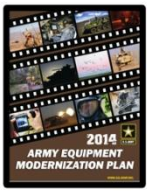
AMERICA'S ARMY:
GLOBALLY RESPONSIVE
REGIONALLY ENGAGED

Army Equipment Program in support of President's Budget 2015

Formerly
Army Equipment Modernization Plan



MAY 2014

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May 2014
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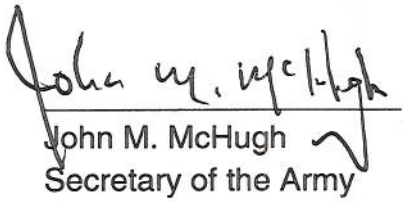
Foreword

The world still presents our Army and our Nation with dynamic and uncertain security challenges. To ensure we can protect national interests in this environment, the Army must remain globally responsive and regionally engaged. We must be leaner, tailored and scalable. Army forces must maintain an expeditionary mindset to deploy anywhere in the world quickly, building capabilities from small force packages and with the minimal amount of support to accomplish the mission. Our Total Army must always be balanced, ready and capable of conducting operations in any location and environment while maintaining tactical and strategic overmatch with our adversaries. The Army Equipping Program in Support of President's Budget 2015 provides specifics on how we will take the next step in meeting future challenges: modernizing equipment for the Total Army.

The Bipartisan Budget Act of 2013 provides some relief from the deep and indiscriminate budget caps imposed by the Budget Control Act of 2011 but, unpredictability of the budget continues to impact modernization programs. The principles of our modernization strategy remain the same: we will focus on the Soldier and squad, building outward to enable them with the Network and other key capabilities. Our Army and our Nation face a time of fiscal realities that will slow the pace of our equipment modernization. We have and will continue to make difficult choices and prioritize our efforts to ensure we maximize every dollar towards putting the best equipment in the hands of our Soldiers. In doing so, the Army will continue to develop effective energy solutions and strengthen information assurance and cyber security. In a time of budget stringency, the Army's greatest challenge is providing steadfast support to worldwide operational commitments to include Afghanistan while simultaneously drawing down, reorganizing and preparing the force for a wider array of security missions and threats in the future.

We are committed to ensure the U.S. Army remains the most highly trained and professional land force in the world. The Army Equipment Program in Support of President's Budget 2015 outlines the allocation of resources for equipment modernization enabling our units and Soldiers to build partnerships with our Allies through peacetime engagements and dominate our enemies and achieve our Nation's objectives when conflict arises.

Raymond T. Odierno
General, United States Army



John M. McHugh
Secretary of the Army

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EXECUTIVE SUMMARY

"As our potential adversaries invest in more sophisticated capabilities and seek to frustrate our military's traditional advantages, including our freedom of action and access, it will be important to maintain our decisive technological edge."[1]

The Army Equipment Program in support of the President's Budget 2015 (AEP PB 15) describes the Army Research, Development and Acquisition (RDA) budget for key capability portfolio areas and the Science and Technology portion of the Fiscal Year 2015 (FY 2015) President's Budget request. The AEP PB 15 is renamed this year to better reflect the focus of the Army's portfolio management and equipment descriptions, but flows from the previous Army Equipment Modernization Strategy and 2014 Army Equipment Modernization Plan. This document delineates RDA investments into 11 capability portfolio areas, highlights the portfolio accomplishments over the last two years and provides intent for FY 2015 investments. The dollars and quantities in this document reflect President's Budget 2015.

The objective of Army equipment modernization is to enable our Soldiers to fight and win across the entire range of military operations by developing and fielding versatile and tailorable equipment that is affordable, sustainable and cost-effective. The Army has developed several initiatives to guide equipment modernization during this period of fiscal constraint. The Total Army focuses equipping modernization on the Soldier and squad providing them with the Network and key enablers. We use incremental improvements to improve existing systems as our first option and build new systems only by exception. The Army is divesting older systems and niche capabilities to decrease sustainment costs and generate additional resources for modernization and readiness. Next, we are developing smaller procurement objectives because the Army cannot afford to equip and sustain the entire force with the most advanced equipment. Our procurements are to insert needed technologies and capability improvements, leveraging commercial investment where we are "technology-takers" (e.g., information technology, fixed wing aviation) and our own focused investments in technology where we are "technology-makers" (e.g., lethality, armor, rotary wing aviation). Finally, each equipment decision is reviewed to ensure it is both affordable within the overall budget and is cost-effective in addressing the capability gap.

The portfolio annexes to this document detail where we have applied our resources in FY 2015. We will prioritize our efforts to modernize the Network to facilitate the decision-making of Soldiers with information and connectivity across all tactical echelons for Unified Land Operations in support of the Joint Force. Likewise, programming for ground vehicles such as the Army's critical Armored Multi-Purpose

[1] Secretary of Defense Chuck Hagel, Washington D.C., Tuesday, November 5, 2013, CSIS Global Security Forum

Vehicle (AMPV), Paladin Integrated Management (PIM) and Joint Light Tactical Vehicle (JLTV) are significant priorities. Similarly, Aviation reflects priorities for Apache, Black Hawk and Chinook helicopters as our most capable and survivable combat-proven aircraft. Additionally, we protect critical Science and Technology investments as the seed corn for the future. However, achieving the Army's priority efforts will take more time due to the decline in resources for the Research, Development and Acquisition accounts. The Army will begin to recover the balance among modernization, readiness and manpower in FY 2020 as manpower end strength stabilizes. At this point, we will renew our investment in new programs impacted by recent budget constraints after assessing existing or new capability gaps and updating our requirements.

Our Total Army is the best in the world today. It has unique capabilities to provide regionally aligned, expeditionary, and decisive land power; however, its capacity and capability overmatch is being eroded. Adding impetus for modernization, there is uncertainty in the international security environment which provides an opportunity for potential adversaries to develop destructive technologies and weapons of there own. Furthermore, the demand for Army units is on the rise to meet combatant commander requirements for regional engagements across the range of military operations to prevent, shape and win in support of national interests. Ultimately, the ability to modernize Army equipment relies on stable, consistent, and flexible budget authority. Adequate resources are essential to meet Defense Strategic Guidance and defense budget priorities. The Bipartisan Budget Act 2013 provides greater budget certainty for FYs 2014 and 2015; however investment reductions in equipment modernization continues to challenge the Army in delivering capabilities to our Soldiers now and into the future.

LINKING RESOURCE DECISIONS TO ARMY STRATEGY

"This time, however, we are drawing down our Army before the war is over and at a time when there is grave uncertainty in the international security environment."[2]

Overview:

The Army continues to plan for a period of dynamic uncertainty. In FY 2014 the Army planned on a complex operational environment, declining resources, and continued threats to U.S. interests. More than 32,000 Soldiers are currently serving in Afghanistan and an additional 114,000 are either forward stationed or deployed in nearly 150 countries. The Army continues to support Soldiers conducting operations in Afghanistan and other locations in Asia, Europe, Africa and the Middle East. World events such as an erratic and bellicose North Korea, Egyptian political turmoil, continued unrest in Iraq, a belligerent Russia, employment of chemical weapons in Syria, and the tragic attack on a civilian shopping mall in Kenya are harbingers of serious threats to people across the globe. These events present a compelling challenge for the unforeseeable future, yet this year the Army continues to experience a further decline in resources. The unpredictability, so prominent in the contemporary security environment, will almost certainly remain a characteristic of future environments and will require integrated strategic land power to protect and advance vital U.S. interests. The Army will meet these challenges by becoming smaller while prioritizing equipment modernization and recovering readiness to ensure Army units are prepared to meet these challenges.

History teaches us that a future crisis is inevitable, requiring a versatile, tailorable and expeditionary Army able to provide decisive land power across the range of military operations. A crisis will likely come at an unanticipated time and place. It will develop at a surprising pace and will require the commitment of expeditionary Army forces. This country will expect a quick and decisive victory with minimal casualties. The Army can only meet that expectation with a manned, modernized, trained and ready Total Army. Anything less creates risk of increased casualties or mission failure.

The Army's Equipment Modernization strategy calls for a mix of divestiture, incremental upgrades to existing platforms, modernization of aging systems, and prioritized science & technology investments to mature and develop next-generation technologies in support of future modernization efforts. The Budget Control Act of 2011 (BCA) created an opportunity for the Army to make a hard self-assessment and critically review equipment modernization. The Army continues to use its strategic

[2] General Raymond T. Odierno, Chief of Staff United States Army, House Armed Services Committee, September 18, 2013

modernization plan to look beyond the program years and take a much longer view of equipment modernization. In 2012, the Army implemented a Long-range Investment Requirements Analysis (LIRA) process, which takes a holistic look at the investment in Science and Technology and the life cycle management of equipment and systems projected over a 30 year period. This 30 year long-range planning process provides focus for program reviews, and identifies cost saving opportunities such as multi-year buys, reduces procurements as the Army downsizes, and facilitates incremental improvements over time. Sustainment strategies are incorporated to ensure the costs to support programs are considered over the life of the system. This long term planning also better identifies opportunities for divestment of obsolete inventory and ensures life-cycle costs, such as software sustainment, are reviewed as system platforms evolve from stand alone systems to networked systems.

Strategic Priorities for a Ready and Modern Army[3]:

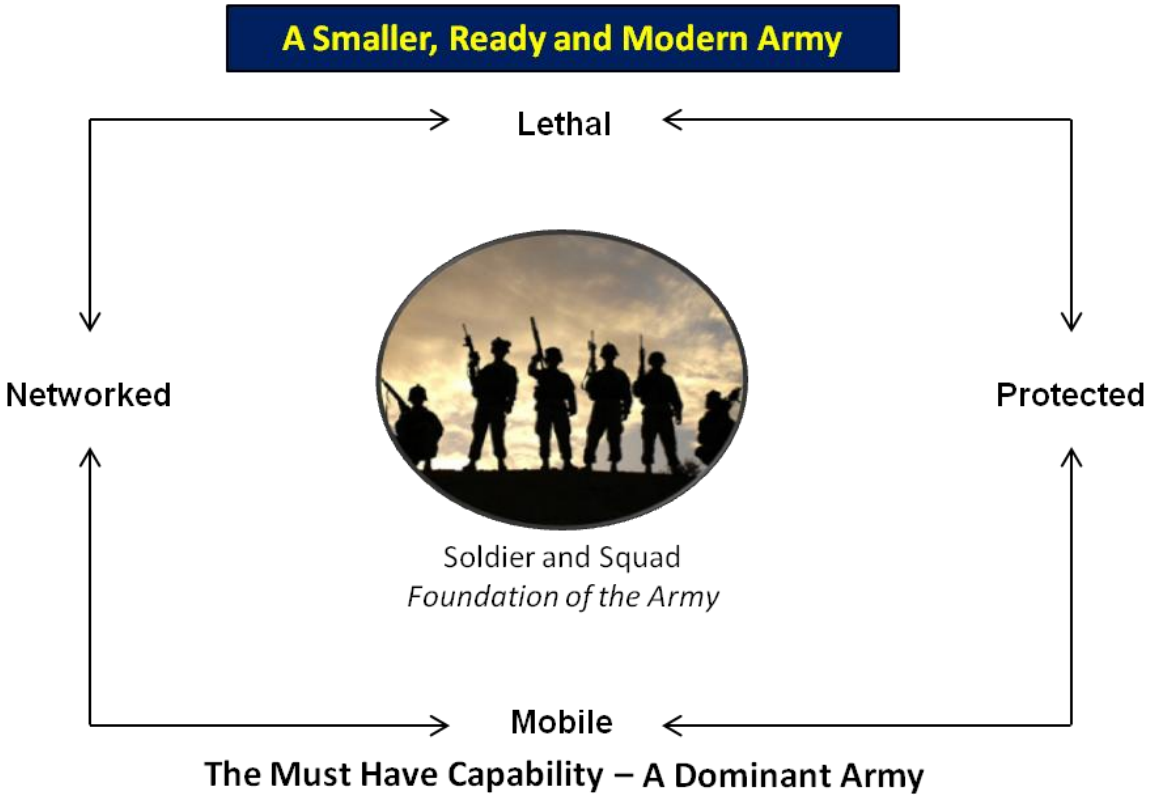

Figure 1. Cornerstone Capabilities

Figure 1 above depicts the cornerstone capabilities required to build discriminately lethal squads and small units. Our strategic intent is to modernize and equip the Total Army with equipment that is affordable, sustainable, and cost-effective to provide ready

[3] CSA Strategic Priorities for the Army (Waypoint #2), 16 Oct 2013

and tailorable land power supporting the full range of combatant command requirements. To achieve those strategic priorities the Army will focus on the following:

- Prioritize Soldier-centered modernization and procurement of proven technologies so that Soldiers have the best weapons, equipment and protection to accomplish every mission.
- Seek fundamental improvements to Soldier and unit system lethality, survivability, mobility, and network functionality to ensure that the American Soldier remains the most discriminately lethal force on the battlefield.
- Focus Science and Technology investment to maximize the potential of emerging game-changing land power technologies to counter emerging threats and to ensure that Army formations retain a decisive materiel edge and tactical overmatch across the range of military operations, to include missions such as cyber, space, Counter-Weapons of Mass Destruction and Weapons of Mass Destruction-Elimination.
- Ensure that Army units are prepared for new, emerging, and evolving missions in areas such as space, cyberspace, missile defense, and countering weapons of mass destruction.
- Equip the Total Army to rapidly deploy, fight, sustain itself, and win against complex state and non-state threats in austere environments and rugged terrain (the expeditionary mindset).

Resource Linkage: *"Versatile and Tailorable, yet Affordable and Cost-Effective"*[4]

The Army goal is to develop and field the mix of equipment needed to ensure that our Soldiers have the right equipment, for the right missions, at the right time. However, the Army is accepting risk by temporarily curtailing equipment modernization efforts to balance unit readiness until we complete force structure reductions allowing us to restore resources to reestablish our modernization tempo. The Army's core capability rests in its Soldiers. Rather than acquire equipment first, then man those systems, the Army organizes its Soldiers first, then trains and equips them to prevail against the challenges they will face.

The Army has an established framework to guide equipment modernization. The strategy focuses our efforts on the Soldier and squad as the foundation of our Army. This means building from the Soldier out and equipping our squads for tactical overmatch in all situations by ensuring they are connected to an integrated network and that they are in vehicles that are survivable, mobile and lethal.

[4] Quote is the theme from the Army Equipment Modernization Strategy.

In general terms, we will improve and procure equipment that is versatile and tailorable, yet cost-effective and affordable. We are prioritizing declining resources against our planned programs while investing in future capabilities through science and technology. This approach calls for carefully planned investment strategies across all Army equipment portfolios. These strategies involve a mix of incrementally upgrading existing platforms, investing in key technologies to support future modernization efforts and development of new capabilities only by exception.

Budget reductions in FYs 2013 and 2014 limited the Army's ability to reset and repair equipment returning from Afghanistan. This returning equipment is critical to rebuilding unit readiness. Even after our combat involvement in Afghanistan is complete, the Army will require supplemental funding for three years to reset our equipment from the harsh demands of war. This continued reset will also assist in maintaining important capabilities in the Army's organic industrial base. Eleven years of war led to a proliferation of non-standard equipment. The Army Requirements Oversight Council reviews non-standard systems and determines the actions necessary for retention, disposal or other disposition of this equipment. These decisions help the Army to bridge between current equipping posture and future modernization requirements while addressing sustainment cost concerns.

The Army continues to support and use Network Integration Evaluations (NIE). The NIE is a series of evaluations designed to put new technologies in the hands of Soldiers early in the development process. The Army executes NIEs to assure continued integration as the network evolves and to evaluate emerging technologies from government and industry sources. The Army uses NIEs to incorporate Soldier feedback into the acquisition process resulting in better capability development. The Army developed the Organic Industrial Base Strategic Plan 2012-2022 to provide the strategy and management framework needed to ensure the organic industrial base remains viable, effective and efficient as the Army draws down from a decade of combat operations. The plan provides a forward looking management framework capable of identifying critical risk areas within area functional groups and establishes a common framework to develop mitigating strategies.

The Bipartisan Budget Act of 2013 (BBA) provides the Army temporary relief from BCA defense spending caps and provides the predictability needed to effectively plan within changing fiscal parameters during FYs 2014 and 2015. Historically, the Army's RDA account has averaged 21.9 percent of its obligation authority. For FY 2015 the RDA account is 17 percent ($20.1B) of obligation authority. The long-term effect of fewer resources will be additional stress on current vehicle fleets, reduced replacement

of war-worn equipment, increased challenges sustaining the industrial base and reduced investment in the modernization of critical capabilities. We will begin efforts to restart the next Infantry Fighting Vehicle when resources are available and restore other high priority modernization programs as the Army achieves a steady state force structure.

President's Budget 2015 Overview and Main Effort.

The Army's planned RDA investments in FY 2015 have declined 39 percent since the FY 2012 budget planning cycle. We will not transition four programs to the acquisition phase, to include the Ground Combat Vehicle and Armed Aerial Scout. Additionally, we will end four programs, restructure 30 programs, and delay 50 programs. A notable delay is the Warfighter Information Network Tactical (WIN-T) Increment 3. While reductions occurred across all portfolios we were able to protect the core of our Science and Technology (S&T) investments for the future.

Previous investments in modern equipment for combat operations in Iraq and Afghanistan has improved overall modernization levels. Yet, the Army still has aging systems that need replacement and systems that can no longer be cost-effectively modified to meet future operational and force protection requirements. The Army will prioritize available resources against these shortfalls during future reviews.

There are three main efforts this year that characterize equipment modernization. These efforts are:

The Network

LandWarNet is the Army's globally interconnected network. It enables mission command by carrying the data, voice and video every Soldier and leader needs to act decisively and effectively. LandWarNet supports all Army operations, from administrative activities in garrison to operations conducted by our deployed and forward stationed Soldiers. Additionally, it forms the basis of our live, virtual, constructive and gaming training. The Mission Command portfolio is impacted by constrained budgets this year resulting in fewer and delayed capabilities. The realities of reduced funding has delayed the Warfighter Information Network – Tactical (WIN-T) Increment 3 and reduced the focus of development to Network Operations and waveform development. We will build Network capacity by continuing to field Operational Capability Sets, focusing on Soldier reach back from the forward edge to higher headquarters, continuing efforts to implement a Common Operating Environment framework for rapid development, and deployment of software products and resourcing

NIEs to evaluate and field an integrated network. The Army continues efforts to achieve an end state of a coherent and intuitive network of sensors, Soldiers, platforms and command posts linked by a robust transport network with an enabling suite of command and control applications and the necessary Network Operational tools, all to provide our Soldiers better access to network capabilities.

Combat Vehicles

The Army is committed to developing and fielding the Armored Multi-Purpose Vehicle to replace our obsolete M113 family of vehicles and augmenting our wheeled vehicle fleet with the Joint Light Tactical Vehicle. The Army will also continue to fund a third brigade's set of Double V-Hull (DVH) Stryker vehicles, while supporting an incremental upgrade to DVH Strykers for power and mobility improvements. We will fund network integration as well as survivability, lethality, and protection improvements to our Abrams tank and Bradley Infantry Fighting Vehicle fleets. A new Infantry Fighting Vehicle (IFV) remains a key requirement for the Army. However, due to significant fiscal constraints, the Department has determined that the Ground Combat Vehicle (GCV) program will conclude upon completion of the technology development phase, expected in June 2014, and will not continue further development. In the near-term, the Army will focus on refining concepts, requirements, and key technologies in support of a future IFV modernization program. This will include investment in vehicle components, sub-system prototypes, and technology demonstrators to inform IFV requirements and future strategies for developing a Bradley Fighting Vehicle replacement. Over the long-term, the Army anticipates initiating a new IFV modernization program, informed by these efforts as resources become available.

Aviation

Following a comprehensive aviation strategy review, the Army will restructure aviation formations to achieve a leaner, more efficient and capable force that balances operational capability and flexibility across the Total Force. The Army will divest legacy systems and fund the modernization and sustainment of our most capable and survivable combat-proven aircraft: the AH-64 Apache, the UH-60 Black Hawk, and the CH-47 Chinook helicopters. The Army will divest almost 900 legacy helicopters including the entire single engine OH-58A/C Kiowa, TH-67 (training), and OH-58D Kiowa Warrior helicopter fleets. With divestment of the TH-67 (training) helicopter, the Army transitions to a dual engine, glass cockpit training helicopter fleet. In FY 2015, the Army will procure 55 UH-72A Lakota light utility helicopters to assume the initial entry rotary wing training helicopter requirement and to assist in the transition to the restructured aviation force. The Army continues to maintain a valid manned Armed Aerial Scout requirement. In the interim, with the implementation of the Aviation

Restructure Initiative (ARI), Apache helicopters will be teamed with unmanned systems that exist in the current inventory to provide an armed aerial scout capability to meet that requirement.

Summary:

As lower funding levels for the Army continue, we are concerned about the health of the industrial base and the subsequent consequences for the Army and our Nation. Shrinking demands for new combat platforms and smaller production rates lead to higher proportional costs. A smaller defense industrial complex may reflect a workforce with reduced design, development, and manufacturing expertise. Diminished capacity in our industrial base may decrease competitiveness and increase response time to future requirements.

Over the next several years, as we continue to draw down and restructure the Army into a smaller force, the Army will continue to have degraded readiness, limited sustainment of existing equipment and modernization program shortfalls. The Army will begin to restore modernization programs late this decade as modernization balances with force structure and readiness, but won't be able to fully recover to a modernized Total Force until FY 2023.

Our equipment modernization efforts reflect the priorities of a relatively modern Army with constrained resources. Affordability and cost-effectiveness are prime factors in planning resources to modernize our equipment and close capability gaps in this fiscal environment.

ARMY FISCAL YEAR 2015 BUDGET OBJECTIVES AND CRITICAL PROGRAMS

Over the past three years, the Army has absorbed several budgetary reductions in the midst of conducting operations overseas and rebalancing the force to the wider array of missions called for in the 2012 Defense Strategy Guidance. The FY 2015 budget unbalances Army equipment modernization through program terminations, procurement delays and program restructures. Overall, Research, Development and Acquisition funding is reduced from FY 2014 and the long term effect will be additional stress on current fleets, reduced replacement of war worn equipment, challenges sustaining the industrial base and modernization of only the most critical capabilities.

The Army focuses on effectively using constrained resources for near-term requirements and tailoring our long-term investments to provide the right capabilities for Soldiers in the future. This approach calls for carefully planned investment strategies across all Army equipment portfolios, which will involve a mix of limiting the development of new capabilities, incrementally upgrading existing platforms and investing in key technologies to support future modernization efforts. The Army has established overarching equipment budget priorities and objectives to help guide our investment strategies, as described below.

Equipment Budget Priorities and Objectives

- **Enhance the Soldier for Broad Joint Mission Support.**

The centerpiece of the Army's Modernization Strategy continues to be the Soldier and the squad. The Army's objective is to facilitate incremental improvements by rapidly integrating technologies and applications that empower, protect, and unburden the Soldier and our formations, thus providing the Soldier with the right equipment, at the right time, to accomplish the assigned mission. The FY 2015 budget supports this priority by investing in technologies that provide the Soldier and squad with advanced war fighting capabilities such as enhanced weapon effects, next generation optics and night vision devices, advanced body armor and individual protection equipment, unmanned aerial systems, ground based robots, and Soldier power systems.

- **Enable Mission Command.**

The Army's objective is to facilitate the decision-making of leaders and Soldiers with networked real-time data and connectivity across the Joint Force down to the Soldier and across platforms through commodity-like procurement and rapid innovation. The

FY 2015 budget supports this priority by resourcing enhanced mission command capabilities and platform integration of network components through Operational Capability Sets, software applications for the Common Operating Environment, operations/intelligence network convergence efforts and platform integration of network components in support of Operational Capability Sets.

- **Remain Prepared for Decisive Action.**

The Army's objective is to facilitate fleet capabilities to increase lethality and mobility while optimizing survivability by managing the full suite of capabilities to enable the most stressing joint war fights. The FY 2015 budget supports this priority by resourcing the Armored Multi-Purpose Vehicle (AMPV), Paladin Integrated Management (PIM) program, Joint Light Tactical Vehicle (JLTV) and critical Aviation programs.

The Army has identified ten critical programs that synchronize equipment modernization. These critical programs are:

The Network

- **Warfighter Information Network-Tactical (WIN-T)** $1.058B ($803.1M Other Procurement, Army (OPA)/$138.3M Operation and Maintenance, Army (OMA)/$116.4M Research, Development, Test and Evaluation (RDTE)) is the Army's deployed mobile network, providing intranet and telephone service to command posts from Theater to Company level. It extends an Internet Protocol (IP) based satellite and line-of-sight communication networks, throughout the tactical force, supporting telephone, data and video. Increment 2 provides an initial on-the-move capability as well as a robust line-of-sight transmission network and greater satellite throughput down to company level for maneuver brigades and division headquarters. Increment 3 focuses on improvements in throughput for the line of sight transmission network through development of a high capacity waveform and development and delivery of an integrated set of Network Operation Tools.

- **Family of Networked Tactical Radios** $211.8M ($185.4M OPA/$26.4M RDTE) is the Army's future family of tactical radio systems providing advanced joint tactical end-to-end networking data and voice communications to dismounted troops, ground and aircraft platforms. Formally known as the Joint Tactical Radio Systems (JTRS), these multi-band/multi-mode radio capabilities leverage IP based technologies. Additionally, these radios provide network routing,

embedded information assurance and simultaneous exchange of voice, data, and video.

- **Joint Battle Command-Platform (JBC-P)** $102.3M ($97.9M OPA/$4.4M RDTE) is the next generation of Force XXI Battle Command Brigade and Below/Blue Force Tracking and is the foundation for achieving affordable information interoperability and superiority on current and future battlefields. JBC-P is the principal command and control/situation awareness (C2/SA) system for the Army and Marine Corps at the brigade level and-below.

- **Distributed Common Ground System-Army (DCGS-A)** $148.4M ($128.2M OPA/$20.2M RDTE) provides integrated Intelligence, Surveillance, Reconnaissance (ISR) Processing, Exploitation, and Dissemination (PED) of airborne and ground sensor platforms providing commanders, at all levels, access to the Defense Intelligence Information Enterprise and leverages the entire national, joint, tactical, and coalition ISR community. The DCGS-A program modernizes and procures components for fixed sites and data centers setting conditions for the Army's ISR component of the Common Operating Environment (COE). The DCGS-A hardware and software will be integrated into select ISR current force Programs of Record (POR) systems to enable networked PED capabilities.

- **Nett Warrior** $90.0M ($84.8M OPA/$5.2M RDTE) is a dismounted Soldier mission command system that provides unprecedented command and control and situational awareness capabilities for dismounted combat leaders at the squad level. The design leverages commercial technology, while incorporating operational unit mission needs, and provides assured power in austere environments. Nett Warrior is also the foundational program to converge a myriad of handheld devices onto one technology – the Handheld Computing Environment within the Common Operating Environment.

Combat Vehicles

- **Armored Multi-Purpose Vehicle (AMPV)** $92.4M (RDTE) replaces the M113 family of vehicles and provides required protection, mobility, and networking for the Army's critical enablers including mortars, medical evacuation, and command and control vehicles.

- **Paladin Integrated Management (PIM)** $330.7M ($247.4M Weapons and Tracked Combat Vehicles (WTCV)/$83.3M RDTE) is an important part of the

Army's Ground Combat Vehicle Modernization Strategy. It provides readily available low risk upgrades which enhance the responsiveness, force protection, survivability and mobility of the self-propelled howitzer fleet. The PIM replaces the current M109A6 Paladin and M992A2 Field Artillery Ammunition Supply Vehicle with a more robust platform that incorporates Bradley common drive train and suspension components in a newly designed hull.

Light Tactical Vehicles

- **Joint Light Tactical Vehicle (JLTV)** $210.3M ($164.6M OPA/$45.7M RDTE) is the centerpiece of the Army's Tactical Wheeled Vehicle modernization strategy. The Army will procure 49,099 JLTVs by 2041. The JLTV family of vehicles is being designed to provide the necessary leap in protection, performance and payload to fill the capability gap remaining between the High Mobility Multipurpose Wheeled Vehicle (HMMWV) and the Mine Resistant Ambush Protected (MRAP) family of vehicles. This multi-mission vehicle will provide protected, sustained and networked mobility for personnel and payloads across the full range of military operations. The Army anticipates selection of one manufacturer in 4th Qtr FY 2015 following a milestone decision.

Aviation[5]

- **AH-64 Apache** $972.5M ($833.2M Aircraft Procurement, Army (ACFT)/$124.1M RDTE/$15.2M OMA) is the Army's world class heavy attack helicopter for the current and future force, assigned to Attack Helicopter Battalions and Armed Reconnaissance Squadrons. The AH-64E provides the capability to simultaneously conduct close combat, mobile strike, armed reconnaissance, security and vertical maneuver missions across the full spectrum of warfare, whether required in day, night, obscured battlefield or adverse weather conditions. AH-64E enhancements consist of several technical insertions, which include level IV Unmanned Aircraft System Control, Cognitive Decision Aiding, improved drive system, composite rotor blades, new fuselage and open system architecture. Apache investment is a key facet of the Army Aviation Restructure Initiative as maturation of manned-unmanned teaming capability provides options for divestment of legacy OH-58D Kiowa Warrior Armed Aerial Scout aircraft.

[5] In accordance with guidance provided by the Deputy Secretary of Defense, the Aviation Portfolio contained in the Army Equipment Program is structured on the briefed Army Aviation Restructure Initiative.

- **UH-60 Black Hawk** $1.55B ($1.45B ACFT/$104.5M RDTE/$.45M OMA) is a utility aircraft and the Army's largest helicopter fleet. The Black Hawk fulfills its role by supporting maneuver commanders through air assault, general support, command and control and aero-medical evacuation missions. The Black Hawk is vital in supporting lift and medical evacuation missions in the current and future force theater operational plans. The Black Hawk is also critical to the homeland defense mission. With its day, night and adverse weather capability, it is a key component of the Army National Guard's forest fire, tornado, hurricane and earthquake state relief missions. As a result of state support requirements, the new Army Aviation Restructure Initiative will provide flexibility to address aging training fleet concerns and will provide the Army National Guard with an additional 111 modernized Black Hawk aircraft.

CONCLUSION

"In reviewing U.S. defense priorities, tempered by our fiscal realities; it's clear that our military must place an even greater strategic emphasis on working with our allies and partners around the world"[6]

More than 32,000 Soldiers are currently serving in Afghanistan and an additional 114,000 are either forward stationed or deployed in nearly 150 countries. Combatant commander requirements for Army units are increasing. The Army must be ready to perform the full range of military operations in support of combatant commanders—to prevent conflict, shape the environment, and when necessary win decisively—to defend the Nation and its interests at home and abroad. The Army is incredibly busy and will continue to be in the future.

Budget reductions have placed Army equipment modernization at risk through program terminations, procurement delays and program restructures. The Bipartisan Budget Act of 2013 provides greater budget certainty for FY 2015, however, reduced investment in equipment modernization continues to challenge the Army in delivering capabilities to our Soldiers now and into the future. Reduced resources impacted the Network resulting in a delay of WIN-T Increment 3 and reduced investments in tactical radio systems. While a new IFV remains a key requirement, due to significant fiscal constraints, the GCV program will conclude upon completion of the technology development phase, expected in June 2014, and will not continue further development. The Army will also divest legacy Aviation systems and will only fund the modernization and sustainment of our most capable and survivable combat-proven aircraft: the AH-64 Apache, UH-60 Black Hawk and CH-47 Chinook helicopters.

The Army's equipment modernization strategy and FY 2015 plan focuses on effectively using constrained resources for near-term requirements and tailoring our long-term investments to provide the right capabilities for Soldiers in the future. For FY 2015, the Army's equipment modernization efforts reflect the priorities of an Army with constrained resources. We will continue to focus on enhancing the Soldier for broad Joint mission support by empowering and enabling squads with improved lethality, protection and situational awareness; enabling mission command by facilitating command and control with networked real-time data and connectivity with the Joint Force; and remaining prepared for decisive action by increasing lethality and mobility, while optimizing the survivability of our vehicle fleets. However, without Congressional support, Sequestration level budget caps will return in FY 2016 and will impose additional risk on Army equipment modernization, leaving our Soldiers less prepared for future conflicts.

[6] *Munich Security Conference; As Delivered by Secretary of Defense Chuck Hagel, Munich, Germany, Saturday, February 1, 2014*

EQUIPMENT PORTFOLIO OVERVIEWS

SOLDIER

Section I. Overview

The squad (with its enablers) is the foundation of the decisive force and the cornerstone of all units. Ensuring our squads have overmatch in the future, the Soldier Portfolio focuses on equipping the individual Soldier and squad for success. Soldier and squad equipment and weapons include: individual and crew-served weapons, shoulder-fired and vehicle-mounted close combat missiles, mortars, Soldier sensors and lasers, night vision devices, body armor, Soldier clothing, individual equipment, parachutes, limited tactical communications equipment and unmanned ground systems (see figure 2). Collectively, these systems enable lethality, protection, situational awareness and mobility for the individual Soldier and squad. Operational overmatch provides Soldiers with a combined arms capability to effectively detect, recognize, acquire, engage and neutralize or destroy targets more effectively at all ranges.

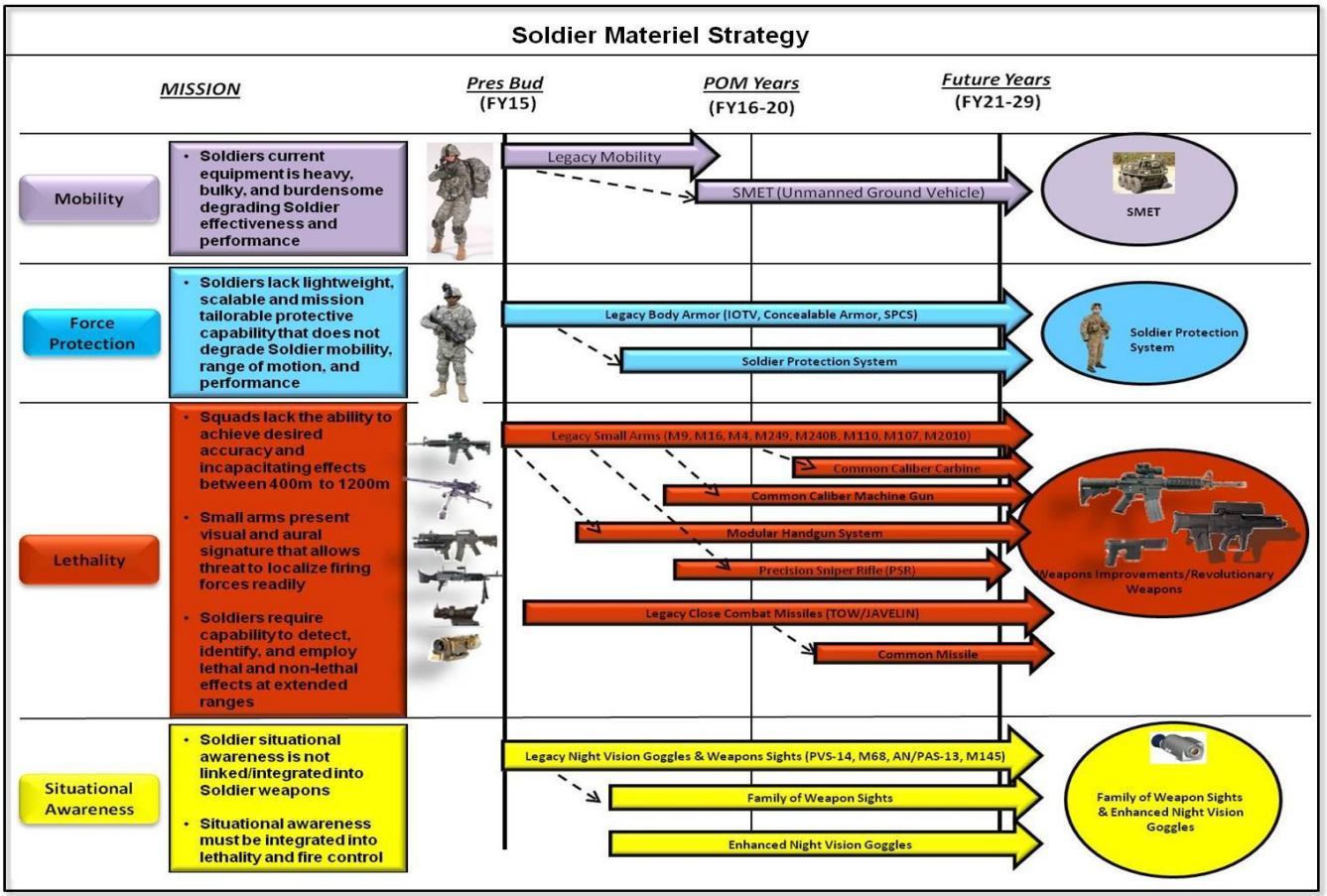

Figure 2. Soldier (see acronym glossary)

Section II. Strategy Update

To meet the readiness and modernization objectives of the Army Campaign Plan, the Soldier and Squad portfolio objectives for FY 2015 are:

- Initiate a common caliber and configuration study to inform small arms modernization decisions to determine the best caliber/configuration for desired effects/ranges, or allow for trades as appropriate.
- Support the extended Engineering and Manufacturing Development (EMD) phase of the XM-25, Counter Defilade Target Engagement System which is the next step in employing this revolutionary Soldier-level precision weapon system. The intent of extending the EMD phase is to improve system lethality and reduce system weight.
- Continue the fielding of Enhanced Night Vision Devices to deploying Special Operation Forces (SOF) and Brigade Combat Teams (BCT).
- Continue replacement of the conventional force parachute inventory with the Advanced Tactical Parachute System.
- Continue to improve Soldier/Squad mobility and load reduction efforts through research and development in body armor, weapons and selected energy solutions to extend dismounted Soldiers' range and endurance. Additionally, in the future, the Soldier Portfolio will include unmanned ground systems (UGS). One of the principal UGS applications will be the development of the Squad Multipurpose Equipment Transport (SMET).
- Provide the Fire Resistant Environmental Ensemble to aircrews improving their protection and comfort.

Section III. Key Soldier and Squad Portfolio Accomplishments (FY 2013/2014)

- Reduced Soldier load in Afghanistan by replacing Outer Tactical Vests with plate carriers (3.2 pounds). Additionally, the weight of the 81mm Mortar was reduced by 20 pounds and the 60mm Mortar was reduced by 8.8 pounds.
- Provided Soldiers with the best possible carbine by procuring improved M4A1s (rather than M4 Carbines) and converting existing M4 Carbines into improved M4A1s. Capability improvements include a heavier barrel for greater barrel life, fully automatic trigger and selector switch, ambidextrous controls, improved sustained rate of fire, a consistent trigger pull and improved ergonomics and handling characteristics.
- Continued procuring the following small arms weapon initiatives with:
  - 48,000 M4A1 Carbines from new production to support the industrial base, while procuring the parts to convert M4s to M4A1s.

  - 11,191 kits to convert .50 caliber machine guns to enhanced .50 caliber Heavy Machine Gun (HMG) to eliminate the need to set head space and timing.
- Limited procurement and increased research and development of Soldier night vision equipment for current and future contingencies enhancing Soldier lethality and situational awareness across the full range of missions:
  - 2,195 Sniper Night Sights for SOF, BCTs and Battlefield Surveillance Brigades (BfSBs).
  - 27,765 Thermal Weapon Sights for deploying BCTs, Combat Support (CS) and SOF units.
  - 1,245 Laser Target Locators for BCTs.
  - 3,040 Small Tactical Optical Rifle-Mounted (STORM) (micro laser range finders) for dismounted infantry and scouts in BCTs.
  - 12,974 Enhanced Night Vision Goggles for deploying BCTs and SOF units.

Section IV. Key FY 2015 Soldier and Squad Portfolio Investments

The FY 2015 Soldier investments total $843.7M ($134.9M Weapons and Tracked Combat Vehicles (WTCV)/$76.5M Research, Development, Test and Evaluation (RDTE)/$329.1M Other Procurement, Army (OPA)/$167.7M Missile Procurement, Army (MSLS)/$132.3M Operation & Maintenance, Army (OMA)/$3.2M Procurement, Ammunition (AMMO)). Includes small arms (individual and crew-served weapons), night vision, Soldier sensors, body armor, individual networked command and control, Soldier clothing and individual equipment and parachutes. Specific investments in this portfolio include:

- $134.4M (OPA) procures 9,030 Enhanced Night Vision Goggles for deploying SOF units and BCTs.
- $32.8M (WTCV) continues small arms investment consisting of M4A1 procurement which supports the industrial base; converting M4s to M4A1s; and procuring carbine accessories (Close Combat Optics, M4 Rails, Close Quarters Battle Kits, cleaning kits and magazines). The M4A1 provides Soldiers with close quarters capability at extended ranges with accurate lethal fire.
- $26.5M (OPA) procures 508 Laser Target Locators.
- $18.5M (OPA) procures 1904 STORM (micro laser range finders).
- $26.0M[7] (OPA) fields new personnel parachutes and accessories for three BCTs and SOF units.
- $28.4M (WTCV) to buy 8,959 M320A1 40MM Grenade Launchers.

[7] Funding amount only for personnel parachutes; cargo parachutes addressed in Sustainment (Service Support) Portfolio.

- $8.4M (WTCV) for Common Remotely Operated Weapon Station (CROWS) supports upgrades to existing systems, fielding and training.
- $25.3M (WTCV) to buy 907 Quick Change Barrel (QCB) Kits to convert M2 (.50 Cal) machine guns to the enhanced .50 Cal HMG configuration by incorporating fixed headspace and timing.
- $4.2M (RDTE) to begin development of Lightweight Command Launch Unit (CLU) to lighten Soldier Load.

MISSION COMMAND

Section I. Overview

LandWarNet (LWN) 2020 And Beyond is the Army's end-to-end network that supports all Army mission areas and is the Army's portion of the Joint Information Environment (JIE). The Mission Command portfolio resources the operational segment of this network which supports Army, Joint, Coalition and Interagency operations. This portfolio consists of four capability areas: Transport, Applications, Enablers and Integration (see figure 3). The primary Transport programs are Warfighter Information Network – Tactical (WIN-T) and the Family of Networked Tactical Radios. The key Application programs are Tactical Mission Command (TMC), Joint Battle Command – Platform (JBC-P), Global Combat Support System – Army (GCSS-A) and migration to the Common Operating Environment (COE). The key Network Enabler programs are Communication Security (COMSEC) with Key Management Infrastructure and Power Generation. The Network Integration Evaluation (NIE) is the principal integration effort.

The end state is a coherent, intuitive network of sensors, Soldiers, platforms and command posts linked by a robust transport network with an enabling suite of command and control applications and the necessary Network Operational (NetOps) tools providing our Soldiers improved interfaces to manage and defend the network. Key characteristics of the objective network are: intuitive user interfaces and ease of use; seamless Unit Task Reorganization (UTR); fully integrated horizontally and vertically; operational resilience; and a single converged transport across all functional capabilities.

The Army continues progress towards building the COE. The COE is a set of agreed upon standards, software components and computing technologies that will enable the Army to produce and field capability more rapidly, reducing costs for development, test and sustainment. Successful COE development has the potential to provide the Army with a leap ahead in how we provide network security and how the Army meets its "big data" challenge.

The network supports both the operating and generating force, shares information across levels of classification and with the implementation of the COE, enables efficiencies, effectiveness and information security. The network is the combat multiplier for our globally responsive and regionally engaged Army.

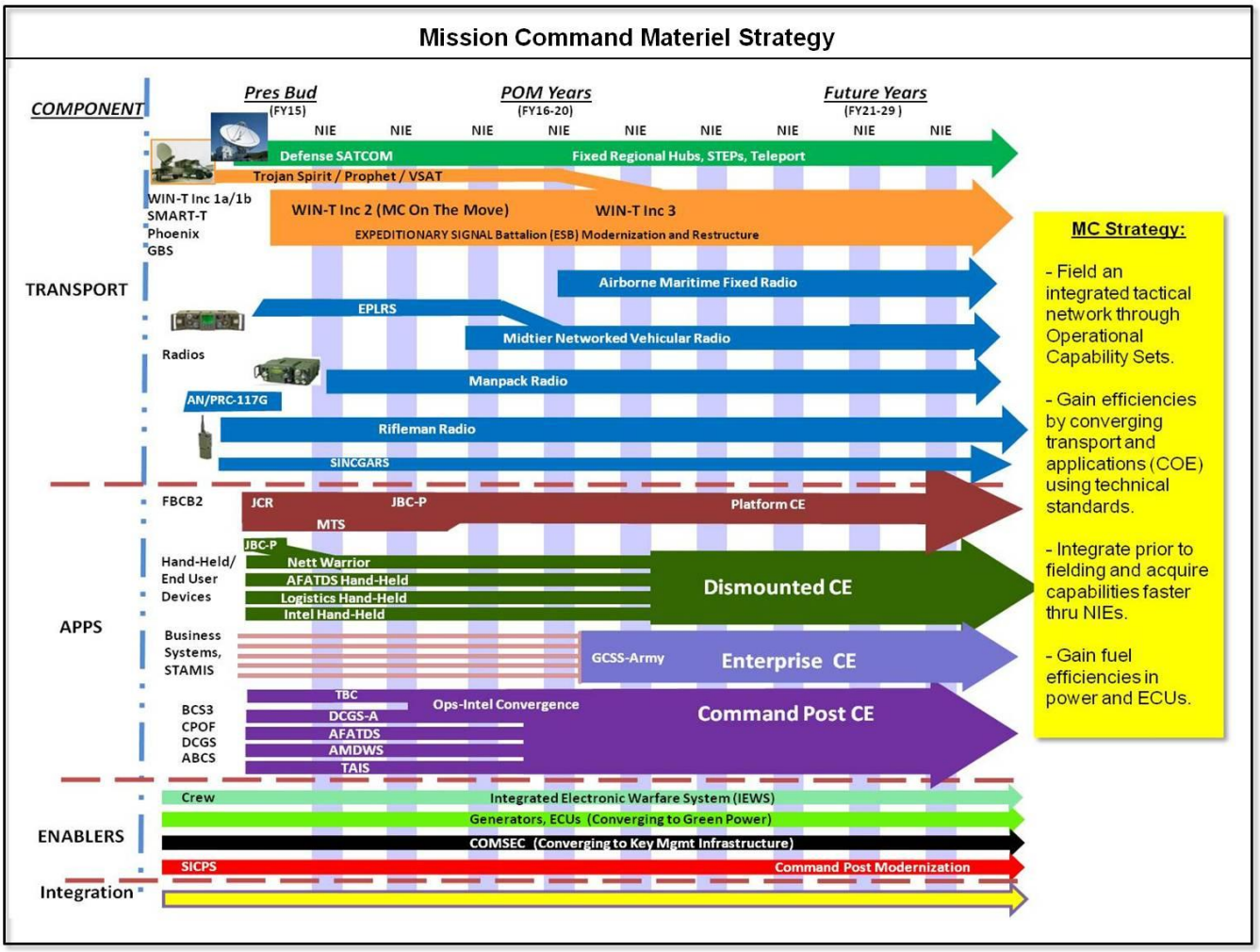

Figure 3. Mission Command (see acronym glossary)

Section II. Strategy Update

Declining budgets impacted the Mission Command portfolio. To support an effective and efficient network with fewer resources, several programmatic delays and accepted risks were adopted. The goal is to continue fielding critical capabilities in Operational Capability Sets to Brigade Combat Teams; continue with a leaner NIE focused on the most critical gaps; take risk by delaying the WIN-T Increment 3 aerial layer and an improved radio; but complete the highband waveform and a common NetOps tool for integration across the network. Additional risk was accepted by delaying a wideband mid tier radio for both the ground and aerial forces and delaying the development of an electronic warfare planning tool and electronic warfare offensive capability.

Section III. Key Mission Command Portfolio Accomplishments (FY 2013/2014)

- Fielding of Operational Capability Set 13 (CS13) to five Brigade Combat Teams and two Division headquarters and fielding Operational Capability Set 14 (CS14) to four Brigade Combat teams and two Division Headquarters. CS13/14 provides the integrated networking on-the-move capability through networking radios, satellite systems, software applications and smart phone like devices developed as a result of Soldier-driven evaluations during the NIE process.
- In FY 2013 we began the modification work order to upgrade all WIN-T Increment 1 and Increment 1b units providing enhanced networking at the halt capabilities by introducing the Net Centric Waveform modem and the colorless core for interoperability. As of April 2014 we have completed 27 percent of the modifications.
- Conducted the Follow-on Operational Test and Evaluation (FOTE) for WIN-T Increment 2, providing an initial on-the-move capability and extending the network to the company level. Fielded initial Increment 2 to support CS13 Units.
- In FY 2014, under WIN-T Increment 3, completed development of the Highband Networking Waveform (HNW) 3.0 which supports the Joint Aerial Layer Network (JALN).
- Conducted the Initial Operational Test and Evaluation (IOTE) for JBC-P providing increased mission command capability and more accurate situational awareness for joint forces.
- Executed fielding of Rifleman Radio (RR) and initial fielding of Handheld, Manpack and Small Form Fit (HMS) Manpack in support of CS13. Conducted follow on NIE assessments to support additional Low Rate Initial Production and fielding of HMS Manpack and transition of RR to a secret and below capability.
- Continued fielding of Advanced Medium Mobile Power Sources (AMMPS), Improved Environmental Control Units (IECUs) and Power Distribution Illumination System Electrical (PDISE) systems to combat outposts and village stability platforms throughout Afghanistan, with 438 AMMPS, 400 IECUs and 408 PDISE systems fielded as of October 2013. Fielding of these systems to Afghanistan concluded in December 2013. AMMPS generators replace Tactical Quiet Generators, are Environmental Protection Agency (EPA) compliant and provide the DOD a 21 percent improvement fleet-wide in fuel efficiency.
- Completed development of Command Post of the Future (CPOF) version 7.0 that supports continuous operations in all network environments and sets conditions for the Command Post Computing Environment (CP CE) which is part of the COE. Conducted an operational evaluation at NIE 14.2 in support of a fielding decision. Beginning with fielding in FY 2014, CPOF V 7.0 provides the ability to operate in disconnected, intermittent and latent network environments and

automatically re-synchronizes offline data changes when the network becomes available.

- Continued development of the CP CE under the COE, which provides a significantly enhanced Common Operating Picture (COP) and collaboration through a common web interface on a consolidated Mission Command workstation for intelligence, fires, logistics and airspace management tools and applications in a more intuitive and cost effective manner. This COE effort was formalized by assigning lead responsibilities for various Computing Environments (CEs), including the CP CE as well as the Mounted and Mobile/Hand Held CEs.
- Continued twice annual NIE events that test program of record systems, validate integration of the Operational Capability Sets and demonstrate new technologies in accordance with the Army's Agile Process standardized operating procedure. During NIE 13.1, 13.2 and 14.1 conducted 13 Systems Under Test (SUTs), 40 Systems Under Evaluation (SUEs) and 26 Demonstrations. Conducted planning for NIE 14.2 which partners with Joint Exercise Bold Quest to integrate joint forces and capabilities into the evaluation.

Section IV. Key FY 2015 Mission Command Investments

The FY 2015 Mission Command investments total $2.7B ($2.0B OPA/$421.7M RDTE/$306.1M OMA) and include communications transport, applications and network services capabilities. Specific investments in this portfolio include:

- $211.7M (OPA) procures WIN-T Increment 1b, upgrading 31 Brigades and provides engineering and integration for the Regional Hub Nodes.
- $460.7M (OPA) procures WIN-T Increment 2, equipping one BCT, nine battalions realigned to BCTs as part of force structure changes, one Division headquarters and fields and supports previously procured assets.
- $113.2M (RDTE) continues the development of WIN-T Increment 3 integrated NetOps. Extends the aerial layer and improved transmission radio to beyond the Program Objective Memorandum (POM).
- $9.7M (RDTE) supports Mid-Tier Networking Vehicular Radio (MNVR) systems testing to support future production and fielding decisions/timelines.
- $140.5M (OPA) procures integrates and fields 438 HMS Manpack radio systems for three Operational Capability Set BCTs in FY 2016.
- $35.2M (OPA) procures 2,236 RR to support Nett Warrior fielding to meet dismounted leader command and control/situation awareness networking requirements for FY 2016 Operational Capability Set BCTs.
- $97.9M (OPA) procures JBC-P for BCTs and Brigades to include replacement of Enhanced Position Location and Reporting System (EPLRS) in BCTs.

- $4.4M (RDTE) supports implementation of Mounted Computing Environment (MCE) as part of COE.
- $50.9M (RDTE) resources development efforts for Command Post COE server infrastructure/common software, interoperability, COE mission command application migration to widgets, operations/intelligence convergence and the rich collaboration web client/command web capability.
- $47.6M (OPA) provides continued procurement of AMMPS.
- $105.3M (RDTE) resources the size and scope of the two annual NIEs.
- $4.5M (RDTE) and $118.6M (OPA) continues training and fielding of Global Combat Support System – Army (GCSS-A) Wave 1 to all Supply Support Activities Army wide; finishes development and begins fielding of GCSS-A Wave 2 consisting of unit supply, ground maintenance and property book functionality.

INTELLIGENCE

Section I. Overview

The Intelligence Portfolio incorporates key components of intelligence collection, exploitation and analysis across four primary layers: Foundation, Terrestrial, Aerial and Space. The goal of the portfolio is to fully integrate the core intelligence capabilities, including Signals Intelligence (SIGINT) collection, Counterintelligence (CI)/Human Intelligence (HUMINT) interrogation and source operations and Geospatial Intelligence (GEOINT), including Full Motion Video (FMV). The portfolio also includes secure intelligence communications architecture, synchronized and integrated with the Army's network initiatives. This architecture supports all aspects of processing, exploitation, analysis and dissemination of intelligence to meet the readiness and modernization objectives of the Army Campaign Plan.

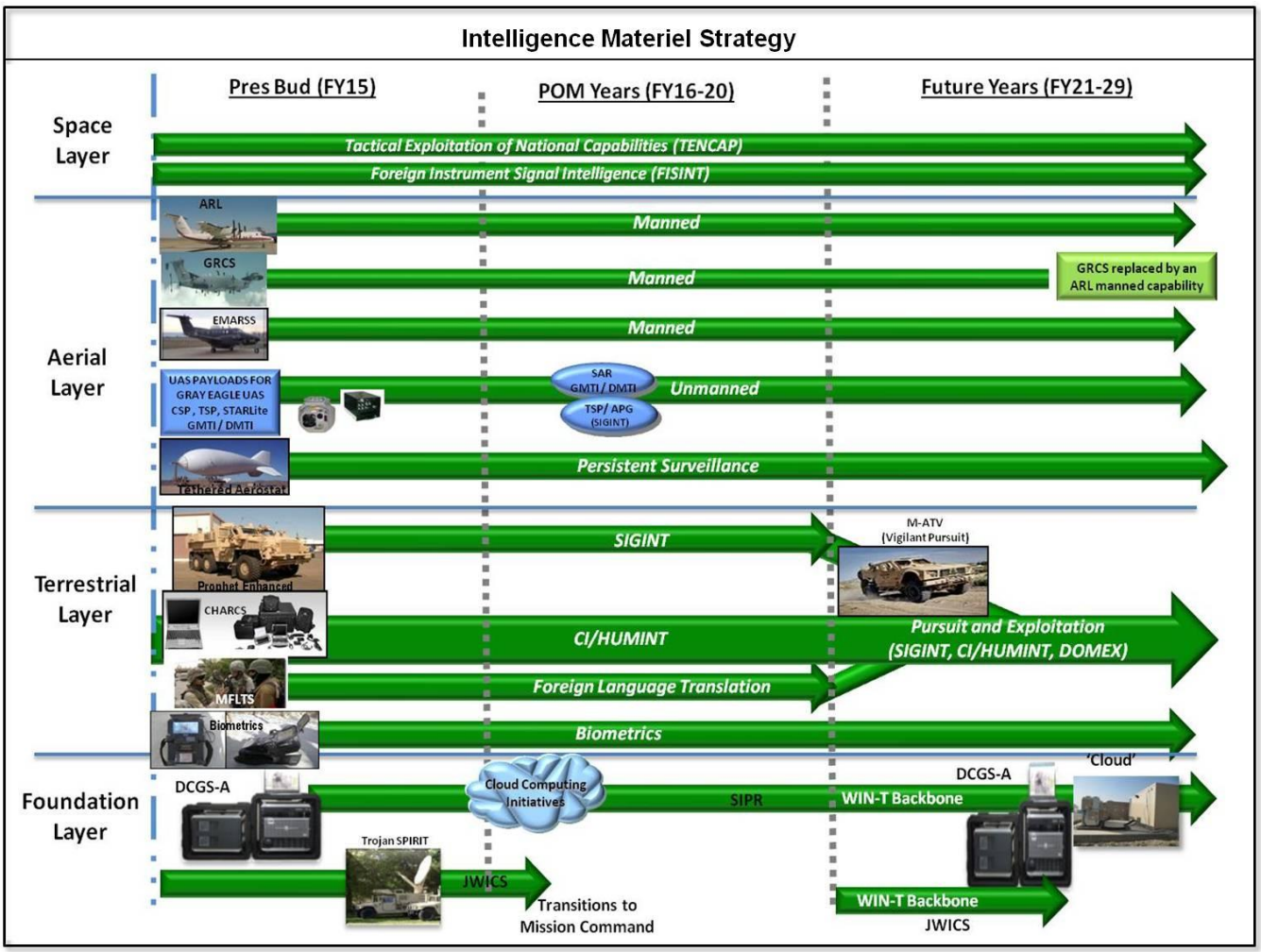

Figure 4. Intelligence (see acronym glossary)

As depicted in figure 4, the Intelligence portfolio provides essential modernization to keep pace with the evolving threat and rapid technological advancements.

Section II. Strategy update

Based on fiscal constraints, the Intelligence Portfolio procurement strategy has been modified to take minimal risk in aerial assets, moderate risk through reduced fielding of unmanned sensors for the MQ-1 Gray Eagle Unmanned Aircraft System (UAS) and increased risk with the Distributed Common Ground System – Army (DCGS-A) through reduced software releases. The Army's manned Aerial Intelligence, Surveillance and Reconnaissance (ISR) capabilities have been maintained and aligned with the Army's Military Intelligence (MI) 2020 strategy. The Tactical SIGINT Payload (TSP) and Common Sensor Payload (CSP) FMV High Definition (HD) capabilities for the MQ-1 Gray Eagle UAS capability have been reduced to only provide to the Special Operations Forces (SOF) and Aerial Exploitation Battalions (AEB). If required, Aerial Unmanned SIGINT support for the Combat Aviation Brigades (CAB) will be provided via Concept of Operations (CONOPS) through the AEBs. DCGS-A training and fielding has been extended from three to five years, software releases from 12-18 months to 36-48 months and hardware refresh to five plus years.

Section III. Portfolio Accomplishments (FY 2013/2014)

- Fielded and trained Increment 1, Release 1 of the Army's advanced analytics capability, DCGS-A to units in theater and next deployers in FY 2013.
- Hunte received a Full Materiel Release (FMR) in 3rd Qtr FY 2013 and is being fielded to the force on the Secret Internet Protocol Router (SIPR) network. Hunte is a software baseline (V3.1.7) that provides enhanced ISR software Processing, Exploitation and Dissemination (PED) capabilities and incorporates ease of use aspects. Hunte is the foundation for software that will be tested in 3rd Qtr FY 2015.
- DCGS-A began Operations/Intelligence Convergence development for the Command Post Computing Environment (CP CE) with incremental assessments at the Network Integration Evaluation events in FY 2013/2014.
- DCGS-A began the fielding of the GEOINT Workstation in FY 2014 which integrated Geospatial Intelligence and Topographic engineer capabilities in a reduced footprint to initiate displacement of the Digital Topographical Support System – Light (DTSS-L).
- Achieved Milestone B for the Army's manned Aerial ISR capability, the Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) program in FY 2013.

- Entered the Engineering, Manufacturing and Design (EMD) phase with contract award for four EMD EMARSS aircraft in FY 2013.
- Continued development and initial testing of the four EMD EMARSS aircraft in preparation for Milestone C in FY 2014.
- Testing EMD EMARSS aircraft (systems #1, #2, #3) is ongoing with testing of EMD #4 scheduled for March 2014. Scheduled delivery date for all four EMD systems is April 2014.
- Completed the integration of the Enhanced Situational Awareness (ESA) and High Band Communications Intelligence (HBC) capabilities for the Army's airborne SIGINT and Electronic Intelligence (ELINT), GUARDRAIL Common Sensor (GRCS) fleet in FY 2013.
- Continued to prepare the GRCS program for the FMV testing and integration on 14 RC-12X GRCS systems in FY 2014.
- Provided interoperable data links and workstation architecture software to improve workstation performance for the Army's manned multi-intelligence Airborne ISR system, Airborne Reconnaissance – Low (ARL) in FY 2013.
- Maintained and upgraded system software, system payloads and workstations to sustain ARL ISR collection capability and relevance in FY 2014.
- Began preparation for ARL-Enhanced (ARL-E) and will leverage Quick Reaction Capabilities (QRC) currently supporting Operation Enduring Freedom (OEF) while increasing multi-intelligence capabilities and system modularity in FY 2014.
- Equipped the MQ-1 Gray Eagle UAS platform with CSP and the Small Tactical Radar-Lightweight (STARLite) sensors in FY 2013 and FY 2014. CSP is a turreted, multi-sensor Electro-Optic/Infrared/Laser Designator (EO/IR/LD) system that provides day/night FMV imaging. STARLite is a Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) capability that provides imagery through weather and detects moving target indicators. Production has commenced on HD CSP, an upgrade that will be fielded to the US Army SOF and AEBs. Development provided software to improve STARLite sensor processing and exploitation and TSP Block I and test activities. TSP is an Aerial SIGINT collection sensor under development for the MQ-1 Gray Eagle UAS that detects radio frequency emitters.
- Fielded the Army's ground SIGINT collection capability, Prophet Enhanced, a more modular and vehicle-agnostic version to BCTs and Battlefield Surveillance Brigades (BfSBs) operating in combat theaters in FY 2013 and FY 2014.

Section IV. Key FY 2015 Intelligence Investments

The FY 2015 Intelligence portfolio investments total $691M ($358M Aircraft Procurement, Army (ACFT)/$124M RDTE/$209M OPA) and include the key components of ISR tasking, collection, exploitation and analysis. Specific investments in this portfolio include:

- $148.4M ($20.2M RDTE/$128.2M OPA) funds DCGS-A development and procurement to modernize and procure components for the DCGS-A systems and fixed sites setting conditions for the Army's ISR component of the COE. DCGS-A hardware and software will be integrated into select ISR current force platforms to network enable and provide enhanced ISR PED capabilities. DCGS-A RDTE provides development and testing of DCGS-A multi-intelligence capable software baselines and the CP CE as it fits into the Army's overarching COE construct. Additionally, development provides for iterative software releases that increase the PED the Army requires and continue critical updates and overarching intelligence processing capability to the Army through the cloud computing capability. The approach will achieve information technology efficiencies through the alignment with Intelligence Community Information Technology Environment. DCGS-A procurement provides 1,362 DCGS-A Portable Multi-Function Workstations, 119 GEOINT Workstations, 135 Intelligence Fusion Servers and Commercial off the Shelf (COTS) software licenses to enhance performance of fielded systems and supports integration of Intelligence Community investments. These systems will support one Corps, three Divisions, 12 BCTs, two SOF units, four Maneuver Enhancement Brigades, four CABs, three Fires Brigades and other Combat Support (CS) and Combat Service Support (CSS) units entering the force generation available pool.
- $202.8M ($17.7M RDTE/$185.1M ACFT) funds development and procurement for EMARSS to provide a real-time, networked multi-sensor intelligence collection capability throughout the joint battle space, with focus on support to BCT operations. Development provided sensor related Engineering Change Proposals (ECPs) and contractor subsystem support for EMARSS and a long range radar prototype to replace the current Airborne Reconnaissance Low (ARL) Phoenix Eye to meet requirements for increased performance for ARL-E. Funding provides design of Communications Intelligence (COMINT) Direction Finding (DF) antenna array for integration on the replacement aircraft for ARL-E. EMARSS procurement provides Government Furnished Equipment (GFE), training support, initial spares, aircraft integration for Quick QRC to Program of Record (PoR) modifications, Mission Equipment Packages (MEP)/PED for QRC to PoR modifications and EMARSS Maintenance Vehicles (EMV).
- $14.2M (ACFT) provides FMV integration, fielding and training for GRCS.

- $131.9M (ACFT) supports funding for the ARL-E through procurement of three DHC-8 300 aircraft, DCGS-A workstations, communications equipment, COMINT subsystems and radar subsystems. Funding also supports non-recurring engineering, integration and test efforts for the first system.
- $45.1M ($18.2M RDTE/$26.9M ACFT) for UAS ISR Payloads, providing the Gray Eagle platform with day and night capability to collect and display FMV continuous imagery, wide-area all-weather search capability, persistent stare, GMTI and SAR capabilities. Provides development of UAS payloads and procurement to retrofit CSP EO/IR/LD with HD sensors, two TSP sensors, initial spares, contractor logistics support, integration and fielding support to SOF and AEBs. Provides first year of fielding support to CSP and STARLite. RDTE facilitates continued improvements to CSP and STARLite and baseline development of TSP.
- $60.3M ($4.4M RDTE/$55.9M OPA) for Prophet Ground SIGINT. Development provides product upgrades for next-generation signals for pre-planned product improvement requirements for Prophet Enhanced sensors. Modernizes 11 Prophet Enhanced sensors for training and fielding to BCTs and BfSBs. Funding will also procure eight next generation receivers and hardware/software improvements to keep pace with rapidly changing threat technology, tactics, techniques and procedures.

MANEUVER

Section I. Overview

The Ground Movement and Maneuver Portfolio's goal is to develop and field an integrated combined team, linked by the network and capable of dominating across the range of missions today and into the future. Key to this effort is our Combat Vehicle Modernization Strategy which transforms the capability of the Brigade Combat Team. The strategy as depicted in figure 5, replaces the M113 Family of Vehicles with an Armored-Multi Purpose Vehicle (AMPV), and also improves the Abrams tank; the Bradley Cavalry, Fire Support and Engineer Vehicles; and the Stryker by increasing protection, mobility and network integration, while deferring development of a new Fighting Vehicle.

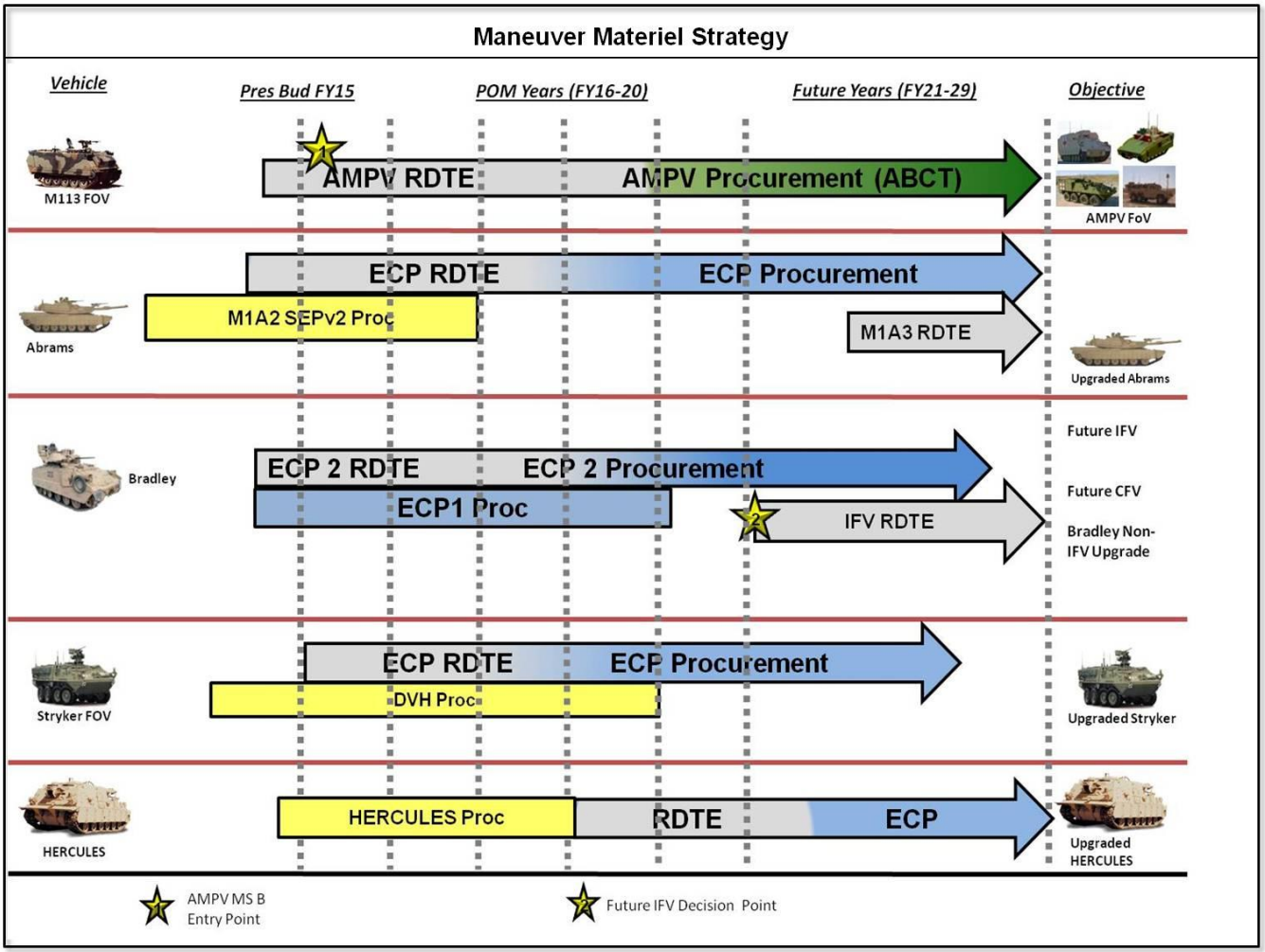

Figure 5. Maneuver (see acronym glossary)

Section II. Strategy Update

Based on current fiscal constraints, the Combat Vehicle Portfolio Strategy modified its strategy by deferring the Ground Combat Vehicle (GCV) until resources are available to focus funding on the Army's proven platforms (Abrams, Bradley and Stryker) and the development of the AMPV. This strategy keeps the AMPV program funded to the Army's cost position to insure the AMPV is fielded to the force as rapidly as possible. Proven platforms will receive much needed Engineering Change Proposals (ECP) to regain lost Size, Weight, Power and Cooling (SWaP-C) and integrate the network.

Section III. Portfolio Accomplishments (FY 2013/2014)

- The Army approved the procurement of a third brigade set of Double V-Hull (DVH) Strykers. The DVH procurement leverages the DVH exchange program that converts flat bottom hull Strykers into DVHs at a significant cost savings to the Army. The DVH significantly improves crew protection in Improvised Explosive Device (IED) environments.

- The AMPV program continues to move forward and released a Request for Proposal (RFP) to industry to gain feedback and bring the Army closer to replacing the venerable M113 Family of Vehicles. The program will enter the Engineering and Manufacturing Development Phase (EMD) beginning in FY 2015.

Section IV. Key FY 2015 Maneuver Investments

The FY 2015 Ground Movement and Maneuver investments total $1.3B ($821.7M WTCV/$473.0M RDTE/$0.6M OMA) including the AMPV to replace the legacy M113 family of vehicles. In addition to developing the critical replacement to the M113, the Army is restoring capabilities to the Army's proven combat platforms such as Abrams, Bradley and Stryker. Specific investments in this portfolio include:

- $92.4M (RDTE) funds AMPV. The RFP for EMD phase has been released and a contract award is planned for 1st Qtr FY 2015. The AMPV program is focused on replacing the legacy M113s within the Armored Brigade Combat Team (ABCT) first with a future decision point for replacement of the remaining echelon above brigade M113s in the Army. Maintaining the program schedule to replace the legacy M113 fleet is critical to meeting future operational needs exposed by the operationally obsolete M113 fleet.

- $199.9M ($107.5M WTCV/$92.4M RDTE) completes Bradley fielding to the Army National Guard (ARNG) and continues production of ECP 1 for suspension and track upgrades. RDTE funds ECP 2 development, focused on network integration and enabling SWaP-C improvements for the Bradley A3 fleet.
- $90.2M (RDTE) funds a Stryker ECP that addresses future network integration, mobility and SWaP-C. The Stryker ECP provides growth in electrical, mechanical and engine power.
- $424.8M (WTCV) funds Stryker ECP and a 3rd Double-V-Hull (DVH) brigade through the Stryker Exchange Program. DVH provides enhanced underbelly protection against IED threat environments.
- $349.6M ($237.0M WTCV/$112.5M RDTE) WTCV continues with Armor production, safety modifications, training devices and operational field modifications. RDTE funds the Technology Development phase for Abrams ECP improvements.

AVIATION

Section I. Overview

The Aviation portfolio consists of core aviation programs, including utility and cargo, fixed wing mission profiles, reconnaissance/attack, Intelligence, Surveillance and Reconnaissance (ISR) and Unmanned Aircraft Systems (UAS) which meet readiness and modernization objectives of the Army Campaign Plan.

As depicted in figures 6, 7 and 8, key objectives and decision points are:

- Fully fund the Apache AH-64E (Apache Block III) program.
- Continue to fully fund Gray Eagle UAS procurement through FY 2015.
- Fully fund UH-60 production meeting 4th Infantry Division (ID) Combat Aviation Brigade (CAB) growth and Special Operations increased aircraft requirement.
- Fully funds remaining aviation equipping requirements for the 4th ID CAB.

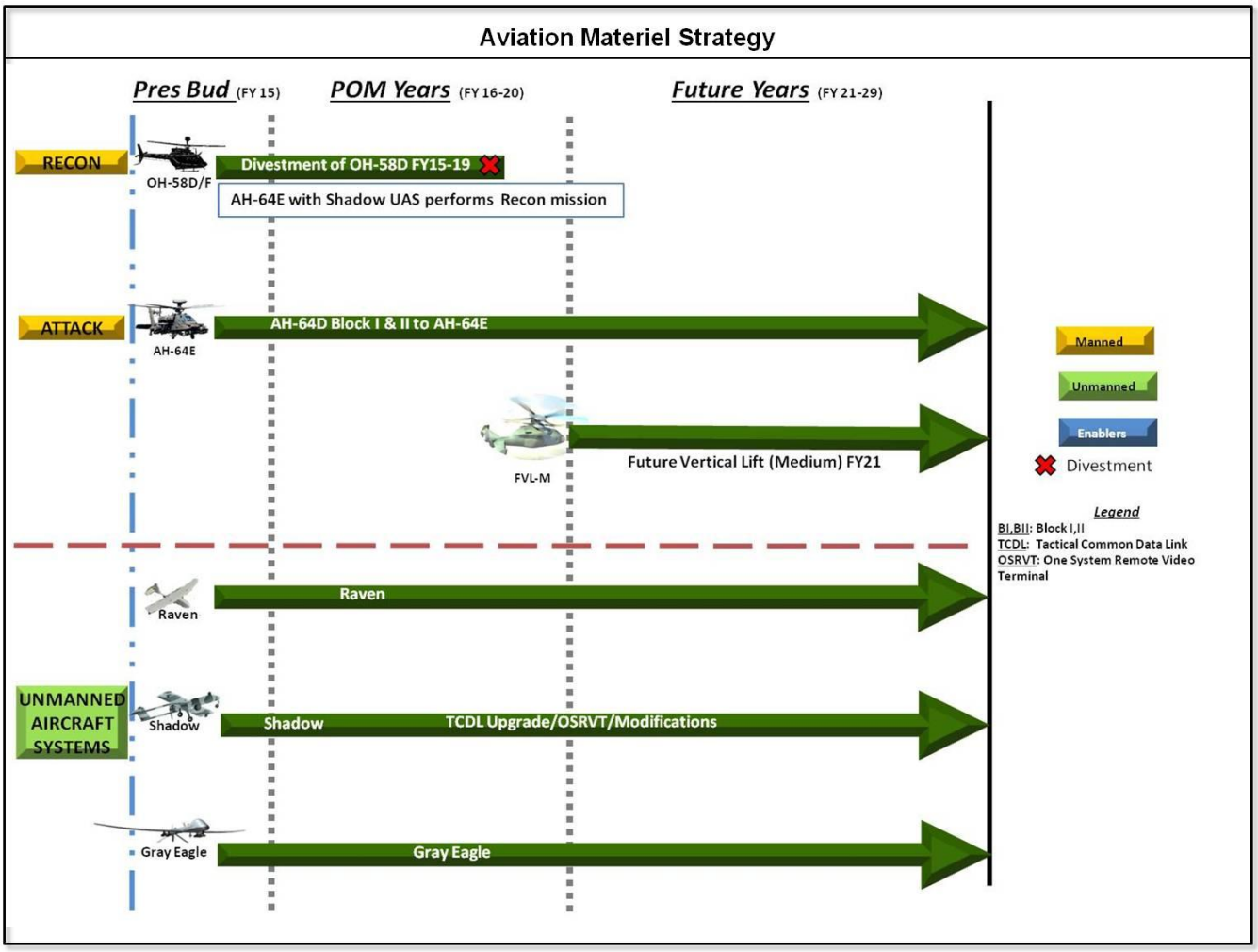

Figure 6. Aviation (see acronym glossary)

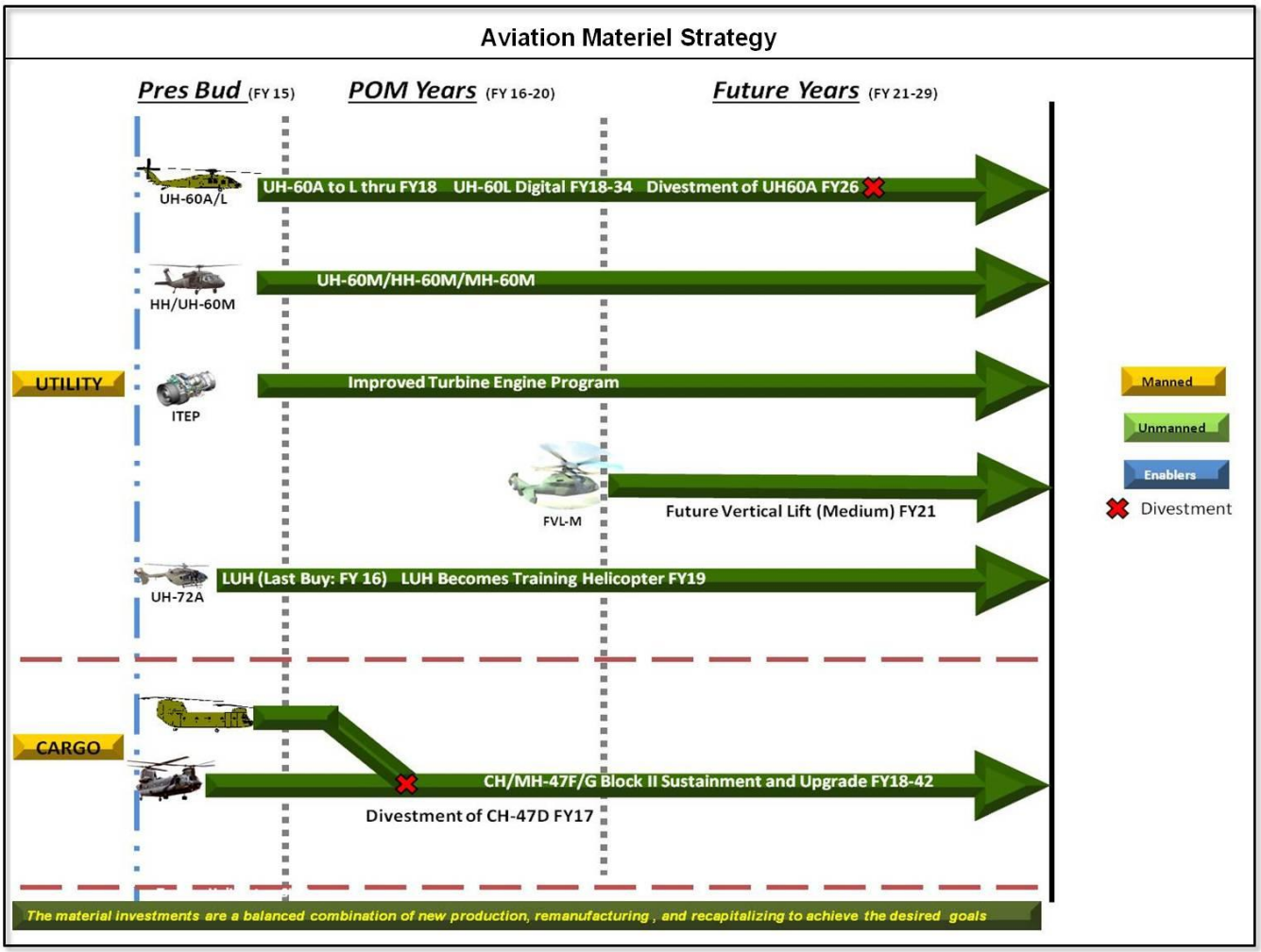

Figure 7. Aviation (see acronym glossary)

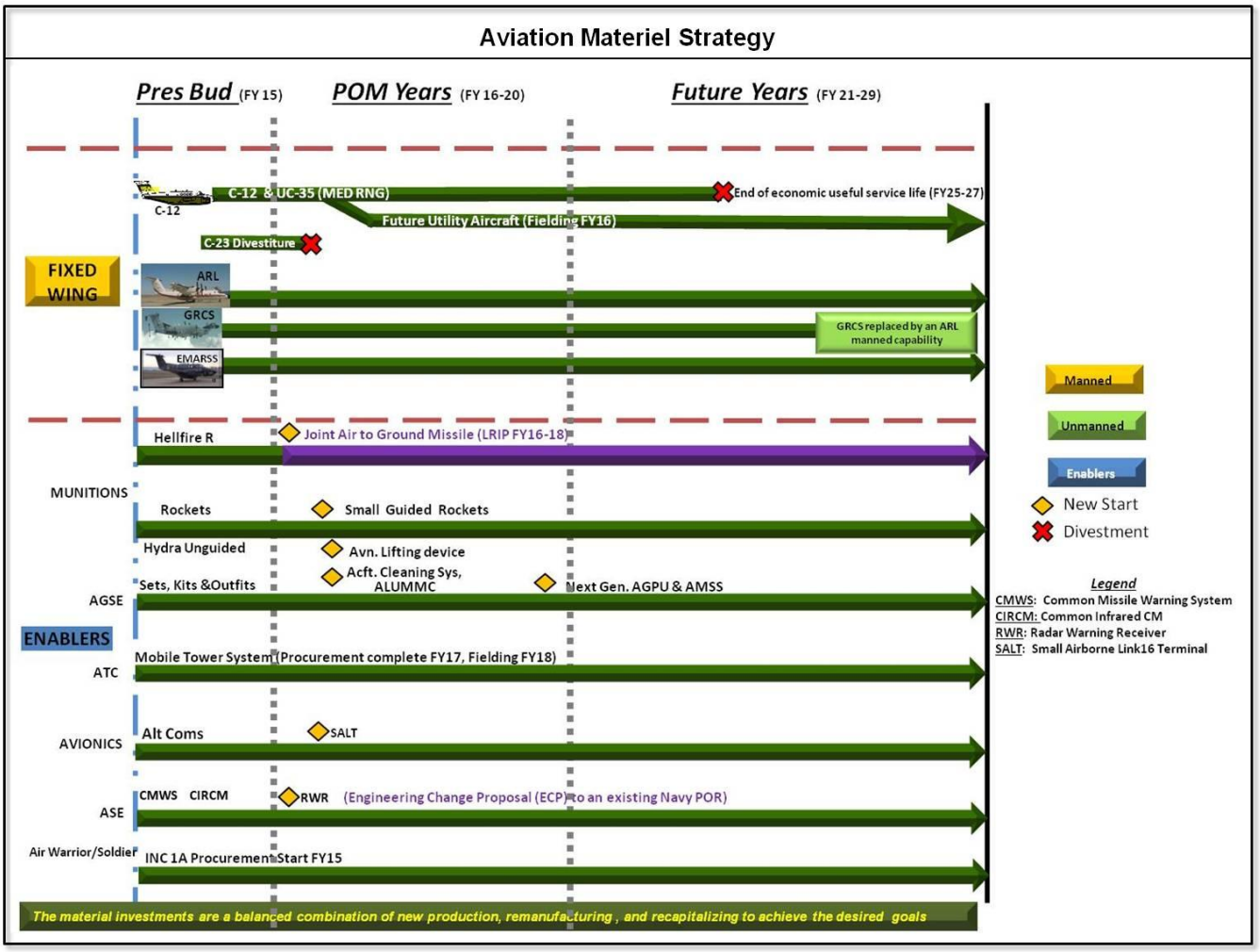

Figure 8. Aviation (see acronym glossary)

Section II. Strategy Update

As the Army downsizes and prioritizes incremental improvements in an environment of competing priorities and limited resources, it is necessary to restructure Army Aviation. The equipping strategy contained in the Army Aviation Restructure Initiative is designed to retain its most modernized aircraft while divesting all models of its legacy single engine aircraft in the conventional force. The plan equips its reconnaissance and attack units with the AH-64E Apache and equips the training base with the UH-72A Lakota in lieu of the legacy Kiowa aircraft. All components will receive the modernized Black Hawk UH/HH-60M, UH-60L digital cockpit aircraft and the CH-47F Chinook to fill their lift and cargo aviation structure requirements. The restructure places all AH-64 Apache requirements in the Active Component. The restructure also allows the Reserve Component to retain a 12 aviation brigade structure, retain its entire 12 aviation brigade Chinook requirement and places an additional 111 Black Hawks, above

current authorizations, in the Army National Guard (ARNG), further increasing lift and transport capability in support of combat and Homeland Defense missions.

Section III. Portfolio Accomplishments (FY 2013/2014)

- Continued induction of Apache AH-64D Block I helicopters for remanufacture to AH-64E (Apache Block III).
- Continued equipping of the Advanced Threat Infrared Countermeasures (ATIRCM) on the CH-47D/F helicopters.
- Completed Air Warrior System procurements in FY 2013; will complete system fielding in FY 2014.
- Fielded Medical Evacuation (MEDEVAC) helicopters (HH-60M) to four General Support Aviation Battalions supporting Army and Department of Defense leadership emphasis on increased MEDEVAC capability.
- Procured 15 MQ-1C Gray Eagle Unmanned Aircraft and the associated ground support equipment totaling $518.1M. Gray Eagle missions include Reconnaissance, Surveillance, Target Acquisition, Armed Reconnaissance, Signals Intelligence, Communications Relay and Battle Damage Assessment.
  - Completed fielding Eagle Company to the 3rd ID CAB which will deploy in FY 2014.
  - At end state, the Army fields 15 Gray Eagle Companies; two assigned to the Special Operations Command; two assigned to Intelligence and Security Command, one company assigned to each active component division headquarters (ten total) and one company assigned to the National Training Center.
- Procured Shadow modifications including seven Tactical Common Data Link (TCDL) Retrofit Kits, seven launchers, nine Universal Mission Simulators, 80 New Mission Computers and 14 Signals Intelligence (SIGINT) payloads. New Equipment Training for TCDL Retrofits continues through FY 2014.
- Focused rotary wing aircraft modernization on the UH-60 (Black Hawk), CH-47 (Chinook) and AH-64 (Apache) helicopters:
  - Procured 111 UH-60M (utility mission) and 48 HH-60M (MEDEVAC mission) helicopters. The M model provides a digitized cockpit, new engine for improved lift and range and wide-chord rotor blades. By the end of FY 2014, the Army will have equipped four Air Ambulance Companies and four Assault Helicopter Battalions (AHBs) with the H-60M. Continued fielding the H-60M to the active and ARNG components.
  - Procured 30 CH-47F and eight MH-47G Chinook aircraft while providing modifications including a loading system enabling more rapid reconfiguration

from cargo to passenger support missions. Continued fielding the CH-47F to the active and ARNG components, with U.S. Army Reserve (USAR) fielding to begin in FY 2014.

- Procured 67 Apache AH-64E (Apache Block III) aircraft and provided existing Block II fleet with modifications that address operationally driven improvements and obsolescence issues. Improvements: Manned-Unmanned Teaming and Sensors upgrades.

- Fielded the Hostile Fire Quick Reaction Capability (QRC)/generation 3 Electronics Control Unit (GEN III ECU).
- In FY 2014 funded $46M for the Kiowa Warrior (KW) helicopter addressing obsolescence and weight reduction efforts for our aging KW fleet.
- Funded $5M in FY 2013 the Armed Aerial Scout (AAS) supporting program RDTE.
- Funded $2.7B in FY 2013-2014 for the Black Hawk helicopter Multi Year Procurement procuring 111 UH-60M and 48 HH-60M aircraft. The first year of Multi-Year/Multi-Service VIII Contract was FY 2012.
- Funded $79.9M in RDT&E to support the continued development of the Improved Turbine Engine Program (ITEP) which is scheduled for a Milestone A (MS A) decision in FY 2014.
- Funded $96M for Lakota in FY 2014, all of which is for the Army National Guard. Procures 10 aircraft in FY 2014.
- Funded fixed wing aircraft modifications for both the Operational Support Airlift and Intelligence Surveillance and Reconnaissance fleet with Global Air Traffic Management (GATM) upgrades, cockpit upgrades and mandatory safety upgrades.
- Funded four replacement aircraft for the Army Test and Evaluation Command to replace retiring T-34 aircraft.
- The Army fielded AH-64E (Apache Block III) First Unit Equipped in FY 2013.
- Funded $104M in FY 2013 for RQ-7B Shadow supporting the acquisition of seven TCDL Retrofit Kits and 400 One System Remote Video Terminals (OSRVT) modification kits.
- Funded $25.8M in FY 2013 for RQ-11B Raven procuring 1,118 gimbaled payloads. The gimbaled payload combines the Electro-optical/Infrared cameras into one payload ball and is a major improvement over the current payloads. In addition, funding answers unit requests for a virtual training device for system operators.
- Funded $518.1M in FY 2013 maximizing the production rate of the MQ-1C gray Eagle program by procuring 15 MQ-1C aircraft and associated ground support equipment.

Section IV. Key FY 2015 Aviation Investments

The FY 2015 Aviation investments total $5.4B ($4.7B ACFT/$632.7M RDTE/$27.3M Procurement, Ammunition (AMMO)/$4.5M MSLS) and includes required capabilities in the reconnaissance, attack, unmanned aerial systems, utility and cargo and fixed wing mission profiles. Specific investments in this portfolio include:

- $128.3M (RDTE) for the Technology Development phase of the Common Infrared Countermeasure (CIRCM) system for Army aviation platforms. CIRCM is a lightweight, low cost, highly reliable laser-based countermeasure system which works in conjunction with Service missile warning systems (i.e. Common Missile Warning System (CMWS)). The program's Full Rate Production decision is scheduled for FY 2019.
- $141.8M ($125.4M ACFT/$16.4M RDTE) for RQ-7B Shadow supporting acquisition of seven Shadow TCDL Retrofit kits (and associated spare parts), seven launchers, 80 New Mission Computers, nine Universal Mission Simulators and 400 new OSRVT modification kits.
- $241.8M ($190.6M ACFT/$51.2M RDTE) procures 19 MQ-1C aircraft and associated ground support equipment.
- $1.55B ($1.45B ACFT/$104.5M RDTE) procures 55 UH-60M, 24 HH-60M, funds ITEP and UH-60 Digital L RDTE efforts and purchases mission equipment packages.
- $972.5M ($833.2M ACFT/$124.1M RDTE/$15.2M OMA) procures 25 remanufactured AH-64E (Apache Block III) aircraft and associated modifications to existing AH-64D fleet.
- $1.06B ($1.03B ACFT/$35.4M RDTE) procures 26 remanufactured, six new build CH-47F aircraft and associated modifications to the Chinook fleet.
- $416.6M ($416.6M ACFT) procures 55 new build UH-72A Lakota Light Utility Helicopters (LUH) to assume the initial entry rotary wing training helicopter requirement and to assist in the transition to the restructured aviation force.

FIRES

Section I. Overview

To prevail in future operational environments and succeed in a wide range of contingencies, the Army must have a campaign-quality, expeditionary Fires force that delivers and integrates lethal and non-lethal fires and enables joint commanders to dominate the operational environment. The Fires portfolio consists of fire support capabilities in the following four areas: Precision Sensors, Delivery Platforms (Shooters), Munitions and Field Artillery (FA) Command and Control (C2) Systems. (See figure 9).

To meet the threats of an ever adaptive adversary who employs unconventional tactics, the Army must carefully balance the quantity, quality and management of its equipment.

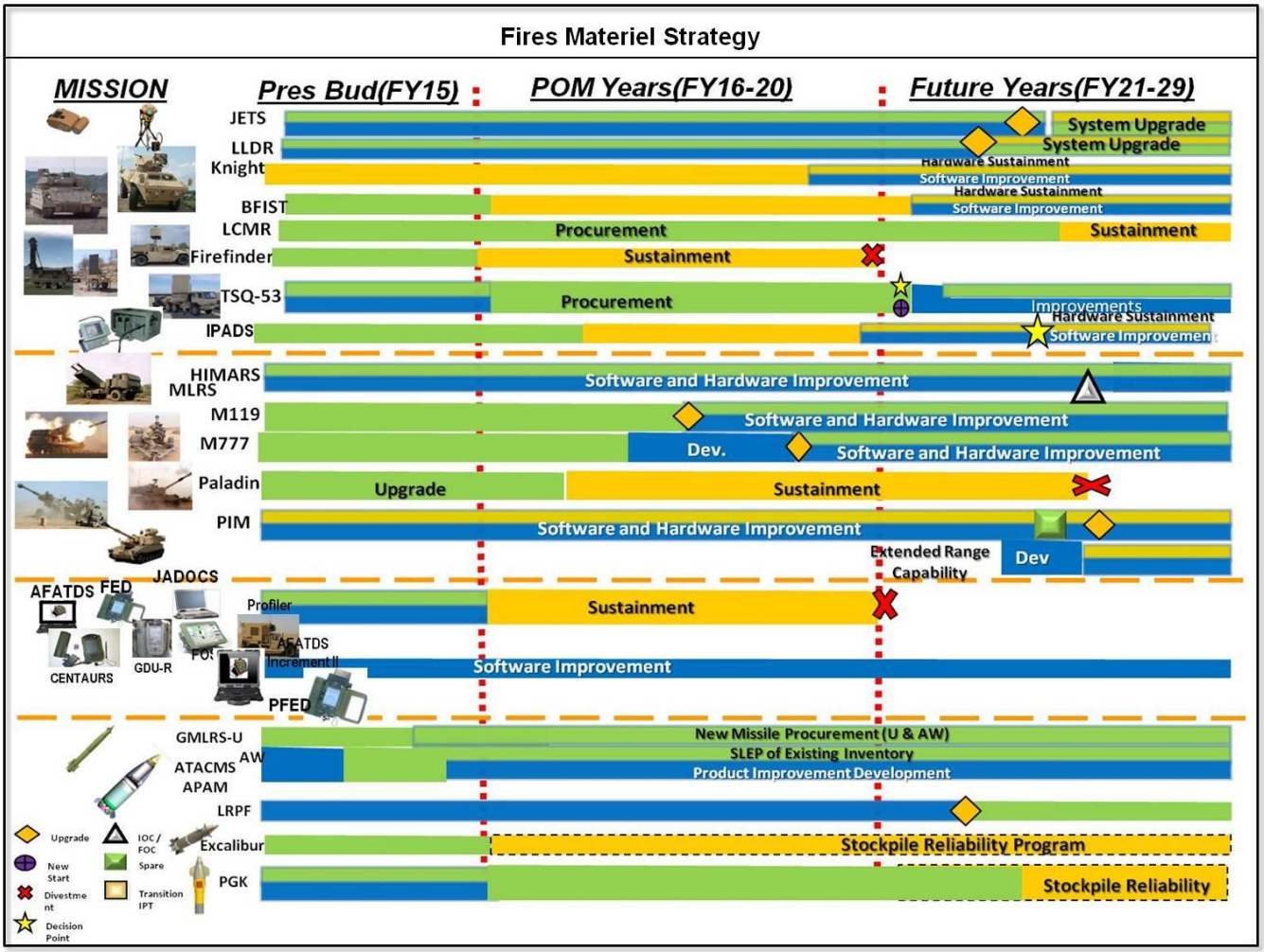

Figure 9. Fires (see acronym glossary)

The Indirect Fires portfolio includes several types and variants of equipment, which focuses on a vast number of precision and near-precision indirect Fire missions. To that end, the key strategic objectives for the Indirect Fires portfolio continue to be:

- Improve Precision Targeting capability, especially lightweight, handheld targeting systems.
- Incorporate Joint Fires into procurement planning.
- Develop and procure Precision Munitions supporting Total Army Munitions Requirements.
- Enhance organic Precision Fires capabilities of Infantry Brigade Combat Teams (IBCT).
- Sustain and modernize firing platforms in synchronization with Army modernization plans.
- Support command and control program merge into the Battle Command Network architecture.
- Seek Common User Interface across all Fires launch and radar systems.
- Seek fielding opportunities in providing technologies rapidly to the Soldier.

Section II. Strategy Update

- Budget constraints have caused adjustments within the Precision Fires portfolio, mainly a reduction in the number of Guided Multiple-Launch Rocket System (GMLRS) rockets procured.
- Modernization and modification efforts for towed howitzers and fire support sensors will be slightly increased and we will begin a service life extension program for Army Tactical Missile System (ATACMS) to bridge the gap until the Army's Long-Range Precision Fires (LRPF) solution can be developed and procured.

Section III. Portfolio Accomplishments (FY 2013/2014)

- Completed fielding and deployed the 12 initial production model AN/TSQ-53 radar systems in support of Operation New Dawn (OND) and Operation Enduring Freedom (OEF).
- Entered Low Rate Initial Production (LRIP) production Lots 2 and 3 for 40 additional AN/TSQ-53 radar systems.
- Scheduled Initial Operational Test and Evaluation (IOT&E) for the AN/TSQ-53 radar system in 3rd Qtr FY 2014.

- Began fielding Lightweight Laser Designator Rangefinder (LLDR) version 2H retrofit which adds celestial compass capability for improved target location in 2Q FY 2014.
- Continued development of the Joint Effects Targeting System (JETS) Target Location Designation with a JETS Production Decision in FY 2015.
- Procured 132 AN/TPQ-50 Lightweight Counter Mortar Radar (LCMR) systems (FY 2013/FY 2014).
- Completed fielding of High Mobility Artillery Rocket System (HIMARS) launchers (FY 2013).
- Completed development of the Multiple Launch Rocket System (MLRS) Improved Armored Cab (IAC) (FY 2013) and entered into initial low rate production of this major platform modification.
- Continue development of the MLRS launcher Fire Control System–Upgrade (FCS-U) (FY 2013); this effort will continue through FY 2014.
- Continue production qualifications of GMLRS Alternative Warhead (AW) and conduct Developmental Test/Operational Test (DT/OT) in FY 2014.
- Completed developmental testing of Paladin Integrated Management (PIM) addressing long-term sustainability and fires capabilities for the Heavy Brigade Combat Team (HBCT). Conducted Limited User Test (LUT). Milestone C and LRIP contract was awarded in October 2013.
- Completed production of the M777A2 howitzer for both the Army and Marine Corps (FY 2013).
- Began fielding of M777A2 Howitzers to IBCTs which will enhance their organic precision fires capability.
- Continued fielding the digitized fire control modifications for the M119A2, 105mm Towed Howitzer addressing responsiveness of fires to support IBCTs.
- Developed and tested Increment 1B of the Excalibur 155mm Precision-Guided Artillery Munition and prepared to begin LRIP in 1st Qtr FY 2013.
- Fielded to forces in Afghanistan an Urgent Materiel Release quantity of the Precision Guidance Kit (PGK) fuze for the 155mm non-precision munitions and began LRIP in 4th Qtr FY 2013.
- Will complete fielding of AN/GMK-2, Computer Meteorological Data-Profiler (CMD-P) systems displacing the two vehicle helium balloon meteorological measuring system.
- Completed sustainment and improvement of M3A3 Bradley Fire Support Team (BFIST) Hardware/Software modifications with the Fire Support Sensor System (FS3).
- Continue modification to the M109A6 Paladin with Paladin Fire Control System (PFCS) to support ABCTs.

Section IV. Key FY 2015 Fires Investments

FY 2015 Fires (Indirect) investments total $1.29B ($410.5M WTCV/$317.5M RDTE/$301.4M OPA/$2.5M OMA/$97M AMMO/$165.9M MSLS) and include lethal and non-lethal fires and effects such as radars, cannons, launchers, munitions and automated enablers. Specific investments in this portfolio include:

- $4.9M (RDTE)/$14.1M (OPA) develops and procures LLDR 2H modifications enhancing target location accuracy.
- $20.6M (RDTE) provides RDTE for JETS. $27.5M (OPA) develops and procures JETS enhancing dismounted fire observers' targeting location capability.
- $26.8M (WTCV) sustains and improves BFIST Hardware / Software modifications with the FS3 for the M7 SA.
- $24.8M (OPA) procures three AN/TPQ-50 LCMR systems.
- $14.1M (RDTE) continues development and testing of the MLRS IAC, the MLRS FCS-U and develops and test HIMARS software updates.
- $11.5M (MSLS) begins procurement of MLRS IAC cab and install the HIMARS Enhanced Command and Control (EC2) modification.
  Note: FY 2015 funding combines MLRS and HIMARS RDTE and MLRS and HIMARS Modifications Missile Procurement, Army (MIPA).
- $72.7M (WTCV) procures Digital Fire Control modifications and redesigned recoil systems to the M119A2 Howitzer which enhances system survivability and lethality for more responsive fires in the IBCT.
- $35.7M (AMMO) continues procurement of Excalibur Increment Ib 155mm Precision-Guided Artillery munitions.
- $7.2M (RDTE)/$61.3M (AMMO) develops and procures PGK fuzes for 155mm non-precision munitions providing a near precision capability.
- $45.4M (WTCV) procures Paladin Fire Control System (PFCS) modification kits for M109A6 Paladin. PFCS combines the Paladin Digital Fire Control System-Replacement (PDFCS-R) and Dynamic Reference Unit Hybrid-Replacement (DRUH-R) into one modification kit. PFCS reflects a cost reduction and streamlining effort to field the PDFCS-R and DRUH-R as a single modification to the vehicle.
- $246.6M ($37.5M RDTE/$209.1M OPA) continues procurement of the AN/TSQ-53 radar system.
- $18.2M (WTCV)/$1.9M (RDTE) supports procurement and integration of a Digital Direct Fire Sight to the M777A2 Digital Fire Control System (DFCS) and supports integration of the Electronic Thermal Warning Device (ETWD) onto the non-recoiling components of the howitzer thus improving reliability and survivability.
- $330.7M ($247.4M WTCV/$83.3M RDTE) WTCV funds 18 PIM LRIP vehicle sets. RDTE provides PIM for continued developmental testing and live fire test.

AIR AND MISSILE DEFENSE

Section I. Overview

The Air and Missile Defense (AMD) modernization strategy provides for a relevant and ready AMD capability, crucial to supporting our National Security Strategy from defense of the Brigade Combat Team (BCT) to defense of the Homeland. Based on the growing and increasingly sophisticated threat, current trends show a strong and growing requirement for AMD forces to be forward deployed around the world, protecting U.S. Forces, critical assets and U.S. strategic interests. AMD, an inherently Joint/multinational mission area, is a key component of multiple Contingency Plans (CONPLANS) within each Combatant Command.

The AMD portfolio consists of required capabilities in the following areas: Ballistic Missile Defense (BMD), Counter Unmanned Aerial System (CUAS), Cruise Missile Defense (CMD), Indirect Fire Protection Capability (IFPC) and Fire Mission Command.

As depicted in figure 10, key imperatives in the AMD portfolio include the common battle manager development, recapitalization of current systems, fielding, modernization and obsolescence improvements, as well as fielding new capabilities.

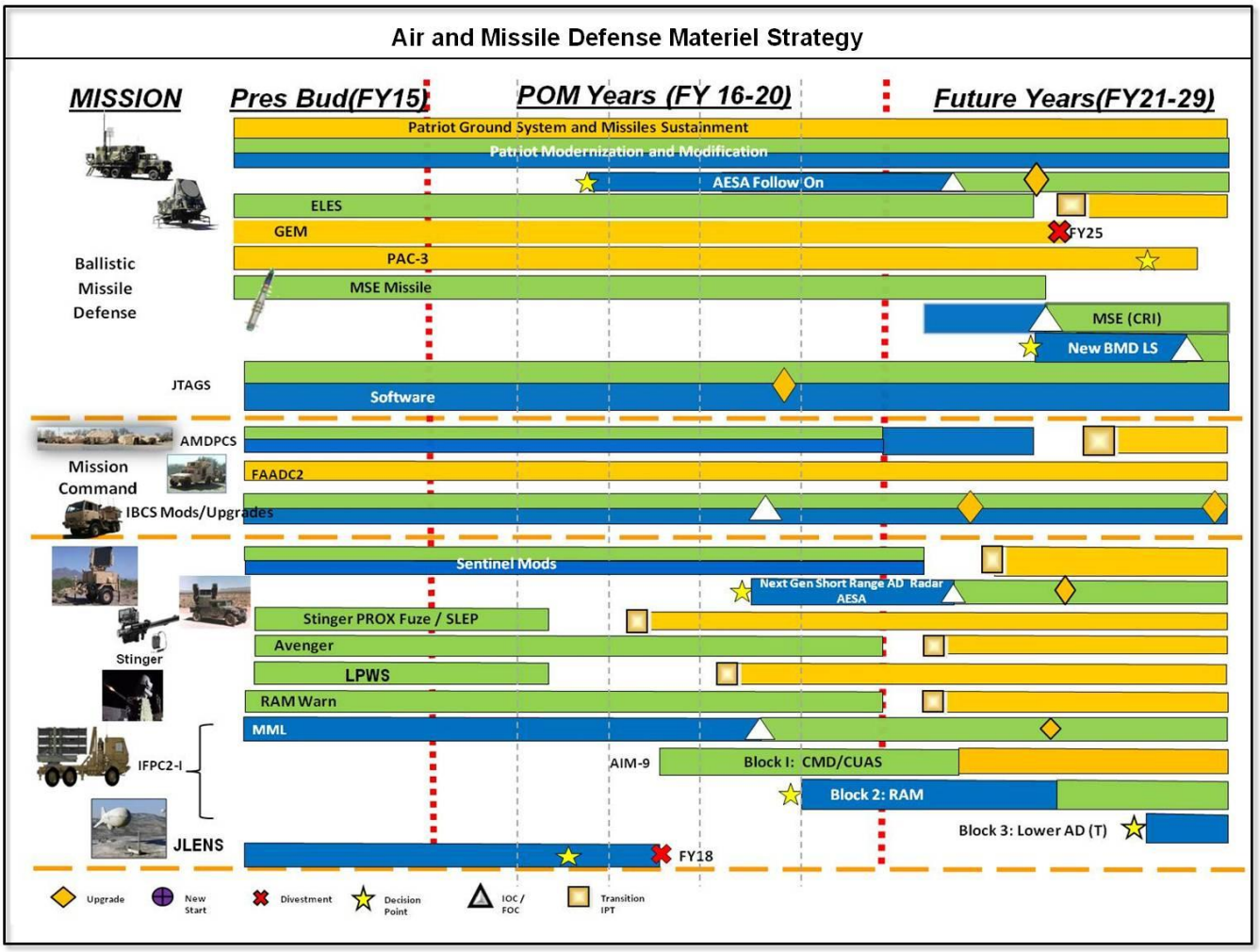

Figure 10. Air and Missile Defense (see acronym glossary)

Given the trends and essential capabilities for future U.S. Army AMD systems articulated above, the strategic modernization imperatives for AMD are:

Modernize: Develop and acquire new equipment and improve or recapitalize current systems remaining relevant and capable of closing capability gaps and achieving dominance in core capabilities:

- Fuse/integrate the air picture with fire control quality data.
- Integrate sensors and weapons on the network through "plug and fight."
- Enable Joint Integrated Fire Control across Army, Navy and Air Force platforms.
- Close capability gaps and increase capabilities to counter cruise missiles, unmanned aerial systems, along with rockets, artillery and mortars.
- Conduct a comprehensive pre-planned product improvement effort incrementally modernizing, modifying and upgrading performance of the Joint Tactical Ground Station (JTAGS) and the Patriot system.

- Conduct modification upgrades to ensure Sentinel's viability against the evolving threat, the replacement of the Identification Friend or Foe Mode 4 to Mode 5 and movement to a common Army platform to meet force protection and Integrated Air and Missile Defense (IAMD) network requirements.

Sustain: Offset obsolescence, extend useful life of existing equipment:

- Conduct Service Life Extension Program (SLEP) and capability improvements on Stinger-Based systems and missiles increasing their counter-UAS capabilities.
- Maintain current capabilities to counter rockets, artillery, and mortars until displaced by Indirect Fire Protection Capability 2-Intercept (IFPC 2-I).

Mitigate: Procure systems capable of meeting the threats of today and tomorrow:

- Develop, acquire, and field a common battle manager/Command and Control (C2)/Mission Command (MC) node for all U.S. Army AMD forces which is a modular, open, net-centric system, and operationally scalable.
- Develop and procure a next generation IFPC to provide effective, full spectrum protection for joint and maneuver forces.

Field: Provide the Soldier with the quantity and type of equipment required, at the proper time enabling training, preparation, and employment for mission successes:

- Field Terminal High-Altitude Area Defense (THAAD), a new capability providing a robust and capable medium-range ballistic missile intercept capability.
- Field the latest variant of the Patriot Advanced Capability (PAC-3) missile, Patriot Missile Segment Enhancement (MSE), in conjunction with ground system hardware and software upgrades, to provide a critical increase in capability.
- Field one Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) orbit, which provides persistent, over the horizon surveillance, and fire control quality data on Army and Joint networks in support of Homeland Defense Operational Exercises.
- Field the Enhanced Sentinel, which is the latest A3 configuration designed to counter threats posed by unmanned aircraft, cruise missile, and electronic attack signatures.
- Field Integrated Air and Missile Defense – Battle Command System (IBCS), a network-centric system-of-systems solution for integrating sensors, shooters and battle management, command, control, communications and intelligence systems for Army air and missile defense.

Section II. Strategy Update

- Sequestration has caused adjustments within the air and missile defense portfolio, to include delaying IBCS procurement and slipping Initial Operational Capability (IOC) from FY 2017 to FY 2018.
- Critical Patriot modernization and modification efforts will be sustained to meet Combatant Command (COCOM) capability gaps.

Section III. Portfolio Accomplishments (FY 2013/2014)

- Upgraded the last Patriot battalions to PAC-3 capability (launcher upgrades continue for all Patriot battalions).
- Completed fielding of an additional Patriot battalion.
- Continued reset of Patriot equipment operating in the U.S. Central Command area of responsibility, completing two battalion sets.
- Continued providing Rocket Artillery & Mortar (RAM) sense and warn capabilities in support of Operation Enduring Freedom at 16 sites in Afghanistan.
- Began fielding RAM warn suites to BCTs.
- Funded the activities necessary to begin transitioning two active component Avenger battalions into IFPC/Avenger battalions.
- Transitioned RAM sense and warn capabilities to Office of Security Cooperation - Iraq and Department of State sites in Iraq. Withdrew and reset 17 Counter-Rockets, Artillery and Mortars (C-RAM) intercept systems previously deployed in preparation for fielding to newly established IFPC/Avenger Composite Battalions starting first quarter FY 2014.
- Reset of 30 Air Defense and Airspace Management (ADAM) Cells and four Forward Area Air Defense Command and Control (FAAD C2) shelters.
- Fielded three Air and Missile Defense Planning and Control Systems to Patriot Battalions (Composite).
- Transitioned the Air and Missile Defense Work Station to the Windows operating system.
- Completed Sensor C2 and Sentinel Radar fielding to all division headquarters.
- Completed modernization of basic Sentinel radars to improved Sentinel radars, commenced the initial fielding of the enhanced Sentinel radars to the Division Headquarters and Training and Doctrine Command (TRADOC).
- Validated the acquisition strategy to procure 431 Army Integrated Air and Missile Defense (AIAMD) Battle Command System Engagement Operation Centers in

line with the strategy to transition all current and future AMD capabilities to one mission command architecture for AMD battle management.

Section IV. Key FY 2015 Air and Missile Investments

The Fiscal Year 2015 Air and Missile Defense investments total $1.6B ($610.0M RDTE/$162.4M OPA/$669.6M MSLS/$114.2M OMA) and include developing and acquiring new equipment and improving or recapitalizing current systems that offer increased Counter Rockets, Artillery and Mortars (C-RAM) Land-based Phalanx Weapon System (LPWS) capabilities; improving and increasing Patriot missile inventory; conducting pre-planned product improvement efforts of the Patriot system; conducting Service Life Extension Program (SLEP) and capability improvements on Stinger missiles; closing capability gaps, extending useful life of existing equipment; and, fielding additional THAAD batteries to provide a robust and capable Medium Range Ballistic Missile intercept capability. Specific investments in this portfolio include:

- $54.1M (RDTE) supports JLENS single orbit deployment for an exercise in FY 2015.
- $98.6M (RDTE) $68.3M (OPA) implements the multi-block acquisition approach to provide a 360 degree, mobile, robust protection capability shifting initially from C-RAM to C-UAS and CMD. Of the total funding, $68.3M OPA and $2.4M RDTE provide support for fielded C-RAM systems, while $96.2M RDTE is directed toward the IFPC investment.
- $27.7M OPA supports continued fielding of RAM Warn to Army BCTs.
- $40.6M OPA supports fielding of C-RAM LPWS Interceptors to IFPC/Avenger Battalions and completes improvements to RAM Warn architecture based on operational lessons learned.
- $49.5M ($5.2M RDTE) continual development of software obsolescence avoidance and small/low/slow enhancements for UAS; $44.3M (OPA) completes application and fielding of small/low/slow for UAS and 31 Mode 5 modification upgrades to the Sentinel radars.
- $152.9M RDTE supports ongoing modeling, simulation and test required to assess current and emerging threats and continue Patriot software upgrades and continues missile system integration.
- $929.4M ($266.8 RDTE/$662.6M MSLS) begins procurement of MSE missiles; procures additional Patriot Enhanced Launcher Electronics System (ELES) launcher upgrades, and continues upgrading Patriot (including modern man stations and radar digital processor); and procures critical software upgrades to address advanced Theater Ballistic Missiles (TBM) electronic attacks and communications upgrades. Supports ongoing modeling, simulation and test

required to assess current and emerging threats and continue Patriot software upgrades and missile system integration.

- $142.5M (RDTE) continues AIAMD development and enables initial deliveries by FY 2018.
- $12.1M ($1.4M MIPA) Proximity/Service Life Enhancement Program (PROX/SLEP) procurement; ($5.1M RDTE) begins the design, development and testing of the Stinger Proximity Fuze and integrates in the Stinger Block 1 missile and $10.7M (MIPA) provides for the Avenger Product Improvement Program (PIP) to address modernization and added capability.
- $15.5M ($10.2M RDTE/$5.3M OPA) supports continued development and fielding of JTAGS Block 2 upgrades for compatibility with new on-orbit sensors.

PROTECTION (ASSURED MOBILITY)

Section I. Overview

The Assured Mobility modernization plan procures equipment based on a validated requirement ensuring affordability and effectiveness. The portfolio focuses on an integrated suite of protection options that commanders can tailor to protect, operationally maximize and conserve unit fighting potential in Combined Arms Maneuver and Wide Area Security Operations. This supports the Army's strategic priority to support the Joint Force with critical enablers, while enroute to and operating within, expeditionary environments alongside Unified Action Partners. Additionally, it supports the Combatant Commanders' ability to defend the nation and its interests at home and abroad, today and against emerging threats. The Assured Mobility portfolio captures enhanced engineering abilities consistent with the functional application of these materiel solutions supporting enhanced survivability across the battlefield. Figure 11 displays a selected collection of capabilities as projected from current, near and extended term perspectives.

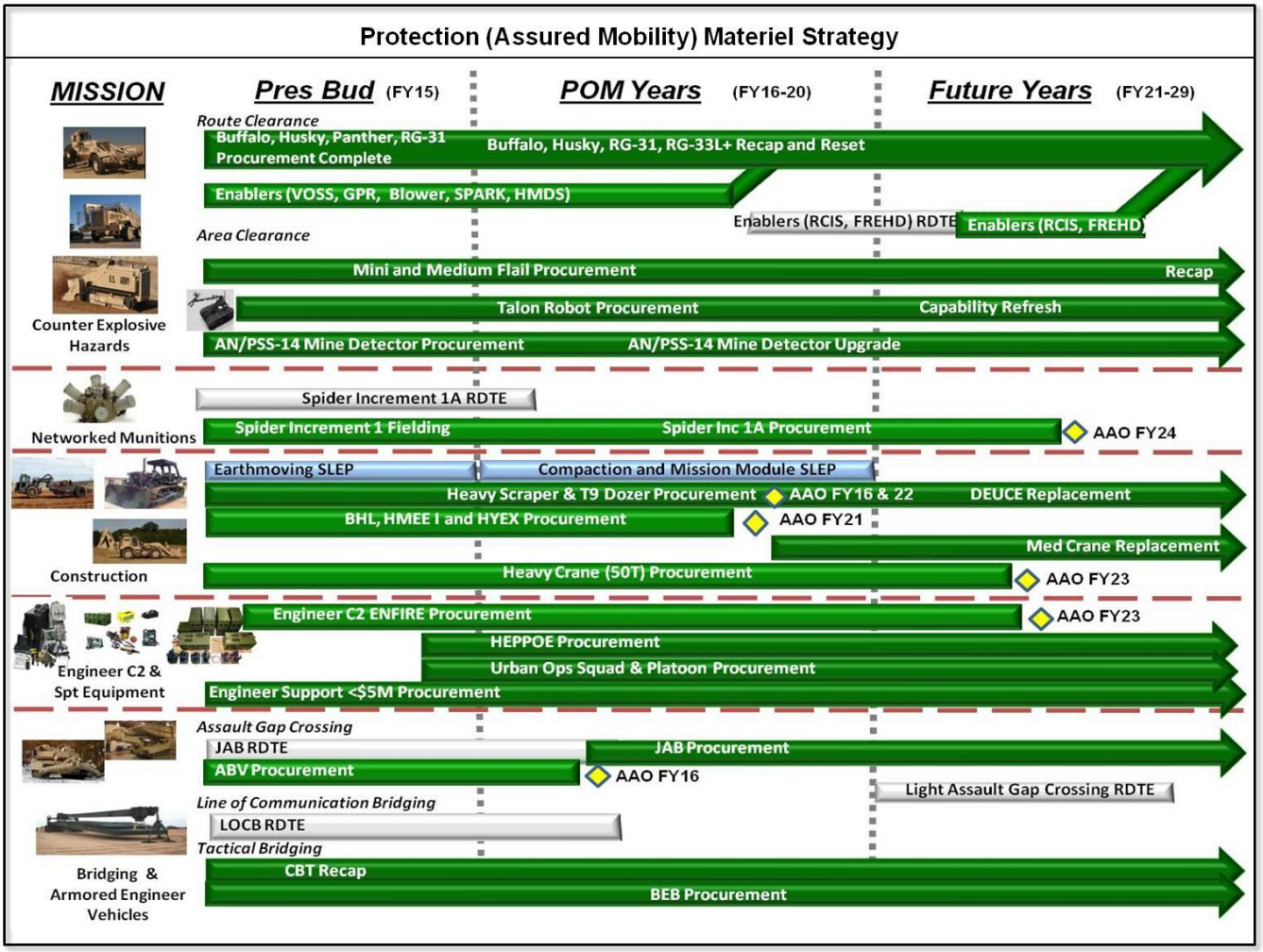

Figure 11. Protection (Assured Mobility) (see acronym glossary)

Section II. Strategy Update

Based on fiscal constraints, the portfolio strategy maintains focus on Counter Explosive Hazards (CEH) and mobility capabilities (Assault Breacher Vehicle (ABV) and Joint Assault Bridge (JAB)) that support the force. Risk was accepted by slowing procurement of Commercial-Off-The-Shelf (COTS) equipment, which includes construction equipment, and sets, kits and outfits.

Section III. Portfolio Accomplishments (FY 2013/2014)

- Fielded 152 Mine Protected Clearance Vehicles (MPCV) Buffaloes and 304 Vehicle Mounted Mine Detection (VMMD) in support of Route Clearance units.
- Fielded 17 Hydraulic Excavators, 245 Medium Dozers and 42 Heavy Scrapers; fielding continues through FY 2014. Procured 17 ABV for fielding to three ABCTs.

- Provided 623 Urban Operations Sets to platoons and squads enabling assured mobility in the urban environment.
- Provided 215 Hydraulic, Electric, Pneumatic, Petroleum Operated Equipment (HEPPOE) to support missions by clearing buildings for repair and construction, clearing areas around road construction, port openings and any other areas that require operations in an urban area.

Section IV. Key FY 2015 Assured Mobility Investments

The FY 2015 Assured Mobility portfolio investments total $549.5M ($88.5M WTCV/$66.3M RDTE/$382.8M OPA) that will ensure Soldiers are protected from multitude of battlefield and homeland security hazards. Specific investments in this portfolio include:

- $159.0M (OPA) funds recapitalization of over 85 Counter Explosive Hazard and Explosive Ordnance Disposal (EOD) vehicles, ten Self Protective Adaptive Roller Kits (SPARK), four Cyclone Blowers and five Wire Neutralization Systems into program of record configuration for fielding; upgrades 3022 AN/PSS-14 Handheld Mine Detectors to the new Revision 6; provides $47.0M in RDTE for the next generation of standoff detection, neutralization and clearance systems.
- $88.5M (WTCV) procures seven ABV systems for one Armored Brigade Combat Team (ABCT) enabling rapid breaching, proofing and marking of full width lanes through complex obstacles and minefields. Begin procurement of 11 JAB for two ABCTs.
- $23.8M (OPA) procures six Bridge Erection Boats and modernizes 34 Common Bridge Transporters for one Multirole Bridge Company (MRBC).
- $59.7M (OPA) modernizes 22 Heavy Scrapers, 22 Heavy Graders, 95 Medium Dozers and four Heavy Cranes.
- $42.0M (OPA) procures 51 HEPPOE, 285 Urban Operations Sets, 107 Fire Fighter Equipment Sets, 35 Seven Man Boats and 62 15-Man Boats.
- $10.1M (OPA) procures 56 Instrument Set, Reconnaissance and Surveying systems to Engineer formations across the Army.
- $10.7M (RDTE) develops improved controller for Spider Increment IA system.

PROTECTION (FORCE PROTECTION AND CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR AND HIGH YEILD EXPLOSIVE (CBRNE))

Section I. Overview

The Force Protection portfolio focuses on an integrated suite of protection options that commanders can tailor to operationally maximize and conserve their unit fighting potential. The Force Protection Portfolio takes into consideration the extensive coordination with all portfolio stakeholders and reflects the expected priorities of future conflicts in accordance with the Army's strategic priorities to rapidly deploy, fight, sustain and win against complex state and non state threats in austere environments and rugged terrain employing the expeditionary mindset. The Army prioritizes Science and Technology investments to maximize the potential of emerging game-changing land power technologies to counter emerging threats and to ensure that Army formations retain a decisive materiel edge and tactical overmatch specifically in Countering Weapons of Mass Destruction (CWMD) and WMD elimination missions. This portfolio composition and alignments works to ensure Army units are prepared for new, emerging and evolving missions in the CWMD area. The Protection portfolio provides Soldiers with Explosive Ordnance Disposal (EOD), force protection, non-lethal capabilities, civil affairs/military information support operations (CA/MISO) and Chemical, Biological, Radiological, Nuclear, and High-Yield Explosive (CBRNE) equipment across the battlefield. Figure 12 displays a selected collection of capabilities as projected from current, near and extended term perspectives.

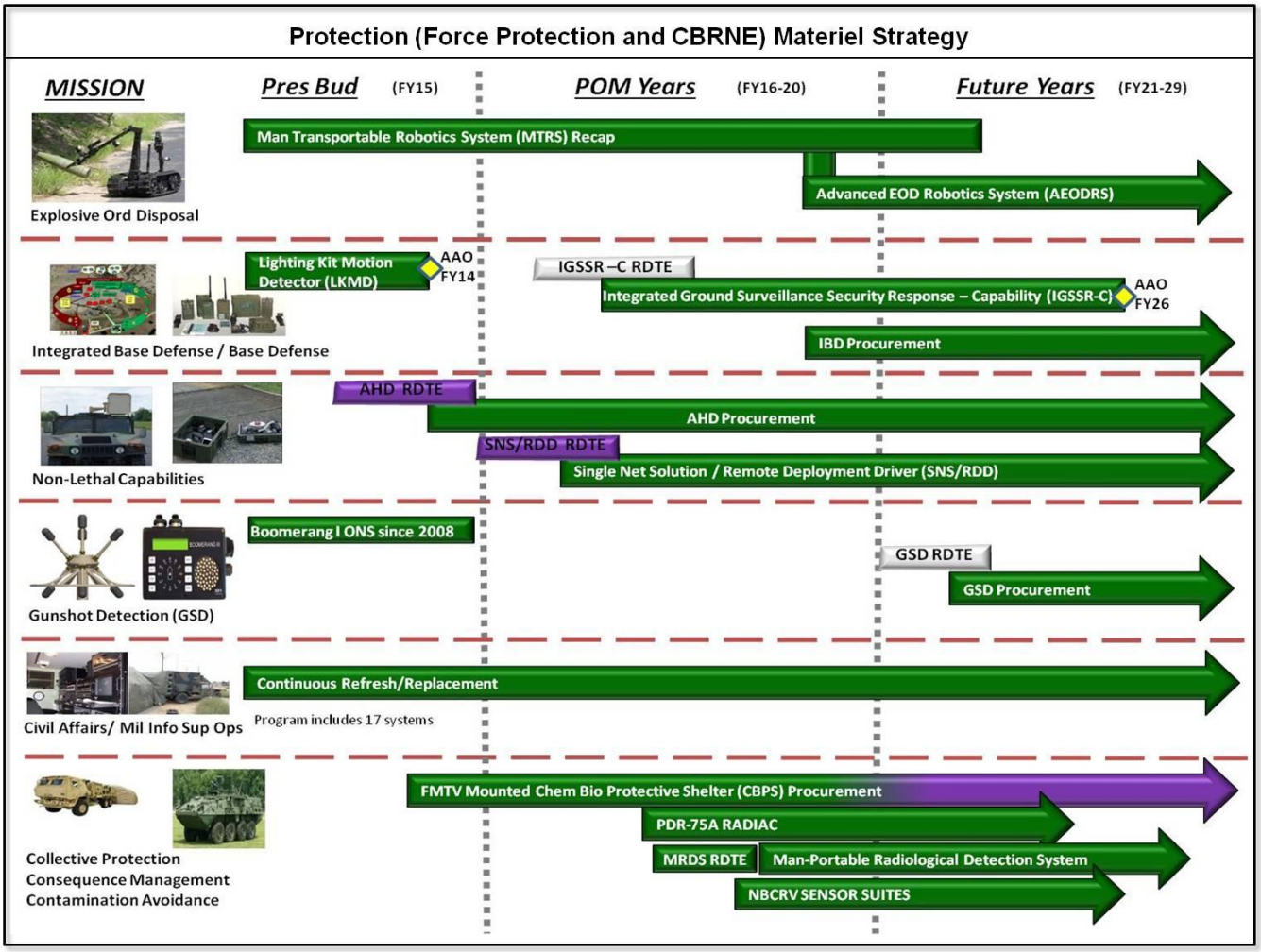

Figure 12. Protection (Force Protection and CBRNE) (see acronym glossary)

Section II. Strategy Update

Based on fiscal constraints, the Force Protection Portfolio procurement strategy takes calculated risk while continuing to provide the Soldier with the highest level of protection possible. EOD procurement will continue to support mobility operations throughout the close and support areas while Integrated Base Defense ties in layered protection measures to secure contingency bases. Additionally, the portfolio will support enhanced survivability across the battlefield through investment in Chemical Biological Protective Shelter (CBPS) and upgraded Nuclear, Biological, Chemical Reconnaissance Vehicle (NBCRV) sensor suites.

Section III. Portfolio Accomplishments (FY 2013/2014)

- Procured 112 CBPS Systems. The CBPS is a highly mobile, self contained, rapidly deployable, chemically and biologically protected shelter that is a

contaminant-free, environmentally controlled medical treatment area.

- Procured 86,090 pieces of Class 1 National Fire Protection Association (NFPA) Personal Protective Equipment (PPE) in support of U.S. Northern Command (NORTHCOM)/U.S. Army North (ARNORTH) CBRN Response Enterprise.

Section IV. Key FY 2015 Force Protection Investments

The FY 2015 Force Protection portfolio investments total $62.6M ($5.2M RDTE/$55.0M OPA/$2.4M OMA) that will ensure Soldiers are protected from multitude of battlefield and homeland security hazards. Specific investments in this portfolio include:

- $15.9M (OPA) procures 133 EOD Equipment systems. The program includes three systems comprised of the Future Radiographic System (FRS) and other systems providing EOD technicians with a rapid, reliable and secure means for identifying and disarming EOD munitions.
- $12.5M (OPA) procures 305 CA/MISO systems. The program includes 17 systems providing essential command and control, communications, computers and intelligence (C4I) capabilities for CA/MISO general purpose forces.
- $885K (RDTE) funds EOD Equipment RDTE providing increased standoff distances for IED-Defeat missions, particularly for Vehicle Borne Improvised Explosive Devices (VBIED).
- $3.0M (OPA) procures two CBPS Systems. The CBPS is a highly mobile, self contained, rapidly deployable, chemically and biologically protected shelter that is a contaminant-free, environmentally controlled medical treatment area.
- $14.5M (OPA) procures Class 1 NFPA PPE in support of USNORTHCOM/ARNORTH CBRN Response Enterprise.
- $937K (OPA) procures 28 Acoustic Hailing Device (AHD) systems in support of non-lethal options for Combatant Commanders.

SUSTAINMENT (TRANSPORT)

Section I. Overview

The Sustainment (Transport) Portfolio consists of Tactical Wheeled Vehicles (TWV), trailers and Watercraft vessels. The TWV fleet includes Light, Medium and Heavy Tactical Vehicles with associated trailers and the Mine Resistant Ambush Protected (MRAP) family of vehicles. TWVs are employed in many roles such as armament troop carriers, sustainment operations, medical evacuations, and Command and Control (C2) platforms which carry critical war fighting capabilities such as fires, intelligence and maneuver. The Army's vision of the truck has evolved in the past decade from an unprotected motorized transport to a protected system capable of operating in a full-spectrum, non-linear battlefield. Trucks must now be armored, have the additional capacity and power to carry that armor and be outfitted with a wide variety of Command, Control, Communications and Computers and Intelligence, Surveillance and Reconnaissance (C4ISR) equipment to remain relevant on today's multi-spectrum battlefields.

The Watercraft fleet consists of platforms and systems that are described in four categories: Command and Control, Causeway Systems, Landing Craft and Floating Craft. Command and Control systems, such as the Harbormaster Command and Control Center and Landing Craft Mechanized Mod 2, provide C2 of port assets, visibility and input to the Common Operating Picture and cargo tracking. Causeway Systems, such as Roll-on/roll-off Discharge Facility, Causeway Ferry, Warping Tug and Floating Causeway, allow throughput in constrained draft and beach gradient conditions. The causeways provide the critical linkage between strategic shipping and shore discharge. Landing Craft, such as Logistics Support Vessel (LSV), Landing Craft Utility (LCU) and Landing Craft Mechanized Mod 1, provide intra-theater lift of time sensitive, mission critical personnel and materiel in support of ground forces. The Floating Craft, such as Small and Large Tug Boats and Barge Derrick, provide heavy lift, towing, repair and salvage capability.

As depicted in Figure 13, key objectives and decision points in the Sustainment-Transportation portfolio include:

- Joint Light Tactical Vehicle (JLTV) is the only major procurement program in Transportation portfolio and is currently in the Engineer and Manufacturing Design (EMD) Phase. Three vendors were awarded contracts to provide 22 prototypes for testing and evaluation.
- The Family of Medium Tactical Vehicle (FMTV) Program funding ends in FY 2014, but deliveries continue thru FY 2015.

- Palletized Loading System (PLS) is modernized through recapitalization.
- Complete fielding MRAP to Army Preposition Stocks/War Reserve, units and training base.
- Continue to procure B kits, at a lower rate, to maintain the industrial base but retain the capability to surge production and take advantage of advances in technology.
- Sustainment and modernization of the current LCU fleet through Service Life Extension Program (SLEP) and C4ISR upgrades. Continue development/integration of Army Watercraft Strategy force protection.

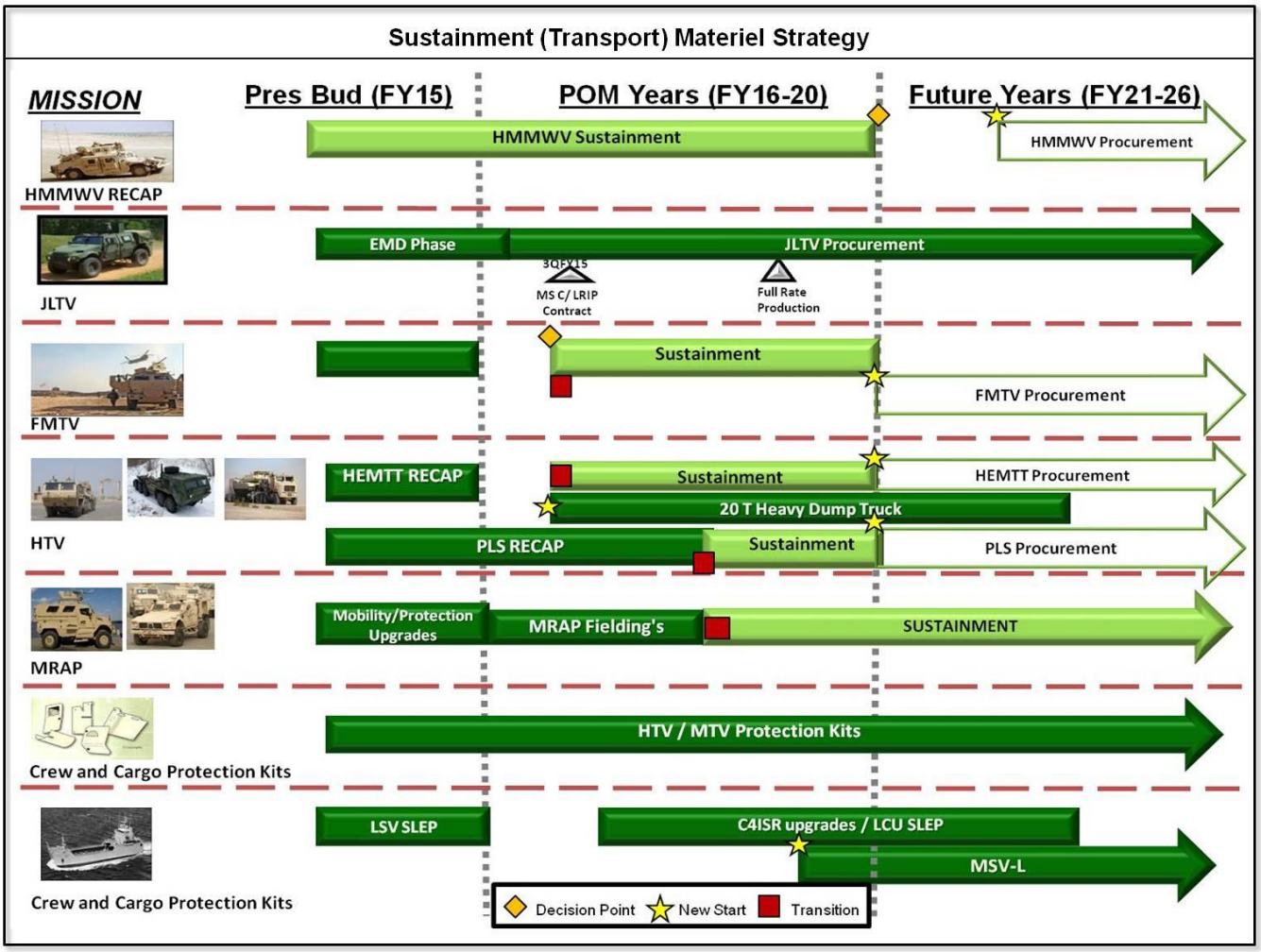

Figure 13. Sustainment (Transport) (see acronym glossary)

Section II. Strategy Update

Based on changes in fiscal environment, the Sustainment Portfolio (Transportation) will continue to support JLTV milestone C decision in FY 2015, LCU Service Life

Extension Program (SLEP), new start programs (e.g. Light Engineer Utility Trailer and 20T Heavy Dump Truck), data interchange and distribution enabler requirements (e.g. PLS trailers, Container Transfer Enhancement (CTE)), TWV safety and capability enhancements while accepting risk in JLTV low rate initial production quantities, PLS modernization goal and reduced protection kits annual quantities. JLTV is the major acquisition program in the portfolio. JLTV is the Army's modernized light tactical vehicle of the future, addressing limitations in force protection and performance capabilities found in up-armored High Mobility Multipurpose Wheeled Vehicle (HMMWV) (UAH) and mobility limitations found in MRAP-All Terrain Vehicles (M-ATV). JLTV also addresses payload capacity limitations in existing vehicles and will provide the Army with a more transportable vehicle that can operate in diverse range of mission sets, to include Improvised Explosive Device (IED) environments. The portfolio supports the TWV strategy protection goals of at least 50 percent of the TWV fleets are armor capable and procure armor kits for 30 percent of the fleets; however risk is accepted in the PLS fleet achieving 47 percent (versus 50 percent) armor capable and reduced protection kit procurement. Force structure and TWV requirement reductions will benefit the PLS fleet in achieving our goal. MRAP vehicles are an enduring requirement. The Army has decided to retain 8,585 MRAP vehicles to provide protected mobility in IED environments. Funding ensures all vehicles possess the latest protection and performance enhancements, achieve full materiel release and are fielded. Excess MRAPs will be divested through Foreign Military Sales (FMS), transfer to US Government and State entities, or de-militarization.

Section III. Portfolio Accomplishments (FY 2013/2014)

- In FY 2013, fielded 210 M-ATV Key Leader vehicles with improved communications suite.
- In FY 2013, fielded 7,737 FMTV trucks and trailers.
- In FY 2013, fielded 130 Family of Heavy Tactical Vehicles (FHTV), Line Hauls and recapitalized 117 Heavy Expanded Mobility Tactical Trucks (HEMTT) and PLSs.
- In FY 2013, completed the SLEP on one LSV; LSV program is complete.
- In FY 2014, programmed to field 137 M-ATVs with improved communications suite.
- In FY 2014, the Army is projected to field 5,610 FMTV trucks and trailers. The FY 2014 FMTV budget request procures 613 trucks, 79 trailers and 452 armor protection kits.
- In FY 2014, the Army is projected to field 1,115 FHTVs and Line Hauls and recapitalize 113 HEMTTs and PLSs. The FY 2014 FHTV budget request

procures 218 FHTV trailers (PLS-trailers and M870 Trailers) and recapitalizes 151 HEMTTs (Cargo, Wreckers and Fuel Tankers) and PLSs.

Section IV. Key FY 2015 Transport Investments

Total Portfolio investments are $466.6M ($61.4M RDTE/$405.1M OPA).

Key procurements:

- $210.3M ($45.7M RDTE and $164.6M OPA) has been allocated for the JLTV program. The program will continue in the EMD phase conducting testing and evaluation.
- $8.0M (OPA) to procure 206 Light Engineer Utility Trailer for Vertical Engineer Companies.
- $28.4M (OPA) to procure 444 PLS trailers.
- $89.3M (OPA) to recapitalize 198 PLSs into armor capable configuration.
- $38.2M (OPA) to procure 480 armor kits for FMTVs and 255 kits for FHTVs.

SUSTAINMENT (SERVICE SUPPORT)

Section I. Overview

The Sustainment portfolio consists of multiple systems, as depicted in figures 14 and 15, providing essential enabling capability to Soldiers. These capabilities are: Aerial Delivery (Joint Precision Airdrop Systems (JPADS)); Field Feeding (Assault Kitchen (AK) and Multi-Temperature Refrigerated Container System (MTRCS)); Field Services (Force Provider); Fuel and Water Storage and Distribution (Modular Fuel System-Tank Rack Module (MFS-TRM), Load Handling System Compatible Water Tank Rack System (HIPPO), and Expeditionary Water Packaging System (EWPS)); Mobile Maintenance (Armament Repair Shop Set (ARSS), Metal Working and Machining Shop Set (MWMSS), Fire Suppression Refill Systems (FSRS), Next Generation Automatic Test System (NGATS), Maintenance Support Device Version 3 (MSD-V3), Calibration Sets and Test Modernization Equipment); Material Handling (5K Light Capacity Rough Terrain Forklift (LCRTF)); and Medical equipment, material sets and communications (Drugs and Vaccines, Medical Field Systems (MFS) and Medical Communication for Combat Casualty Care (MC4)).

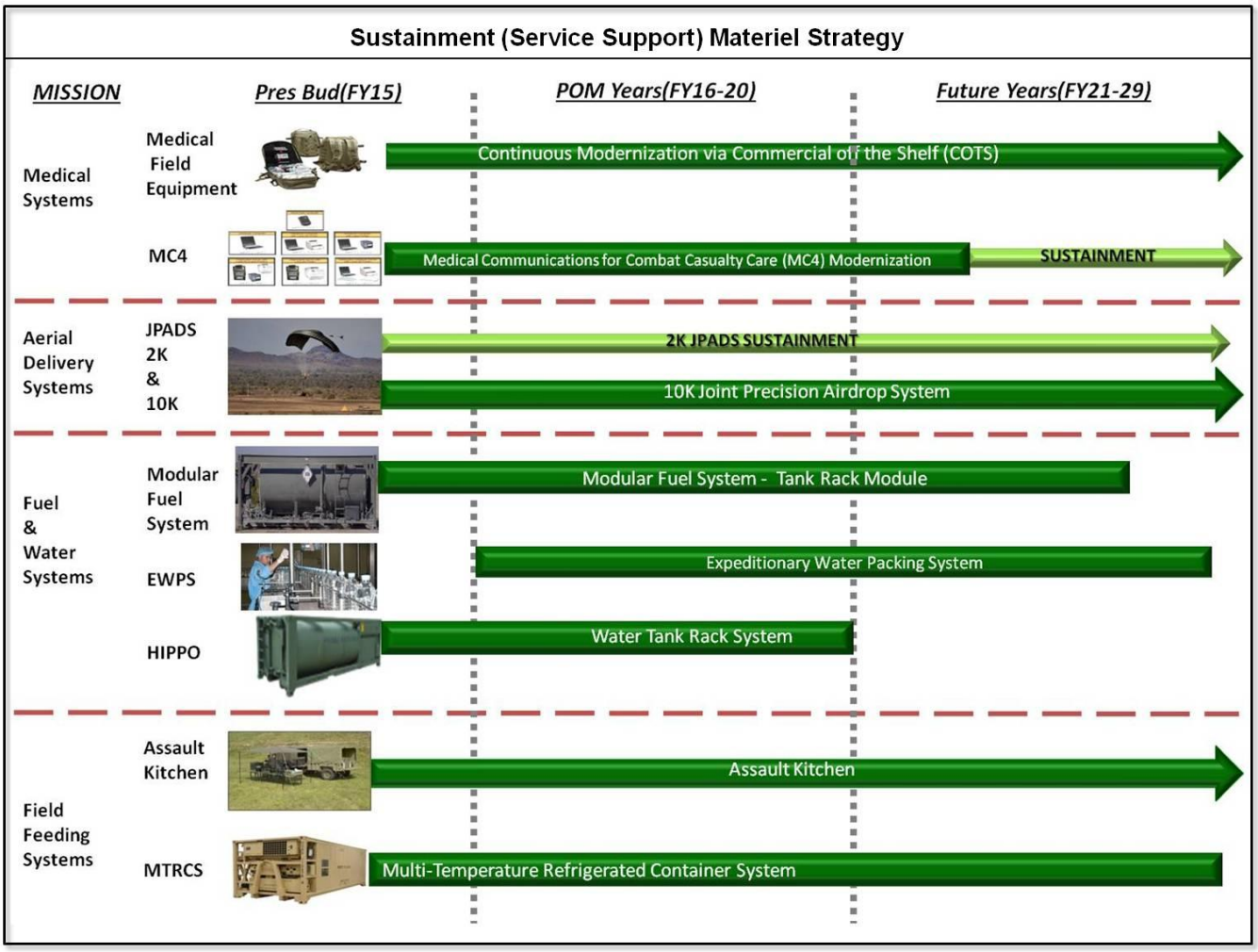

Figure 14, Sustainment (Service Support) (see acronym glossary)

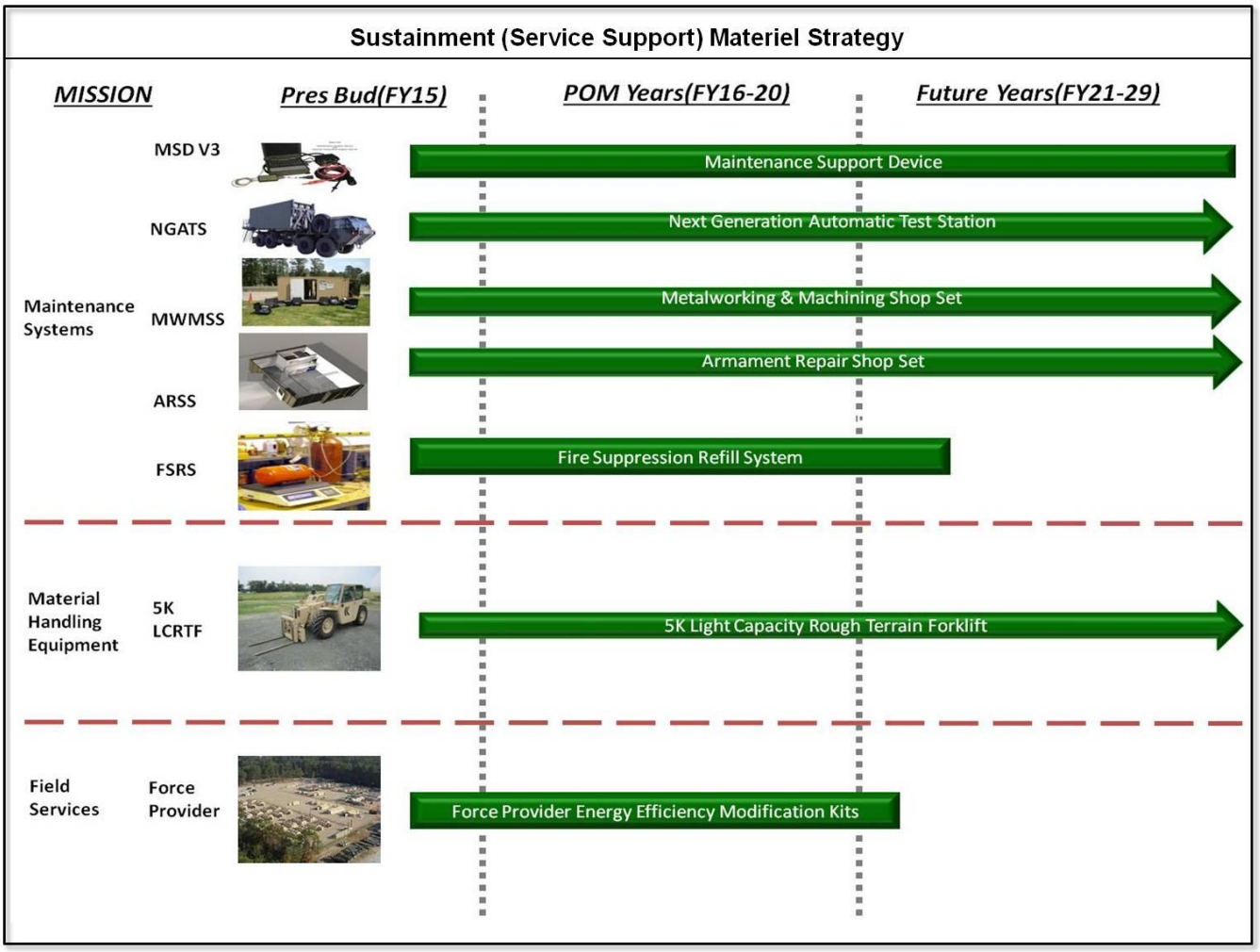

Figure 15. Sustainment (Service Support) (see acronym glossary)

Section II. Strategy Update

Based on changes in the fiscal environment, the Sustainment Portfolio strategy will maintain support to modernize the Army, but procurement is reduced to a minimum sustainment rate. We accept risk in creating longer procurement schedules to reach the Army Acquisition Objective (AAO). The portfolio funds priority medical equipment, material sets, communications and critical RDTE that support Federal Drug Administration (FDA) regulated clinical trials for Drugs & Vaccines. The portfolio funds modern Force Sustainment Systems (e.g. LCRFT, 10K JPADS, AK, Force Provider energy efficiency modifications, and MTRCS); At-Platform, Off-Platform and general purpose test equipment (e.g. MSD-V3 and NGATS); priority maintenance systems (e.g. ARSS and MWMSS); and priority fuel and water distribution and storage systems (e.g. HIPPO and MFS-TRM) to replace aging and obsolete systems and replace the logistics footprint.

Section III. Portfolio Accomplishments (FY 2013/2014)

- Fielded 2,666 pieces of medical equipment systems in FY 2013 and projected to field 3,750 medical equipment systems in FY 2014 providing medical capabilities that include dental, x-ray, lab, optometry, surgical, evacuation, preventive medicine, veterinary and combat stress control.
- Fielded 55 10,000 pound JPADS in FY 2013 and projected to procure 44 JPADS in FY 2014. The 10K JPADS provide rapid, precise, high altitude delivery capabilities to forces without the use of ground transportation.
- Fielded 210 5K LCRFT Forklifts in FY 2013 and are projected to procure 148 in FY 2014. Its primary mission includes loading and unloading 20 foot International Organization for Standardization (ISO) containers and handing loads in storage facilities and is found in various units such as Brigade Combat Teams (BCT), Combat Aviation Brigades (CAB), Ordnance units, Quartermaster units and Transportation units.
- Fielded 322 MTRCS in FY 2013 and projected to procure in 327 MTRCS in FY 2014 to BCTs increasing storage capabilities and enhancing quality of life for units/detachments operating in remote locations.
- In FY 2014 projected procurement of 474 MFS-TRM to BCTs providing bulk and retail fuel distribution and storage capability.
- In FY 2014 projected procurement of 27 Modular Fuel System Pump Rack Modules to Stryker Brigade Combat Teams (SBCT) providing bulk fuel distribution and storage capability.
- Fielded 120 HIPPO systems in FY 2013 and are projected to field 59 HIPPO in FY 2014. HIPPO provides a capability which receives, stores and issues large quantities of potable water anywhere in the theater of operations. The HIPPO replaces the Forward Area Water Point Supply System (FAWPSS).
- Fielded 385 ATLAS II Forklifts in FY 2013 and are projected to field 56 ATLAS in FY 2014 to various units such as BCTs, CABs and Ordnance and Transportation units. Its primary mission includes loading and unloading 20 foot ISO containers and handling loads up to 10,000 pounds with 48 inch load centers (Air Force 463L pallets).
- In FY 2013, fielded 2,165 Maintenance Support Devices (MSD-V3) to improve maintenance diagnostic capability for tactical wheeled vehicles, armored weapons systems and aviation weapon systems.
- In FY 2014, new start projected procurement of 13 MWMSS supporting the replacement of 24 legacy systems.

- In FY 2014, new start projected procurement of 9 ARSS to support HBCTs, SBCTs and Infantry Brigade Combat Teams (IBCT) by providing on-system maintenance repairs to weapons as far forward as possible on the battlefield.
- Fielded 170 AK in FY 2013 and projected to procure 200 AK in FY 2014 replacing legacy field feeding systems.

Section IV. Key FY 2015 Service Support Investments:

The FY 2015 Sustainment investments total $423.5M ($89.1M RDTE/$260.1M OPA/$74.3M OMA) for support programs and include fuel and water systems, load handling systems, airdrop systems, tool sets, medical systems and other combat enablers. Specific investments in this portfolio include:

- $47.0M (OPA) and $43.9M (OMA) procures 2,382 Medical Devices and Medical Equipment Sets that provide health service support for soldiers on the battle field with current standards of care.
- $22.6M (OPA) procures 974 pieces of MC4 that supports medical information system, enabling lifelong electronic medical records, streamlined medical logistics and enhanced situational awareness for Army tactical forces.
- $22.1M (OPA) procures 460 MFS-TRM providing a mobile fuel storage capability for 12 BCTs.
- $22.6M (OPA) procures 1,653 MSD-V3 replacing obsolete test sets in 16 BCTs.
- $12.8M (OPA) procures four NGATS replacing legacy Direct Support Electrical System Test Sets (DSESTS) and legacy Base Shop Test Facility (BSTF) in two BCTs.
- $10.3M (OPA) procures 64 MTRCS providing rapid refrigerated transport and storage of Class I items for six BCTs.
- $12.3M (OPA) procures 138 HIPPO replacing obsolete Semi-Trailer Mounted Fabric Tanks (SMFT) and FAWPSS in seven BCTs.
- $5.7M (OPA) procures six calibration sets replacing obsolete calibration sets in three BCTs.
- $2.2M (OPA) procures 10 JPADS 10K and 15 JPADS 2K in support of joint precision aerial delivery operations conducted in numerous theaters of operations/training missions.
- $14.3M (OPA) procures 146 5K LCRTF replacing legacy 4,000 pound forklifts throughout the Army.
- $9.4M (OPA) procures 19 MWMSS replacing 24 legacy systems to support SBCTs, IBCTs, and Engineer FSCs.
- $10.4M (OPA) procures 28 ARSS to support HBCTs, SBCTs and Infantry Brigade Combat Teams (IBCT) by providing on-system maintenance repairs to weapons as far forward as possible on the battlefield.

- $4.0M (OPA) procures 16 Fire Suppression Refill System (FSRS) providing the capability to refill the majority of fire suppression systems fielded to ABCTs, SBCTs, and Support Maintenance Companies (SMC).

SCIENCE AND TECHNOLOGY PROGRAM

The Army Science and Technology (S&T) investments support Army modernization goals to develop and field affordable equipment in a rapidly changing technological environment. The Army depends on its Science and Technology (S&T) program to help prepare for the future, mitigate the possibility of technical surprise and ensure that we are able to remain dominant in any environment. The Army's S&T mission is to foster discovery, innovation, demonstration and transition of knowledge and materiel solutions to enable future force capabilities while exploiting opportunities to transition solutions to the current force. The Army relies on the S&T Enterprise to make intellectually informed investments based on analytic rigor that produces the right technologies and engineering solutions to support the future force. The S&T community affords us the flexibility and agility to respond to the many challenges that the Army will face.

In alignment with the S&T Mission statement above, the Army's S&T Vision is that the S&T Enterprise will be considered the premier technology provider by the Soldier, using its distinctive competencies in concert with best-in-class technology harvested globally, to develop, deliver and sustain superior capability for the Soldier. The S&T Enterprise will attract the best and brightest minds to apply their expertise to creatively solve difficult national security challenges.

Turning Science into Capabilities – 30 year strategic modernization plan

Turning science into capability takes a continuum of effort starting with fundamental research, the development and demonstration of technology, the validation of that technology and its ultimate conversion into capability. From an S&T perspective, this includes the laboratory confirmation of theory, the demonstration of technical performance, the conceptualization of the future to broaden the perspective of the requirements developers as well as the technology providers and the experimentation with new technologies to generate capabilities and to help refine/improve system design. Systems engineering plays an ever increasing role in ensuring that the technology developed can become a part of the capability of the future.

As part of this continuum, the Army has initiated a more strategic look at acquisition programs of record (PoR) across their life-cycle and across the full DOTMLPF (Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities). By establishing long-range plans over the course of PoR life-cycles, areas where there was an unaffordable alignment of activities (such as multiple major combat platforms

undergoing Engineering Change Proposals within the same 2-3 year timeframe) or unreasonable alignments (such as planned technology upgrades to a system that has already transitioned into sustainment) are made obvious. With that information in mind, we established tradespace to generate options that form the basis for decisions that will help the Army stay within its fiscal top line and still maximize its capabilities for Soldiers.

This new way to approach planning has put rigor into the analysis and forces the communities who invest in the development of materiel and the long-term sustainment of materiel to work together to maximize the Army's capabilities over time. From an S&T perspective, it clearly starts to inform the community as to when technology is needed for insertion as part of a planned upgrade. It also cues us as to when to start investing for replacement platforms. Aside from the obvious benefit achieved by laying out the Army's programs and seeing where we may have generated unrealizable fiscal challenges, it has reinvigorated the relationships and strengthened the ties between the S&T community and their Program Executive Office (PEO) partners. We are working together to identify technical opportunities and the potential insertion of new capabilities across this 30 year timeframe.

This new process has provided an opportunity for the development of a synchronized modernization program that is nested within both the Army and National Military Strategies and balances across the near-, mid- and far-term investments. This is an effort that will be designed from inception to meet the Army's enduring challenges and address the breadth of threats that we face now and in the future – enabling us to provide the right capability to Soldiers at the right time.

For FY 2015, the Army has dedicated more than $2.2B to its S&T Program, all of which is aligned with the Army's needs and priorities: $424.2M in RDT&E BA1 (Basic Research), $862.6M in RDT&E BA2 (Applied Research), $904M in RDT&E BA3 (Advanced Technology Demonstrations); $74.7M in the Technology Maturation Initiatives Program in RDT&E BA4 (Advanced Component Development and Prototypes); and $76.2M in the Manufacturing Technology Program in RDT&E BA7 (Operational System Development).

The S&T projects are planned and executed collaboratively with the Army's 16 laboratories and Centers, Program Executive Offices (PEOs) and warfighters (Soldiers/leaders who employ warfighting capabilities) represented by TRADOC. The Army Capabilities Integration Center (ARCIC), a field operating agency supporting Headquarters, TRADOC, manages the Army's architecture of the future to ensure that

the warfighter's requirements are integrated and understood. Where appropriate, partnerships are developed among the Services, Department of Defense (DoD) laboratories, industry, academia and international partners. The Army's S&T investments reflect a balanced approach to far-term, basic research for discovery and understanding of phenomena (Research, Development, Test & Engineering (RDT&E) Budget Activity (BA) 1); mid-term, applied research for laboratory concept demonstrations to develop and evaluate the feasibility and practicality of proposed solutions (RDT&E BA 2); and near-term, advanced technology demonstrations of subsystems and components in relevant environments outside the laboratory (RDT&E BA 3) that transition to programs of record or support efforts such as Operational Need Statements or initiatives undertaken by the Rapid Equipping Force. In addition, TRADOC Centers of Excellence ensure that promising capabilities from emerging technologies are transitioned to the Soldier through enabling concepts and JCIDS requirements documents. We have established an Army S&T and Acquisition partnership that invests a portion of the Army's RDT&E BA 4 funding (Advanced Component Development and Prototypes) against high potential technologies/sub-systems and further matures them for demonstration in relevant environments and operational scenarios. This partnership seeks to support the prototyping of technologies and systems earlier in the acquisition lifecycle, ensuring competition while reducing technological risk to Army programs of record. This investment, which we will continue to build upon, is showing progress in creating a more seamless path for transition out of S&T and into programs of record. Finally, the Army's (RDT&E BA7) funding in the area of Manufacturing Technology (Man Tech) spans the acquisition life cycle and enables affordable and low risk-production of key technologies necessary to meet Army requirements.

The Army S&T program is organized into eight investment portfolios that address challenges across six Army-wide capability areas (Soldier/Squad, Air, Ground Maneuver, Command, Control, Communications and Intelligence (C3I), Lethality, and Medical) and two S&T enabling areas (Basic Research and Innovation Enablers):

- The Soldier/Squad Portfolio includes sub-portfolios in Human Dimension, Soldier Lethality and Enablers, Human Systems Integration, Survivability and Sustainment. The Soldier/Squad Portfolio executes innovative S&T programs that increase the performance, effectiveness, health and reliability of the human component and develops and integrates the equipment which can unburden Soldiers/Squad during dismounted operations allowing for rapid dominance in increasingly complex environments across a diverse range of operations.

- The Air Portfolio aims to be the global leader in providing game-changing range, payloads, speed, survivability and lethality to maintain U.S. technical superiority and combat overmatch for vertical lift aviation systems. It includes sub-portfolios in the areas of Platform Design and Structures; Engines and Drive trains; Aircraft Occupant Survivability; Maintenance and Sustainability; Rotors and Vehicle Management; Aircraft Weapons and Sensors; and Unmanned and Optionally Manned Systems.
- The Ground Maneuver Portfolio includes sub-portfolios for: Survivability, Ground Platforms (manned and unmanned) and Mobility and Countermobility to provide our Soldiers with overmatch of offensive and defensive capabilities in weapons and military vehicles. Sustainment S&T efforts are focused within our Soldier and Ground Portfolios.
- The Lethality Portfolio invests in long range artillery and rockets, air and missile defense, medium caliber and tank-fired munitions, close combat and air launched munitions, directed energy weapons, energetic materials and guidance components. The Lethality Portfolio includes sub-portfolios for: Weapons Enablers, Fire Support, Directed Energy, Close Combat and Air Defense to develop affordable weapon systems with improved performance and provide increased survivability under any conditions.
- The C3I Portfolio vision is to provide Soldiers at the tactical edge with trusted and responsive sensors, communications, information adaptable in dynamic, austere environments to support battlefield operations and non-kinetic warfare. Its sub-portfolios include: Communications, Mission Command, Sensors and Intelligence/Electronic Warfare.
- The Medical Portfolio includes sub-portfolios for: Systems Biology, Military Operational Medicine, Infectious Diseases, Combat Casualty Care and Clinical and Rehabilitative Medicine. The Medical Portfolio is focused on materiel and knowledge-based medical solutions to increase warfighter fitness, health, protection, resilience, improve downrange health delivery and enhance recovery, rehabilitation or reintegration.
- The Innovation Enablers Portfolio includes sub-portfolios for Environmental Quality and Installations, High Performance Computing and S&T classified programs. The DoD High Performance Computing Modernization Program supports all Services and DoD Agencies, provides advanced computational capabilities as a solution of first resort to explore and evaluate new theories, reduces time and cost of acquiring weapons systems and enables real-time calculations in support of military operations. The Environmental Quality and Installations sub-portfolio includes investment areas in Adaptive and Resilient

Installations, Military Materials in the Environment and Sustainable Ranges and Lands.

- Underpinning all of the Army S&T efforts is a strong Basic Research program that builds an agile and adaptive foundation of technical understanding so that the Army is able to respond to future threats. The Basic Research Portfolio includes the following sub-portfolios: Human Centric, Information Centric, Material Centric, Platform Centric and Enrichment Initiatives. Investing wisely in people with innovative ideas is our best approach to catching unexpected discoveries for the Army of the Future. To create the environment for discovery, it is important to continue making smart investments in basic research, especially in Army unique areas.
- Integrated within each of these portfolios is the Army's Technology Maturation Initiative and Manufacturing Technology (ManTech) program.

    » The Technology Maturation Initiative invests in technology efforts that are closely partnered with planned or existing programs of record, seeking to further mature and prototype technologies before Milestone B, reduce acquisition program costs and risks and accelerate the integration of advanced technologies into warfighter capabilities. In FY 2015, Technology Maturation Initiative investments will target: Active Protection Systems; Air and Missile Defense; Degraded Visual Environment Operations; Ground Vehicle Technologies; Intra-Soldier Wireless and Integrated Electronics; Platform Agnostic Sensors (Horizontal Technology Integration); Radio Frequency Convergence; Position Navigation and Timing (PNT) and New Capability Upgrades for Equipment Modernization.

    » The ManTech program is a key aspect of the Army mission to provide Soldiers with a decisive advantage in any mission. It addresses required manufacturing maturation for critical S&T efforts, such as next-generation armor systems; provides cost reduction of manufacturing and repair processes for current warfighting systems; and enables above the shop floor efforts related to digital product and production data.

The following are examples of major efforts within the S&T Portfolio with near term products:

- The Warrior Injury Assessment Manikin (WIAMan) Program is an effort to design a new instrumented test manikin that provides enhanced capability to measure

the blast waves and acceleration changes that occur on a vehicle occupant during vehicle Under Body Blast events. The WIAMan Program will design a test tool that replicates human injury and allows injury prediction by pairing test asset development with medical research. The project will evaluate skeletal injuries to occupants during such events and will develop skeletal injury criteria to be used during combat vehicle LFTEs to improve vehicle design and soldier survivability. The first blast manikin prototypes will be available in FY 2015.

- The Occupant Centric - Force Protection Program is exploring designs and technologies to improve force protection and mitigate Soldier injury due to underbody improvised explosive device and mine blast, vehicle rollover and vehicle crash events. This design philosophy considers the Soldier first, integrating occupant protection technologies, such as energy absorbing floors and seats with novel vehicle designs to understand the contribution of the individual technologies to improved survivability. To test and validate the improvements to occupant survivability and understand the integration issues, an occupant centric survivability concept design demonstrator is in development. Ballistic hull versions of the concept design demonstrator will undergo underbody blast testing in FY 2014. To further test and validate the improvements to occupant survivability and further understand integration issues, technologies will be integrated on legacy platform-specific demonstrators in FY 2014 and FY 2015. Legacy demonstrators include a Bradley Infantry Fighting Vehicle and Mine-Resistant Ambush-Protected All Terrain Vehicle. The goal is to document the methodology used to improve occupant survivability and publish standards and occupant centric design guidelines, test procedures, safety specifications, as well as improving modeling and simulation capabilities.

- The Active Protection System (APS) Program is developing technologies to reduce vehicle weight while significantly increasing protection against current and emerging advanced threats by reducing reliance on armor through other means such as sensing, warning, hostile fire detection and active countermeasures. The APS program is also developing an APS Common Architecture (CA) with standard interfaces to enable adaptable APS solutions that can be integrated across Army vehicle platforms as required. Formulation of the APS Program will occur in FY 2014. To test and validate APS and the APS CA, a soft kill demonstrator and a hard kill/soft kill demonstrator will be developed for test and demonstration in FY 2017 and FY 2019 respectively. The goal is the development and demonstration of an APS and APS Common Architecture that

establish and document standardized interfaces, demonstrator specifications to the sub-system level, performance and integration assessments and test reports, residual risk assessments and a verified and validated APS simulation tool; development is conducted to facilitate fielding of APS on Army platforms.

- The Joint Multi-Role (JMR) Technology Demonstrator (TD) is the S&T program designed to develop next-generation aircraft concepts that demonstrate vastly improved range, speed, survivability and payload capacity to meet the operational capabilities required of future aviation systems. These concepts will inform the design and development of the planned Future Vertical Lift (FVL) acquisition program and reduce technical risk by evaluating critical technologies early. By partnering with industry and academia, Army S&T is specifically working on engineering new aviation systems able to sustain speeds in excess of 170 knots; achieve an overall mission range greater than 800 kilometers (out and back); and hover with a full combat load under high density altitude conditions while also addressing operational and sustainment costs. Plans for additional FVL technologies include enhanced vehicle and occupant survivability; internal weapons carriage; next-generation sensors for target detection and identification; common, open systems architecture for on-board avionics; manned-unmanned teaming ability; and shipboard compatibility. The JMR TD initiated designs for several demonstrator aircraft in 2013 and will conduct first flights in 2017 as a series of steps toward developing the next-generation fleet of vertical lift aircraft by 2030.

- The Degraded Visual Environment (DVE) mitigation effort is developing technologies to aid pilots in operating vertical lift systems in environments with reduced visibility of varying degrees wherein situational awareness and aircraft control cannot be maintained as comprehensively as they would in normal visual meteorological conditions. DVE mitigation will involve the integration of technologies from three S&T investment areas: sensors, cueing and flight controls. An incremental approach is used for technology development. In FY 2014 to FY 2019 we will develop and demonstrate technologies for a forward looking pilotage system and hazardous avoidance that provide enroute, 360 degree hazard warning, synthetic vision and sensor(s) DVE pilotage capability will be developed and demonstrated.

- Within the C3I portfolio, Army S&T is providing solutions to improve command and control, situational awareness and dynamic communications, while maintaining appropriate military security not found in commercial devices. For example, the Actionable Intelligence technology initiative is developing and maturing tools to collect and transform Intelligence data into timely and relevant situational understanding that reduces tactical surprise for Soldiers at the company-level and below. It focuses on Operations/Intelligence convergence, automated Company Intelligence Support Team (COIST) tools and sensor exploitation at the tactical edge to provide equipped units with tactical information overmatch currently only available to higher echelons. The effort is structured into four thrust areas that will be completed in FY 2015: Proactive Data Services, COIST Fusion Services, Analyst Collaborative Tools, and Overwatch Sensor Grid. Capabilities and technologies include lighter and more effective sensor payloads (for improved minefield, IED and threat detection), improved urban terrain and combat identification sensors (through structure sensing, friend/foe disambiguation), and a tool suite that utilizes the Distributed Common Ground System - Army standard architecture to perform threat projections and provide near-real-time tips and cues to the squad. In addition, by FY 2017 S&T is developing an intra-Soldier wireless capability that will provide a secure, wireless personnel area network solution to network on-Soldier sensors and ancillary devices to unburden and increase freedom of maneuver for the Soldier.

- Army S&T in conjunction with the Product Director Position Navigation and Timing (PNT) is developing and maturing the ability to obtain and trust PNT information while operating in conditions that impede or deny access to Global Positioning System (GPS), including, operations in dense vegetation, urban and mountainous terrain, subterranean and underwater operations, that results in electromagnetic interference to the GPS. Assured PNT focuses on platform distribution of PNT, scalable PNT architectures that pace the threat and the ability to upgrade to M-Code with little to no impact on the system integration. The concerted effort intends to deliver technology to the program of record in FY 2016.

- Army S&T is also exploring emerging technologies that may result in future critical (and affordable) capabilities for assured communications and persistent Intelligence, Surveillance and Reconnaissance (ISR) and are expected to be useful in future Anti-Access/Area Denial environments. One such area of Army S&T investment is in nano-satellite technology to augment or provide redundant

capabilities to the tactical warfighter. In partnership with United States Southern Command (USSOUTHCOM), the U.S. Air Force (USAF) Space Test Program (STP) and the Office of the Secretary of Defense, the SMDC Nano Satellite-3 Joint Capability Technology Demonstration (JCTD) will demonstrate beyond line-of-sight communications and data exfiltration via three nano-satellites in a Low Earth Orbit (LEO) constellation in FY 2014/2015. In partnership with U.S. Pacific Command, the Department of defense and the USAF STP, the Kestrel Eye JCTD will demonstrate a proof-of-concept to provide overhead Joint Photographic Experts Group (JPEG) imagery directly to tactical commanders in response to their Tasking, Collection, Processing, Exploitation and Dissemination process via a constellation of three small satellites. Within the Soldier portfolio, multiple laboratories have collaborated on a systems engineering research and development effort to conduct demonstrations of integrated head-borne systems between FY 2014 and FY 2016. This approach optimizes system weight and increases protection and human performance. The team is developing technical attributes for a test methodology for this integrated system that includes such factors as laser protection, anti-fog, abrasion resistance and blast overpressure. Material efforts focus on lighter and stronger materials for helmets, eyewear, face shields, respiratory protection, miniaturized heads up displays, blast sensors and impact attenuation systems. The team is optimizing power and energy sources to distribute power for all the equipment that is resident on the head-borne system. Human integration analysis was critical in the development of concepts and designs, which supported operationally based human performance metrics. This system engineering approach is a major step forward in the Army's effort to unburden our Soldiers.

- Within the Medical portfolio, Army S&T is developing medical technologies including drugs, vaccines, medical devices, diagnostics and medical practices and procedures to protect and improve the survival of U.S. Forces across the entire spectrum of military operations. In FY 2015 and FY 2016, a host of medical products will transition to advanced development, including: a hydration status monitor that will be a simple, fieldable, low-cost, lightweight device for measuring actionable levels of dehydration status; a vital signs monitor that provides medics with advanced decision-support capabilities and the ability to simultaneously monitor multiple patients; and an Intracavitary Hemorrhage Control Agent that controls bleeding associated with non-tourniquetable and non-compressible injuries, such as those often found with neck, groin, or torso injuries where compression could result in further damage. The Armed Forces Institute of Regenerative Medicine (AFIRM), as part of the Clinical and Rehabilitative

Medicine research area, is a multi-institutional, interdisciplinary network developing advanced treatment options for severely wounded service members. Under the first AFIRM consortium, the Army supported tremendous advances, including ten hand transplants and four face transplants over the past five years, as well as major advances in burn repair and scarless wound healing. In 2013, the Army awarded a second series of cooperative agreements known as AFIRM II. The AFIRM II program will focus on six areas: extremity regeneration, craniomaxillofacial regeneration, skin regeneration, composite tissue allotransplantation (transplantation of non-identical donor cells, tissues, or organs) and immunomodulation (modification of immune response to improve transplant retention) and genitourinary/lower abdomen reconstruction. Therapies developed by the AFIRM II program are intended to aid traumatically injured service members and civilians. The goals of the program are to position promising technologies and therapeutic/restorative practices for entrance into human clinical trials, to fund early human clinical trials, and to fund basic through translational regenerative medicine research and development.

- The Army Manufacturing (Man Tech) Technology Advanced Body Armor project incorporates new composite assembly and consolidation techniques, novel tooling, new ceramic fabrication and computer controlled automation to deliver an integrated process to support the development of new PEO Soldier performance specifications. Specifically, the ManTech effort provides first-of-its-kind process technology to enable 10 percent weight reduction of DoD pervasive Enhanced Small Arms Protective Insert (ESAPI) hard plate body armor for defined threats. These technologies have been successfully and repeatedly demonstrated in a manufacturing relevant environment. The manufacturing processes demonstrated by ManTech are being transitioned to PM Soldier's Soldier Protection System Program of Record, which includes the development of lighter Hard Armor Protective Inserts (HAPI) plates. Composite and process technologies developed under ManTech also enable the fabrication of Swimmer's Cut and Special Operations Forces Personal Equipment Advanced Requirements plates to benefit SOCOM fielding initiatives.

As the Army S&T Program continues to identify and harvest technologies suitable for transition to our force, we aim to remain ever vigilant of potential and emerging threats. We are implementing a strategic approach to modernization that includes an awareness of existing and potential gaps, an understanding of emerging threats, knowledge of state-of-the-art commercial, academic and government research, as well as a clear understanding of competing needs for limited resources. Army S&T will sharpen its

research efforts to focus upon those core capabilities it needs to sustain while identifying promising or disruptive technologies able to change the existing paradigms of understanding. Ultimately, the focus remains upon Soldiers; Army S&T consistently seeks new avenues to increase the Soldier's capability and ensure their technological superiority today, tomorrow and decades from now. The Army S&T mission is not complete until the right technologies provide superior overmatch capability for our Soldiers.

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Acronym List

AAO	Army Acquisition Objective
AAS	Armed Aerial Scout
ABCS	Army Battle Command Systems
ABV	Assault Breacher Vehicle
ACFT	Aircraft Procurement, Army
ADAM	Air Defense Airspace Management (Cell)
AEB	Aerial Exploitation Battalions
AEODRS	Advance EOD Robotics System
AEP PB 15	Army Equipment Program in support of President's Budget 2015
AESA	Active Electronically Scanned Array
AFATDS	Advanced Field Artillery Tactical Data System
AGSE	Aviation Ground Support Equipment
AHB	Assault Helicopter Battalions
AHD	Acoustic Hailing Device
AK	Assault Kitchen
AMD	Air and Missile Defense
AMDPCS	Air and Missile Defense Planning and Control System
AMDWS	Air and Missile Defense Work Station
AMPV	Armored Multi-purpose Vehicle
APAM	Anti-Personnel/Anti-Materiel
ARCIC	Army Capabilities Integration Center
ARI	Aviation Restructure Initiative
ARL	Airborne Reconnaissance Low
ARL-E	Airborne Reconnaissance Low – Enhanced
ARNG	Army National Guard
ARNORTH	U.S. Army North
ARSS	Armament Repair Shop Set
ASE	Aircraft Survivability Equipment
ATACMS	Army Tactical Missile System
ATC	Air Traffic Control
ATIRCM	Advanced Threat Infrared Countermeasures
AW	Alternate Warhead
B	Billions
BBA	Bipartisan Budget Act 2013
BCA	Budget Control Act of 2011
BCS-3	Battle Command Support and Sustainment System
BCT	Brigade Combat Team
BEB	Bridge Erection Boat
BFIST	Bradley Fire Support Team (Vehicle)
BfSB	Battlefield Surveillance Brigade
BHL	Backhoe Loader
BI/BII	Block I, Block II

BMD	Ballistic Missile Defense
BSTF	Base Shop Test Facility
C2	Command and Control
C2/SA	Command and Control/Situational Awareness
C3I	Command, Control, Communications, Intelligence
C4I	Command, Control, Communications, Computers and Intelligence
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance
CA/MISO	Civil Affairs and Military Information Support Operations
CAB	Combat Aviation Brigade
CBPS	Chemical Biological Protective Shelter
CBRNE	Chemical, Biological, Radiological, Nuclear and High-Yield Explosive
CBT	Common Bridge Transporter
CDTE	Counter Defilade Target Engagement
CE	Computing Environment
CFV	Cavalry Fighting Vehicle
CHARCS	Counterintelligence and Human Intelligence Automated Reporting and Collection System
CI	Counterintelligence
CIRCM	Common Infrared Countermeasures
CMD/CUAS	Cruise Missile Defense/Counter Unmanned Ariel Surveillance Sensor
CMD-P	Computer Meteorological Data-Profiler
CMWS	Common Missile Warning System
COCOM	Combatant Command
COE	Common Operating Environments
CoIST	Company Intelligence Support Team
COMINT	Communications Intelligence
COMSEC	Communication Security
CONOPS	Concept of Operations
CONPLAN	Contingency Plan
COP	Common Operating Picture
COTS	Commercial Off the Shelf
CPOF	Command Post of the Future
CPCE	Command Post Computing Environment
C-RAM	Counter-Rockets, Artillery and Mortars
CROWS	Common Remotely Operated Weapon System
CS	Combat Support; or Capability Set
CS	Capability Set
CSP	Common Sensor Payload
CSS	Combat Service Support
CTE	Container Transfer Enhancement
CUAS	Counter Unmanned Aerial System
CWMD	Counter Weapons of Mass Destruction
DCGS-A	Distributed Common Ground System - Army
DF	Direction Finding
DFCS	Digital Fire Control System
DMTI	Digital Moving Targeting Indicator
DOMEX	Document and Media Exploitation
DRUH-R	Dynamic Reference Unit Hybrid-Replacement

DSESTS	Direct Support Electrical System Test Set
DTSS-L	Digital Topographical Support System – Light
DVH	Double V Hull
EC2	Enhanced Command and Control
ECP	Engineering Change Proposal
ECS	Engagement Control Station
ECU	Environmental Control Unit
ECU	Electronics Controller Unit
ELES	Enhanced Launcher Electronics System
ELINT	Electronic Intelligence
EMARSS	Enhanced Medium Altitude Reconnaissance Surveillance System
EMD	Engineering and Manufacturing Development
EMV	EMARSS Maintenance Vehicle
EO/IR/LD	Electro-optical/Infrared/Laser Designator
EOD	Explosive Ordnance Disposal
EPA	Environmental Protection Agency
EPLRS	Enhanced Position Location and Reporting System (Radio)
EPP	Extended Planning Period
ESA	Enhanced Situational Awareness
ETWD	Electronic Thermal Warning Device
EWPS	Expeditionary Water Packaging System
FA	Field Artillery
FAAD C2	Forward Area Air Defense Command and Control
FAWPSS	Forward Area Water Point Supply System
FBCB2	Force XXI Battle Command Brigade and Below
FCS-U	Fire Control System – Upgrade
FDA	Federal Drug Administration
FHTV	Family of Heavy Tactical Vehicles
FISINT	Foreign Instrument Signal Intelligence
FMR	Full Materiel Release
FMS	Foreign Military Sales
FMTV	Family of Medium Tactical Vehicles
FMV	Full Motion Video
FOS	Family of Systems
FOT&E	Follow-on Operational Test and Evaluation
FOV	Family of Vehicles
FREHD	Forward Reconnaissance and Explosive Hazard Detection
FRS	Future Radiographic System
FS3	Fire Support Sensor System
FSRS	Fire Suppression Refill System
FUE	First Unit Equipped
FVL	Future Vertical Lift
FY	Fiscal Year
GATM	Global Air Traffic Management
GBS	Global Broadcast System
GCSS-A	Global Command Support System – Army
GCV	Ground Combat Vehicle
GDU-R	Gun Display Unit – Replacement

GEM	Guided Enhanced Missile
GEOINT	Geospatial Intelligence
GFE	Government Furnished Equipment
GMLRS	Guided Multiple Launch Rocket System
GMTI	Ground Moving Target Indicator
GPR	Ground Penetrating Radar
GRCS	Guardrail Common Sensor
GSD	Gunshot Detection
HBC	High Band Communications Intelligence
HBCT	Heavy Brigade Combat Team
HD	High Definition
HEMTT	Heavy Expanded Mobility Tactical Truck
HEPPOE	Hydraulic, Electric, Pneumatic, Petroleum Operated Equipment
HIMARS	High Mobility Artillery Rocket System
HIPPO	Load Handling System Compatible Water Tank Rack System
HMDS	Husky Mounted Detection System
HMEE	High Mobility Engineer Excavator
HMG	Heavy Machine Gun
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HMS	Handheld, Manpack and Small Form Fit (radios)
HNW	Highband Network Waveform
HTV	Heavy Tactical Vehicle
HUMINT	Human Intelligence
HYEX	Hydraulic Excavator
IAC	Improved Armored Cab
IAMD	Integrated Air and Missile Defense
IBCS	Integrated Air and Missile Defense – Battle Command System
IBCT	Infantry Brigade Combat Team
IBD	Integrated Base Defense
ID	Infantry Division
IECU	Improved Electronics Controller Unit
IED	Improvised Explosive Device
IEWS	Integrated Electronic Warfare System
IF-FoS	Indirect Fire Family of Systems
IFPC	Indirect Fire Protection Capability
IFV	Infantry Fight Vehicle
IGSSR-C	Integrated Ground Surveillance Security Response – Capability
IOC	Initial Operational Capability
IOT&E	Initial Operational Test and Evaluation
IOTE	Initial Operational Test and Evaluation
IOTV	Improved Outer Tactical Vest
IP	Internet Protocol
IPADS	Improved Position and Azimuth Determining System
IPADS-G	Improved Position and Azimuth Determining System integrated with Global Positioning Satellite
ISO	International Organization for Standardization
ISR	Intelligence Surveillance and Reconnaissance
ITEP	Improved Turbine Engine Program

JAB	Joint Assault Bridge
JADOCS	Joint Automated Deep Operations Coordination System
JALN	Joint Aerial Layer Network
JBC-P	Joint Battle Command-Platform
JCR	Joint Capabilities Release
JCTD	Joint Capability Technology Demonstration
JETS	Joint Effects Targeting System
JIE	Joint Information Environment
JLENS	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor
JLTV	Joint Light Tactical Vehicle
JMR	Joint Multi-Role
JPADS	Joint Precision Airdrop System
JPEG	Joint Photographic Experts Group
JTAGS	Joint Tactical Ground Station
JTRS	Joint Tactical Radio Systems
JWICS	Joint Worldwide Intelligence Communications System
KW	Kiowa Warrior
LCMR	Lightweight Counter-Mortar Radar
LCRTF	Light Capability Rough Terrain Forklift
LCU	Landing Craft Utility
LEO	Low Earth Orbit
LIRA	Long-range Investment Requirements Analysis
LKMD	Lighting Kit Motion Detector
LLDR	Lightweight Laser Designator Rangefinder
LOCB	Line of Communication Bridging
LPWS	Land-based Phalanx Weapon System
LRIP	Low Rate Initial Production
LRPF	Long Range Precision Fires
LSV	Logistic Support Vessel
LUH	Light Utility Helicopter
LWN	LandWarNet
M	Millions
MAMI	Medium Altitude Multi-Intelligence
M-ATV	MRAP All Terrain Vehicles
MC	Mission Command
MC4	Medical Communications for Combat Casualty Care
MCE	Mounted Computing Environment
MEDEVAC	Medical Evacuation
MEP	Mission Equipment Package
MFLTS	Machine Foreign Language Translation System
MFS	Modular Fuel System; Medical Field Systems
MFS-TRM	Modular Fuel System Tank Rack Module
MI	Military Intelligence
MIPA	Missile Procurement, Army
MLRS	Multiple Launch Rocket System
MML	Multi Mission Launcher
MNVR	Mid-tier Networking Vehicular Radio
MPCV	Mine Protected Clearance Vehicles

MRAP	Mine Resistant Ambush Protected (vehicle)
MRAP-ATV	MRAP All Terrain Vehicle
MRBC	Multi-Role Bridge Company
MRDS	Man-portable Radiological Detection System
MS A	Milestone A (acquisition milestone)
MS B	Milestone B (acquisition milestone)
MS C	Milestone C (acquisition milestone)
MSD	Maintenance Support Device
MSE	Missile Segment Enhancement
MSLS	Missile Procurement, Army
MSV-L	Maneuver Support Vessel – Light
MTRCS	Multi-Temperature Refrigerated Container System
MTRS	Man Transportable Robotic System
MTV	Medium Tactical Vehicle
MWMSS	Metal Working and Machine Shop Set
NBCRV	Nuclear Biological, Chemical Reconnaissance Vehicle
NetOps	Network Operations
Nett	Not an acronym - honors World War II Medal of Honor recipient Colonel Robert B. Nett
NFPA	National Fire Protection Association
NGATS	Next Generation Automatic Test System
NIE	Network Integration Evaluation
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OMA	Operation & Maintenance, Army
OND	Operation New Dawn
ONS	Operational Needs Statement
OPA	Other Procurement, Army
OSRVT	One System Remote Video Terminal
PAC	Patriot Advanced Capability
PB	President's Budget
PDFCS-R	Paladin Digital Fire Control System-Replacement
PDISE	Power Distribution Illumination System Electrical
PED	Processing, Exploitation and Dissemination
PFCS	Paladin Fire Control System
PFED	Pocket-sized Forward Entry Device
PGK	Precision Guidance Kit
PIM	Paladin Integrated Management
PIP	Product Improvement Program
PLS	Palletized Load System
PNT	Position Navigation and Timing
POM	Program Objective Memorandum
PoR	Program of Record
PPE	Personal Protective Equipment
PROX/SLEP	Proximity/Service Life Enhancement Program
PSR	Precision Sniper Rifle
QCB	Quick-Change Barrel
QRC	Quick Reaction Capabilities
RAM	Rockets, Artillery and Mortars; also Reliability, Availability and Maintainability

RCIS	Route Clearance Interrogation System
RDA	Research, Development and Acquisition
RDTE	Research, Development, Test and Evaluation
RFP	Request for Proposal
RR	Rifleman Radio
RSTA	Reconnaissance, Surveillance and Target Acquisition
RWR	Radar Warning Receiver
S&T	Science and Technology
SALT	Small Airborne Link-16 Terminal
SAR	Synthetic-Aperture Radar
SATCOM	Satellite Communications
SEP	System Enhancement Package
SICPS	Standard Integrated Command Post System
SIGINT	Signals Intelligence
SINCGARS	Single Channel Ground and Airborne Radio System
SIPR	Secret Internet Protocol Router
SLEP	Service Life Extension Program
SMART-T	Secure Mobile Anti-Jam Reliable Tactical Terminal
SMC	Support Maintenance Company
SMET	Squad Multi-purpose Equipment Transport
SMFT	Semi-trailer Mounted Fabric Tank
SNS/RDD	Single Net Solution/Remote Deployment Driver
SOCOM	Special Operations Command
SOF	Special Operations Forces
SPARK	Self Protective Adaptive Roller Kit
SPCS	Soldier Plate Carrier System
STARLite	Small Tactical Radar Lightweight
STORM	Small Tactical Optical Rifle-Mounted
STP	USA Space Test Program
SWaP-C	Size, Weight, Power and Cooling
TAIS	Tactical Airspace Integration Systems
TBC	Tactical Battle Command
TBM	Theater Ballistic Missile
TCDL	Tactical Common Data Link
TD	Technology Demonstration
TENCAP	Tactical Exploitation of National Capabilities
THAAD	Terminal High Altitude Area Defense
TMC	Tactical Mission Command
TOW	Tube-Launched, Optically-Tracked, Wire-Guided
TPE	Theater Provided Equipment
TSP	Tactical SIGINT Payload
TWV	Tactical Wheeled Vehicles
U.S.	United States
UAH	Up Armored HMMWV
UAS	Unmanned Aircraft System
UGS	Unmanned Ground System
USAR	United States Army Reserve
USNORTHCOM	U.S. Northern Command

USSOUTHCOM	U.S. Southern Command
UTR	Unit Task Reorganization
VBIED	Vehicle Borne IED
VMMD	Vehicle Mounted Mine Detection
VOSS	Vehicle Optics Sensor System
VSAT	Very Small Aperture Terminal
WIAMan	Warrior Injury Assessment Manikin
WIN-T	Warfighter Information Network – Tactical
WMD	Weapons of Mass Destruction
WTCV	Weapons and Tracked Combat Vehicles

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