (or baselines for multiple COAs) based on readily available information.	(e) added the following to this section: In the context of this enclosure, the documentation requirement is for the minimal amount necessary to define and execute the program and obtain MDA approval. This documentation may take any appropriate, written form; will typically be coordinated only with directly affected stakeholders; and will evolve in parallel with rapid acquisition activities as additional information becomes available as a result of those activities.
(f) The acquisition approach will comply with statutory requirements in Table 10 and specified items in Table 2 of Enclosure 1; however, a streamlined, highly tailored approach consistent with the urgency of the need will be employed. Regulatory requirements will be tailored or waived. The tailored Acquisition Strategy should be relatively brief and contain only essential information to the extent possible, such as resourcing needs and sources, key	

deliverables, performance parameters, a production schedule, a contracting methodology and key terms, preliminary plans for Assessment (which may or may not include test and evaluation), deployment, training, and sustainment. Information technology (IT) and National Security Systems (NSS) provided in response to an urgent need do require an Authority to Operate or an Interim Authority to Operate in accordance with DOD Instruction 8510.01 (Reference (bx)). A disposition decision should be made as early as feasible and decided upon at appropriate milestones or other decision points.	Included key risks and mitigation approaches
(g) Funding for urgent needs may be in increments over the urgent need's lifecycle.	(g) changed to program lifecycle begins upon Pre-Development initiation
The urgent need life-cycle begins upon the receipt of an urgent need and ends upon completing the final disposition of the capability provided in response to the urgent need as described in the Operations and Support portion of this enclosure.	
(h) When designing the acquisition approach, the Program Manager, in collaboration with the requesting operational commander or sponsoring user representative will determine whether an operational prototype is necessary.	(h) Updated to include prototype determination in Acquisition strategy
(i) If the program has been placed on Director, Operational Test and Evaluation, (DOT&E) oversight, a plan for operational testing must be approved by the DOT&E. DOT&E will report the results of required testing to the Secretary of Defense and provide copies to Congress and the MDA	
b. Development Milestone. Entry into Development is approved by the MDA.	

(1) The Program Manager will present the acquisition approach to include the program requirements, schedule, activities, program funding, and the Assessment Approach and intermediate decision points and criteria. (2) The MDA will: (a) Determine the feasibility of resolving the urgent need within the required timelines to include consideration of the technical maturity of the preferred solution(s). (b) Review the acquisition approach and determine whether the preferred solution(s): 1. Can be fielded within 2 years. 2. Does not require substantial development effort. 3. Is based on technologies that are proven and available. 4. Can be acquired under fixed price. (c) Provide any exceptions necessary pursuant to section 804 (b)(3) of P.L. 111-383 (Reference (z)), including exceptions to the requirements of paragraphs 3.b.(2)(b)1 through 3.b.(2)(b)4. (d) Approve initial quantities to be produced and assessed (to include required assessment and training articles). (e) Approve a tailored Acquisition Strategy and Acquisition Program Baseline. These documents will be based on readily available information and will mature over time into a more robust plan. (f) Decide if RAA, in accordance with section 806(c) of P.L. 107-314 (Reference (p)), should be requested from the Secretary of Defense to expedite the urgent need's resolution. (g) In collaboration with the supporting	(1) The program manager will also provide Program Baseline (b) review Acquisition strategy and program baseline and determine whether the preferred solution(s): (e) Approve the tailored Acquisition Strategy and Acquisition Program Baseline. These documents will be based on available information to be updated over time as directed by the MDA. (f) Changed from expedite the urgent need's resolution to expedite fielding of capability. (g) Updated language. Approve the

operational test organization, approve a highly tailored and abbreviated Test and Evaluation Master Plan (TEMP). The TEMP will describe a performance Assessment plan that will include schedule, test types and environment, and assets required. If the defense rapid acquisition program is on DOT&E oversight, the Program Manager must then prepare a combined operational and live fire test plan for DOT&E approval.	planned testing approach. A normal Test and Evaluation Master Plan (TEMP) is generally not necessary. TEMPs are usually not appropriate for rapid acquisitions when there is minimal development work and minimal T&E to execute. Some test planning is usually required, however. In collaborate with the supporting operational test organization, a highly tailored and abbreviated test plan may be required by the MDA. The abbreviated test plan will describe a performance assessment approach that will include schedule, test types and environment, and assets required. An Operational Test Plan for the required pre-deployment performance assessment is generally adequate. If the defense rapid acquisition program is on DOT&E oversight, a TEMP is also not normally required; however, the Program Manager should prepare a combined operational and live fire test plan for DOT&E approval.
(h) Approve any waivers to statute (if permitted by statute) or regulation. Specify any additional authority the Program Manager may use to modify the acquisition approach without the specific approval of the MDA. (i) Authorize release of the request for proposals and related documents for development and any other MDA approved actions. (j) Document these decisions in an ADM.	
c. Development Activities (1) Development includes an Assessment of the performance, safety, suitability, and survivability of the capability, but does not require that all identified deficiencies including those related to safety be resolved prior to production or deployment. The MDA will, in consultation with the user, determine	In consultation with the user and the requirements validation authority,

which deficiencies must be resolved and what risks can be accepted. (2) IT and NSS provided in response to an urgent need require an Authority to Operate or an Interim Authority to Operate (DOD Instruction 8510.01 (Reference (bx))). DOD Component Chief Information Officers will establish processes consistent with DOD Instruction 8510.01 for designated approval authorities to expeditiously make the certification determinations and to issue Interim Authorization to Test, Authority to Operate, or Interim Authority to Operate. d. Production Milestone (1) Entry into Production and Deployment is approved by the MDA. (2) At the Production Milestone review: (a) The Program Manager will summarize the results of Development activity and the program Assessment. The Program Manager will present plans to transport, deploy, and sustain the capability; to conduct Post-Fielding Assessments; and to train maintenance and operating personnel. This information will be provided to the MDA for approval. (b) The MDA, in consultation with the supporting operational test organization, and with the approval of DOT&E for programs on DOT&E oversight, will determine when Postfielding Assessments are required, whether the urgent need solution has been adequately reviewed, performs satisfactorily, is supportable, and is ready for production and deployment. (c) The MDA decides whether to produce and deploy the system, approves the updated acquisition approach (which will include the sustainment plan), and	(2) IT, including NSS, fielded under this enclosure require an Authority to Operate d. P&D milestone Changed post-fielding to post-deployment assessments Changed from approval to concurrence of DOT&E Added Program Baseline.

documents the Production Decision in an ADM. This decision should be coordinated, when feasible, with the intended user. e. Production and Deployment Activities (1) During Production and Deployment the acquiring organization provides the warfighter with a capability that satisfies the urgent need to include any required training, spares, technical data, computer software, support equipment, maintenance, or other logistics support necessary for operation. (a) DOD Components will ensure urgent need acquisition program capabilities and required support (e.g., field service representatives, training) are deployed by the most expeditious means possible and tracked through to their actual delivery to the user. (b) The DOD Components will coordinate with each other and the requiring activity to verify the total requirement, considering necessary support and spares and including required training capability for deployed and/or pre-deployment training. (2) Upon deployment, the capability will enter into Operations and Support. f. Operations and Support (1) The Program Manager will execute a support program that meets materiel readiness and operational support performance requirements, and sustains the urgent need acquisition program product in the most cost-effective manner over its anticipated total life cycle. Planning for Operation and Support will begin during Pre-Development and will be documented in the Program Manager's Acquisition Strategy.	Changed to: Verify the total number of items required,

(2) The capability is operated and supported consistent with the sustainment plan approved by the MDA at the Production Milestone. (3) The Program Manager or the user may propose urgently needed improvements to the capability. If within the scope of the approved urgent need, this enclosure may be used to acquire the improvements. All improvements must be approved by the MDA and may be funded, developed, and assessed in accordance with the procedures in this enclosure if urgent need criteria are met. If improvements are outside the scope of the validated or approved requirement, a new or amended urgent need statement may be required. (4) In collaboration with the original requirement sponsor, a post-fielding Assessment will be conducted after deployment by the DOD Component on all capabilities fielded as urgent needs. If practical, this Assessment will be conducted in the field by the supporting operational test organization. If not practical, the Program Manager may use alternate means for this Assessment to include Program Manager or operational test agency Assessment of user feedback or other DOD Component feedback. All programs under DOT&E Oversight will be independently reviewed and approved by DOT&E. (5) Disposition Analysis. No later than 1 year after the program enters Operations and Support (or earlier if directed by the DOD Component), the DOD Component will appoint an official to conduct a Disposition Analysis. Based on the analysis, the DOD Component Head and the CAE will prepare a determination	Changed to: If within the scope of the initial requirements document, procedures in this enclosure may be used to acquire the improvements. Changed from requirement sponsor to requesting DOD component and post-fielding to post-deployment.

document for disposition of the product. The disposition analysis will consider the performance of the fielded system, long term operational needs and, the relationship of the capability to the component's current and planned inventory of equipment. The analysis will also consider the continuation of non-materiel initiatives, the extension of science and technology developments related to the fielded capability, and the completion of MDA-approved and funded materiel improvements. The disposition official will recommend one of the following options: (a) Termination: Demilitarization or Disposal. The system will be demilitarized and disposed of in accordance with all legal and regulatory requirements and policy related to safety (including explosive safety) and the environment. The recommendation will be coordinated with the DOD Component or, for JUONS and JEONS, the Combatant Commands. (b) Sustainment for Current Contingency. The system will continue operation and sustainment as an urgent need for the current contingency. Multiple sustainment decisions may be made should the capability require operations and support longer than 2 years; however, such sustainment decisions will be made and re-documented at least every 2 years. The sustained urgent need solution will continue to receive the same priority of action as the original urgent need solution. This recommendation will be coordinated with the DOD Component validation authority. (c) Transition to Program of Record. If the program provides a needed, enduring capability, it may be transitioned to a program of record. The disposition official	

will recommend to the CAE the acquisition point of entry into the defense acquisition system, and whether the MDA should retain program authority or whether it should transition elsewhere. The DOD Component validation authority will specify the capability requirements documents required to support transition to a new or existing program of record. This recommendation will be made to the Deputy Secretary of Defense for JUONs, JEONs, warfighter SIG urgent needs, or Secretary of Defense RAA determinations, or to the DOD Component Head for Component specific UONs.	Changed from DOD Component to requirements validation authority Removed Deputy Secretary of Defense for JUONs, JEONs
(6) The DOD Component Head and the CAE will review the disposition official's recommendation and record the Component Head's transition decision in a Disposition Determination. The Determination will specify the requirements documents required by the validation authority to support the transition. Programs of record will follow the procedures described in the core instruction.	changed "described in the core instruction" to "for such programs described in this instruction"
4. INFORMATION REQUIREMENTS. Provides Information Requirements that are unique to the Rapid Acquisition of Urgent Needs and pertain to urgent needs below the cost thresholds of ACAT I and IA programs.	ADDITIONAL INFORMATION REQUIREMENTS. Table 10 provides the Information Requirements that replace or are in addition to the statutory or regulatory requirements in Tables 2 and 6 in Enclosure 1 that are applicable to ACAT II and ACAT III programs. For rapid acquisition, the documentation procedures described in paragraph 4a(3)(d) will be applied to all information requirements unless otherwise prescribed in statute.

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APPENDIX B. WARFIGHTER IMPROVISED/PROCURED URGENT NEEDS

One inspired citizen saved the lives of six soldiers with this radio controlled truck equipped with a video camera made for a deployed brother. The soldiers used this modified toy hobby truck as a reconnaissance scout to look for IEDS ahead of their HMMWV. The remote car was eventually used to trigger a 500 pound IED potentially saving the soldiers' lives. (Stump, 2015). This same truck design was also used to inspect the undercarriage of vehicles entering the facility for explosives. The design and equipment were readily available as COTS items. (Stump, 2015). Photo use permission from: SFC Christopher Fessenden on 11/10/15 per email.	
Improvised vehicle armor (hillbilly-armor) Soldiers rummaged salvage yards for scrap metal which was secured to their vehicles by the use of welds or bolts to provide additional protection from IEDs (Cerre, n.d.). Pictured is a five ton cargo truck modified with improvised armor on the doors, rear gunner's box and an improved bumper ("Improvised Vehicle Armor," 2015). Troops used scrap metal, pieces of Kevlar, plywood, blankets and comprised ballistic glass for protection ("Improvised Vehicle Armor," 2015). User JKM on en.wikipedia - Photograph taken by Jeff McFall at LSA Adder, Iraq.	

Popular with the secret service and special forces, Dragon Skin Body Armor purchased by soldiers as additional protection from IEDs and bullets until some services banned the purchase of non-standard gear (Baglole, n.d.). Dragon armor is just one of many types of armor purchased by troops and their families. ("Soldiers in Iraq," 2015).	Follow below link for picture of dragon skin. Permission was not available for this paper as the company was no longer in operation. http://defense-update.com/products/d/dragonskin.htm

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