ARMY EQUIPMENT MODERNIZATION PLAN

U.S.ARMY

2013

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	Form Approved OMB No. 0704-0188

Report Documentation Page

1. REPORT DATE **2013**	2. REPORT TYPE	3. DATES COVERED **00-00-2013 to 00-00-2013**	
4. TITLE AND SUBTITLE **Army Equipment Modernization Plan**		5a. CONTRACT NUMBER	
		5b. GRANT NUMBER	
		5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)		5d. PROJECT NUMBER	
		5e. TASK NUMBER	
		5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Department of the Army,Deputy Chief of Staff, G-8,700 Army Pentagon,Washington,DC,20310**		8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)	
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)	

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**66**	

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18

MAY 16 2012

Today we are faced with uncertain strategic and operational environments coupled with fiscally constrained resources. The Army's equipment modernization strategy reflects the need to support the current fight, respond to uncertainties and implement the Army strategy for the force in 2020 all nested with DOD's strategic guidance. This strategy is focused on equipment needed to deter and defeat hybrid threats. We will network the force; replace, improve or transform our combat platforms; and empower, protect, and unburden our Soldiers.

The Army Equipment Modernization Plan 2013 describes the Research, Development and Acquisition (RDA) portion of our Fiscal Year 2013 President's Budget request which reflects the Army's priority materiel programs and identifies the critical capabilities to succeed in the full range of missions while maintaining a decisive advantage over any adversary.

The Army must continue to develop and field a versatile and affordable mix of equipment. The balanced approach to achieving this goal contains three main principles: integrated capability portfolios that align our equipment modernization communities to identify capability gaps and eliminate unnecessary redundancies, incremental modernization to deliver new and improved capabilities, and Army force generation processes to ensure unit equipment readiness.

Although we are a force in transition, we must continue to provide the Nation with the best equipped, most modernized, and highly capable Army to prevail in any operational environment. We will do this with affordability as our watchword and remain committed stewards of our Nation's resources. With a balanced equipment modernization strategy, the Army will remain on track to equip the Army of 2020.

DONALD C. TISON
Acting Deputy Chief of Staff, G-8

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EXECUTIVE SUMMARY

The Army Equipment Modernization Plan 2013 (ModPlan13) describes the Research, Development and Acquisition (RDA) portion of our Fiscal Year 2013 (FY13) President's Budget request. It is a unique document that breaks down the RDA investments into ten capability portfolio areas, highlights the portfolio accomplishments over the last two years and provides the intent for FY13 investments as well as the way ahead.

In addition to capability portfolio investment strategies, ModPlan13 links RDA investments to Army strategy and discusses specific modernization priorities and objectives, priority materiel programs, the Army's science and technology program and equipment fielding and distribution.

Today we are faced with uncertain strategic and operational environments coupled with declining resources. The Army will continue to develop and field a versatile and affordable mix of equipment to allow Soldiers and units to succeed in the full range of missions today and tomorrow and to maintain our decisive advantage over any adversary we face. The balanced and affordable approach to achieving this goal uses integrated capability portfolios and portfolio reviews to align our equipment modernization communities to identify capability gaps and eliminate unnecessary redundancies, incremental modernization to deliver new and improved capabilities and Army force generation processes to ensure unit equipment readiness. The Army's equipment modernization plan reflects the need to deter and defeat hybrid threats. We will network the force; replace, improve or transform our combat platforms; and empower, protect and unburden our Soldiers.

Although we are a force in transition, we must continue to provide the Army with the best equipped, most modernized and most highly capable units that will prevail on any battlefield. We will do this with affordability as our watchword and remain committed stewards of our Nation's resources. With a balanced equipment modernization strategy, the Army will remain on track to equip a smaller force without sacrificing its decisive edge.

Details on major Army acquisition programs can be found in the **2012 Army Weapon Systems handbook** at: http://armyalt.va.newsmemory.com/wsh2012.php

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LINKING RESOURCE DECISIONS TO ARMY STRATEGY

LINKING RESOURCE DECISIONS TO ARMY STRATEGY

> " *All of these changes are enabling us to craft a military that's better suited for the 21st-century challenges that we confront — one that can defeat any adversary on any battlefield, be it on land, be it in the air, be it in sea, be it in space or be it in cyberspace.* "
>
> — *Secretary of Defense Leon E. Panetta*

The Army has global responsibilities requiring large technological advantages to prevail decisively in combat. Just as Airmen and Sailors seek supremacy in the air and on the seas, Soldiers must dominate their enemies on land. Modernizing, especially as end-strength is reduced, is the key to ensuring that our dominance continues.

The Army is setting priorities and making prudent choices to provide the best possible force for the Nation within the resources available. We are developing and fielding a versatile and affordable mix of equipment to enable us to succeed in the full range of missions and maintain a decisive advantage over our enemies. To meet the challenges of an evolving strategic and fiscal environment, our strategy is based on three tenets: integrated capability portfolios, incremental modernization and leveraging the Army Force Generation cycle.

> " *To meet current and future threats our military must remain the finest in the world. It must be an agile and deployable full spectrum force that can deter conflict, project power and win wars.* "
>
> — *Army Secretary John M. McHugh*

- Integrated capability portfolios align stakeholders to identify capability gaps and eliminate unnecessary redundancies.

- Incremental modernization enables us to deliver new and improved capabilities by leveraging mature technologies, shortening development times, planning growth potential and acquiring in quantities that give us the greatest advantage while hedging against uncertainty.

- Army Force Generation processes synchronize the distribution of equipment to units providing increased readiness over time and delivering a steady and predictable supply of trained and ready modular forces. The Army has consolidated its materiel management process under a single command and designated U.S. Army Materiel Command as the Army's Lead Materiel Integrator. Additionally, we consolidated all of our materiel data into a single authoritative repository called the Logistics Information Warehouse.

> " *To prevent conflict, we must maintain credibility, which is partly based on modernization…* "
>
> —*GEN Raymond T. Odierno*

These emerging systems and processes represent a powerful new approach for implementing the Army's equipping priorities, policies and programs to meet new security demands of the 21st century. Equipment requested in the FY13 President's Budget

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strikes a balance between current and future needs, provides the basis for an affordable equipping strategy over time and takes into account Army requirements and priorities. In developing this request, the Army made difficult decisions to shift funds previously programmed for future capabilities to current needs.

The decisions came at the expense of promising and needed technologies with capabilities that did not fit within resource limitations. The Army's FY13 budget priorities are to network the force, replace, improve and/or transform selected platforms and to empower, protect and unburden the Soldier.

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ARMY FISCAL YEAR 2013 BUDGET PRIORITIES AND OBJECTIVES

ARMY FISCAL YEAR 2013 BUDGET PRIORITIES AND OBJECTIVES

The Army's FY13 budget request is strategy based and reflects the need for   equipment to deter and defeat adaptive threats that use hybrid approaches.

Below are the priorities and specific objectives that guide FY13 equipment modernization investments.

PRIORITIES	OBJECTIVES
NETWORK the FORCE	• Provide secure and common joint architecture that is synchronized with real time information. • Provide broadband capabilities to commanders on-the-move and voice / data / imagery to company and platoon level.

REPLACE, IMPROVE and/or TRANSFORM:	• **COMBAT VEHICLES**
	
	  • Replace the Infantry Fighting Vehicle (IFV) accommodating an entire Infantry Squad, balancing mobility and survivability and providing unmatched lethality.
	
	  • Replace aging M113 family of vehicles with improved protection and mobility.
	
	  • Improve Abrams, non-IFV Bradleys, Paladin and Stryker Vehicles.
	
	• **LIGHT TACTICAL VEHICLE**
	
	  • Modernize the wheeled vehicle fleet with a Joint Light Tactical Vehicle (JLTV), the first Network-ready vehicle providing protection while allowing more maneuverability.
	
	• **AVIATION**
	
	  • Upgrade highest demand capability platform with increased sensors.

EMPOWER, PROTECT and UNBURDEN the SOLDIER	• Enhance the lethality, protection, situational awareness and mobility of the individual Soldier. • Ensure overmatch capabilities for the Squad, the cornerstone of all units and the foundation of the decisive force.

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PRIORITY PROGRAMS

The priority Army materiel programs for FY 13 are:

THE NETWORK

- **Warfighter Information Network-Tactical (WIN-T)** [$1.2 billion (B) ($278 million (M) Research, Development, Test and Evaluation (RDTE) / $947M Other Procurement, Army (OPA))] provides the broadband backbone communications necessary for the tactical Army. It extends an Internet Protocol based satellite and line-of-sight communications network through the tactical force supporting telephone, data and video. In FY12, we begin fielding the second increment of WIN-T, providing 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 54 maneuver brigades and ten division headquarters. In FY15, we begin fielding the third increment of WIN-T, providing full on-the-move capabilities as well as exponential improvements in throughput on the line-of-sight transmission network and enabling an aerial layer to thicken the network.

- **Joint Tactical Radio System (JTRS)** [$556M (OPA)] is the Army's future deployable mobile communications family of radio systems, providing advanced joint tactical end-to-end networking data and voice communications to dismounted troops and aircraft platforms. JTRS utilizes Internet Protocol based technologies and provides network routing, embedded information assurance and simultaneous exchange of voice, data and video with multiple channels.

- **Joint Battle Command-Platforms (JBC-P)** [$141M (OPA)] is the next generation of Force XXI Battle Command Brigade and Below (FBCB2) / Blue Force Tracking (BFT) and is the foundation for achieving information interoperability on current and future battlefields and 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)** [$315M ($41M RDTE / $274M OPA)] provides integrated intelligence, surveillance, reconnaissance processing, exploitation and dissemination 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 intelligence, surveillance and reconnaissance (ISR) community.

- **Nett Warrior** [$150M ($47M RDTE / $103M OPA)]. Squads are the foundation of the decisive force and Soldiers are the centerpiece of the Army's formation. Nett Warrior is a mission command system worn by the dismounted Soldier providing unprecedented C2 / SA capabilities and support to the combat leader. The design incorporates operational unit mission needs and leverages operational lessons learned.

COMBAT VEHICLES

- **Ground Combat Vehicle (GCV)** [$640M (RDTE)] is the Army's replacement program for the IFV in Heavy Brigade Combat Teams (HBCTs) and is the centerpiece of the Army's overall combat vehicle modernization strategy. The GCV accommodates a nine-man infantry squad, balances mobility and survivability and provides unmatched lethality on the battlefield. Key GCV attributes include modular armor allowing commander adjustments based on operational threats as well as a design which allows

incorporation of future size, weight, power and cooling technologies (SWAP-C). The Army expects to award engineering and manufacturing development contracts in FY14.

- **Armored Multi-Purpose Vehicle (AMPV)** [$74M (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 treatment as well as command and control vehicles. An analysis of alternatives (AoA) is underway following the February 2012 approval of the AMPV requirement for materiel development.

- **Paladin Integrated Management (PIM)** [$374M ($168M RDTE / $206M Weapons and Tracked Combat Vehicles (WTCV))] is an important part of the Army's Ground Combat Vehicle modernization strategy and provides readily available, low risk upgrades enhancing 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 chassis with a more robust platform incorporating Bradley common drive train and suspension components in a newly designed hull. The program completed the initial developmental testing phase and was designated as an Acquisition Category I Major Defense Acquisition Program in FY11.

LIGHT TACTICAL VEHICLES

- **Joint Light Tactical Vehicle (JLTV)** [$72M (RDTE)] is the centerpiece of the Army's tactical wheeled vehicle modernization strategy replacing approximately one third of the light wheeled vehicle fleet by 2035. The multi-mission vehicle design provides protected, sustained, networked mobility for personnel and payloads across the full range of missions (traditional to irregular). The Army released the request for proposals (RFP) for potential JLTV vendors in January 2012 and expects a Milestone B decision in 3rd Quarter FY12. The Army anticipates a Milestone C decision in Second Quarter FY15.

AVIATION

- **Kiowa Warrior (KW)** [$280M ($85M RDTE / $192M Aircraft Procurement, Army (ACFT) / $3M Operations and Maintenance Army (OMA))]. The Army recognizes a continuing requirement for a light, armed helicopter for manned armed aerial reconnaissance, surveillance and light attack operations missions. The Kiowa Warrior OH-58 model upgrade provides enhanced cockpit and sensor capabilities which includes the Cockpit Display Subsystem 5, a nose mounted sensor, a Dual-Channel Full Authority Digital Electronic Control engine and integrated Manned / Unmanned Teaming capability.

EQUIPMENT PORTFOLIO OVERVIEWS

MOVEMENT & MANEUVER (SOLDIER) PORTFOLIO

Section I-Overview:

The squad is the foundation of the decisive force and the cornerstone of all units. Ensuring our squads are never in a fair fight and have overmatch in the future, the Soldier portfolio focuses on equipment for squad success. It consists primarily of small arms, crew-served weapons, shoulder-fired and vehicle-mounted missiles, mortars, Soldier sensors and lasers, night vision devices, body armor, Soldier clothing, individual equipment, parachutes, unmanned ground vehicles and limited tactical

communications equipment (see table 1). Collectively, these systems enable lethality, protection, situational awareness and mobility for the individual Soldier and squad. To meet the readiness and the modernization objectives of the Army Campaign Plan the Soldier portfolio focus for FY13 is:

- Supporting a battalion-level, in-theater Limited User Evaluation of the Individual Semi-automatic Airburst System (ISAAS) as the next step in employing this revolutionary Soldier-level, precision weapon system.
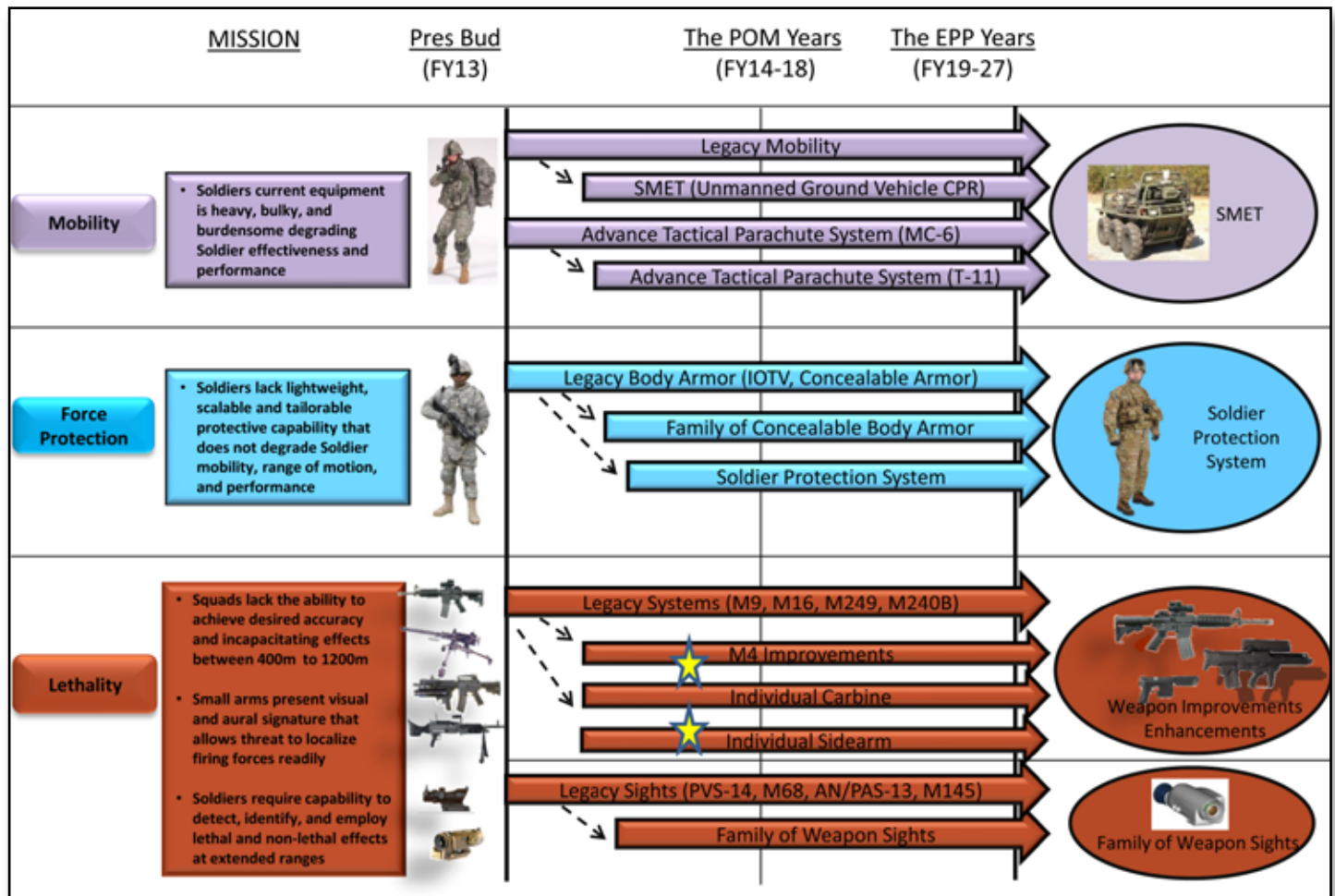
SOLDIER SYSTEM PORTFOLIO MATERIEL STRATEGY

Table 1. Soldier Portfolio (see Acronym Glossary)

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- Continuing the fielding of Enhanced Night Vision Devices to deploying Special Operation Forces and Brigade Combat Teams.

- Executing small arms procurement, as informed by the results of a full and open carbine competition, while simultaneously improving the current carbine capability for deployed forces.

- Continuing replacement of the conventional force parachute inventory with the Advanced Tactical Parachute System.

- Continuing Soldier load reduction efforts through research and development in body armor and weapons including the Lightweight .50 Cal Heavy Machinegun, the M240L Medium Machinegun and Mortars (60mm and 81mm).

- Providing the Fire Resistant Environmental Ensemble to aircrews improving their protection and comfort.

- Continuing fielding of Operation Enduring Freedom Camouflage Pattern Fire Resistant Army Combat Uniforms and organizational and individual equipment to forces deploying to Afghanistan.

Section II – Key Soldier Portfolio Accomplishments (FY11/12):

- Reduced Soldier load in Afghanistan by replacing 501 M240B Medium Machine Guns with Lightweight Medium Machineguns (10 pounds) and 44,000 Outer Tactical Vests with plate carriers (3.2 pounds). In addition, reduced the weight of the 81mm Mortar by 20 pounds and the 60mm Mortar by 8.8 pounds.

- Provided the American Soldier 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, fully automatic trigger and selector switch, ambidextrous controls, greater barrel life, improved sustained rate of fire, a consistent trigger pull and improved ergonomics and handling characteristics.

- Continued procuring the following small arms weapon initiatives with:

  » 1,655 Lightweight M240L Machineguns lightening the Soldier load.

  » 5,000 additional .50 cal Machine guns supporting increased requirements for Theater and Sustainment, Protection and Logistics deploying units.

- 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:

  » 3,425 Sniper Night Sights for Special Operations Forces (SOF), Brigade Combat Teams (BCT) and Battlefield Surveillance Brigades.

  » 7,181 Sense-Thru-the-Wall sensors for deploying BCTs and SOF.

  » 36,229 Thermal Weapon Sights (TWS) for deploying Combat Support (CS) and Combat Service Support (CSS) units.

  » 1,348 Laser Target Locators for BCTs.

» 1,437 Small Tactical Optical Rifle-Mounted (STORM) (micro laser range finders) for dismounted infantry and scouts in BCTs.

» 24,846 Green Laser Interdiction Systems for BCTs.

Section III - Key FY13 Soldier Portfolio Investments:

The FY13 Soldier investments total $1.1B ($166M RDTE / $230M WTCV / $482M OPA / $166M Missile Procurement, Army (MSLS) / $81M OMA) and include small arms (individual and crew-served weapons), night vision, Soldier sensors, body armor, individual networked C2, Soldier clothing and individual equipment and parachutes. Specific investments in this portfolio include:

• $126M (OPA) procures Enhanced Night Vision Goggles for deploying SOF and 250 systems per deploying BCT.

• $82M (OPA) procures 4,244 TWS III enhancing lethality for deploying BCT units.

• $21M (WTCV) continues small arms investment. Quantities dependent on cost per item as determined through the carbine competition.

• Full spectrum dominance Soldier sensors and lasers for deploying BCTs and SOF :

» $27.2M (OPA) procures 587 Laser Target Locators.

» $20.7M (OPA) procures 1,381 STORM (micro laser range finders).

• $36M (OPA) fields new parachutes and accessories for three BCTs.

• $29.8M (WTCV) procures the new XM806 Lightweight .50 cal Machinegun with an initial 750 weapons. This weapon is approximately 60 percent lighter than the current weapon – the M2 Heavy Machine Gun.

• $21.3M (WTCV) procures 12,000 improved M4A1s.

• $27.2M (WTCV) procures carbine accessories (Close Combat Optics, Rifle Combat Optics, M4 Rails, Close Quarters Battle Kits, Cleaning Kits and Magazines).

• $14.3M (WTCV) procures M4 product improvement Kits to convert 20,140 M4s to improved M4A1s.

• $83.9M (OPA) fields 76 Small Unmanned Ground Vehicles (SUGV) to two Infantry Brigade Combat Teams (IBCT).

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MISSION COMMAND PORTFOLIO

Section I - Overview:

The Army's One Network Strategy is a deployable, integrated and interoperable network which spans all echelons of command and supports Army, Joint and coalition operations, forming a true enterprise network (see table 2). The Mission Command (MC) portfolio consists of three distinct capability areas: **Transport, Applications** and **Network Services.** Warfighter Information Network – Tactical (WIN-T) and Joint Tactical Radio Systems (JTRS) are the primary Transport programs; Tactical

Battle Command (TBC), Joint Battle Command – Platform (JBC-P) and Global Command Support System – Army (GCSS-A) are the key Application programs; and Communication Security (COMSEC) with Key Management Infrastructure (KMI) and network management are the key Network Service programs. The Army integrates these elements into a coherent network of sensors, Soldiers, platforms and command posts linked by a robust transport network with an enabling suite of command and control (C2) applications providing our Warfighters greater access to greater and more varied network capabilities and
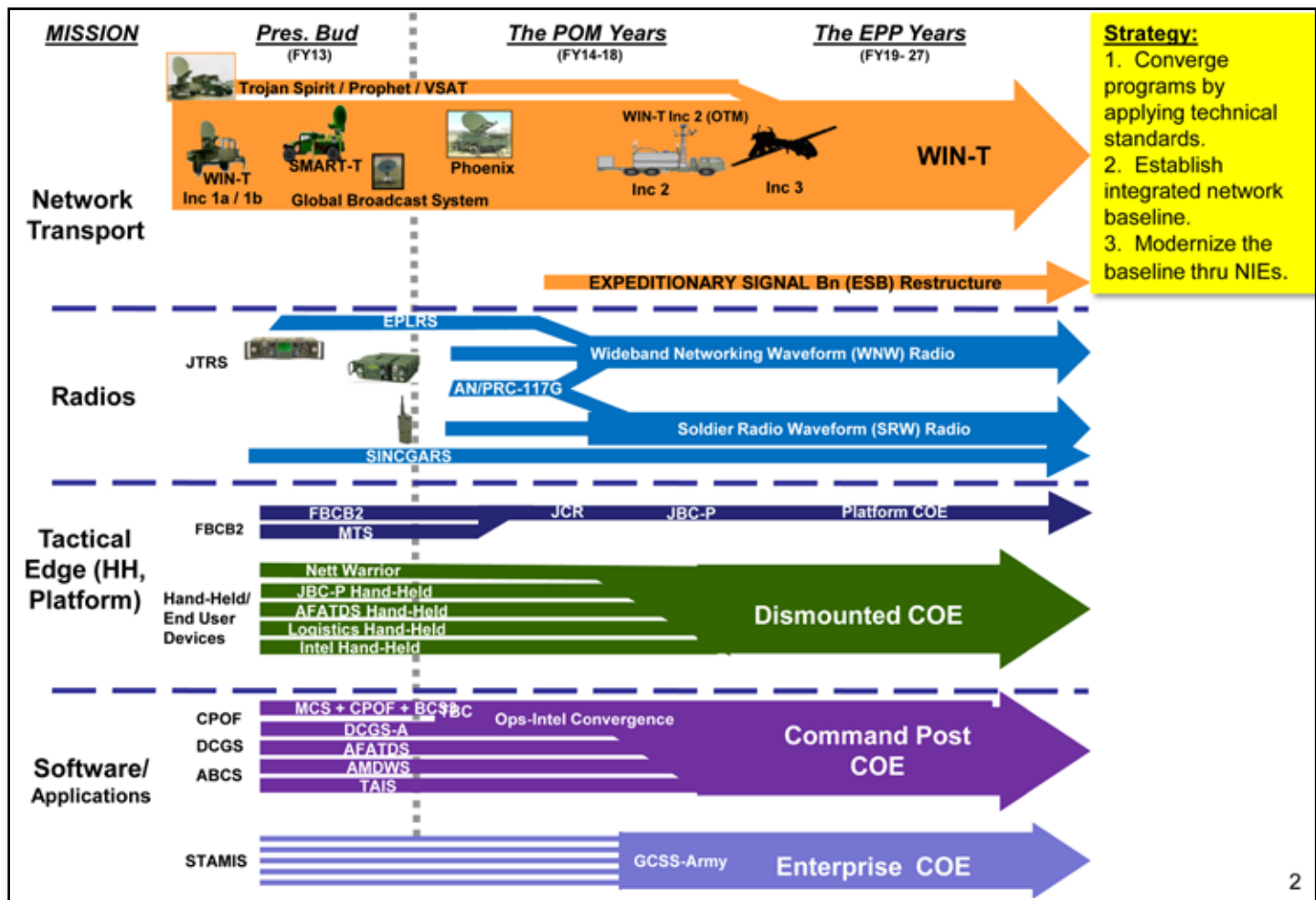
MISSION COMMAND PORTFOLIO

Table 2. Mission Command Portfolio (see Acronym Glossary)

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services. The network supports both the operating and generating force, shares information across levels of classification and enables rapid application development and deployment. The network is the combat multiplier for a versatile Army and every Soldier has access.

Section II – Key Mission Command Portfolio Accomplishments (FY11/12):

- Completed the fielding of WIN-T Increment (Inc) 1 and Inc 1a initial capabilities to 216 units. Beginning in FY12, all Inc 1 and 1a units will be upgraded to Inc 1b providing Enhanced Networking at the Halt capabilities by introducing the Net Centric Waveform (NCW) modem and the "colorless core" for interoperability.

- Conducted the Initial Operational Test and Evaluation (IOTE) for WIN-T Inc 2 providing an initial on-the-move capability to BCTs and divisions and extending the network to the company level.

- Awarded a production contract upgrading Secure Mobile Anti-Jam Reliable Tactical Terminals (SMART-T) supporting the Advanced Extremely High Frequency waveform and providing a significant increase in provided data rates. The Army fields SMART-T to maneuver brigades, Expeditionary Signal Battalions, divisions and corps.

- Fielded a Global Command Support System-Army (GCSS-A) web-based Army automation information system as the primary tactical logistics enabler in support of Army and Joint Transformation for Sustainment using an Enterprise Resource Planning system.

- Fielded a Windows based platform of Advanced Field Artillery Tactical Data System (AFATDS).

- Started the fielding of an Advanced Medium Mobile Power Source (AMMPS) replacing second generation Tactical Quiet Generators (TQG) employing advanced technologies improving engine / fuel efficiency, system reliability and increased survivability for military applications.

Section III: Key FY13 Mission Command Portfolio Investments:

FY13 Mission Command investments total $3.8B ($957M RDTE / $2.8B OPA) and include communications transport, applications and network services capabilities. Specific investments in this portfolio include:

- $98M (OPA) procures WIN-T Increment 1b upgrading 32 Brigades.

- $731M (OPA) procures WIN-T Increment 2 equipping seven BCTs.

- $566M (OPA) procures Wideband Data Radio systems, JTRS Manpack radios and Rifleman Radios for eight BCTs.

- $112M (OPA) replaces the Standard Army Management Information Systems (STAMIS) family of programs with integrated logistician tools and services starting in FY12.

- $68M (RDTE) collapses development and integration efforts of the Army Battle Command Systems (ABCS) producing a collaborative battle command (BC) environment for the maneuver, fires and air warfighting functions.

- $141M (OPA) procures JBC-P for ten BCTs.

- $150M ($47M RDTE / $103M OPA) funds Nett Warrior Initial Operational Test and Evaluation, on-going software development and procures the dismounted leader improved situational awareness (SA) capability for eight BCTs.

INTELLIGENCE PORTFOLIO

Section I-Overview:

The Intelligence Portfolio incorporates key components of intelligence collection, exploitation and analysis organized into four primary layers: Foundational, Terrestrial, Aerial and Space. The goal of the portfolio is full integration of core intelligence capabilities including Full Motion Video, Signals Intelligence (SIGINT) collection and geolocation and Human Intelligence (HUMINT) interrogation and source operations. The portfolio also includes a secure intelligence communications architecture which is well-synchronized and integrated with the Army's network initiatives and supports all aspects of exploitation, analysis and dissemination meeting the readiness and modernization objectives of the Army Campaign Plan.

As depicted in table 3, the Intelligence portfolio provides essential modernization keeping pace with the evolving threat and rapid technology advancements. It equips Soldiers with advanced intelligence

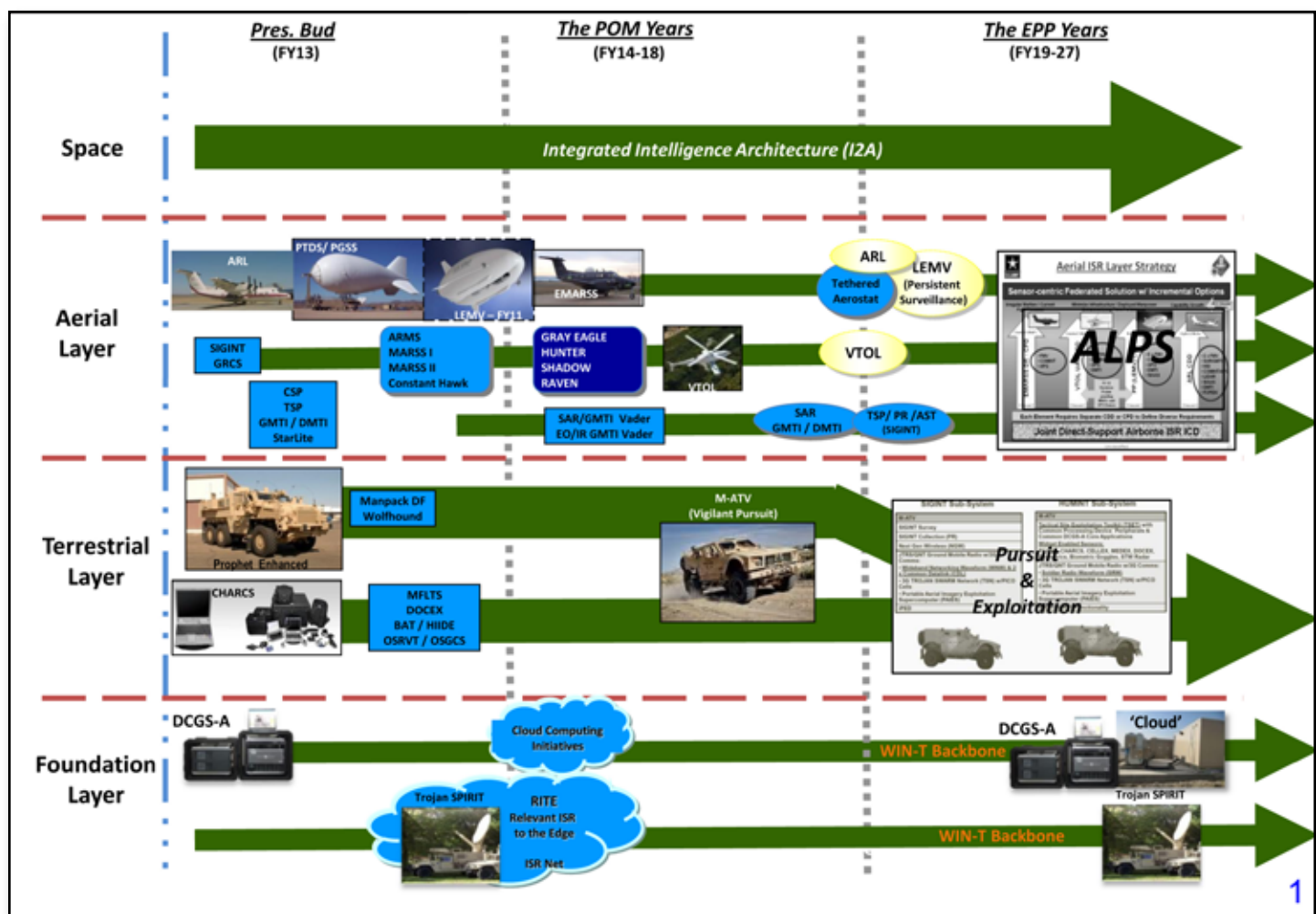## ARMY INTELLIGENCE PORTFOLIO -- SYSTEMS MODERNIZATION STRATEGY

Table 3. Intelligence Portfolio (see Acronym Glossary)

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processing, analytical and dissemination tools. This modernization strategy delivers manned and unmanned aerial ISR platforms and sensors to the Soldier. It also funds essential team-oriented signals, human intelligence and counterintelligence capabilities and Top Secret / Sensitive Compartmented Information communications for tactical intelligence systems. This strategy continues investment in tools which enable collection, exploitation and dissemination with precision and speed, such as biometrics, identity resolution and counter-deception detection.

Section II – Key Intelligence Portfolio Accomplishments (FY11/12):

- Trained 1,958 students on the Distributed Common Ground System - Army (DCGS-A) in 160 events and fielded the following:

  » Five DCGS-A Enabled (DE) Analysis and Control Elements

  » 43 DE Analysis and Control Team - Enclaves

  » 21 DE Common Ground Stations

  » 33 DE Digital Topographic Support Systems

  » 281 DCGS-A ISR Fusion Servers

  » 1,544 DCGS-A Portable Multi-Function Workstations

- Transitioned DCGS-A Operation Enduring Freedom (OEF) capabilities to "cloud computing" architecture with user gateways from Company Intelligence Support Team (CoIST) to the International Security Assistance Force Headquarters.

  » Began unit training on the software baseline in 1st Qtr, FY11 and the operational cloud computing capability reached Initial Operating Capability in April 2011.

  » Fielded tactical edge nodes at OEF field operating bases providing advanced analytics and increasing storage capabilities in FY12.

  » Completed a formal Initial Operational Test and Evaluation of DCGS-A in FY12 in preparation for a 1st Qtr, FY13 Information Technology Board Full Deployment Decision.

- Achieved Enhanced Medium Altitude Reconnaissance Surveillance System (EMARSS) Milestone (MS) B and entered the Engineering, Manufacturing and Development (EMD) phase with contract award for four EMD EMARSS aircraft to the Boeing Corporation. Began development and initial testing of these EMD aircraft in preparation for MS C (FY13).

- Delivered the first seven of 14 fully modernized RC-12X Guardrail Common Sensor (GRCS) aircraft in FY11 and immediately deployed them in support of ground combat operations. In FY12, the Army procures and integrates Enhanced Situational Awareness (ESA) and High Band COMINT (HBC) on the remaining seven RC-12X GRCS systems for fielding this year.

- Completed the Airborne Reconnaissance – Low (ARL) multifunctional conversion program in FY11 standardizing the current aircraft fleet of eight ARL with SIGINT / Imagery Intelligence (IMINT) and Moving Target Indicator (MTI) radar payloads. In FY12, continue upgrading system payloads with improved interface software and radar improvements in order to remain a relevant ISR collection asset against a dynamic range of targets.

- Equipped and fielded the first Gray Eagle UAS with the Common Sensor Payload (CSP), Full Motion Video and Small Tactical Radar Lightweight (STARLite) Synthetic Aperture Radar (SAR) system in FY11. RDTE efforts initiated engineering development of High Definition video and Target Location Accuracy improvements for CSP, enhancements to STARLite range and resolution and initiation of EMD of the Tactical SIGINT Payload (TSP).

- Fielded Prophet Enhanced Ground Signals Intelligence, a more modular and vehicle-agnostic version of Prophet Signals Intelligence capability, to BCTs and Battlefield Surveillance Brigades (BfSBs) operating in combat theaters.

  » Fielded 22 of the Prophet Enhanced sensors to next deployers as Theater Provided Equipment in FY12.

  » Provided RDTE for both software and hardware upgrades to the Prophet Enhanced sensors maintaining operational relevance.

- Fielded 596 Machine Foreign Language Translation System quick reaction capability through FY11.

  » Deployed 102 smart phones capable of two-way speech-to-speech translation which represents a significant step forward from previous phrase-based one-way translation devices.

  » Developed, refined and tested the technology providing speech-to-speech translation in three languages and text-to-text translation capability in two languages in FY12.

Section III – Key FY13 Intelligence Portfolio Investments:

Fiscal Year 13 Intelligence investments total $703M ($197M RDTE / $254M OPA / $252M ACFT) and includes the key components of intelligence, surveillance and reconnaissance collection, exploitation and analysis. Specific investments in this portfolio include:

- $225M ($184M OPA / $41M RDTE) funds DCGS-A.

  » Integrates DCGS-A software and cloud computing capabilities into one baseline capability package (DCGS-A Software Baseline 1.1) and develops the Army Common Operating Environment Command Post Computing Environment.

  » Procures 2,214 DCGS-A Portable Multi-Function Workstations, 202 DCGS-A Intelligence Fusion Servers and 23 DE Analysis and Control Team - Enclave in support of one corps, three divisions, 12 BCTs, three special operations units, three maneuver enhancement brigades, three combat aviation brigades, three fires brigades and other combat support (CS), combat service support (CSS) units entering the ARFORGEN available pool.

- $47M (RDTE) procures four developmental EMARSS aircraft which will deploy and operate as part of Task Force ODIN – Afghanistan in FY13.

  » Completes Engineering, Manufacturing and Development (EMD) of four developmental aircraft and completes the requirements of the current contract.

» Continues assessments of future aerial intelligence requirements to determine additional capabilities beyond current Army, QRC and joint systems.

• $16M (ACFT) modernizes GUARDRAIL Common Sensor (GRCS) and completes (retrofits) the final software and hardware upgrades (ESA and HBC) on the first set of seven RC-12X systems (due to the unavailability of these systems during fielding of aircraft 1-7). The modernized GRCS system provides improved irregular warfare SIGINT support to BCT commanders through better look-down intercept angles and enhanced frequency collection while maintaining superior full spectrum, deep-look capability to echelons above brigade commanders.

• $259M ($232M ACFT / $27M RDTE) for UAS ISR Payloads providing the optimal mix for the Gray Eagle platform with day / night capability to collect and display continuous imagery, wide-area all-weather search capability, persistent stare, Ground Moving Target Indicator (GMTI) and SAR. Provides development and procurement of 27 CSP Electro-Optical/Infra-Red/Laser Desig-

nator sensors and 39 STARLite SAR/GMTI sensors for integration and fielding support to the ARFORGEN schedule. RDTE funding facilitates continued improvements to CSP and STARLite and baseline development of TSP.

• $59M ($49M OPA / $10M RDTE) for Prophet Ground Signals Intelligence.

» Procures nine Prophet Enhanced sensors mounted on Panther Medium Mine Protected Vehicles and four Prophet Control systems for fielding to BCTs and BfSBs operating in combat theaters. Funding will also procure six next-generation receivers and hardware/software improvements to keep pace with rapidly changing threat technology and tactics, techniques and procedures.

» Funds RDTE product upgrades for next-generation Signals, develops a geolocation capability per pre-planned product improvement requirements and initiates integration and testing of a software-defined radio / receiver solution to the Prophet Enhanced sensor.

MOVEMENT AND MANEUVER (GROUND) PORTFOLIO

Section I - Overview

The Movement and Maneuver (Ground) Portfolio goal is to develop and field an integrated combined team, linked by the network, 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 by acquiring the Ground Combat Vehicle (GCV), replaces the M113 Family of Vehicles with an Armored-Multi Purpose Vehicle

(AMPV) and improves the Abrams tank, the Bradley Cavalry, Fire Support and Engineer Vehicles and the Stryker by increasing protection, ensuring required mobility and allowing integration of the network.

Section II – Key Movement and Maneuver (Ground) Portfolio Accomplishments (FY11/12):

- Began an aggressive testing program of the Stryker Double V Hull and began fielding this
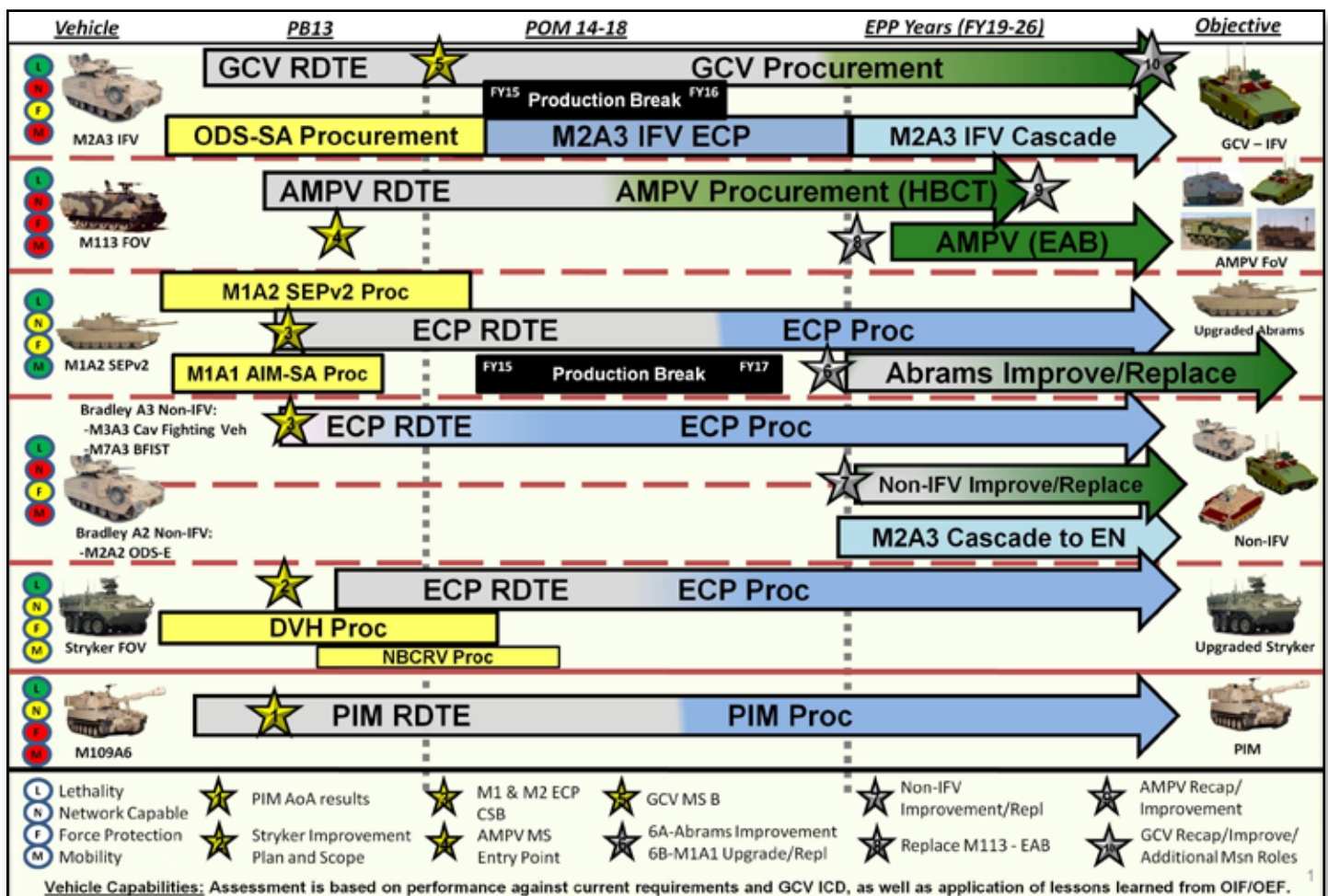
MANEUVER PORTFOLIO

Table 4. Maneuver Portfolio (see Acronym Glossary)

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more survivable vehicle to Afghanistan meeting the changing operational needs of our deployed Warfighters.

- Fielded nine IBCTs with the Mortar Fire Control System-Dismounted providing dismounted infantry the mortar fire control capability previously found only in our heavy forces.

- Converted the 3rd Armored Cavalry Regiment HBCT to a Stryker Brigade Combat Team better balancing the Army force structure.

- Modernized 1st Infantry Division (Fort Riley) and the 116th HBCT (Idaho Army National Guard) with the most modern versions of the Abrams tank (M1A2 System Enhancement Program (SEP) v2) and the Bradley Fighting Vehicle (M2A3).

- Focused on achieving standardization of two variants of our dominant combat maneuver platforms (M1 Abrams Tank and M2 Bradley Fighting Vehicle (BFV)) combined with expansion of the versatile and lethal Stryker Combat Vehicle.

  » Modernized the older M1 variant with M1A1 Situational Awareness (SA) upgrade kits while upgrading the M1A2 Abrams with the M1A2 SEP kit. Procured 87 M1A1 SA kits and 21 M1A2 SEP kits providing enhanced situational awareness for operators and command elements, increased force protection and integration optimization between systems.

  » Upgraded kits made the M2A3 Operation Desert Storm (ODS) and M3A2 ODS Bradleys compatible with the M1A1 SA Abrams providing greater lethality, survivability and sustainability.

Section III – Key FY13 Movement and Maneuver (Ground) Portfolio Investments

The FY13 Movement and Maneuver (Ground) investments total $1.8B ($868M WTCV / $919M RDTE) and include the Army's combat vehicles such as Abrams, Bradley, Stryker and the development of the GCV. Specific investments in this portfolio include:

- $640M (RDTE) develops GCV technologies which continues through 4th quarter FY13.

- $374M ($168M RDTE / $206M OPA) begins M109A6 PIM procurement by purchasing the Paladin Digital Fire Control System-Replacement. RDTE funds development and integration of common components into prototype vehicles.

- $74M (RDTE) funds AMPV Analysis of Alternatives and Pre-Milestone A development activities. Initial focus is on replacing M113s within the HBCTs. The remaining efforts focus on a future decision point to address the M113's located in echelons above brigade.

- $393M ($379M WTCV / $14M RDTE) procures 58 Nuclear Biological Chemical Reconnaissance Vehicles (NBCRV) and supports protection and Overseas Contingency Operation requirements. The NBCRV provides an unprecedented capability to the Joint Force and Homeland Defense by detecting and identifying biological, chemical and nuclear hazards.

- $301M ($204M WTCV / $97M RDTE) completes the fielding of M1A2SEPv2 Abrams achieves Modular Two Variant Fleet Configuration: 1,547 M1A2SEPv2s and 791 M1A1AIM SA. RDTE funds the Technology Development phase for Abrams Engineering Change Proposal (ECP) improvements.

- $230M ($148M WTCV / $82M RDTE) completes Army National Guard (ARNG) Bradley non-IFV procurement modernization with M2A2 ODS Situational Awareness kits. RDTE focuses on ECP improvements for the Bradley Cavalry, Fire Support and Engineer Vehicles.

MOVEMENT AND MANEUVER (AIR) PORTFOLIO

Section I - Overview:

The Movement and Maneuver (Air) 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 within tables five through seven, key objectives and decision points in the Movement and Maneuver (Air) portfolio are:

- Fully fund the Kiowa Warrior OH-58F program.

- Fully fund the Apache Milestone C decision.

- Fully fund Gray Eagle UAS production.

AVIATION PORTFOLIO (CORE PROGRAMS)
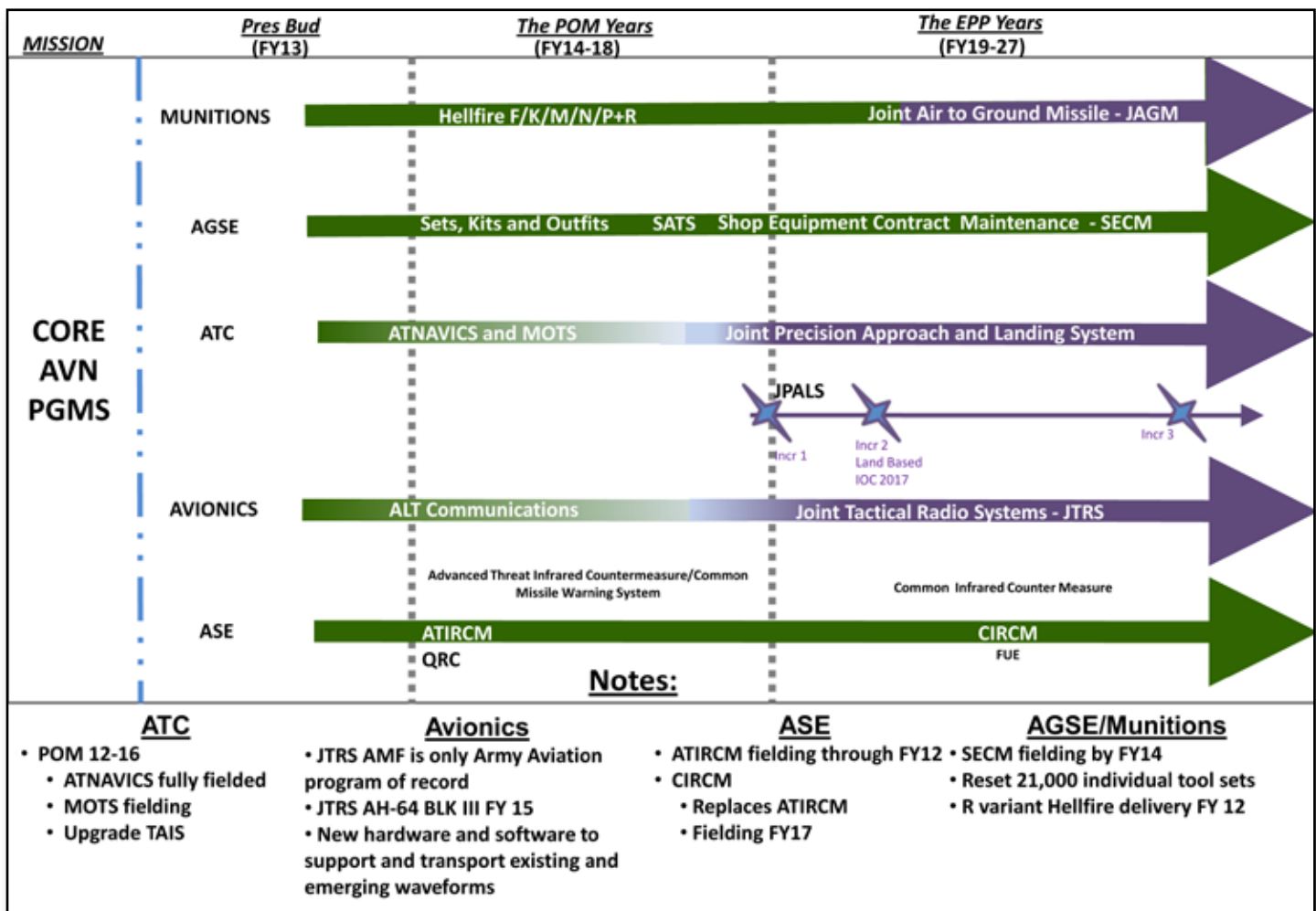
Table 5. Aviation Portfolio (see Acronym Glossary)

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- Fully fund UH-60 production meeting 13th Combat Aviation Brigade (CAB) growth and Special Operations increased aircraft requirement.

- Continue procurement of the Lakota, Light Utility Helicopter program in support of cascading OH-58 aircraft to the training base.

- Fully fund 13th CAB and Special Operations CH-47 aircraft requirements.

Section II – Key Movement and Maneuver (Air) Portfolio Accomplishments (FY11/12):

- Continued induction of the first battalion of Apache helicopters for remanufacture to AH-64D Apache Block III.

- Continued First Unit Equipped for the Advanced Threat Infrared Countermeasures (ATIRCM) on the CH-47D helicopter (FY10).

- Continued fielding the Digital Data Link (DDL) with 217 DDL systems in FY11, procured 291

AVIATION PORTFOLIO (UTILITY/CARGO/FIXED WING)

MISSION	Pres Bud (FY13)	The POM Years (FY14-18)	The EPP Years (FY19-27)
UTILITY	UH-60A/L	UH-60A to L	UH-60L
	UH-60M		UH-60M/HH-60M/MH-60M
	UH-72A	Light Utility Helicopter	
CARGO	CH-47D		
	CH-47F	FY11 Pure Fleet G	FY18 Pure Fleet F
		CH-47F / MH-47G	
FIXED WING	C-27J	Joint Cargo Aircraft RMD 802 Transfer JCA to USAF	
	C-12	C-12, C-23 & UC-35 (MED RNG)	Future Utility Aircraft (FUA)
		C-23 (CARGO) DIVESTURE	
	RC-12	Special Electronic Mission Aircraft (RC-7, RC-12)	EMARSS/RC-12X/Aerial ISR layer - Future ISR
	RC-7		

Notes:

UH-60/LUH	CH-47	FW
• Increased MEDEVAC capability ISO SECDEF and SEC Army "Golden Hour" Standard	• CH-47F production and fielding on schedule	• Legacy Fleet 300+ Aircraft
• Near simultaneous UH-60M modernization for AC and RC units	• 6 CH-47 units equipped	• C-23 Divesture
• Divest UH-1 and OH-58A/C Legacy Fleet	• 6 CH-47 units have deployed OCONUS	- Transformation
		- FUA ICD development
		- ISR strategy review ongoing

Table 6. Aviation Portfolio (see Acronym Glossary)

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new DDL systems and converted 456 analog systems to DDL. DDL increases the amount of channels Raven aircraft use within a single geographic area providing the supported unit more full motion video coverage across the entire area of operations.

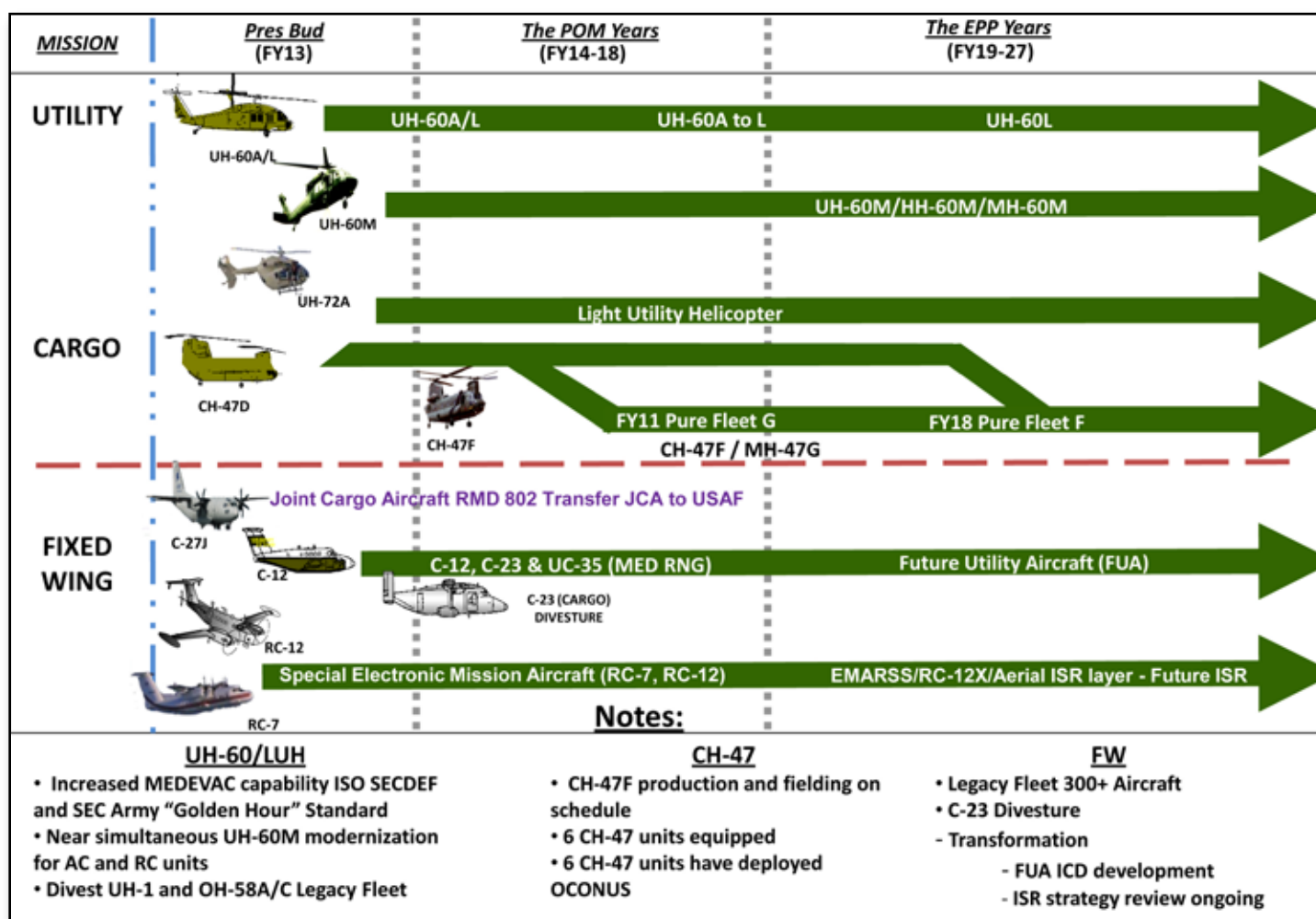- Fielded the 1-104th Attack Reconnaissance Battalion (ARB) (Pennsylvania ARNG) with AH-64D Apache Block II helicopters and inducted the AH-64A aircraft of the 1-135th ARB (Missouri ARNG) as part of modernizing the ARNG attack helicopter fleet.

- Provided four Tactical Airfield Lighting Systems to Theater Provided Equipment in FY11 enhancing the safety and efficiency of theater airfields in Iraq and Afghanistan.

- Fielded Medical Evacuation (MEDEVAC) helicopters (HH-60M) to six General Support Aviation Battalions supporting Army and Department of Defense leadership emphasis on increased MEDEVAC Capability.

- Procured 29 MQ-1C Gray Eagle Unmanned Aircraft and the associated ground support equipment ($456M). Gray Eagle missions include Reconnaissance, Surveillance, Target Acquisition, Armed Reconnaissance, Signals Intelligence, Communications Relay and Battle Damage Assessment.

  » Fielded two Gray Eagle Quick Reaction Capability platoons equipped with four aircraft each (one was in Operation New Dawn (OND) and the other is deployed in Operation Enduring Freedom (OEF)).

  » Completed fielding the first MQ-1C Gray Eagle Company to the 1st Cavalry Division CAB and the unit subsequently deploys in FY12.

  » Fielded the second MQ-1C Gray Eagle Company to the 1st Infantry Division CAB in the 3rd quarter of FY12 and this unit conducts Initial Operational Test and Evaluation and subsequently deploys.

  » At end state, the Army fields 17 Gray Eagle Companies; two fully equipped companies within the Special Operations Command; five fully equipped Companies in the General Purpose Force available / deployed pool; and ten partially equipped companies in the training / reset pool.

- Procured Shadow modifications including 52 Laser Designators, 20 Universal Ground Control Stations and 46 Tactical Common Data Link retrofit kits.

- Focused rotary wing aircraft modernization on the UH-60 (Black Hawk), CH-47 (Chinook) and AH-64 (Apache) helicopters:

  » Procured 48 UH-60M (utility mission) and 24 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 FY11, the Army equipped five Assault Helicopter Battalions (AHBs) with the UH-60M.

  » Procured 40 F model Chinook aircraft while providing modifications including a loading system enabling more rapid reconfiguration from cargo to passenger support missions.

  » Procured 16 new Apache Block III aircraft and upgraded existing aircraft to Block II models. Block II modifications integrate Target Acquisition Designation Sight / Pilot Night Vision Sensor upgrades and other safety and reliability modifications. The

Block III model is the Army's attack helicopter bridge to the future force and provides unmanned aerial system control capability, a visual near-infrared sensor to aid target acquisition and other force protection and reliability enhancements.

- Funded $48M for RDTE and $35M APA for Hostile Fire Quick Reaction Capability development, testing and fielding of capability in May 2012.

- Funded $26M for the KW helicopter addressing obsolescence and weight reduction efforts for our aging KW fleet; specifically the continued research and development of the Cockpit and Sensor Upgrade Program and procurement of long lead items for the first lot of Limited Rate Initial Production (LRIP) of OH-58F helicopters.

- Funded $15M in FY12 the Armed Aerial Scout (AAS) supporting program RDTE.

- Funded $1.7B in FY12 for the Blackhawk helicopter Multi Year Procurement procuring 47 UH-60M and 24 HH-60M aircraft. The first year of Multi-Year/Multi-Service VIII Contract is FY12.

- Funded $250M for Lakota in FY12 of which $244M remains allocated for the Army National Guard. Procures 39 aircraft in FY12.

- Funded $1.4B in FY12 procuring 47 modernized CH-47F and one MH-47G aircraft.

- Planned FY12 fixed wing aircraft modifications include the Global Air Traffic Management (GATM) upgrade, Aircraft Survivability Equipment (ASE) and Blue Force Tracker (BFT) installation.

- Funded $666M in FY12 for Apache Block III. The Army remains on schedule for Apache Block III First Unit Equipped in FY13.

- Funded $165M in FY12 for RQ-7B Shadow supporting the acquisition of 8 Tactical Communication data Link retrofit kits and 400 One System Remote Video Terminals (OSRVT) modification kits.

- Funded $86M in FY12 for RQ-11B Raven procuring 300 gimbaled systems (900 Air Vehicles) and assuming other hardware costs including ground control stations, remote video terminal and an initial deployment spares package. The gimbaled payload combines the Electro-optical/Infrared cameras one-to-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 $551M in FY12 maximizing the production rate of the MQ-1C Gray Eagle program by procuring 36 MQ-1C aircraft, 18 ground control stations, 18 ground data terminals, nine satellite communication ground data terminals and other ground support equipment. Under this acceleration, the Army increases procurement of aircraft and associated ground support equipment in FY12 and FY13 from 27 aircraft per year to the new procurement profile of 29 aircraft in FY11 and 36 aircraft in FY12.

- Funded $8M in FY12 for Vertical Take Off and Landing (VTOL) UAS providing the BCT a multi-intelligence platform capable of conducting beyond-line-of-sight full motion video, wide area surveillance and signals intelligence. VTOL UAS reduces the need for burdensome runway and infrastructure requirements and provides sensor capability expansion given the aircrafts ability to hover as well as in flight slow airspeed.

- Funded $127M in FY12 for the Joint Air to Ground Missile (JAGM) which supports the transition of Army Hellfire missile to a joint missile system and replaces the Marine Corps air launched version of the Tube-launched Optically-tracked Wire-guided missile and Navy Maverick missiles. In addition, funds were applied to the JAGM program re-structure which extended the technology development phase.

- Funded $43M in FY12 for the Long Endurance Multi-Intelligence Vehicle (LEMV). Provides sustainment to LEMV Airship 1 operations achieving Initial Operating Capability and fully mission capable status in OEF and builds additional airships and configurable ISR / communications payloads.

- Funded $163M in FY12 for 350 of the Gen3 Electronic Control Units for Common Missile Warning System (CMWS).

Section III – Key FY13 Movement and Maneuver (Air) Portfolio Investments:

FY13 Movement and Maneuver (Air) investments total $6.6B ($776M RDTE / $123M Procurement

AVIATION PORTFOLIO (RECON/ATTACK/UAS)
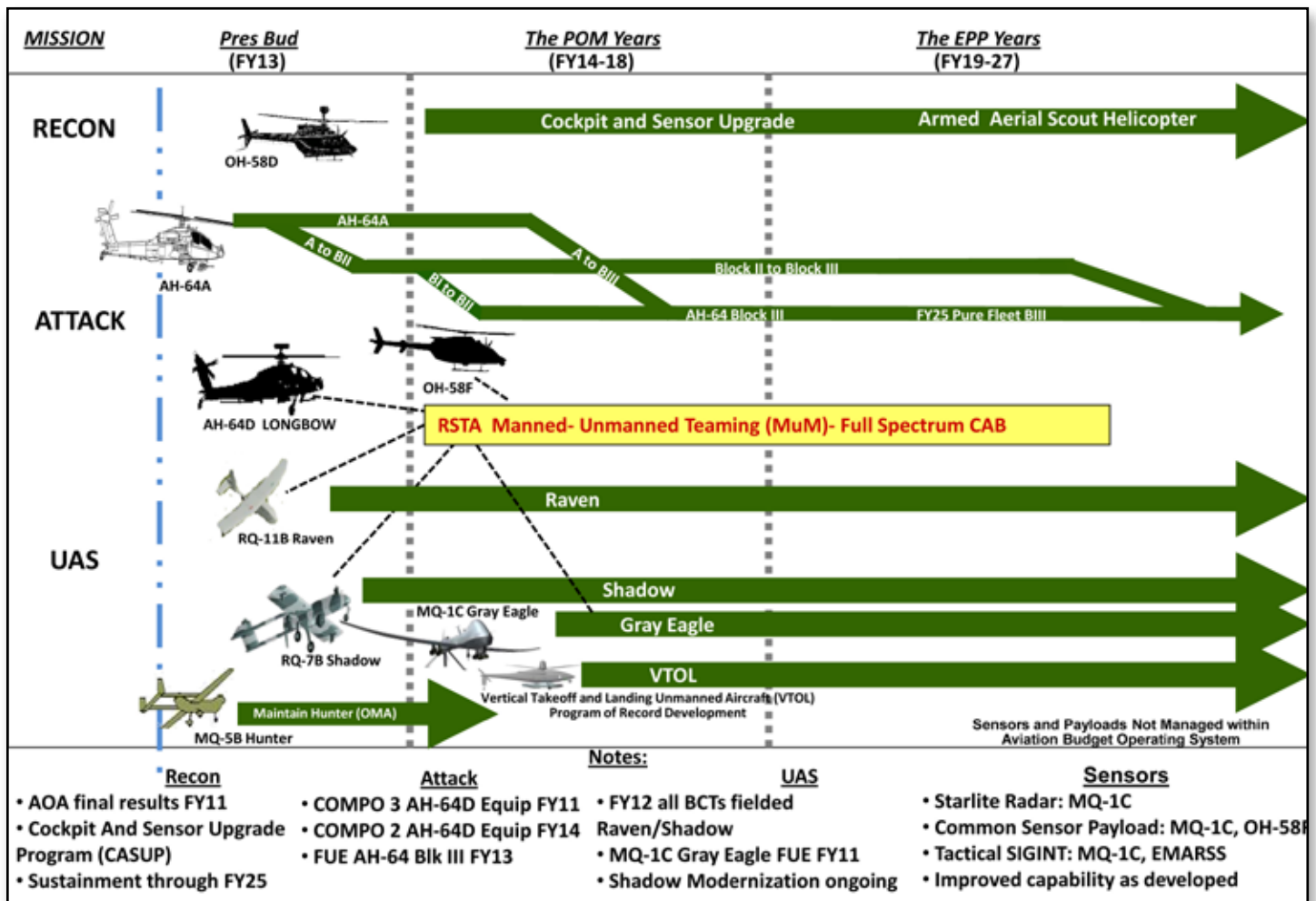
Table 7. Aviation Portfolio (see Acronym Glossary)

of Ammunition, Army (AMMO) / $1M MSLS / $5.6B ACFT) and include required capabilities in the reconnaissance, attack, unmanned aerial systems, utility and cargo and fixed wing mission profiles. Specific investments in this portfolio include:

- $97M (RDTE) for the Technology Development phase of the Common Infrared Countermeasure (CIRCM) system for Army aviation platforms. CIRCM is a light-weight, low cost, highly reliable laser-based countermeasure system which works in conjunction with Service missile warning systems (i.e. CMWS). Proposed Full Rate Production is approximately FY18.

- $30M ($4M RDTE / $25.8M ACFT) for RQ-11B Raven procuring 78 systems (234 Air Vehicles) and other hardware including ground control stations, remote video terminal and an initial deployment spares package. In addi-

tion, funding answers unit requests for a virtual training device for system operators during the ARFORGEN training cycle.

- $135M ($31.2M RDTE / $104M ACFT) for RQ-7B Shadow supporting acquisition of seven Shadow Tactical Communication Data Link (TCDL) retrofit kits (and associated spare parts), seven launchers, 44 enhanced mission computers, eight universal mission simulators and 400 One System Remote Video Terminal (OSRVT) modification kits. Shadow support the ARFORGEN training cycles.

- $2M (RDTE) funding for VTOL UAS.

- $593M ($74.6M RDTE / $518M ACFT) procures 19 MQ-1C aircraft and associated ground support equipment.

FIRES (INDIRECT) PORTFOLIO

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 Field Artillery (FA) force that delivers and integrates lethal and non-lethal fires enabling joint and maneuver commanders the ability to dominate their operational environment across the full range of missions. The Fires portfolio consists of required fire support capabilities in the following four areas: Precision Sensors, Delivery Platforms (Shooters), Munitions and FA (C2) Systems. (See table 8).

To meet the threats of an ever adaptive adversary who uses unconventional tactics, the Army must carefully balance the quantity, quality and management of its equipment. The Fires (Indirect) portfolio includes several types and variants of equipment which focuses on a vast number of precision and near-precision
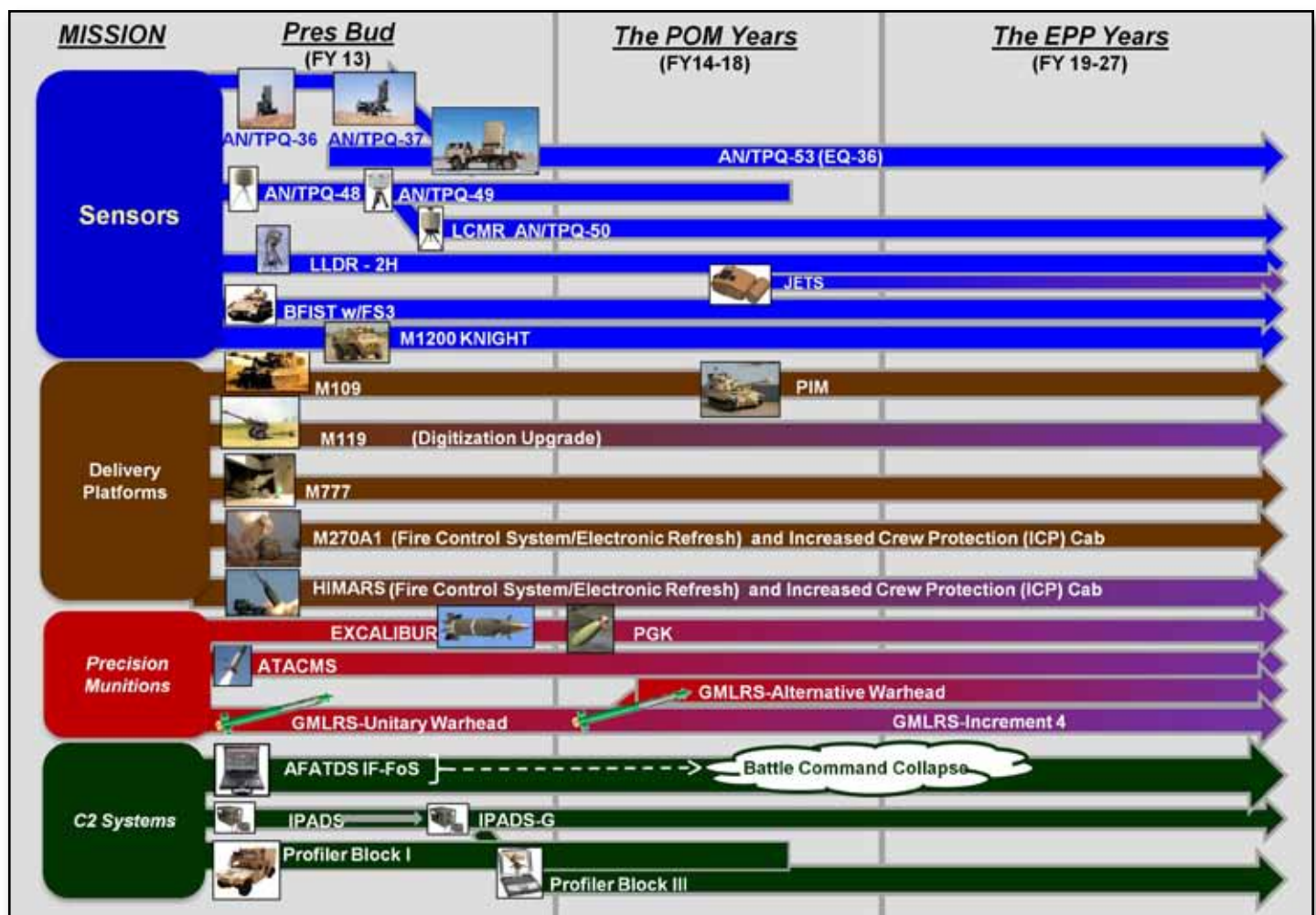
FIRES - FIELD ARTILLERY PORTFOLIO

Table 8. Fires Portfolio (see Acronym Glossary)

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Field Artillery missions. To that end, the key strategic objectives for the Fires portfolio are:

- 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 IBCTs.

- 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 Warfighter.

Section II – Key Fires (Indirect) Portfolio Accomplishments (FY11/12):

- Completed fielding and deployed the 12 initial production model Q-53 radar systems in support of OND and OEF. Fielded 20 additional Q-53 radar systems for units deploying in support of OEF (FY12).

- Upgraded Firefinder radars (AN/TPQ-36 and AN/TPQ -37) with a new more reliable radar processor (Q-36 and Q-37) and improved power amplifier modules and antenna array (Q-37).

- Upgraded Lightweight Laser Designator Rangefinders (LLDR) supporting the Army-Directed Requirement for increasing precision in employment of currently fielded Precision Munitions.

- Began initial development of the Joint Effects Targeting System (JETS) Target Location Designation System with the Technology Demonstration phase planned for FY13.

- Continued improvement of the Q-50 Lightweight Counter Mortar Radar (LCMR) system capabilities increasing the range and accuracy over the previous LCMR version radar system (FY12).

- Procured 78 M1200 Targeting Under Armor (TUA) retrofits of the M1200 Armored Knight. The TUA modification increases Soldier survivability by placing the Soldier inside the vehicle during mission operation.

- Continued improving crew survivability with the retrofit of previously fielded High Mobility Artillery Rocket System (HIMARS) Multiple Launch Rocket System (MLRS) launchers incorporating an increased crew protection cab in both active and reserve component units.

- Completed competitive prototyping for the Guided Multiple Launch Rocket System alternative warhead and began engineering, manufacturing and development in FY12.

- Began development of PIM addressing long-term sustainability and fires capabilities for the HBCT.

- Began procuring additional M777A2 Howitzers enhancing organic precision fires capability to IBCTs.

- Continued the development of the digitized modifications for the M119A2, 105mm Towed Howitzer addressing responsiveness of fires to support IBCTs.

- Recertified the Excalibur 155mm Precision Munitions program with the Office of the Secretary of Defense and Congress through the Nunn-McCurdy process.

- Tested and began procurement of an Urgent Materiel Release quantity of the Precision Guidance Kit fuse for the 155mm non-precision munitions.

- Completed fielding of Profiler Laptop systems displacing the two vehicle helium balloon meteorological measuring system.

Section III – Key FY13 Fires (Indirect) Portfolio Investments:

FY13 Fires (Indirect) investments total $1.6B ($404M RDTE / $335M WTCV / $426M OPA / $148M AMMO / $259M 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:

- $22M (OPA) develops and procures Lightweight Laser Designator Rangefinder (LLDR) 2H modifications enhancing target location accuracy.

- $22M (RDTE) provides RDTE for JETS.

- $57M (WTCV) sustains and improves Bradley Fire Support Team (BFIST) Hardware / Software modifications with the Fire Support Sensor System (FS3).

- $73M (OPA) procures and fields Q-50 Lightweight Counter Mortar Radar (LCMR) Systems.

- $3M (RDTE) develops Q-50 LCMR Common Front End (CFE) and Extended Range software.

- $12M (MSLS) completes fielding of the (HIMARS) Launcher.

- $21M (WTCV) develops and procures Digitization modifications to M119A2 Howitzer for more responsive fires for IBCT.

- $13M (OPA) procures 136 Block III Meteorological Measuring Set Profilers (laptop).

- $115M (AMMO) develops and procures Excalibur 155mm munitions in accordance with recent Nunn-McCurdy recertification.

- $67M (RDTE) continues development and testing of the Guided Multiple Launch Rocket System alternative warhead.

- $168M (RDTE) provides PIM RDTE and $206.1M begins funding PIM Low Rate Initial Production (LRIP).

- $262M ($9M RDTE / $253M OPA) continues procurement of the Q-53 radar system.

PROTECTION (AIR AND MISSILE DEFENSE) PORTFOLIO

Section I – Overview:

The Air and Missile Defense (AMD) modernization strategy is driven by a complex and changing operational environment which requires capabilities from the tactical through strategic levels and provides defenses against advancements in ballistic missiles; manned and unmanned aircraft; as well as rockets, artillery and mortars which threaten friendly forces as well as defended assets at home and abroad. The AMD portfolio consists of required capabilities in the following areas: Ballistic Missile Defense; Counter UAS / Cruise Missile Defense; Indirect Fire Protection; and C2 Defense.

As depicted in table 9, key imperatives in the AMD portfolio include the common battle manager development and fielding, improvements and recapitalization of current systems as well as fielding new capabilities.

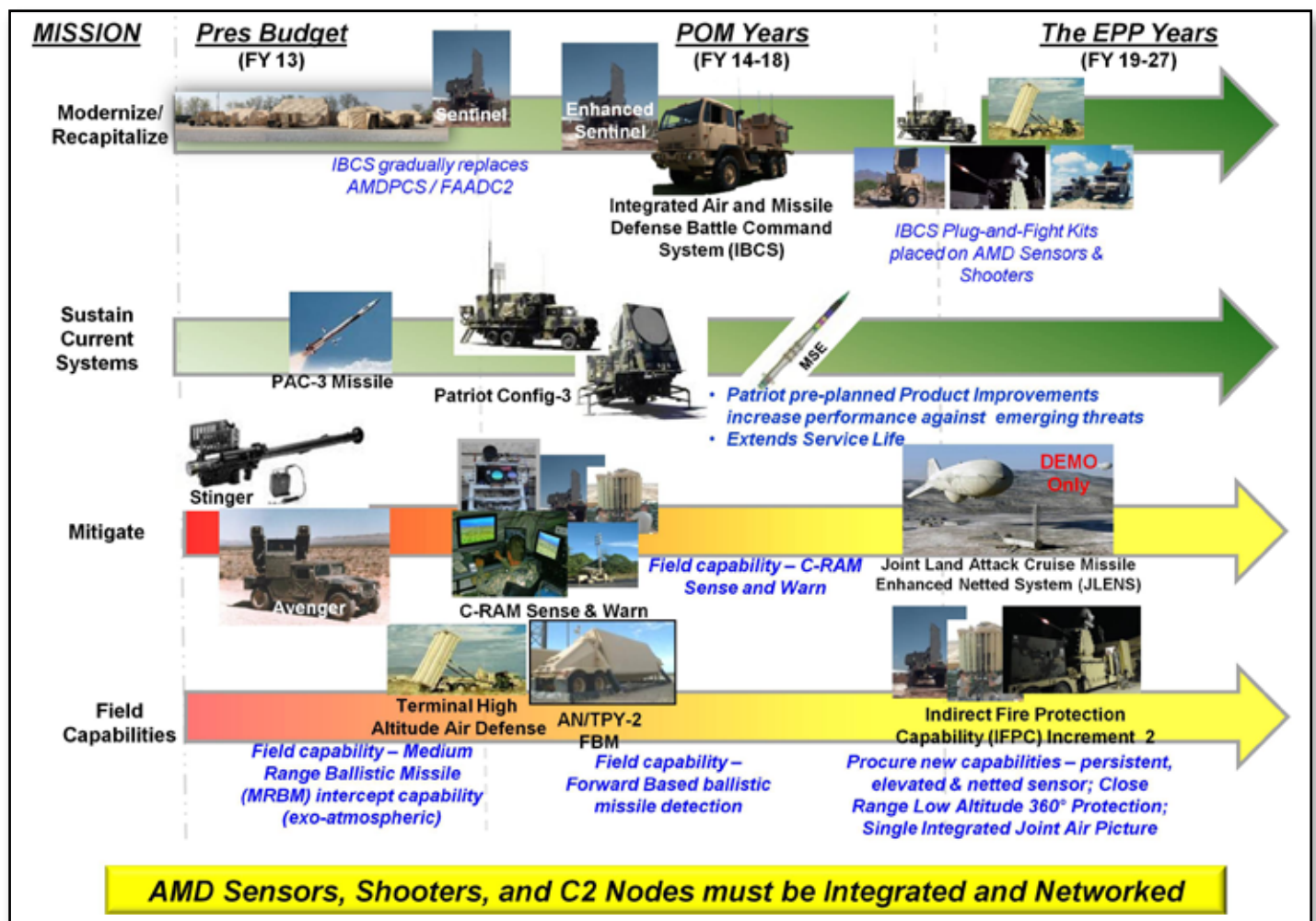## AIR AND MISSILE DEFENSE PORTFOLIO

Table 9. Air and Missile Defense Portfolio (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.

- Increase capabilities to the Counter-Rockets, Artillery and Mortar (C-RAM) systems deployed in Theater.

- Improve Patriot missiles by replacing the Patriot Advanced Capability-3 (PAC-3) missile with the improved Missile Segment Enhancement (MSE).

- Conduct a comprehensive pre-planned product improvement effort incrementally modernizing and upgrading performance of the Patriot system.

- Conduct Service Life Extension Program (SLEP) and capability improvements on Stinger missiles increasing their counter-UAS capabilities.

Sustain: Close capability gaps, extend useful life of existing equipment.

- Develop, acquire and field a common battle manager / C2 node for all U.S. Army AMD forces which is a modular, open, net-centric system that is operationally scalable.

- 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 U.S. Army, U.S. Navy and U.S. Air Force platforms.

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

- Develop and procure a next generation Indirect Fire Protection Capability (IFPC) to providing effective, full spectrum protection for the 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.

Section II – Key Air and Missile Defense Portfolio Accomplishments (FY11/12):

- Upgraded the last of three older Patriot units to PAC-3 capability (launcher upgrades continue).

- Continued fielding of Grow The Army battalion #15 with expected completion by the end of FY12.

- Continued reset of Patriot equipment operating in the U.S. Central Command area of responsibility, completing two battalion sets by July 12.

- Provided C-RAM sense and warn capabilities to 27 different sites in Iraq during Operation Iraqi Freedom (OIF) and Operation New Dawn (OND). Additionally, deploying C-RAM sense and warn capabilities in support of Operation Enduring Freedom at 22 sites in Afghanistan.

- Provided C-RAM Intercept capabilities for six different sites in Iraq initially in support of OIF and later in support of OND.

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- Planned transition of C-RAM sense and warn capabilities to nine Office of Security Cooperation - Iraq and Department of State sites in Iraq as part of support for United States Mission - Iraq. The 22 C-RAM intercept systems withdrawn from Iraq are projected for fielding to newly established IFPC/Avenger Composite Battalions.

- Conducted reset of 20 Air Defense and Airspace Management (ADAM) Cells and 18 Forward Area Air Defense Command and Control (FAAD C2) shelters.

- Fielded three Air and Missile Defense Planning and Control Systems to Patriot Battalions (Composite).

- Conducted reset of 39 ADAM Cells and 33 FAAD C2 shelters.

- 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 six Basic Sentinel radars to Improved Sentinel radars in the National Capital Region (NCR). These radars have enhanced target range and classification as well as radar reliability / supportability via improved electronics.

- Completed developmental testing of the Sentinel Radar IFPC, enhancing fratricide prevention and improving integration into the C-RAM Command and Control architecture. Completed software release to the AOR and NCR in July 2011 and to the remainder of the fleet in September 2011.

- 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 III – Key FY13 Air and Missile Defense Portfolio Investments:

The Fiscal Year 2013 Air and Missile Defense investments total $2.3B ($1.3B RDTE / $153M OPA / $4M AMMO / $866M MSLS) and include developing and acquiring new equipment and improving or recapitalizing current systems that offer increased capabilities to the C-RAM systems; improving Patriot missiles; conducting pre-planned product improvement efforts of the Patriot system; conducting Service Life Extension Program and capability improvements on Stinger missiles; closing capability gaps, extend useful life of existing equipment; and fielding Terminal High-Altitude Area Defense, a robust and capable Medium Range Ballistic Missile intercept capability. Specific investments in this portfolio include:

- $401M (RDTE) meets U.S. financial obligations for Medium Enhanced Air Defense System (MEADS) in accordance with the current Memorandum of Understanding.

- $191M (RDTE) continues Joint Land Attack Cruise Missile Elevated Netted System (JLENS) Engineering and Manufacturing Development with completion in FY14. Includes testing and a CONUS-based exercise.

- $82M (RDTE) completes the MSE live fire test / evaluation, ground system integration, corrective

actions and completes initial production facilitation by FY14.

- $316M ($110M RDTE / $206M MSLS) continues upgrading Patriot (including modern man stations, radar digital processor and modern adjunct processor) and completes fielding to the force by FY18.

- $262M (RDTE) continues AIAMD development and enables initial deliveries by FY16.

- $88M ($54.3M RDTE / $34M OPA) initiates improvements to the C-RAM systems deployed to theater and acceleration of IFPC Increment II Milestone B to FY15.

- $21M (RDTE) begins SLEP and integrates capability improvements to field 850 Stinger missiles by FY15.

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FORCE PROTECTION PORTFOLIO

Section I – Overview:

The Force Protection modernization plan procures selected Chemical, Biological, Radiological and Nuclear (CBRN), mobility and other protection equipment that is effective and affordable. This equipment provides American Soldiers with the highest levels of force protection, civil affairs / military information operations capabilities and enhanced engineering abilities consistent with the functional application of these materiel solutions in support of assigned missions. Current modernization efforts include procuring new and improved materiel solutions enhancing our capabilities in current and future years. Figures 10-12 display a selected array of mature capabilities as projected from current, near and extended term perspectives.

CBRN PROGRAMS
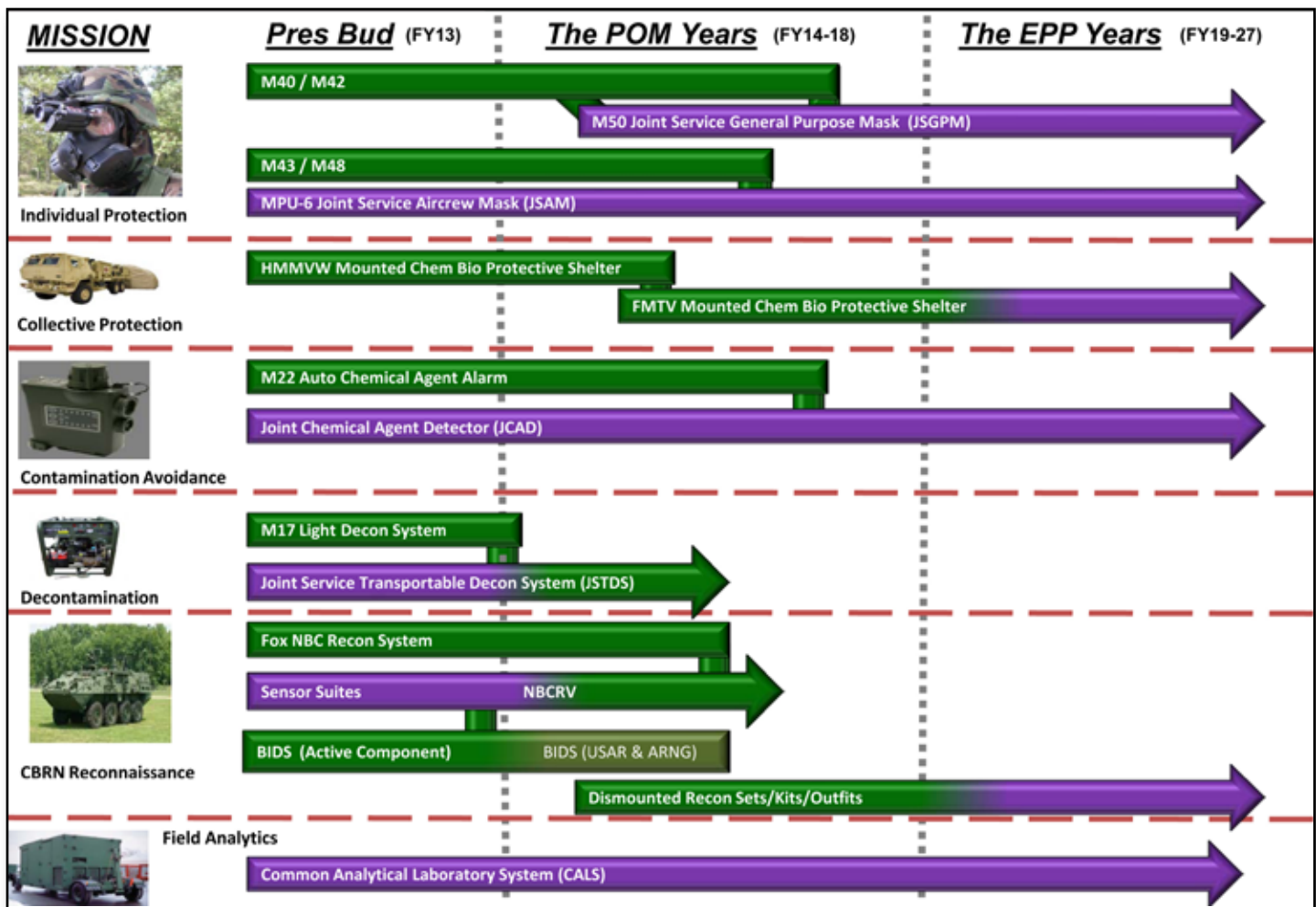
Table 10. Force Protection Portfolio: CBRN Programs (see Acronym Glossary)

Section II – Key FY11-12 Force Protection Portfolio Accomplishments:

- Fielded 42 additional Biological Integrated Detection Systems (BIDS). These systems complete the final three platoons of the 307th Chemical Company (21 systems) and one platoon for the 308th Chemical Company (7 systems) in FEMA region IX. They also added two platoons of capability to the 365th Chemical Company (14 systems) in Salt Lake City, Utah. BIDS is a fully deployable, Critical Dual Use (CDU) system that can be used for contingency operations as well as homeland defense.

- Fielded 200 Vehicle Optic Sensor Systems, 122 Husky Mounted Detection Systems, 1,934 Self Protective Adaptive Roller Kit (SPARK) II Rollers and 46 Counter Improvised Explosive Device (IED) Interrogation Arms in support of Route Clearance units.

- Fielded Hydraulic Excavator (HYEX) Type I excavators providing 26 Multi-Role Bridge

MOBILITY PROGRAMS
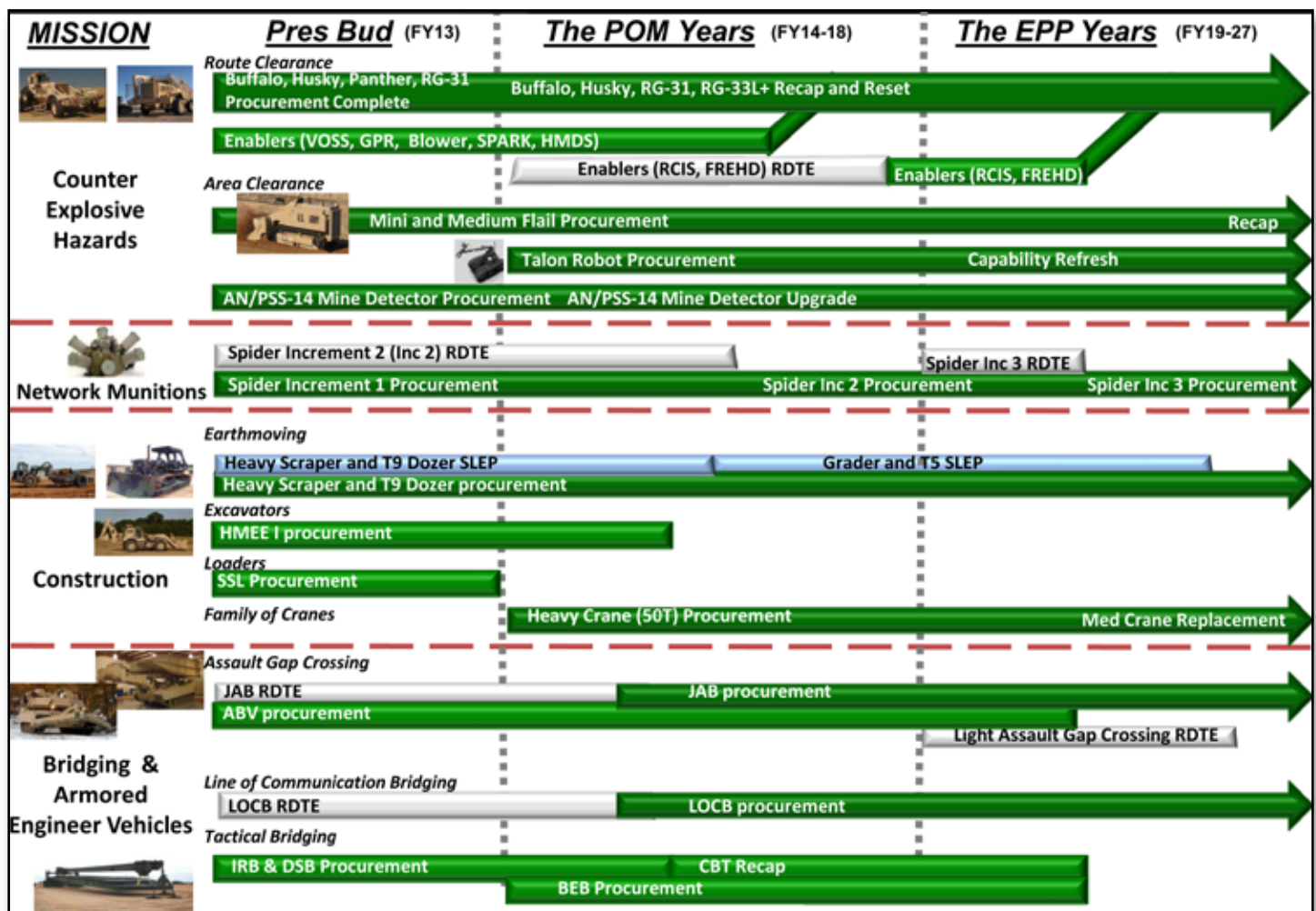
Table 11. Force Protection Portfolio: Mobility Programs (see Acronym Glossary)

Companies an improved deep excavation capability and procured 19 Assault Breacher Vehicles (ABV) fielding 3 HBCTs.

- Provided 476 Urban Operations Sets to platoons and squads enabling assured mobility in the urban environment.

- Procured 20 ABVs, 30 Heavy Scrapers, 171 T9 Dozers, 60 Water Distributors and 280 Instrument Set, Reconnaissance and Surveying (ENFIRE) surveying sets for three HBCTs in FY12.

- Recapitalized over 200 Route Clearance and Explosive Ordnance Disposal (EOD) vehicles into their program of record configuration in FY12.

Section III – Key FY13 Force Protection Portfolio Investments:

The FY13 Force Protection investments totaling $96M ($12M RDTE / $84M OPA) ensure Soldiers are protected from the effects of chemical, biological, radiological and nuclear hazards. Specific investments in this portfolio include:

PROTECTION PROGRAMS

MISSION	Pres Bud (FY13)	The POM Years (FY14-18)	The EPP Years (FY19-27)
Base Defense	Battlefield Anti-Intrusion System (BAIS) — AAO FY14; Lighting Kit Motion Detector (LKMD) — AAO FY15		
Gunshot Detection	Boomerang I ONS since 2008	GSD/Boomerang	
Non-Lethal Capabilities	Launched Electrode Stun Device (LESD); Acoustic Hailing Device (AHD)	No Funding FY13-14	
Civil Affairs/ Mil Info Sup Ops	Continuous Modernization Refresh / Program includes 17 systems		
Explosive Ord Disposal	Man Transportable Robotics System (MTRS)	Advanced EOD Robotics System (AEODRS) — AAO FY17	

Table 12. Force Protection Portfolio: Other Protection Programs (see Acronym Glossary)

- $18M (OPA) procures 1,306 Battlefield Anti-Intrusion System (BAIS) (14.6 percent of the Army Acquisition Objective (AAO) of 8,933). Provides early seismic/acoustic warning, intrusion detection and characterization of approaching ground intrusion threats.

- $5M (RDTE) for Gunshot Detection System (GDS) providing the capability to detect / identify point-of-origin location of incoming small arms gunfire.

- $27M (OPA) procures 6,525 Lighting Kit, Motion Detector (LKMD) systems (18.8 percent of the AAO of 34,711). Provides close-in motion detection and visible light / infra-red illumination of approaching ground intrusion threats.

- $29M (OPA) procures 1,508 EOD Equipment systems. This program includes 12 systems comprised of Man-Transportable Robotic Systems (MTRS) and associated equipment providing EOD technicians with a rapid, reliable and secure means for identifying and disarming EOD munitions.

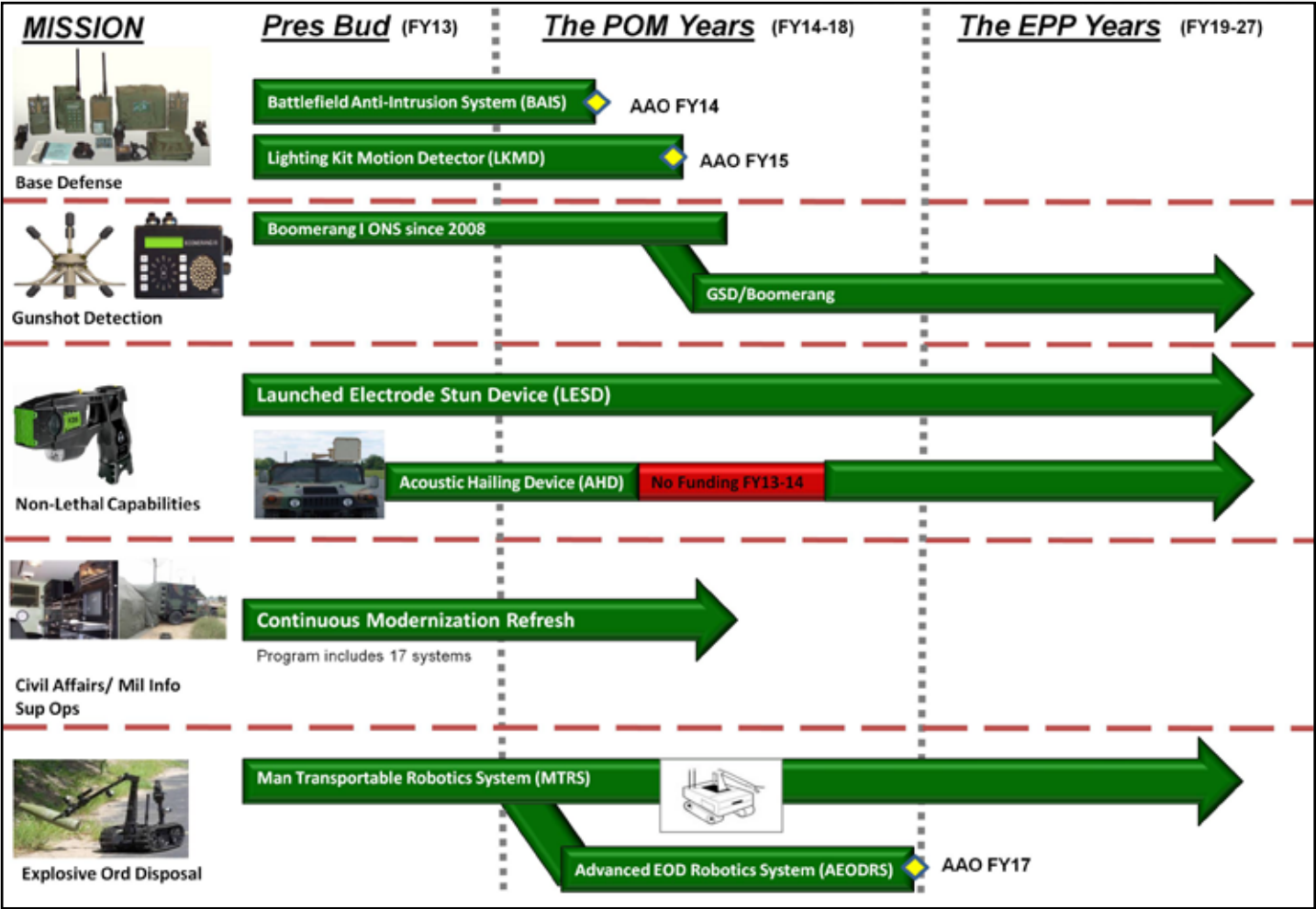- $466K (RDTE) funds EOD Equipment RDTE extending the current Non-Line-of-Sight capability of the Man-Transportable Robotic System providing increased standoff distances for EOD Technicians while conducting dismounted operations.

- $37M (OPA) procures 890 Civil Affairs/Military Information Support Operations (CA/MISO) systems. This program includes 17 systems providing essential command and control, communications, computers and intelligence (C4I) capabilities for CA / MISO General Purpose Forces.

- $212M (OPA) funds recapitalization of over 177 Route Clearance and EOD vehicles and 24 M160 Mini Flails into program of record configuration for fielding. Procures four new M160 Mini Flails to complete a Theater ONS. Provides $98M in RDTE for the next generation of standoff detection, neutralization and clearance systems.

- $50M (OPA) procures 10 Assault Breacher Vehicle (ABV) systems for two HBCTs enabling rapid breaching, proofing and marking of full width lanes through complex obstacles and minefields.

- $14M (RDTE) utilizes RDTE in developing Joint Assault Bridge (JAB) technology modernizing the obsolete Armored Vehicle Launched Bridge fleet.

- $80M (OPA) for Tactical Bridging. Modernizes dry and wet gap bridging with the Improved Ribbon Bridge (IRB), a float bridge; $34.6M for 14 systems) and Dry Support Bridge (DSB, $34M for 8 systems).

- $134M (OPA) for Construction Equipment. Modernizes by replacing 61 dozers, nine heavy scrapers, 76 High Mobility Engineer Excavators (HMEE) and 40 water distributors.

- $15M (OPA) procures 153 Instrument Set, Reconnaissance and Surveying systems to Engineer formations across the Army.

- $68M ($14M RTDE / $36M OPA / $17M AMMO) procures 222 Spider Increment 1 systems (anti-personnel), 120 systems worth of ammunition and develops Increment II system with improved controller and anti-vehicular capability.

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SUSTAINMENT (TRANSPORT) PORTFOLIO

Section I – Overview:

The Sustainment (Transport) Portfolio consists of Tactical Wheeled Vehicles (TWV) and Watercraft (See table 13).

The TWV portfolio includes the Light, Medium and Heavy Tactical Vehicle fleets and the Mine Resistant Ambush Protected (MRAP) family of vehicles. The Army employs TWVs in a wide variety of roles including armament carriers, logistics vehicles, ambulances and C2 vehicles. The evolution of the "Army truck" has progressed tremendously in a short period of time. While simple, unprotected motorized transportation is practical in the training base, it does not address current threats in deployed environments. Remaining relevant on today's multi-spectrum battlefields requires armored or armor capable trucks with additional capacity and power for additional weight and power required to protect personnel and support a wide variety of missions.

The Watercraft portfolio includes the Harbormaster Command and Control Center (HCCC), Logistic

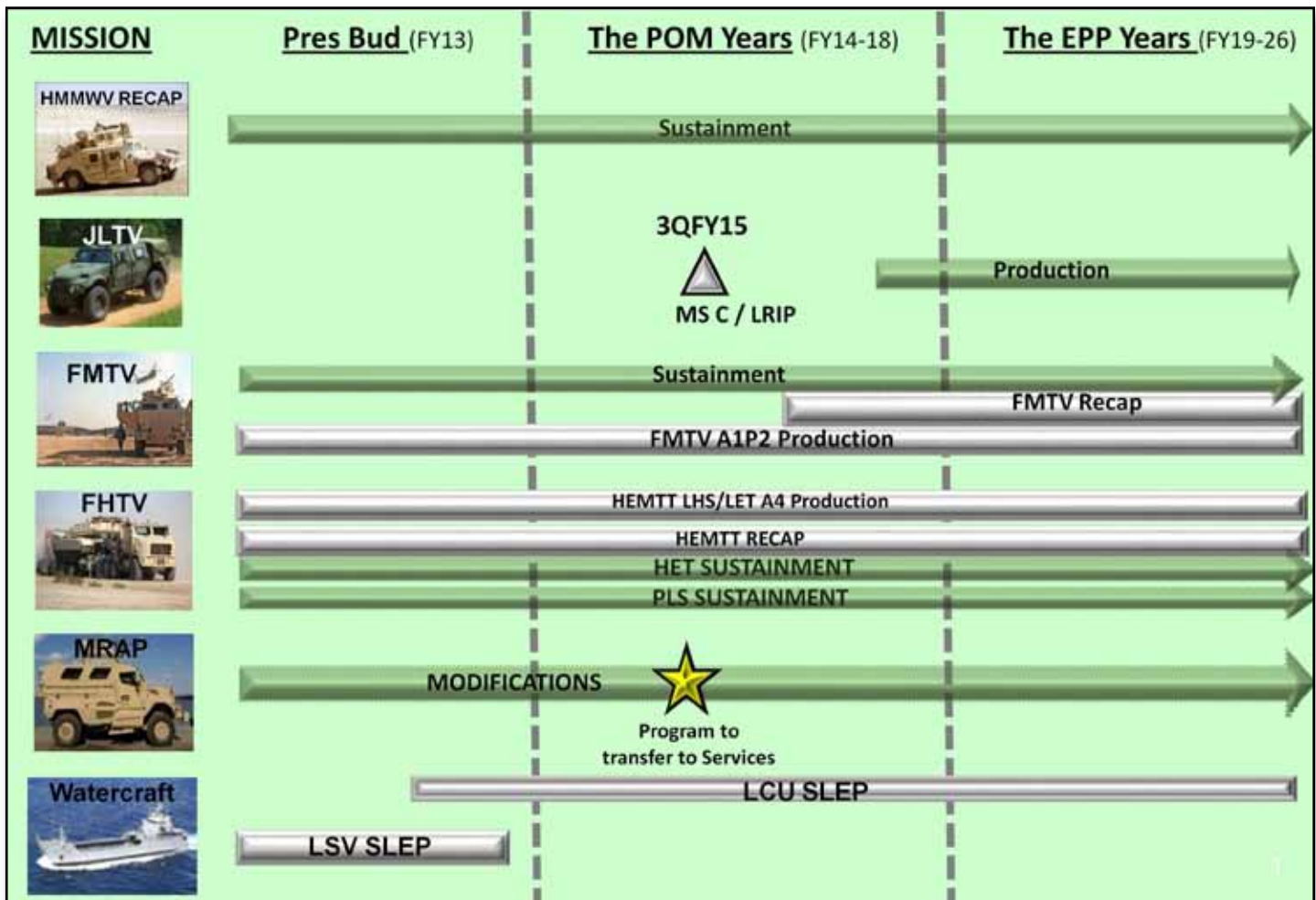## SUSTAINMENT TRANSPORT MODERNIZATION

Table 13. Sustainment Transport Portfolio (see Acronym Glossary)

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Support Vessel (LSV) and Landing Craft Utility (LCU). The HCCC provides command and control tools and sensors for watercraft asset management. The watercraft fleet consists of the LSV and LCU which both provide transport of combat vehicles and sustainment cargo in various waterways in support of combat, contingency and humanitarian relief efforts. The LSV SLEP revitalizes aging vessels with new and modernized parts.

As depicted in table 13, key objectives and decision points in the Tactical Wheeled portfolio include:

- Fully funding Joint Light Tactical Vehicle (JLTV) development and fielding.

- Producing sufficient Heavy Expanded Mobility Tactical Truck (HEMTT) Load Handling System (LHS)/Light Equipment Transporter (LET) filling fleet shortages.

- Modernizing the legacy Medium Tactical Vehicle fleet, replacing M900 series 5-ton trucks with armored and armor capable Family of Medium Tactical Vehicles (FMTV).

- Integrating the MRAP fleet as an Army program of record.

- Sustaining one LSV vessel through a SLEP extending its useful life with new / upgraded C4ISR, force protection and engineering equipment.

Section II – Key Sustainment (Transport) Portfolio Accomplishments (FY11/12):

- Fielded 1,912 MRAP All Terrain Vehicle (M-ATV), 186 MRAP Wreckers in support of OEF.

- Completed the depot-level repair (RESET) of 989 and recapitalization (RECAP) of over 2,414 Tactical Wheeled Vehicles (TWVs).

- Completed the SLEP of 3 of 17 (LSV and LCU); which will complete 6 of 17 watercraft in the 34 vessel fleet.

- Fielded in excess of 17,891 TWVs (MTV and HTV fleets).

- Procured over 1,463 trucks and 702 trailers within the FMTV. Within the Family of Heavy Tactical Vehicles, the Army procures over 3,217 trucks, trailers and other associated systems.

Section III – Key FY13 Sustainment (Transport) Portfolio Investments:

The FY 13 Sustainment (Transport) investments total $661M ($81M RDTE / $580M OPA) and includes light, medium, heavy tactical wheeled vehicle fleets and the MRAP family of vehicles. Specific investments in this portfolio include:

- $72M (RDTE) for JLTV Engineering and Manufacturing Development.

- $3M (OPA) procures HEMTT LHSs filling unit shortages.

- $36M (OPA) procures HEMTT LETs replacing the M916 Tractor in Engineer units.

- $374M (OPA) procures FMTV A1P2s and replacing aging M900-series 5T vehicles.

- $27M (OPA) recapitalizes HEMTTs into armor capable configuration.

- $18M (OPA) recapitalizes PLSs into armor capable configuration.

- $6M (OPA) completes LSV SLEP on hull numbers LSV 1 and LSV 2 and thus completing the six vessel SLEP program.

SUSTAINMENT PORTFOLIO

Section I – Overview:

The Sustainment portfolio consists of multiple systems providing essential enabling equipment (See table 14). These systems include: Joint Precision Airdrop Systems (JPADS), Modular Fuel System (MFS), Load Handling System Compatible Water Tank Rack System (Hippo), Assault Kitchen, Multi-Temperature Refrigerated Container System (MTRCS), 5K Light Capacity Rough Terrain Forklift (LCRTF), Hydraulic System Test and Repair Unit (HSTRU), Metal Working and Machine Shop Set (MWMSS), Next Generation Automatic Test System (NGATS), Maintenance Support Device (MSD) Version 3 and Calibration Sets.

SUSTAINMENT PORTFOLIO MODERNIZATION

Table 14. Sustainment Portfolio (see Acronym Glossary)

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Section II – Key Sustainment Portfolio Accomplishments (FY11/12):

- Fielded 100 percent of the 2,000 pound JPADS requirements (1548) and beginning initial fielding of the 10,000 pound JPADS. The 2K and 10K JPADS provide rapid, precise, high-altitude delivery capabilities to forces without the use of ground transportation.

- Fielded the MFS to nine SBCTs providing a fuel distribution and storage capability at any location without construction equipment or material handling equipment.

- Delivered 100 MTRCS to Afghanistan in 2011 increasing storage capabilities and enhancing quality of life for units / detachments operating in remote locations.

- Fielded 509 Hippo systems providing 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.

- Fielded 229 5K LCRTF providing a C-130 deployable, CH-47 sling-load capable, low velocity airdrop and PLS Flatrack compatible system in support of the Army family of ISO containers of commercial sized pallets and replaces the 4K forklift.

Section III – Key FY13 Sustainment Portfolio Investments:

The FY13 Sustainment investments total $355M ($110M RDTE / $245M OPA) for support programs and includes fuel and water systems, load handling systems, airdrop systems, tool sets, medical systems and other combat enablers. Specific investments in this portfolio include:

- $23M (OPA) procures 179 Tank Rack Modules and 27 Pump Rack Modules providing a mobile fuel storage capability for 12 BCTs.

- $27M (OPA) procures 1,644 MSDs V3 replacing obsolete test sets in 16 BCTs.

- $19M (OPA) procures five NGATS replacing legacy Direct Support Electrical System Test Sets (DSESTS) and legacy Base Shop Test Facility (BSTF) in five BCTs.

- $22M (OPA) procures 159 Multi-Temperature Refrigeration Container System (MTRCS) providing rapid refrigerated transport and storage of Class I items for 11 BCTs.

- $13M (OPA) procures 124 Load Handling System Compatible Water Tank Rack System (Hippos) replacing obsolete Semi-Trailer Mounted Fabric Tanks (SMFT) and Forward Area Water Point Supply Systems (FAWPSS) in seven BCTs.

- $11M (OPA) procures three calibration sets replacing obsolete calibration sets in three BCTs.

- $7M (OPA) procures 55 10K JPADS in support of joint precision aerial delivery operations conducted in numerous theaters of operations/ training missions.

- $6M (OPA) procures 64 5,000 pound forklifts replacing legacy 4,000 pound forklifts throughout the Army.

- $5M (OPA) procures 86 Assault Kitchens (AK) replacing legacy field fielding systems in Special Forces detachments and IBCTs.

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SCIENCE AND TECHNOLOGY PROGRAM

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 by fostering invention, innovation, maturation and demonstration of technologies for the current and future fight. The S&T efforts are focused on the Army's equipment modernization priorities: network the force, replace, improve and/or transform selected platforms and empower, protect and unburden the Soldier.

The Army S&T program is organized into investment portfolios that address challenges in six capability areas: four Army-wide areas (Air; Soldier; Ground and Command, Control, Communications and Intelligence (C3I)) and two areas unique to S&T (Basic Research and Enduring Technologies):

- The Air Portfolio includes technologies for manned and unmanned systems; air-delivered lethality; and air-platform safety, survivability and protection.

- The Soldier Portfolio includes technologies for Soldier and Squad Lethality, Survivability, Mobility; Leader Development; Training; Combat Casualty Care and Clinical and Rehabilitation Medicine capabilities.

- The Ground Portfolio includes technologies for weapons systems, active and passive protection systems for ground vehicles, manned and unmanned ground platforms and mobility systems, countermine/counter-IED efforts and deployable small base protection.

- The C3I Portfolio includes technologies for ground, air and Soldier communications devices and networks, air and space sensor and network payloads and Mission Command.

- The Basic Research Portfolio provides a fundamental S&T foundation to enable Army-relevant technology capabilities.

- The Enduring Technologies Portfolio includes technology development associated with environmental quality and installations, such as sustainable ranges and lands, pollution prevention, military materials in the environment and adaptive and efficient installations. It also includes the Department of Defense (DoD) High Performance Computing Modernization Program, which was devolved from the Office of the Secretary of Defense to the Army in FY12. This program supports all Services and DoD Agencies, enables incorporating advanced computational capabilities as a solution of first resort to explore and evaluate new theories; reduces time and cost of acquiring weapons systems; and provides real-time calculations in support of military operations.

- The S&T projects are planned and executed collaboratively through partnerships among industry, academia and the 21 Army Research, Development and Engineering Centers (ARDECs) and laboratories. The Army's S&T investments reflect a balanced approach to far-term, basic research for discovery and understanding of phenomena (RDT&E Budget Activity (BA) 6.1); mid-term, applied research for laboratory concept demonstrations (RDT&E BA 6.2); and near-term, advanced technology demonstrations in relevant environments outside the laboratory (RDT&E BA 6.3). In FY12, the Army began the Technology Maturation Initiative, a new program supported with RDT&E BA 6.4 funds. This program establishes a stronger partnership between Army S&T and acquisition by maturing and demonstrating technologies and providing competitive prototypes to help

expedite technology transition from the laboratory to operational use.

Results of Army S&T investments can be seen in many capabilities currently in the field. Examples include the following:

- **Deployable Force Protection (DFP)** S&T Program developed designs and methods to expediently establish mortar pits and provide overhead cover using modular systems that incorporate blast and ballistic protection. Members of the DFP team worked with troops on design and employment options. The 82nd Airborne Division will deploy in 2012 with a number of modular protective mortar pit and overhead cover systems that will be used in an operational assessment in theater. Use of these systems will save time associated with establishing mortar pits and will improve force protection for Soldiers.

- **Husky Mounted Detection System (HMDS)** S&T Program used an advanced, high-performance ground penetrating radar to detect both non-metallic and metal-cased buried threats, including IEDs constructed of bulk explosives and low-metal pressure plates, buried in primary and secondary roads. Under a Joint Urgent Operational Needs Statement (JUONS), 220 systems were fielded to Operation Enduring Freedom (OEF) in support of the Army and Marine Corps. HMDS transitioned to the Product Manager for Countermine and Explosive Ordinance Disposal (PM CM&EOD) in April 2009 and the PM initiated a competitive Program of Record for the HMDS capability in FY12.

- **The Universal Collaboration Bridge (UCB)** S&T Program is a software architecture that provides interoperability between different chat systems. The UCB will interface Variable Message Format (VMF) and Extensible Messaging and Presence Protocol (XMPP) for text chat to provide important text chat interoperability between Joint Battle Command – Platform (JBC-P) equipped vehicles and Tactical Operations Center-based XMPP users. The software has been transitioned to the Product Manager for Tactical Battle Command in FY10 and is being integrated into JBC-P.

- **The Advanced Affordable Turbine Engine (AATE)**, S&T Program developed and demonstrated two new helicopter turbine engines that provide significant improvements in engine power and operating efficiencies. In FY12, the program transitioned to the Army's Improved Turbine Engine Program (ITEP) to retrofit the Blackhawk and Apache fleet.

- **The Target Location/Designation System (TLDS)**, S&T Program demonstrated an improved, man-portable, target acquisition, targeting and laser designation system with reduced size, weight and power. In FY10 PEO Soldier transitioned the TLDS common designator module into the Lightweight Laser Designator Rangefinder Block II and Joint Effective Targeting System programs. In FY11, PEO Soldier integrated Far Target Location technology into the JETS program.

DoD's shift towards more capabilities-focused processes has led the Army to re-assess how technology matures and transitions from the laboratory to Program Executive Offices, Program Managers and Industry. The Army revised its S&T process with increased focus on the delivery of capabilities within a predetermined timeframe. The new Technology-Enabled Capability Demonstration (TECD) process realigns strategic planning with strategic processes,

aligns investment priorities with Army senior leadership goals and shifts emphasis from demonstrating technology to demonstrating fully integrated technology-enabled capabilities. The purpose of the TECD process is to develop and demonstrate technologies or sets of technologies to solve near-term Army needs within three years of project initiation.

The Army Science and Technology Advisory Group (ASTAG) validated this approach and prioritized Army challenges for TECD funding. Priority TECD programs validated by the ASTAG include the following:

- Force Protection – Basing: demonstrate ability to construct and protect a 300- person combat outpost or patrol base in 30 days with integrated sensing and defense capabilities.

- Force Protection – Soldier and Small Units: define a new paradigm where Mobility, Lethality/SA and Survivability are all factors in Personal Protection Equipment design and employment.

- Force Protection – Occupant Centric Platform: develop, design, demonstrate and document an occupant centered Army ground vehicle design philosophy that improves vehicle survivability and force protection by mitigating Soldier injury due to underbody IED and mine blast, vehicle rollover and vehicle crash events.

- Overburdened Physical Burden: develop and demonstrate capabilities that reduce physical burden on the Soldier and small unit without reducing operational effectiveness.

- Surprise/Tactical Intelligence – Mission Command (MC): reduce tactical surprise and achieve overmatch at the squad level by providing tools that enable MC on the move and allow tactical leaders to synchronize action, seize the initiative and maintain situational awareness.

- Surprise/Tactical Intelligence – Actionable Intelligence: provide critical time-sensitive information to the small unit from higher echelon down through company in time to prevent surprise/ambush.

- Sustainment/Logistics – Basing: reduce the need for fuel and water resupply and decrease waste while increasing quality of life for Soldiers in combat outposts/patrol bases.

- Human Performance – Individual Training to Tactical Tasks: develop innovative, effective training methods that expedite training and adapt to Soldiers' learning needs in three domains: cognitive – infantry squad leader, procedural-fires and new/evolving systems-unmanned systems.

- Human Performance – Medical Assessment and Treatment: develop technologies that can be used by small units that will facilitate more accurate decisions about treatment, return-to-duty (RTD) and evacuation for mild to moderate traumatic brain injury (TBI) and post traumatic stress (PTS). Develop therapies to improve recovery from TBI and PTS.

In FY13, the Army has dedicated more than $2B to its S&T programs: $444M in RDT&E BA 6.1 (basic research), $875M in RDT&E BA 6.2 (applied research) and $891M in RDT&E BA 6.3 (advanced technology demonstrations).

CAPABILITY FIELDING
AND DISTRIBUTION

CAPABILITY FIELDING AND DISTRIBUTION

Two key aspects of ensuring Soldiers have the equipment they need when they need it are the Army equipment distribution plans and the Army Equipping and ReUse Conference (AERC).

The plans, published at: https://www.g8.army.mil/pdf/AES2012_lq.pdf, provide equipping guidance and describe the ends, ways and means the Army will use to ensure Soldiers have the right equipment in the quantities needed to accomplish assigned missions in support of Combatant Commander requirements. The AERC, attended by the Army's equipment stakeholders, enables a holistic review of the Army's equipping posture, policies and issues. It is used to synchronize equipment distribution based on Army priorities.

The first aspect of ensuring Soldiers have the equipment they need is the **Army Equipment Plan**, which establishes goals and metrics for achieving a balance between requirements and resources. It describes how equipment and capabilities provided by the Army Equipment Modernization Plan are distributed and placed into a unit to synchronize it with its assigned mission. It addresses the rotational and non-rotational Operational Force and the Generating Force. The plan is dynamic and flexible, addressing divergent needs and requirements of the Total Army. The plan's goals and objectives are achieved using three lines of operation: unit-based equipping, managing friction and building long-term readiness.

- **Unit-Based Equipping**. The Army's equipping goal is to ensure that Soldiers always have the equipment they require to execute assigned missions. It measures success in doing so using a series of equipping goals or Aim Points (AP). During FY11 and FY12, the Army's short-term equipping goals for Active Component units with a 1:2 Boots on the Ground (BOG):Dwell ratio, is to equip them to S-3 (65-79 percent of

their authorized equipment) at Aim Point (AP) 1 (Return (R)+6 months) and S-2 (80-89 percent) at AP2 (R+1 year). Units will be equipped to S-1/Assigned Mission Equipping (AME)-1 (90 percent or greater) by the time a unit enters the available phase. The short-term equipping targets for Reserve Component (RC) units are to equip them to S-3 at AP2 (R+2 years), S-2 at AP3 (R+3 years) and S-1 at AP4 (R+4 years). This line of operation also includes maintaining the Generating Force and RC Critical Dual Use equipping levels to no less than 80 percent and tailoring equipment distributions to better manage shortages and maximize capabilities.

- **Managing Friction**. Friction is the term used to describe critical Army requirements such as filling training sets, equipment in transit over strategic distances, equipment in Reset, etc., that prevent materiel from being used to fill unit requirements. Success in managing friction is measured by how well the Army can see its own equipment inventories and make informed management decisions about how to allocate that inventory to build Army readiness. Friction consumes valuable resources and it increases the complexity of equipping units.

- **Building Long-term Readiness**. The Army will continue to focus on Army management policies and structure to bring resources, resourcing processes, requirements validation and priorities into better synchronization with cyclic equipping readiness requirements. Some of the methods the Army uses to build long-term readiness include ensuring documents accurately reflect equipping status, updating the readiness reporting system and examining the relevance of long-standing equipping programs and policies.

The second aspect of ensuring Soldiers have the equipment they need is the **Army Equipping and Reuse Conference**. The goal of the AERC is to ensure Soldiers are equipped for the current fight and for future contingencies. The AERC combines knowledgeable, experienced equippers with representatives from all stakeholders across the Army in a focused venue that ensures Combatant Commanders have the most capably equipped units the Army can provide, while allowing participants an opportunity to address a wide range of key Army equipping concerns.

The AERC enables a holistic view of the Army's equipping posture, policies and issues. It is a venue in which stakeholders (equipment providers and using units) can refine equipping plans. The results of each AERC are briefed to the senior Army leadership. During this brief the HQDA DCS, G-8, provides an analysis of the Army equipping situation and identifies issues that affect readiness.

The conference provides two key outputs. The first is the information sharing that comes from special topic working sessions. These sessions sustain communications across the community of stakeholders on strategic issues affecting Army equipping policy and posture. They provide the commands with a forum to receive updates and address questions or concerns on current and evolving issues that impact our collective equipping effort. The second is a refined distribution plan for the next 21 months. The plan ensures Soldiers get the right equipment at the right place at the right time.

Lead Materiel Integrator

The Army Materiel Command is the Army's Lead Materiel Integrator (LMI) to increase efficiencies, eliminate redundancies, increase cost savings and improve materiel readiness. The LMI approach to Army materiel management combines transparency of decisions, collaboration among all materiel stakeholders, a strategic view of all materiel requirements and sources of supply over time and the consolidation of multiple authoritative inputs in one place, yielding a truly synchronized materiel distribution and redistribution process that optimizes supply against demand.

The Army Materiel Command is developing an automated decision support tool (DST) to help it formulate equipping recommendations to the field. The DST will provide increased asset visibility using data from the Army's authoritative materiel data repository, the Logistics Information Warehouse (LIW). The LIW, along with the LMI's DST, will optimize supply against demand allowing the Army to distribute and redistribute materiel with unprecedented speed and precision.

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CONCLUSION

CONCLUSION

Equipment requested in the FY13 President's Budget strikes a balance between current and future needs, provides the basis for an affordable equipping strategy over time and takes into account Army requirements and priorities. In developing this request, the Army made difficult decisions to shift funds previously programmed for future capabilities to current needs. The decisions came at the expense of promising and needed technologies with capabilities that did not fit within resource limitations and represented significant changes in almost 100 programs. Nevertheless, the Army is committed to maintaining the most capable Army in the world with the resources available. We continuously assess programs to find overlapping or joint capabilities that meet the need, or programs that are simply unaffordable or result in acceptable capability risk.

The Army will continue to develop and field a versatile and affordable mix of equipment to allow Soldiers and units to succeed in the full range of missions today and tomorrow and to maintain our decisive advantage over any adversary we face. The balanced and affordable approach to achieving this goal uses integrated capability portfolios that align our equipment modernization communities to identify capability gaps and eliminate unnecessary redundancies, incremental modernization to deliver new and improved capabilities and Army force generation processes to ensure unit equipment readiness.

Although we are a force in transition during a period of declining resources, we must continue to provide the Army with the best equipped most modernized and most highly capable units that will prevail on any battlefield. We will do this with affordability as our watchword and remain committed stewards of our Nation's resources. With a balanced equipment modernization strategy, the Army will remain on track to equip the Army of 2020.

ACRONYM GLOSSARY

ACRONYM GLOSSARY

AAE	Army Acquisition Executive
AAO	Army Acquisition Objective
AAS	Armed Aerial Scout
ABCS	Army Battle Command Systems
ABV	Assault Breach Vehicle
ACAT	Acquisition Category
ACFT	Aviation Procurement, Army
ACOM	Army Command
ACR	Armored Cavalry Regiment
ACTD	Advanced Concept Technology Demonstration
ADAM	Air Defense Airspace Management (Cell)
AEHF	Advanced Extremely High Frequency
AEODRS	Advance EOD Robotics System
AERC	Army Equipping and Reuse Conference
AFATDS	Advanced Field Artillery Tactical Data System
AGSE	Aviation Ground Support Equipment
AHB	Assault Helicopter Battalions
AIAMD	Army Integrated Air and Missile Defense
AIM SA	Abrams integrated management situational awareness
AIT	Automatic Identification Technology
AK	Assault Kitchen
AKMS	Army Key Management System
AKP	Adjustable Keyboard Podium
ALPS	Aerial Layer Platforms and Sensors
AMD	Air and Missile Defense
AMDPCS	Air and Missile Defense Planning and Control System
AMDWS	Air and Missile Defense Work Station
AMF	Airborne Maritime Fixed (AMF) variant of Joint Tactical Radio System (JTRS)
AMMPS	Advanced Medium Mobile Power Source
AMPV	Armored Multi-purpose Vehicle
AN/PLT-5	EOD Transmitter, Countermeasure
AOA	Analysis of Alternatives
APO	Army Procurement Objective
ARB	Attack Reconnaissance Battalion
ARFORGEN	Army Force Generation
ARGCS	Agile Rapid Global Combat Support
ARL	Airborne Reconnaissance Low
ARMS	Aerial Reconnaissance Multi-Sensor
ARNG	Army National Guard
AROC	Army Requirements Oversight Council
ASAS	All Source Analysis System

ASCC	Army Service Component Command
ASE	Aircraft Survivability Equipment
ASTAG	Army Science and Technology Advisory Group
ATACMS	Army Tactical Missile System
ATC	Air Traffic Control
ATIRCM	Advanced Threat Infrared Countermeasures
ATLAS	All-Terrain Lifter Army System
ATLS	Automated Tactical Landing System
ATNAVICS	Air Traffic Navigation, Integration and Coordination System
AW	Alternative Warhead
B	Billions
BAIS	Battlefield Anti-Intrusion System
BAT	Biometrics Automated Toolset
BCBL	Battle Command Battle Lab
BCPL	Battle Command Product Line
BCS3	Battle Command Sustainment Support System
BCT	Brigade Combat Team
BEB	Bridge Erection Boat
B-FIST	Bradley Fire Support Team (Vehicle)
BFSB	Battlefield Surveillance Brigade
BFT	Blue Force Tracker
BI, BII, BII	Block I, II, III
BIDS	Biological Integrated Detection System
BLOS	Beyond Line of Sight
BSTF	Base Shop Test Facility
C2	Command and Control
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
CAL	Caliber
CALS	Common Analytical Laboratory System
CARA	CBRNE Analytical and Remediation Activity
CASUP	Cockpit And Sensor Upgrade Program
CBDP	Chemical Biological Defense Program
CBRN	Chemical, Biological, Radiological and Nuclear
CBRNE	Chemical, Biological, Radiological, Nuclear and Enhanced Conventional Weapons
CBT	Common Bridge Transporter
CDS-5	Cockpit Display System 5
CHARCS	Counterintelligence and Human Intelligence Automated Reporting and Collection System

CHIMS	CI/HUMINT Management System
CI	Counterintelligence
CIRCM	Common Infrared Countermeasures
CMWS	Common Missile Warning System
COE	Common Operating Environments
COIST	Company Intelligence Support Team
COMSEC	Communications Security
COTS	Commercial Off the Shelf
CPOF	Command Post of the Future
CPR	Capability Portfolio Review
C-RAM	Counter-Rockets, Artillery and Mortars
CROWS	Common Remotely Operated Weapon System
CS	Combat Support
CSB	Configuration Steering Board
CSM	Capability Set Management
CSP	Common Sensor Payload
CSS	Combat Service Support
CTSF	Central Technical Support Facility
DAB	Defense Acquisition Board
DAE	Defense Acquisition Executive
DARPA	Defense Advanced Research Projects Agency
DE	DCGS-A Enabled
DF	Direction Finding
DCGS-A	Distributed Common Ground System - Army
DDL	Digital Data Link
DHCP	Digital Host Communication Protocol
DMTI	Digital Moving Target Indicator
DOCEX	Document Exploitation
DPICM	Dual Purpose Improved Conventional Munitions
DSB	Dry Support Bridge
DSESTS	Direct Support Electrical System Test Set
DST	Decision Support Tool
DTSS	Digital Topographic Support System
DVH	Double V Hull
EAB	Echelons Above Brigade
EAC	Echelons Above Corps
ECP	Engineering Change Proposal
ECS	Engagement Control Station
EMARSS	Enhanced Medium Altitude Reconnaissance Surveillance System
EMD	Engineering and Manufacturing Development
EN	Engineers

ENFIRE	Instrument Set, Reconnaissance and Surveying
EOIP	Everything Over Internet Protocol
EO/IR	Electro-optical/Infrared
EOC	Engagement Operations Center
EOD	Explosive Ordnance Disposal
EPLRS	Enhanced Position Location and Reporting System (Radio)
ERMP	Extended Range Multi-Purpose (Unmanned Aerial System) (Gray Eagle)
ESA	Enhanced Situational Awareness
ESB	Expeditionary Signal Battalion
FA	Field Artillery
FAA	Functional Area Assessment
FAAD C2	Forward Area Air Defense Command and Control
FAASV	Field Artillery Ammunition Supply Vehicle
FADEC	Full Authority Digital Electronic Control
FAWPSS	Forward Area Water Point Supply System
FBCB2	Force XXI Battle Command Brigade-and-Below
FDP	Full Dimension Protection
FHTV	Family of Heavy Tactical Vehicles
FIB	Fires Brigade
FMC	Fully Mission Capable
FMTV	Family of Medium Tactical Vehicles
FOT&E	Follow-on Operational Test and Evaluation
FOV	Family of Vehicles
FRHN	Fixed Regional Hub Nodes
FRP	Full Rate Production
FSSP	Fuel System Supply Point
FUA	Future Utility Aircraft
FUE	First Unit Equipped
FY	Fiscal Year
GATM	Global Air Traffic Management
GCSS-A	Global Command Support System – Army
GCV	Ground Combat Vehicle
GGB	Guardrail Ground Baseline
GMLRS	Guided Multiple Launch Rocket System
GMR	Ground Mobile Radio
GMTI	Ground Moving Target Indicator
GNEC	Global Network Enterprise Construct
GRCS	Guardrail Common Sensor
GRRIP	Global Rapid Response Intelligence Package
HALE	High Altitude Long Endurance (airship)
HBC	High Band COMINT

HBCT	Heavy Brigade Combat Team
HCCC	Harbormaster Command and Control Center
HEMTT	Heavy Expanded Mobility Tactical Truck
HEMTT-LHS	Heavy Expanded Mobility Tactical Truck-Load Handling System
HET	Heavy Equipment Transporter
HF	High Frequency
HIIDE	Handheld Interagency Identity Detection Equipment
HIMARS	High Mobility Artillery Rocket System
HME CIED	Home Made Explosives Counter Improvised Explosive Device
HMEE	High Mobility Engineer Excavator
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HMS	Handheld, Manpack and Small Form Fit (radios)
HQ	Headquarters
HQDA	Headquarters Department of the Army
HSTRU	Hydraulic System Test and Repair Unit
HTV	Heavy Tactical Vehicle
HUMINT	Human Intelligence
I2A	Image Interpolation Algorithm
IBCS	Integrated Air and Missile Defense – Battle Command System
IBCT	Infantry Brigade Combat Team
ICD	Initial Capabilities Document
IED	Improvised Explosive Device
IETM	Interactive Electronic Technical Manuals
IFPC	Indirect Fire Protection Capability
IFTE	Integrated Family of Test Equipment
IFV	Infantry Fight Vehicle
IMETS	Integrated Meteorological System
IMINT	Imagery Intelligence
IOC	Initial Operating Capability
IOTE	Initial Operational Test and Evaluation
IOTV	Improved Outer Tactical Vest
IP	Internet Protocol
IPADS	Improved Position and Azimuth Determining System
IPN	Installation Processing Node
IRB	Improved Ribbon Bridge
ISAAS	Individual Semi-Automatic Airburst System
ISR	Intelligence Surveillance and Reconnaissance
ISRIS	Intelligence, Surveillance, Reconnaissance Information Service
JAB	Joint Assault Bridge
JAGM	Joint Air to Ground Missile
JBC-P	Joint Battle Command-Platform

JBPDS	Joint Biological Point Detection System
JC4ISR	Joint Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance
JCAD	Joint Chemical Agent Detector
JCR	Joint Capabilities Release
JCTD	Joint Capability Technology Demonstration
JETS	Joint Effects Targeting System
JIOC	Joint Information Operations Center
JLENS	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor
JLTV	Joint Light Tactical Vehicle
JMPS	Joint Mission Planning System
JNN	Joint Network Node
JPADS	Joint Precision Airdrop System
JPALS	Joint Precision Approach and Landing System
JSAM	Joint Service Aircrew Mask
JSGM	Joint Service General Purpose Mask
JSTDS	Joint Service Transportable Decontamination System
JTRS	Joint Tactical Radio Systems
KMI	Key Management Infrastructure
KW	Kiowa Warrior
LCMR	Lightweight Counter-Mortar Radar
LCRTF	Light Capability Rough Terrain Forklift
LCU	Landing Craft Utility
LEMV	Long Endurance Multi-Intelligence Vehicle
LESD	Launched Electrode Stun Device
LET	Light Equipment Transport
LHS	Load Handling System
LKMD	Lighting Kit Motion Detector
LLDR	Lightweight Laser Designator Rangefinder
LMI	Lead Materiel Integrator
LOCB	Line of Communication Bridging
LOS	Line of Sight
LRIP	Low Rate Initial Production
LSV	Logistic Support Vessel
LUH	Light Utility Helicopter
LWN	LandWarNet
M	Millions
MAAS	Multi-INT Analysis and Archive System
MAP-HT	Mapping the Human Terrain
MARSS	Medium Altitude Reconnaissance Surveillance System
M-ATV	MRAP All Terrain Vehicle

MC	Mission Command
MDD	Materiel Development Decision
MDS	Mission-Design Series
MEADS	Medium Extended Air Defense System
MEB	Maneuver Enhancement Brigade
MEDEVAC	Medical Evacuation
MFCS-D	Mortar Fire Control System - Dismounted
MFLTS	Machine Foreign Language Translation System
MFS	Modular Fuel System
MGS	Mobile Gun System
MISO	Military Information Support Operations
MLRS	Multiple Launch Rocket System
MMPV	Medium Mine Protected Vehicle
MNVR	Mid-tier Networking Vehicular Radio
MOTS	Mobile Tower System
MRAP	Mine Resistant Ambush Protected (vehicle)
MRBC	Multirole Bridge Company
MRBM	Medium Range Ballistic Missile
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
MTI	Moving Target Indicator
MTOE	Modified Table of Organization and Equipment
MTRCS	Multi-Temperature Refrigerated Container System
MTRS	Man Transportable Robotic System
MTV	Medium Tactical Vehicle
MUM	Manned - Unmanned Teaming
MWMSS	Metal Working and Machine Shop Set
NBCRV	Nuclear Biological, Chemical Reconnaissance Vehicle
NCW	Net Centric Waveform
NCR	National Capital Region
NDT	Nuclear Disablement Teams
Nett	Not an acronym - honors World War II Medal of Honor recipient Col. Robert B. Nett
NGATS	Next Generation Automatic Test System
NGB	National Guard Bureau
NTNF-GSM	National Technical Nuclear Forensics-Ground Sampling Mission
NVG	Night Vision Goggles
ODS-E	Operation Desert Storm - Engineer

ODS-SA	Operation Desert Storm-Situational Awareness (Abrams Tank variant)
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OMA	Operations & Maintenance, Army
ONS	Operational Need Statement
OPA	Other Procurement, Army
OSGCS	One System Ground Control Station
OSRVT	One System Remote Video Terminal
OTM	On The Move
OWF	Ozone Widget Framework
P3I	Preplanned Product Improvement
PAC	Patriot Advanced Capability
PB	President's Budget
PCASS	Preliminary Credibility Assessment Screening System
PDB	Post Deployment Build
PDFCS-R	Paladin Digital Fire Control System - Replacement
PED	Processing, Exploitation and Dissemination
PGK	Precision Guidance Kit
PGSS	Persistent Ground Surveillance Systems
PIM	Paladin Integrated Management
POM	Program Objective Memorandum
PLS	Palletized Load System
PM	Product or Program Manager
POP	Points of Presence
POR	Program of Record
PSDS2	Persistent Surveillance Dissemination System of Systems
PTDS	Persistent Threat Detection System
QRC	Quick Reaction Capability
RAID	Rapid Aerostat Initial Deployment
RAM	Rockets, Artillery and Mortars; also Reliability, Availability and Maintainability
RC	Reserve Component
RDA	Research, Development and Acquisition
RDTE	Research, Development, Test and Evaluation
RF-ITV	Radio Frequency In-transit Visibility
RFP	Request for Proposals
RSTA	Reconnaissance, Surveillance and Target Acquisition
RTCH	Rough Terrain Container Handler
S&T	Science and Technology
SA	Situational Awareness
SALE	Single Army Logistics Enterprise
SAR	Synthetic-Aperture Radar

SATCOM	Satellite Communications
SATS	Standard Aircraft Towing System
SATS	Standard Automotive Tool Set
SBCT	Stryker Brigade Combat Team
SECM	Shop Equipment Contact Maintenance
SEP	System Enhancement Package
SIGINT	Signals Intelligence
SINCGARS	Single Channel Ground and Airborne Radio System
SKL	Simple Key Loader
SKO	Sets, Kits and Outfits
SLEP	Service Life Extension Program
SMART-T	Secure Mobile Anti-Jam Reliable Tactical Terminal (satellite system)
SMET	Squad Multi-purpose Equipment Transport
SMFT	Semi-trailer Mounted Fabric Tank
SOF	Special Operations Forces
SOSE	System of System Engineer
SPARK	Self Protective Adaptive Roller Kit
SRW	Soldier Radio Waveform
STAMIS	Standard Army Management Information Systems
STARLITE	Small Tactical Radar Lightweight
STEP	Strategic-Tactical Entry Points
STG	SIGINT (Signals Intelligence) Terminal Guidance
SWAP	Space, Weight and Power
SWAP-C	Size, Weight, Power and Cooling
TAIS	Tactical Airspace Integration System
TAMR	Total Army Munitions Requirement
TBC	Tactical Battle Command
TCDL	Tactical Common Data Link
TECD	Technology Enabled Capability Demonstration
THAAD	Terminal High Altitude Area Defense
THDD	Tactical Handheld Digital Device
TIGR	Tactical Ground Reporting
TLDS	Target Location Designation System
TOW	Tube Launched, Optically Tracked, Wire Guided
TQG	Tactical Quiet Generator
TSET	Tactical Site Exploitation Tool Set
TSP	Tactical SIGINT Payload
TUA	Targeting Under Armor
TWS	Thermal Weapon Sight
TWV	Tactical Wheeled Vehicles
UAS	Unmanned Aerial System

Table of
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UAV	Unmanned Aerial Vehicle
UGCS	Universal Ground Control Station
UHF	Ultra High Frequency
USAR	United States Army Reserve
USMC	United States Marine Corps
VSAT	Very Small Aperture Terminal
VTOL	Vertical Take Off and Landing
VUIT	Video Unmanned Intel Teaming
WIN-T	Warfighter Information Network – Tactical
WMD-E	Weapons of Mass Destruction-Elimination
WNW	Wideband Networking Waveform
WTCV	Weapons and Tracked Combat Vehicles

**Details on major Army acquisition programs can be found
in the 2012 Army Weapon Systems handbook at:**

http://armyalt.va.newsmemory.com/wsh2012.php