TABLE OF CONTENTS

EXECUTIVE SUMMARY 3

CHAPTER ONE: INTRODUCTION TO ARMY MODERNIZATION 5

CHAPTER TWO: LINE OF EFFORT 1: DEVELOP AND FIELD NEW CAPABILITIES 13

CHAPTER THREE: LINE OF EFFORT 2: PROCURE UPGRADED CAPABILITIES, RECAPITALIZATION AND DIVEST EXISTING EQUIPMENT 23

Section 1: Full Dimensional Protection 27

Section 2: Battle Command 30

Section 3: Dominant Maneuver 36

Section 4: Tactical Wheeled Vehicles 38

Section 5: Soldier Systems 41

Section 6: Mobility Systems 44

Section 7: Fires 46

Section 8: Intelligence 52

Section 9: Aviation 58

Section 10: Focused Logistics 63

CHAPTER FOUR: LINE OF EFFORT 3: FIELD AND DISTRIBUTE CAPABILITIES IN ACCORDANCE WITH ARMY PRIORITIES AND ARMY FORCE GENERATION MODEL 69

CHAPTER FIVE: ENABLING MEANS 78

CHAPTER SIX: CONCLUSION 85

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
2010		**00-00-2010 to 00-00-2010**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
2010 Army Modernization Strategy	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,700 Army Pentagon,Washington,DC,20310-0700**	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	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**91**	

DEPARTMENT OF THE ARMY
DEPUTY CHIEF OF STAFF, G-8
700 ARMY PENTAGON
WASHINGTON DC 20310-0700

DAPR-ZA

23 April 2010

Every day our Soldiers put their lives on the line to serve their country, protect our Nation, and fight terrorism. These brave men and women deserve the best equipment available, as soon as possible. We always want them to be protected and able to defeat our enemies—today and tomorrow. But after eight years of combat, our Army is stretched—the demand on forces exceeds our sustainable supply, putting the Army out of balance.

The 2010 Army Modernization Strategy explains how we will bring the Army back into balance to meet our current and future challenges.

The goal of Army Modernization is to develop and field a versatile and affordable mix of the best equipment available to allow Soldiers and units to succeed in both today's and tomorrow's full spectrum military operations. We must continue to transform into a force that is versatile, expeditionary, agile, lethal, sustainable, and interoperable to give our Soldiers a decisive advantage in any fight.

Our plans depend on a steady stream of predictable funding to field capabilities to Soldiers. Congress and the American people have consistently supported the Army's needs for modernization. We must make the best possible use of our limited fiscal resources and ensure that no significant modernization decision is made without a thorough review of its costs, projected benefits, and the trade-offs that might be required to pay for it.

Army modernization depends on the support of the Army—Soldiers, Leaders, and Civilians. This support must be earned and is not automatically conferred. Without this support, history has proven that Army programs flounder and our national security is at risk. Soldiers depend on our success—failure is not an option.

ROBERT P. LENNOX
Lieutenant General, U.S. Army
Deputy Chief of Staff, G-8

2010 ARMY MODERNIZATION STRATEGY
EXECUTIVE SUMMARY

The 2010 Army Modernization Strategy (AMS) defines how the U.S. Army continues to modernize and transform to fulfill our mission to sustain our Soldiers and maintain readiness of the world's strongest, and most capable Army. It describes our efforts to ensure that Soldiers have the best equipment and necessary capabilities to guarantee their success in any mission or environment. The strategy is designed to describe our overarching goals, priorities, and objectives to both internal and external audiences so that we can achieve unity of purpose in our modernization efforts. Mutual understanding and agreement on the basic elements of our AMS is crucial to our success.

There are several significant changes in the 2010 AMS from previous editions. First, we have shifted from a document which endeavored to describe all the various efforts underway in Army modernization to a Modernization Strategy which first sets overarching goals and objectives, and then provides overviews of selected modernization efforts. Secondly, this is the first AMS to explicitly address the changes needed in our modernization and equipping programs, as we adapt to the Army Force Generation (ARFORGEN) Model. Finally, this strategy is shaped by guidance from the Secretary of Defense concerning the Future Combat Systems (FCS) program and describes our new Brigade Combat Team (BCT) Modernization approach.

Our Soldiers can expect to face an adaptive enemy who successfully uses unconventional tactics. To be successful against hybrid threats, global terrorists, and followers of extremist ideologies as well as be prepared for unexpected contingencies, we must continue to upgrade our capabilities to remain the dominant land force of the world. Consequently, modernization is a critical strategic component of our national defense.

The recently published 2010 Quadrennial Defense Review (QDR) reflects strategic direction which is directly applicable to Army Modernization. Within this guidance, two key objectives were established:

- Rebalance the capabilities of America's Armed Forces to prevail in today's wars, while building the capabilities needed to deal with future threats.

- Reform the Department's institutions and processes to support the urgent needs of the warfighter better; buy weapons that are usable, affordable, and truly needed; and ensure that taxpayer dollars are spent wisely and responsibly.

The 2010 AMS directly supports these objectives. We have, and will continue to, critically examine all our modernization plans to ensure that they address pressing capability gaps, that they have applicability to both today's and tomorrow's fights, and that they present affordable and feasible solutions based on sound cost benefit analysis.

The 2010 AMS must also support accomplishment of the Army's Goal:

> Build a ***versatile mix*** of ***tailorable*** and ***networked organizations*** operating on a **rotational cycle** to provide a ***sustained flow*** of trained, equipped and ready forces for full spectrum operations and to hedge against ***unexpected contingencies***—at a tempo that is predictable and sustainable for our All-Volunteer Force.

The 2010 AMS is the blueprint for how the Army will achieve this Goal in the area of modernization. The AMS establishes supporting objectives, which by virtue of their accomplishment, will move the Army further down the path toward achieving the overall Goal. Four attributes of the Army Goal, in particular, influence the direction and development of our modernization programs: **Versatility, Tailorability**, the ability to be **Networked**, and the fielding of capability on a **Rotational** cycle.

The Army Modernization Strategy

Ends: What we are seeking to accomplish: The objective of Army Modernization is to develop and field a versatile and affordable mix of the best equipment available to allow Soldiers and units to succeed in both today's and tomorrow's full spectrum operations.

Ways: How we will accomplish our goals. We will focus our efforts along three major Lines of Effort:

- **Developing and fielding new capabilities.** Examples of supporting objectives include implementation of the BCT Modernization Plan, leveraging technologies harvested from the Army's Science and Technology (S&T) Program, and shortening the time between requirement identification and solution delivery.

- **Continuously modernize equipment to meet current and future capability needs through procurement of upgraded capabilities, recapitalization, and divestment.** Examples of supporting objectives include validating and implementing affordable Portfolio Strategies for selected fleets of equipment, using Cost-Benefit Analysis to make fleet sustainment decisions routinely, and capitalizing on technology-based initiatives.

- **Meet the Needs of Our Force through Army priorities and the ARFORGEN Model.** Examples of supporting objectives include establishing ARFORGEN as a key metric to inform modernization decisions, address changing Theater Provided Equipment (TPE) in Afghanistan, refine the Army Prepositioned Stocks (APS) 2015 Strategy, and conduct Responsible Drawdown and Reset of equipment.

Means: What we will need to accomplish our objectives. These necessary means include focused leadership, operational analysis, a strong industrial base, strategic communication, and fiscal support. The combined result ensures that the Army's modernization efforts are supported with analysis and articulated clearly to retain the trust and full support of Congress and the American people.

Summary

To continue to fulfill our vital role for the Nation, the Army must sustain its efforts to restore balance and set conditions for the future. The continued support of Congress will ensure that the Army remains manned, trained, and equipped to protect our national security interests at home and abroad—now and in the future. Equipping Soldiers with capable and modern equipment to win today's fight while setting the conditions for continuing success in future full-spectrum operations entails trade-offs and risk, involving multiple competing objectives that must be balanced against constrained resources and uncertainty.

The Army remains devoted to the best possible stewardship of the resources it is provided by the American people through Congress. The 2010 AMS describes how we deliver on investments in modernization and will use these resources to provide our Soldiers with the best equipment available, as quickly as possible, so they can succeed anywhere, every time.

Our Soldiers deserve nothing less. Army Strong!



U.S. Soldiers engage enemy forces in Afghanistan. We must continue to modernize their equipment so our Army can remain the dominant land force in the world.

CHAPTER ONE: INTRODUCTION TO ARMY MODERNIZATION



These Soldiers waiting in line to go into harm's way depend on the American people for their equipment; the best they can get and delivered on time.

Introduction: *Why the Army Modernizes*

The Army modernizes for our Soldiers. They rely upon the best training and equipment our Nation can provide to accomplish their mission. Today's and tomorrow's anticipated strategic environment of persistent conflict requires the Army to modernize our capabilities continuously and aggressively to stay ahead of our adversaries.

American Soldiers can expect perpetually to face an adaptive enemy who successfully uses unconventional tactics. The Army must continue to upgrade its capabilities to remain a dominant force and successful against hybrid threats, global terrorists, and followers of extremist ideologies and be prepared for unexpected contingencies. We must be able to operate across the full-spectrum of operations, including: prevailing in protracted counter-insurgency campaigns; helping other nations build capacity; assuring our friends and allies; supporting civil authorities at home and abroad; and deterring, or if necessary, defeating various threats.

In the years ahead, the United States (U.S.) will confront complex, dynamic, and unanticipated challenges to our national security and the collective security of our friends and allies. These challenges will occur in many forms and will be countered through a balanced application of the elements of full-spectrum operations—offense, defense, stability, and civil support.

Overarching Guidance: *Implementing Strategic Direction*

The Army's Modernization Strategy must support the accomplishment of the objectives described in the Department of Defense's February 2010 QDR and the

Army Goal. The ability to draw a clear line between this strategic direction and the AMS is critical to ensure that we continue to deliver the capabilities needed by Army units today and into the future.

The **2010 QDR** established two clear objectives for the Department of Defense: First, to rebalance further the capabilities of America's Armed Forces to prevail in today's wars, while building the capabilities needed to deal with future threats. Secondly, to further reform the Department's institutions and processes to better support the urgent needs of the warfighter; buy weapons that are usable, affordable, and truly needed; and ensure that taxpayer dollars are spent wisely and responsibly.

The 2010 Army Modernization Strategy directly reflects these objectives. To prevail in today's wars, Army investments reflect substantially greater emphasis on those capabilities most frequently requested by deployed commanders. This has been accomplished by taking a comprehensive view of our investment plan and prioritizing needed capabilities over others less critical. As a result of this holistic review, the Army's Fiscal Year 2011 (FY11) Budget Request and indeed the Army's Future Year's Defense Program (FYDP) includes increased funding for rotary wing aviation, unmanned aerial vehicles, networked communications, robots, unmanned sensors, and the accelerated development of a combat vehicle with both increased mobility and protection from Improvised Explosive Devices (IED). This type of review will continue with periodic reviews of our investment portfolio in support of Program Objective Memorandum (POM) development as well as routinely scheduled reviews. Under the leadership of the Vice Chief of Staff of the Army and the Under Secretary of the Army we have recently initiated Capability Portfolio Reviews to review the most critical components of our investment programs. These reviews focus on operational relevance, cost and effectiveness. It is our intent to continue and institutionalize these reviews to ensure we continue to deliver the capabilities most needed by our Soldiers as quickly and efficiently as possible.

Other initiatives underway in this area promise to increase the Army's ability to field relevant capabilities with the best value. Systems will be rigorously evaluated on a cost/benefit basis. The Department will consider the full life cycle cost of all systems before validation of requirements. Finally, as our fleets of equipment enter into sustainment phases the Army will employ operational research tools to ensure we make the best decisions concerning recapitalization, insertion of upgrades, repair, and divestment.

The second primary goal of the QDR, to reform the Department of Defense's institutions and processes, is a major focus of the 2010 AMS. Within this strategy, you will learn of the Army's direction to institutionalize efforts to shorten the time between the identification of a requirement to the fielding of a capability. Additionally, the emphasis on the use of accepted operations research methods to make informed cost-benefit decisions is a major element of the AMS.



UH-60 Blackhawk helicopters fly over US Soldiers.

The **Army's Goal** contains executable direction for Army modernization. That goal is to:

> Build a **versatile** mix of **tailorable** and **networked** organizations operating on a **rotational cycle** to provide a sustained flow of trained and ready forces for current commitments and to hedge against unexpected contingencies at a tempo that is predictable and sustainable for our All-Volunteer Force.

The 2010 AMS is the blueprint for how the Army will achieve the Army Goal in the area of equipment. The AMS establishes supporting objectives and goals, which by virtue of their accomplishment, will move the Army further down the path toward achieving the overall Army Goal. Four aspects of the Army Goal, in particular, are directly addressed in this strategy: Versatility, Tailorability, the ability to be Networked, and the fielding of capability on a Rotational cycle.

Versatility has been defined as the ability to "turn with ease from one thing to another." To enable Army organizations to be versatile, their equipment must share that characteristic. The AMS describes how we will implement this goal. We will prioritize those capabilities that allow our equipment to be used in multiple environments in multiple mission roles. Tangible examples of how the Army is implementing versatility in its equipment investments include: the development of the Joint Light Tactical Vehicle (JLTV) which balances protection, performance, and payload for multiple environments; the development of a new Ground Combat Vehicle which is designed to be relevant in different mission roles; and the flexibility inherent in our new plan for modernizing BCTs in increments called Capability Packages.

Army Equipment must be **tailorable** to have maximum utility. Given the uncertainty of future conflict, we can ill afford to invest in "one trick ponies" that cannot adapt. Capability documents and resourcing will emphasize need for tailorable attributes. Current Army investments which illustrate Tailorability are scalable armor packages for tactical wheeled vehicles, munition options ranging from lethal to non-lethal, modular payloads for Unmanned Air Systems (UAS) based on the mission, and body armor choices ranging from plate carriers to the full suite of protection.

A **networked** Army is crucial for success. Not only between Army forces, but interoperability between Army units and other Services and Coalition allies is essential. Seamless networking allows the sharing of friendly, enemy, and neutral positions, critical intelligence, and other information. The AMS directs continued action in this area and places the highest priority on those capabilities that contribute to a networked force. Three of the most important capabilities being developed and fielded to support the Army need for a networked force include the Joint Tactical Radio System (JTRS) which is a software defined system that promotes interoperability; Warfighter Information Network–Tactical (WIN-T) designed as a communications system for reliable, secure, and seamless video, data, imagery, and voice services; and Joint Battle Command–Platform (JBC-P) which is the primary air, ground platform, and dismounted Soldier Command and Control (C2)/Situational Awareness (SA) system designed for use by Joint forces.

The 2010 AMS directs particular emphasis for the fielding of a capability on a **rotational cycle.** As the Army transitions to cyclical readiness, in accordance with the ARFORGEN model, fundamental change must occur in our processes. All our processes must be aligned to ensure that the appropriate capability is delivered at the proper times in the proper amounts. Examples of how the AMS contributes to progress in this area include: directing a review and update to the Army's current ARFORGEN Equipping Strategy, establishing ARFORGEN-based goals for modernization resourcing, and directing a closer linkage between the documentation of equipment and the available fiscal resources.

Ends: *What we are seeking to accomplish*

> **The objective of Army Modernization is to develop and field a versatile and affordable mix of the best equipment available to allow Soldiers and units to succeed in both today's and tomorrow's full-spectrum operations.**

Equipping Soldiers and units is a core Army responsibility under Title 10, U.S. Code. In addition to the statutory responsibilities that are inherent in equipping the Army,

there remains an absolute moral responsibility on the part of all leaders to ensure our Soldiers have the best equipment, in sufficient quantities, so that our Soldiers always have a distinct and significant advantage in any fight. This responsibility requires us to explore new technologies constantly, conduct exhaustive test and experimentation, and never be afraid to ask ourselves if every aspect of our equipping programs can withstand the scrutiny of rigorous cost-benefit analysis.

Clearly many other functions must be synchronized in order to ensure that the fielding of equipment results in the actual increase of capability in units. Soldiers must be trained, leaders must be knowledgeable and confident in their ability to employ systems, doctrine must be present and facilities such as airfields or arms rooms must be available. Only when all those activities are integrated can we be confident that we have enhanced combat power. This modernization strategy focuses on the materiel aspects of modernization, while recognizing that it takes a team approach to put capability into the hands of Soldiers.

What follows is how we intend to implement Army Modernization:



Mine Resistant Ambush Protected vehicles are loading onto a Roll On/Roll Off ship for deployment.

Ways: *How we will accomplish our goals*

"Ways" describe ***how*** the "ends" are to be accomplished by the employment of resources (means).
The Army will accomplish our modernization goals by focusing our efforts in ***three major lines of effort:***

- Develop and field new capabilities to meet identified capability gaps through traditional and rapid acquisition processes;

- Continuously modernize equipment to meet current and future capability needs through procurement of upgraded capabilities, recapitalization, and divestment; and

- Meet continuously evolving force requirements in the current operational environment by fielding and distributing capabilities in accordance with Army priorities and the ARFORGEN Model.

The line of effort in our Modernization Strategy: **Developing and Fielding New Capabilities** will be described in more detail in Chapter 2. It describes the need to determine capability gaps, field new equipment to fill those gaps, and present some specific objectives the Army must develop to field new capabilities faster to Soldiers to ensure they maintain the dominant edge in combat. The objectives for this area are to:

Implement the Brigade Combat Team Modernization Plan. The BCT Modernization Plan, which is a subset of AMS, enables incremental improvements to the network, integrates Mine Resistant Ambush Protected Vehicles (MRAPs) into formations, incrementally fields Capability Packages, and develops a new Ground Combat Vehicle.

Field New Capabilities. The Army will relentlessly prioritize capability gaps and then develop and field new capabilities to the Soldiers to ensure they have the right equipment to succeed in any mission in any environment.

Shorten the Time Between Identification of a Requirement and Delivery of the Solution. By optimizing and supporting the Capabilities Development Rapid Transition (CDRT) process along with the Rapid Equipping Force (REF) and the Asymmetric Warfare Group (AWG), the Army will expedite capability fielding to the force. We will institutionalize and synchronize these processes to optimize delivery speed of the most needed capabilities to Soldiers.

Leverage Breakthroughs from the Army's Science and Technology Program. The Army's S&T program will continue to accelerate and mature technologies that enable the future force to conduct full-spectrum operations, while exploiting opportunities to transition technology rapidly to the current force to meet today's operational requirements.

The second line of effort: **Continuously Modernize Equipment to Meet Current and Future Capability Needs Through the Procurement of Upgraded Capabilities, Recapitalization, and Divestment** will be described in Chapter 3. Details are found there on how we intend to keep Army equipment relevant and capable for the foreseeable future, including the following major objectives for the modernization of our equipment:

Continuously Modernize by Incorporating Improved Capabilities, Recapitalizing Existing Equipment, and Divesting Old Equipment. The Army uses three means to continuously modernize: Procure upgraded capabilities, Recapitalize, and Divest.

Validate and Implement Affordable Portfolio Strategies for Selected Fleets of Equipment. These include Fighting Vehicles; Aircraft; Tactical Wheeled Vehicles (TWV); Battle Command (BC) and Networks, and Intelligence, Surveillance and Reconnaissance (ISR). The Army will develop and publish detailed plans for these particular portfolios given their importance to the Army success. Approved portfolio strategies will provide a long-term plan for the management of fleets and resources to achieve Army goals and objectives over time.

Develop Processes to Make Fleet Sustainment Decisions Routinely Based on Cost-Benefit Analysis. The Army is reviewing existing processes and developing new procedures to review the status of fleet equipment, define and analyze courses of actions (COAs), cost the COAs, and conduct a cost-benefit analysis for review and approval by senior leaders.

Capitalize on Technology Based Initiatives. Technology based initiatives are reviewed by operational, technical, and acquisition Subject Matter Experts (SME) to ensure those with the greatest potential benefit to the Army are funded.



With night vision goggles our Soldiers "own the night."

Adopt a Comprehensive Investment Strategy Toward Modernization. We must sustain the technological superiority of our Army by equipping our force within the ARFORGEN Model. The Army will accomplish this by creating unprecedented capabilities for Soldiers to ensure they maintain a decisive edge over our enemies, while managing within the realities of a constrained fiscal environment.

The third line of effort: **Meeting the Needs of Our Force through Army Priorities and ARFORGEN** is the subject of Chapter 4. Meeting the needs of an Army engaged in persistent conflict using a rotational readiness model will demand unprecedented agility and adaptability. The details outlined in Chapter 4 will describe the following modernization objectives:

Establish ARFORGEN as a Key Metric to Inform Modernization Decisions. The Army is constantly faced with establishing objective levels of modernization within our fleets of equipment. For example, what percentage of our Medium Truck Fleet must be the most modern armor-capable truck versus a non-armor capable truck? What percentage of our Night Vision Devices must be the most modern variant? The Army will use the ARFORGEN Model as a key metric to measure our modernization requirements.

Update the 2009 Army Equipping Strategy[1]. We will update the Army Equipping Strategy using lessons learned, input from the field, and analyzing changes to the strategic and fiscal landscapes.

Establish Theater Provided Equipment in Afghanistan. The Army is establishing stable sets of TPE in Afghanistan. The Army's intent is to provide its deployed forces with the best available equipment, while at the same time reducing the cost and risk involved in the repetitive transportation of unit equipment to and from Afghanistan.

Equip for Full-Spectrum Operations. Today's equipment demands continue to stress the Army's ability to equip units fully for full-spectrum operations. After eight years of war and our current volatile operating environment, we must think differently about equipping our Army and take appropriate measures to gauge and adjust the equipping posture in a proactive manner.

Refine the 2015 Army Prepositioned Stocks Strategy. The APS remain a valuable asset in providing the Army strategic depth and Combatant Commanders' rapid response to the many potential contingencies they will encounter. The Army must balance sourcing and maintaining modernized equipment in APS as well as in Army units.

Conduct Responsible Drawdown/Reset. As the Army redeploys its forces from Iraq, Army equipment is redistributed to accomplish other assigned missions. During the redistribution process, the equipment is Reset to ensure it is capable of continued operations.

Improve Synchronization of Documentation Versus Resources. We will continue to support the Army Command Plan process to ensure the Army publishes authorization documents (Modified Tables of Equipment (MTOE) and Tables of Distribution and Allowances (TDA)) that reflect attainable ARFORGEN-based equipping levels and modernization across the force.

Means: *What we will need to accomplish our objectives while assessing* ***Risk***

Equipping Soldiers to win today's fight while setting the conditions for continual success in future full-spectrum operations entails trade-offs and risk. New equipment fielding; implementing BCT modernization and fleet investments plans; complementary upgrading, recapitalization, and divestment initiatives; and supporting Army priorities and the ARFORGEN process involving multiple competing objectives that must be balanced against constrained resources and uncertainty.

To help overcome these challenges, we rely on five mutually supporting enabling means—funding support, focused leadership, a strong industrial base, strategic communication, and operations analysis. The combined result certifies that the Army's modernization efforts are supported with analysis and clearly articulated to ensure the full support of Congress and the American people.

Fiscal support is a crucial enabler of Army modernization. Our strategy depends on predictable funding to field capabilities to Soldiers. Congress and the American people have consistently supported Army needs for modernization. We recognize this support is based on full transparency and strong fiscal stewardship of the available funding.

Army modernization must be affordable and flexible given today's fiscal constraints. We must make the best possible use of our limited funds and ensure that no

significant resource-related issue is decided without a thorough review of cost, projected risk, and benefits; future support and sustainment requirements; and the trade-offs which may be required to offset the cost.

Full Congressional support of the President's Budget request enables the Army to meet current and future needs. This support is integral to maintaining our technological edge and allowing the Army to modernize, maintain readiness, and retain our status as the pre-eminent land force in the world. It also ensures we can meet our anticipated national security requirements in this era of persistent conflict.

The Army's FY11 modernization base budget request provides funding for new procurement, rebuild, overhaul, upgrade of existing system fleets, and also grows future capabilities through research and development efforts. This budget enables the Army to continue efforts to balance the force with the most modern capabilities and solutions available, while integrating new cutting-edge equipment to our Soldiers.

Focused leadership is probably the most important enabler of Army modernization. The active involvement of leaders in Army modernization is essential. As in all endeavors, focused leadership—at all levels and across all equipping activities—provides the principle and sustaining impetus to achieve success. It ensures priorities, objectives, and risk avoidance measures are well-defined and effectively communicated. One example of focused leadership is the conduct of Capability Portfolio Reviews. These reviews, conducted by senior Army leaders, have effectively served to provide necessary attention to ensuring that both existing and proposed Army modernization programs have a clear link to an operational need and promise to deliver capability in an affordable and effective manner. Another element of focused leadership is through the use and review of the Army Campaign Plan (ACP) which is the Army's roadmap for the future. The AMS implements the ACP in the area of equipment investment.

Army leadership at all levels must continue to nourish and sustain the trust and confidence of Congress and the American people through frequent and open dialogue. Building trust and confidence begins with universal understanding that our Soldiers and Families are our Number One priority. Army leadership must articulate the critical role of land power and the Army in this era of persistent conflict. We must foster support for the Army's modernization efforts and stress the required balance between funding for people, readiness, and modernization.

Effective Strategic Communication is crucial for gaining the support of stakeholders and educating internal and external audiences on the importance of Army modernization. The key to effective Strategic Communication is establishing an overall vision and clear implementation strategies, which are promoted by simple, honest messages presented consistently and repetitively.

The ability to make sound decisions depends on operational analysis. Equipping and modernizing the Army entails the analysis of complex decisions involving multiple objectives and uncertainty. Leaders must balance Army current and future requirements against a backdrop of reduced fiscal resources and political constraints. Operations analysis augments leader judgment and supports decision making on the basis of sound and supportable logic through the application of rigorous quantitative and qualitative methods. It provides a repeatable and reproducible framework that helps leaders achieve balance and greater understanding of the impact of resource decisions on equipping plans.

[1] "The Army Equipping Strategy." U.S. Army G-8, 2009. https://www.g8.army.mil/pdf/Army_Equipping_Strategy.pdf

Risk: *What is to be achieved measured against resources available*

There will never be enough resources to accomplish 100 percent of what we desire in the area of Army modernization. This represents risk that Army leaders must mitigate, through a variety of means to balance ends, ways, and means.

The Army must develop and execute flexible strategies that are adaptive to change to mitigate risks imposed by evolving threats, economic uncertainties, and technological breakthroughs. We must protect critical intellectual capital, essential raw materials, and access to the Nation's defense-specialized industrial capacities. Chapter 5 provides details on the means necessary to execute our strategy.



A junior officer briefs her Soldiers on the risks they face during an upcoming convoy emphasizing the proper procedures they will use to protect Soldiers and preserve their equipment and vehicles.

CHAPTER TWO
LINE OF EFFORT 1: DEVELOP AND FIELD NEW CAPABILITIES

Introduction

The Army must provide our Soldiers with the equipment they need to succeed across the full-spectrum of conflict to maintain our advantage over current, emerging, and future threats. We must accurately identify capability gaps and consequently develop viable solutions for the Soldier and incrementally field enduring capabilities across the force. The Army will provide Soldiers with needed capabilities by implementing the BCT Modernization Plan, fielding new capabilities, incorporating proven solutions into our units through the CDRT, Rapid Acquisition Processes, and leveraging breakthroughs in the Army's S&T Programs.

The Army's BCT Modernization Plan. In April 2009, Secretary of Defense Robert M. Gates provided guidance and directed the Army to "accelerate the initial increment of the program to spin out technology enhancements to all combat brigades" and noted the lack of a clear role for MRAP in the current vehicle programs. The Army was further directed to "cancel the vehicle component of the current FCS program, reevaluate the requirements, technology, and approach—and then re-launch the Army's vehicle modernization program…." The Army accepted this guidance and Secretary Gates' direction has shaped the Army's approach to BCT Modernization.

Fielding New Capabilities. The Army will continue to develop and field new capabilities to our Soldiers to ensure they have the right equipment at the right time, to engage in any mission, in any environment. In addition to identifying capability requirements in theater and at Training and Doctrine Command's (TRADOC) Centers of Excellence (COE), the Army works closely with U.S. Special Operations Command (USSOCOM), other Services, and inter-agency partners to develop a holistic set of capability requirements.

Shorten the Time Between Identification of a New Requirement and Delivery of the Solution. The last eight years of war have dictated a need for the Army to field capabilities to the Soldier at a faster rate than the acquisition process has previously allowed. One of the ways the Army is expediting capability fielding is through the CDRT process. The CDRT process transitions Non-Standard Equipment, Non-Standard Initiatives, and non-materiel solutions proven in the operational theaters of war into long-term capabilities for the current and future force. Several rapid acquisition processes, such as the REF, the Rapid Fielding Initiative (RFI), and the Operational Needs Statement (ONS) process, as well as materiel solutions developed by the AWG, provide deployed and deploying Soldiers with viable solutions to meet identified capability gaps quickly. Once these solutions have proven to be viable to the force, they may go through the CDRT process to transition to programs of record. Institutionalizing this process will ensure our Soldiers are equipped with the capabilities they need to accomplish any mission.

Leverage Breakthroughs from the Army S&T Program. The Army S&T program supports modernization by accelerating mature technologies for future modernization efforts while exploiting opportunities to transition technology rapidly today. These efforts are supported through a strategic investment perspective to enable a flexible, affordable, and sustainable acquisition strategy that will equip our forces with a balanced resourcing strategy.

Implementing the Army BCT Modernization Plan

Following the Secretary of Defense's April 2009 decisions, the Army directed TRADOC to develop recommendations to modernize our BCTs incrementally and to determine the operational requirements for a new Ground Combat Vehicle. In response, TRADOC established Task Force 120 which evaluated the Army's short- and long-term modernization requirements to ensure proposed solutions mitigated the Army's highest risk capability gaps. The task force delivered its recommendations to senior Army leaders in early September 2009, which focused on capability packages, Ground Combat Vehicle operational requirements, and BCT network integrated

architecture. These recommendations form the basis for the incremental modernization of the Army's BCTs.

Subsequently, in November 2009, the Secretary of Defense approved the Army's BCT modernization plan which:

• Enables incremental improvements to the Army BC Network;

• Incorporates MRAP vehicles into the force;

• Accelerates the fielding of capability packages to BCTs by 2025; and

• Develops a new Ground Combat Vehicle within seven years.

Battle Command Network Modernization The Army's Battle Command Network is central to enabling the force to operate across the full-spectrum of conflict including austere and complex environments. The Network must be interoperable, affordable, and capable of incremental upgrades to ensure our Soldiers have the right information at the right place and time. It keeps our Soldiers connected at extended ranges with voice, data, and video through the integration of existing capabilities combined with the development of new capabilities. This interoperability effort is crucial for future warfighting success and requires the integration of sensors, applications, services, transport methods, interfaces, as well as the policies and architectural design to achieve these goals.

The Network will improve our situational awareness and collaborative planning capabilities by sharing essential information from an integrated platform or a dismounted Soldier to their Command Post. It will begin to converge to a common operating environment which will improve interoperability between Army and correlated Department of Defense systems, eliminate current "stovepipe" applications, and reduce development schedule and cost, while facilitating more maintainable and upgradeable software.

Network modernization utilizes two primary transport programs which will incrementally move the Army to a single and expanding the Network: WIN-T and JTRS. The WIN-T is the backbone for the Army's transport modernization plan and will be fielded in three increments. Fielding of Increment one is almost complete, which provides reach-back capabilities to Battalion Command Posts. Increment two provides an initial On-the-Move (OTM) transport capability including real-time high definition imagery to BCT and Battalion Commanders, as well as Beyond Line-of-Sight (BLOS) services to the BCT Company level. This is scheduled for initial fielding in FY12. Increment three expands OTM capabilities and adds an aerial tier vastly improving network reach, redundancy, and management.

The JTRS program provides a dynamic, scalable, OTM network architecture, connecting the Soldier to the Network and enhances capability to exchange increased voice, data, and video faster than current systems. The advanced network waveforms provide rapid distribution of data and imagery with increased information assurance protection and automatic routing across complex terrain. The JTRS is also backward compatible and, therefore, interoperability with current radios. The Network plan accelerates the fielding of new tactical radios aligned with capability package fielding to 29 BCTs by the end of FY16.

A critical Network modernization element is convergence to a common operating environment with upgraded applications and network services. The Network Integration Kit (NIK) provides control of the Unattended Ground Sensor (UGS) and updates the Common Operation Picture (COP) of UGS status, sensor reports, and imagery into Force XXI Battle Command, Brigade and Below (FBCB2) and Army Battle Command System (ABCS).

This Convergence of Current and Evolving Applications is the Cornerstone of how the Army will Incorporate Emerging Capabilities into the Current Network. The Command Post of the Future (CPoF) and Tactical Ground Reporting System (TiGR) are examples of this approach to incorporate new or increased capabilities quickly into the force. The JBC-P will replace FBCB2 and improve situational awareness by reducing latency, supporting rapid task reorganization, and improving interoperability with U.S. Marine Corps ground forces. The fielding of the integrated network occurs within multiple capability packages, beginning with initial fielding to an Infantry BCT in FY11.

Mine Resistant Ambush Protected Vehicle Integration The success of the MRAP family of vehicles (FoV) in Iraq and Afghanistan demonstrates the critical need for integration of these types of capabilities in Army formations. The Army will establish 20 sets of MRAPs tailored to BCTs and available for their employment while in the available phase of the ARFORGEN cycle. The MRAPs will also be available for home station training and in the institutional training base. In select enabler units (sustainment brigades, medical, route clearance, and explosive ordnance units) MRAPs will be integrated. The Army will also maintain MRAPs in operational float and war reserve stocks.



These Mine Resistant Ambush Protected vehicles are armored vehicles designed to survive Improvised Explosive Device attacks and ambushes.

Capability Package Development Capability Packages are prioritized solutions across DOTMLPF that are adaptive and tailored to mitigate Brigade high risk gaps, aligned with the POM and managed in two year cycles in support of ARFORGEN. The capability package concept recommends Brigade modernization priorities, addresses current and predicted Brigade high-risk capability gaps, and is fielded and funded over specific two-year timeframes as complete packages or sub-packages based on Soldier needs, technological advances, and available resources. The Army's BCT Modernization Plan accelerates the fielding of capability packages to 29 BCTs through FY16.

The Capability Package development requires an integrated process which incorporates the actions and insights from multiple sources and across multiple lines of effort. This process ensures the timely identification, analysis, selection, and prioritization of viable solution sets to provide increased capabilities to the Soldier and will:

- Evaluate technologies using wartime lessons learned
- Incorporate Soldiers into the capability and technology evaluation and validation process through the Army Evaluation Task Force;
- Deliver Capability Packages to the force aligned with the ARFORGEN cycle, providing increased capability to all Brigades;
- Exploit and leverage Research, Development, Test, and Evaluation (RDT&E) efforts; and
- Develop new capabilities quickly and apply technology insertions to current capabilities.
- Ensure technology is integrated into current equipping efforts leading to doctrinal, leader, education, and training changes

The capabilities scheduled for delivery to the first BCT in FY11-12 are in the final test and evaluation phases. These capabilities will provide commanders with improved precision fires capabilities found in the increased ISR capability in the Class I UAS, UGS, and Small Unmanned Ground Vehicle, and integrated network capabilities that link the Soldier to headquarters in NIKs. The figure below identifies the capabilities and technologies included in the FY11-12 capability package.

Capability Package 11-12

SPIN-OUTS



SUGV



Urban UGS



Class I UAV



Tactical UGS



Network Integration Kit

REQUIREMENTS FOR CURRENT FIGHT

- Ground Soldier System (GSS)
- Human Terrain Teams

ESSENTIAL NETWORK ENABLERS

WIN-T Increment2
JTRS

Future Capability Packages will address identified capability gaps across the force, leveraging mature technologies and resources to the Soldier. The TRADOC Capability Package development process, beginning with the annual Capability Needs Analysis, ensures the timely identification, analysis, selection, and prioritization of viable solutions for inclusion in incremental Capability Packages. Future Capability Packages may include upgrades to capabilities scheduled for fielding in FY13 and FY14, such as new improvements to the Army BC Network and the Class I UAS. A continuous review of capability needs and an incremental delivery approach of solutions will ensure our units and Soldiers are equipped with the most advanced technologies our Nation's resources can provide to meet current operational requirements.

A New Ground Combat Vehicle Precise lethal and non-lethal effects are critical for mitigating collateral damage. Mobility, on and off roads, is essential to maneuver Soldiers and their equipment rapidly to positions of advantage. Sustainment provides the capability to stay in the fight longer. Regardless of role, these attributes characterize effectiveness, and over time when combined with operational attributes and projected threats, drive our Ground Combat Vehicle requirements. The Ground Combat Vehicle will have the design growth potential allowing for adapting capabilities as the operational environment changes and as technology matures to position our Soldiers best for long-term success.

The Army sponsored a Ground Combat Vehicle Blue Ribbon Panel which received input from Joint-Service partners, retired general officers, think tank analysts, representatives from the Office of the Secretary of Defense, Army Soldiers, and leaders with a wide range of operational experience to inform the Ground Combat Vehicle operational requirements development effort. Additional input from commanders and Soldiers with recent combat experience in Iraq and Afghanistan was critical to identify the characteristics and features needed in the new Ground Combat Vehicle.

The new platform will provide a versatile range of capabilities, including the under-belly protection offered by MRAP, the off-road mobility and side protection of the Bradley Fighting Vehicle, and the urban and operational mobility of the Stryker. It will include precision lethality to enable decisive results, maintain superiority over like systems, and integrate into the network to maintain situational awareness in urban and other operations. While the new vehicle will provide sufficient space and electrical power to accept the network, it will also have growth potential to ensure the ability to integrate upgrades and new technologies. The Ground Combat Vehicle's development approach enables production of the first vehicle by FY17, while establishing a basis from which to adapt. Capabilities incorporated in subsequent increments will be based on changes in the operational environment and enabled by maturation of emerging technologies.



The Stryker Brigade Combat Team combines the capabilities for rapid deployment and tactical mobility.

Integrating New Capabilities

The Army will continue to develop and field new capabilities to the Soldier that fulfill gaps identified in theater or from the Army's Centers of Excellence. In addition to these initiatives, the Army must also capitalize on the initiatives developed, tested, and successfully employed by the USSOCOM, other Services, and inter-agency partners. Some of the

new capabilities the Army is fielding to the Soldier are the Biometric Automated Tool Set (BATS), Joint High Speed Vessel (JHSV), Machine Foreign Language Translator System (MFLTS), Extended Range/Multi Purpose (ER/MP) UAS, Terminal High Altitude Area Defense (THAAD), and Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS).

Biometric Automated Tool Set The BATS is a multi-modal biometric collection system designed to collect and fuse biometric and biographical information by collecting fingerprints, iris images, and facial recognition of actual or potential adversaries. It then matches this information against a downloaded database and provides near-real time feedback. Urgent fielding of this capability to theater has proven to be a highly effective combat multiplier.

Joint High Speed Vessel The Army's JHSV is a key element for transforming the Army's watercraft capabilities. The JHSV is the Army's next-generation self-deploying watercraft. It brings an entirely new capability set to the force by filling critical capabilities gaps in rapid, tactical response and operational maneuver of expeditionary and modular forces. The JHSV is an interoperable platform that can work in tandem with Navy and Marines in any waterborne theater to deploy equipment, cargo, and troops. The JHSV enables units to maneuver into the battlespace with little to no Reception, Staging, Onward Movement, and Integration in the forward area and it can also provide follow-on sustainment through minor and degraded ports. Leveraging technologies developed within the commercial sector and the Department of Defense, the JHSV will be faster, more capable, and possess greater survivability than current generation watercraft.

Machine Foreign Language Translator System Military, contract, and host nation linguists provide a critical capability that is unavailable in sufficient numbers to satisfy the language translation needs of the Services, Joint, and National agencies. The MFLTS is a family of products that provides commanders at all echelons and environments a machine language translation of speech, text, and media broadcasts from the language of interest to English. The MFLTS complements the available linguists and enables non-linguists, regardless of mission, to interact and be productive at low level linguistic tasks and basic communication with a broader cross section of the local national population.

Extended Range/Multi Purpose Unmanned Aerial System The ER/MP UAS provides division and BCT commanders with a dedicated, assured, multi-mission UAS for the tactical fight. The ER/MP UAS is capable of providing reconnaissance, surveillance, target acquisition, C2, communications relay, signals intelligence (SIGINT), electronic warfare, attack, detection of weapons of mass destruction (WMD), and battle damage assessment capability. The first unit will be fielded in 2011, and will deploy in 2013. There is currently one Quick Reaction Capability (QRC) platoon (made up of 4 pre-production aircraft and 2 Ground Combat Systems) deployed to Operation Iraqi Freedom (OIF). There will be a second QRC platoon deploying in 2010.

Terminal High Altitude Area Defense The THAAD, designated by Army leadership as a "clearly transformational" system, is designed to defend against short- and medium-range ballistic missiles, both inside and outside the atmosphere. The THAAD will protect largely dispersed U.S. and Allied forces and geo-political assets across a wide geographical area. The THAAD's capability to intercept at both endo- and exo-atmospheric altitudes makes effective countermeasures against THAAD difficult; integration with lower tier systems will allow multiple intercept opportunities, will significantly mitigate the effects of unitary warheads and sub-munitions, and will enable near-leak proof protection against ballistic missiles as required in the National Military Strategy. The THAAD is the only theater land-based ballistic missile defense system designed to defeat all short- to medium-range classes of Theater Ballistic Missile (TBM) threats. The THAAD fielding as a land-based upper tier system is critical to the need to include deployable, multi-layered missile defense capabilities.



The Terminal High Altitude Air Defense (THAAD) formerly called the Theater High Altitude Air Defense is designed to shoot down short- and medium-range ballistic missiles using a hit-to-kill approach.

Joint Land Attack Cruise Missile Defense Elevated Netted Sensor The JLENS is a theater-based system using advanced sensor and networking technologies to provide persistent wide-area surveillance and precision tracking of land attack cruise missiles and UASs. The JLENS is a joint program with the Army as lead, which integrates data from multiple sensors and Command, Control, Communications, and Intelligence networks and consists of surveillance and fire control radars. The JLENS provides over-the-horizon surveillance and precision tracking for broad area defense and also functions as a multi-purpose aerial platform to enable extended range C2 linkages.



The Joint Land Attack Cruise Missile Elevated Netted Sensor (JLENS) protects our Soldiers over a large area by providing over-the-horizon surveillance for defense against cruise missiles.

Shorten the Time Between Identification of a New Requirement and Delivery of the Solution-Optimize and Support the Capabilities Development Rapid Transition Process

As we entered this war, the Army recognized our processes were too slow, requiring as much as 18 to 24 months to get some of our major systems into the hands of Soldiers. We had to respond and adapt to changing situations, consider what had not been previously considered, and above all, ensure that the current force had useable equipment in new operational environments. We have undertaken numerous initiatives to accelerate acquisition and equipment fielding—expediting capabilities to the Soldier.

The CDRT serves as an example of the Army responding to Soldiers in theater. It reduces development time of identified successful capabilities and serves as an accelerated capabilities development process. The TRADOC Army Capabilities Integration Center, along with Headquarters, Department of the Army (HQDA), conducts quarterly assessments of theater inserted capabilities to determine and recommend those that should become enduring and integrated into the acquisition process. The assessment is a six month process, with overlapping iterations. The capabilities are grouped into three categories:

• Acquisition Program/Enduring Capability. The capability fills a current gap and is applicable to the entire Army and to the future force;

• Sustain Capabilities. The capability fills a current identified gap in theater, but is not applicable to the entire Army or useful to the future force; and

• Terminate Systems. The capability does not fulfill intended function adequately or performance is unacceptable.

Capabilities identified as enduring capabilities compete for funding as stand-alone acquisition programs or are incorporated into existing acquisition programs. As of CDRT iteration # 7, the process has considered 453 materiel and non-materiel initiatives; 49 were selected as enduring and 116 were selected for termination. Some enduring capabilities, now established as an acquisition program, include the Interceptor Body Armor, CPoF, the Raven UAS, and TiGR. Many of these capabilities were introduced to the force through several rapid acquisition processes such as the REF, RFI, ONS, and materiel solutions developed by AWG.

Rapid Equipping Force The REF mission is to assess quickly what the Army needs now and provide commanders with off-the-shelf items, both government and commercial, that reduce the risks to Soldiers and helps increase their effectiveness. The REF works one-on-one with units, either in combat or preparing for it, to find innovative solutions for their immediate equipping needs. The REF accomplishes this by partnering with industry, academia, senior leaders, and Army organizations such as Army Materiel Command (AMC), TRADOC, the acquisition community, and the Army Test and Evaluation Command. A major focus is on defeating IEDs and providing direct support to the Joint IED Defeat Organization and the AWG. The REF also deploys teams forward to evaluate deployed force needs and capabilities. To date they have introduced over 785 different types of equipment and provided more than 80,000 individual equipment items to deployed Soldiers and units in Iraq and Afghanistan, and other parts of the world.

Rapid Fielding Initiative In keeping with the "Soldier as a System (SaaS)" philosophy, the RFI provides off-the-shelf technology and items of equipment to Soldiers to enhance their survivability, lethality and mobility. The RFI list is composed of individual equipment that every Soldier receives and additional unit equipment that is fielded to BCTs. The RFI list is updated by TRADOC to keep it relevant to lessons learned from the war. The RFI helps save Soldiers' lives by fielding items such as the Improved First Aid Kit, which is now fielded to every Soldier in Theater. To date, the Army has issued more than a million sets of RFI equipment to Soldiers.

The Operational Need Statement Process An ONS is a deployed or deploying unit's request for a materiel solution to address an operational requirement. The ONS may correct a deficiency, improve an existing capability, or procure a new/emerging capability required for mission success. An ONS can streamline the warfighting commander's ability to obtain equipment quickly, enable an operational capability, and ensure mission success. Equipment obtained through the ONS process which is not currently a program of record will be evaluated in the CDRT process for potential inclusion in future Army programs.

Asymmetric Warfare Group The AWG exists to address critical needs in training, intelligence, and countermeasures when confronted with an enemy using terrorist or guerilla warfare techniques. The organization is designed to improve the Army's asymmetric warfare capabilities at the operational and tactical levels throughout the full-spectrum of operations. The AWG has played a vital role in developing materiel solutions to counter asymmetric threats, such as the IED, in Afghanistan and Iraq.

Looking to the Future—The Army's Science and Technology Program

The American Soldier—the most potent weapon in our Nation's arsenal—is empowered by technology.

We sustain the superiority of our Soldiers by pursuing technologies to create unprecedented capabilities for our current and future modular force. Underpinning this imperative is a robust and dynamic Army S&T community—of people and laboratories—leading scientific and technological breakthroughs for the Soldier.

The Army S&T program supports both research and acquisition by understanding and exploiting emerging science and technology; selectively investing to develop and adapt technologies for Army needs; using "Soldier Outcomes" to focus investments on specific needs; collaborating with and leveraging other Services, agencies, international partners and the private sector; partnering with Program Executive Officers, Program Managers, and rapid acquisition agents to facilitate technology transition; and sustaining a vital in-house workforce and laboratory infrastructure. The Army S&T program is also aligned with other Services' and Defense Agency S&T programs through the Defense Reliance 21 planning process under oversight of the Director, Defense Research and Engineering.

Army Basic Research investments are targeted in areas that are fundamental to realizing superior land warfighting capabilities and the discovery of new knowledge from research in areas highly relevant to the Army mission. These areas include: research in network science to understand better, predict performance and design future networks; neuroscience to learn and exploit how the brain works so that we might improve human-machine interfaces and Soldier performance; materials that provide increased protection for our Soldiers and equipment; immersive virtual systems to improve our training capability; autonomous systems to facilitate unmanned systems that can perform needed military tasks with minimal Soldier interaction; biotechnology to leverage understanding gained through the study of nature; and nanotechnology to develop materials, devices, and systems at the molecular scale.

The Army S&T program is shaped to foster innovation and mature technology to enable future force capabilities while exploiting opportunities to transition technology rapidly to the current force. The Army S&T supports the current force in three key ways:

• Providing warfighting benefit from past S&T investments, such as 2nd Generation Forward Looking Infrared sensors, which enable U.S. domination of night time operations;

• Accelerating on-going technology efforts, such as mine detecting ground-penetrating radar technology, to allow for rapid fielding to the Soldier; and

• Providing scientist and engineering expertise to the acquisition community to solve current issues for the Soldier, as was achieved in the development of the low-contrast visual paint for rotorcraft systems.

The Army's scientists and engineers have been at the forefront of adapting technology for urgent operational needs in products such as the Rucksack Enhanced Portable Power System—a lightweight, portable power system capable of recharging batteries and/or acting as a continuous power source for external device, such as UGS and surveillance cameras. They also provide technical expertise that has resulted in the development and integration of technologies such as vehicle armor upgrades for advanced IED defeat, fuel tank hardening, and crew protective opaque and transparent armors, dramatically enhancing MRAP survivability in the face of constantly evolving threats.

In the coming year, the Army's S&T community plans to continue pursuing basic and applied research and technology development in areas of force protection; command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR); medical; lethality; Soldiers technology; logistics; rotorcraft; unmanned systems; and advanced simulation that will potentially allow the Army to

maintain superior land warfighting capabilities. This strategy also retains flexibility to develop solutions that are responsive to changing Soldier needs.

Summary

The Army is committed to developing and incorporating capabilities into the force more effectively and efficiently than in the past. Our incremental BCT Modernization Plan, centered on modernizing the network, integrating MRAPs into formations, fielding capability packages, and developing the Ground Combat Vehicle, enables the Army to fill prioritized capability gaps in the operational force based on technological readiness, testing, and Soldier needs.

Our requirements and acquisition systems have become more responsive in recent years to meet battlefield capability needs quickly. We must continue to improve our processes and institutionalize those that have proven their worth as effective systems. We must partner more with Special Operations Forces, other Services, and inter-agency partners to capitalize on the initiatives they develop. The Army's S&T program will continue to accelerate and mature technology that enables the future force to conduct full-spectrum operations, while exploiting opportunities to transition technology rapidly to the current force to meet today's operational requirements.

The Army's imperative is continuous and aggressive modernization of our capabilities to ensure we remain the dominate force—capable of operating in all environments while conducting full-spectrum operations.



The protection capabilities found in the MRAP need to be intergrated into all Army formations.

CHAPTER THREE
LINE OF EFFORT 2: PROCURE UPGRADED CAPABILITIES, RECAPITALIZATION AND DIVEST EXISTING EQUIPMENT



Soldiers look to the American people to provide them with the equipment they need to succeed.

Introduction

Transforming an Army at war requires a careful balance between sustaining and enhancing the capabilities of the current force to win the war today, while investing in equipment that our future force will need to win our Nation's wars tomorrow. Our goal is to speed the delivery of successful products from research and development to meet the challenges of the current fight. At the same time, we must leverage what we have learned during eight years of war to develop the right tools for the job ahead.

To support our Soldiers, we must continuously evaluate how we accomplish all missions and provide the proper training and equipment. The Army will focus on broad goals and remain mindful of the economic constraints our Nation faces.

The key objectives for this line of effort include:

• Continuously modernize by upgrading and recapitalizing existing equipment; and divesting old equipment;

• Validate and implement portfolio strategies for selected fleets of equipment such as Fighting Vehicles, Aircraft, TWV, BC and Networks, and ISR;

• Develop processes to make fleet sustainment decisions routinely based on cost-benefit analysis routinely;

• Capitalize on technology-based initiatives; and

• Adopt a comprehensive investment strategy toward modernization.

Continuously Modernize by Upgrading and Recapitalizing Existing Systems; and Divesting Old Equipment

The Army uses three means to modernize existing capabilities:

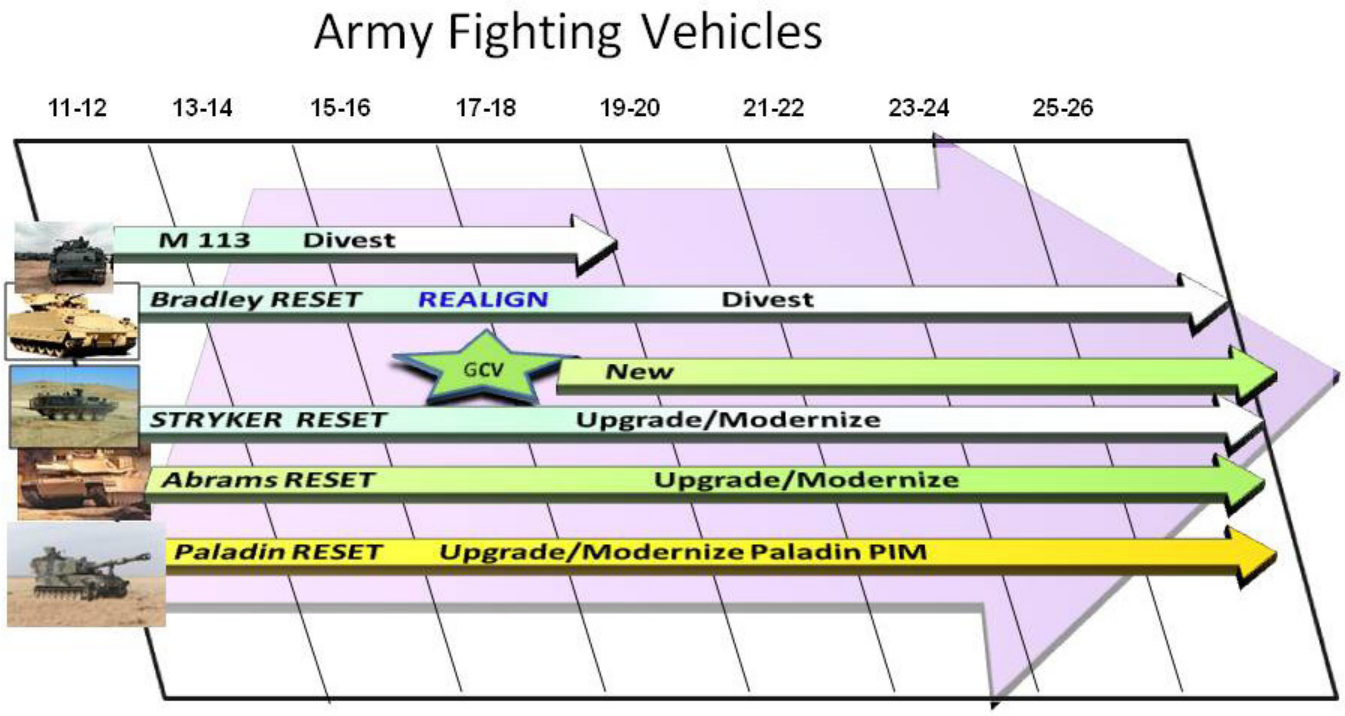
Procure upgraded capabilities to provide enhanced capabilities to meet operational requirements;

Recapitalize existing equipment to restore it to like new conditions with zero miles/zero hours; and

Divest equipment with limited ability to adapt to new requirements at a reasonable cost.

Continue the Development, Validation and Deliberate Execution of Portfolio Strategies for the Near- and Long-Term Management of Major Fleets of Equipment such as Fighting Vehicles, Aircraft, TWV, BC and Networks, and ISR

Portfolio Strategies provide a long-term investment plan for the management of fleets. They are essential to the planning and programming process to ensure long-term plans for fleets are integrated, executable, and within resource constraints. Senior leaders review and approve the portfolio strategies before implementation. Once approved, they provide the path ahead for the management of the fleets to achieve Army goals and objectives over time. The Fighting Vehicle Fleet Portfolio Strategy, currently under review, is an example of continuous modernization over time.



In this example, the Army is:

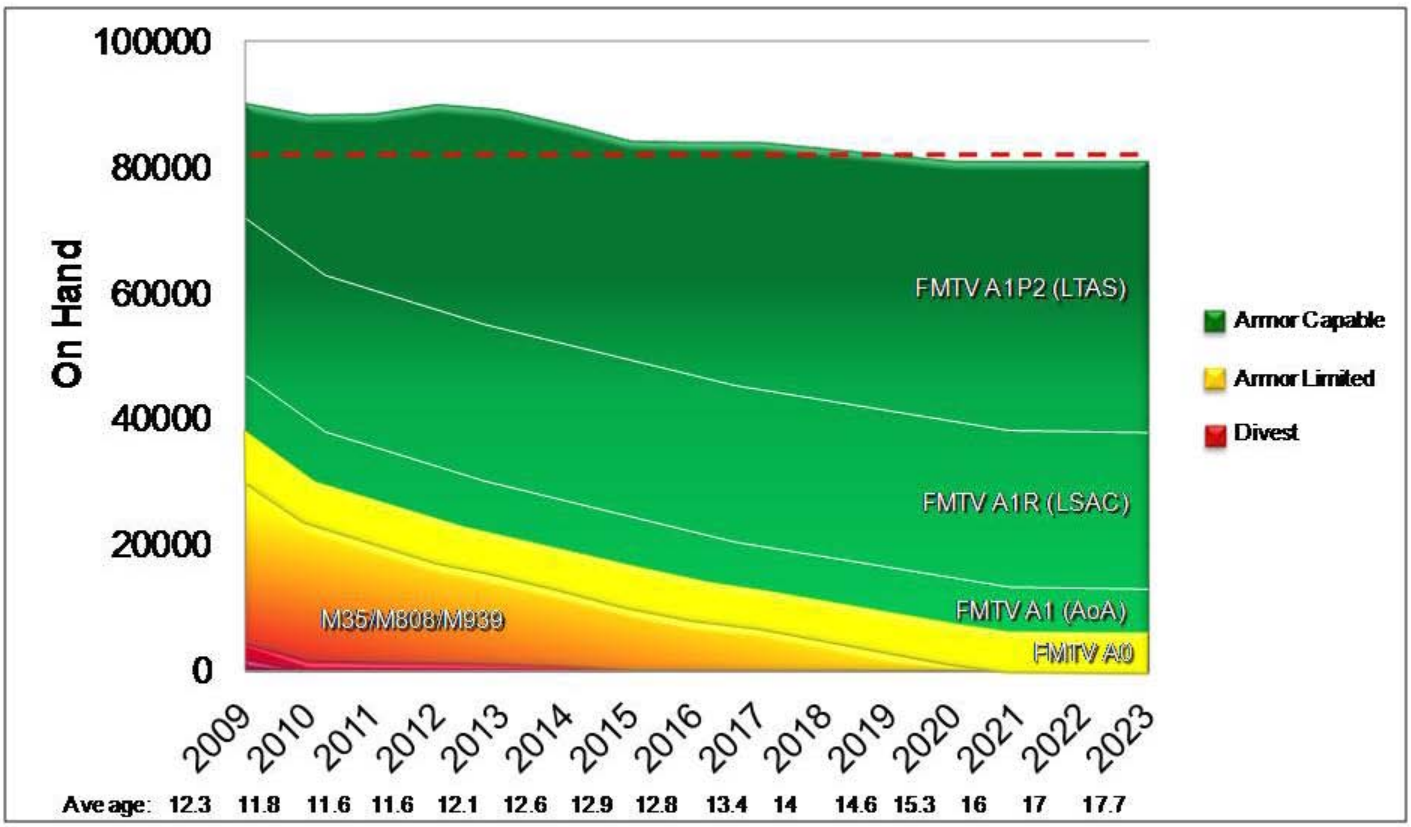
• Developing a **new Ground Combat Vehicle** to meet projected battlefield requirements, which will have the growth potential to allow including new capabilities as the operational environment changes and technology matures.

• **Upgrading** and leveraging equipment with sufficient operational capability and capacity to grow. For example, the planned Stryker and Paladin modernization programs ensure these combat vehicles will remain relevant in today's fight and into the future.

• **Resetting** equipment returning from theater and/or **sustaining** existing unit equipment in full mission capable readiness.

• **Divesting** equipment without sufficient capability or growth capacity, such as the M113 FoV.

Continuously Modernize by Upgrading and Recapitalizing Existing Systems; and Divesting Old Equipment



The Army is combining existing, and developing new processes, to review the status of fleet equipment routinely, define and analyze COAs, cost the COAs, and conduct a cost-benefit analysis for review and approval by senior leaders.

The Army conducts cost-benefit analyses of recapitalization, sustaining, and/or divesting vehicles in several TWV fleets. Shown below is one COA under review for the Family of Medium Tactical Vehicle fleet (FMTV).

The FMTV investment plan (shown on page 25) procures armor-capable vehicles to support Long Term Protection Strategy (LTPS) objectives, to replace older models, and to fill MTOE shortages. It divests M35 series trucks by end of FY11 and M809 series trucks by end of FY15. The M939 series trucks are sustained through FY22.

Capitalize on Technology-Based Initiatives

The Army actively supports and manages its technology-based programs with an emphasis on the future transition of technology to program of record for implementation. Operational, technical, and acquisition SMEs review technology-based initiatives to ensure those with the greatest potential benefit to the Army are funded. The Army carefully reviews the funded initiatives during their exploratory development phase to shape the outcome to meet current and future Army capability requirements.

Adopt a Comprehensive Investment Strategy towards Army Modernization

The AMS incorporates acquisition investment tenets that provide a sound foundation for the Army to equip and modernize our forces in a flexible, affordable, and sustainable manner and:

• Leverage existing systems by making cost effective improvements in both capability and reliability while balancing investments in new equipment to meet ongoing and future requirements of a networked Army;

• Create opportunities through flexible and stable investments to mitigate the risks of uncertainty caused by evolving threats, changes to our force structure, and changes in the national economy;

• Maintain a healthy intellectual and materiel industrial base—both organic and commercial—as part of our overall national security; and

• Balance fleet management across modernization, recapitalization, Reset, and divestitures.

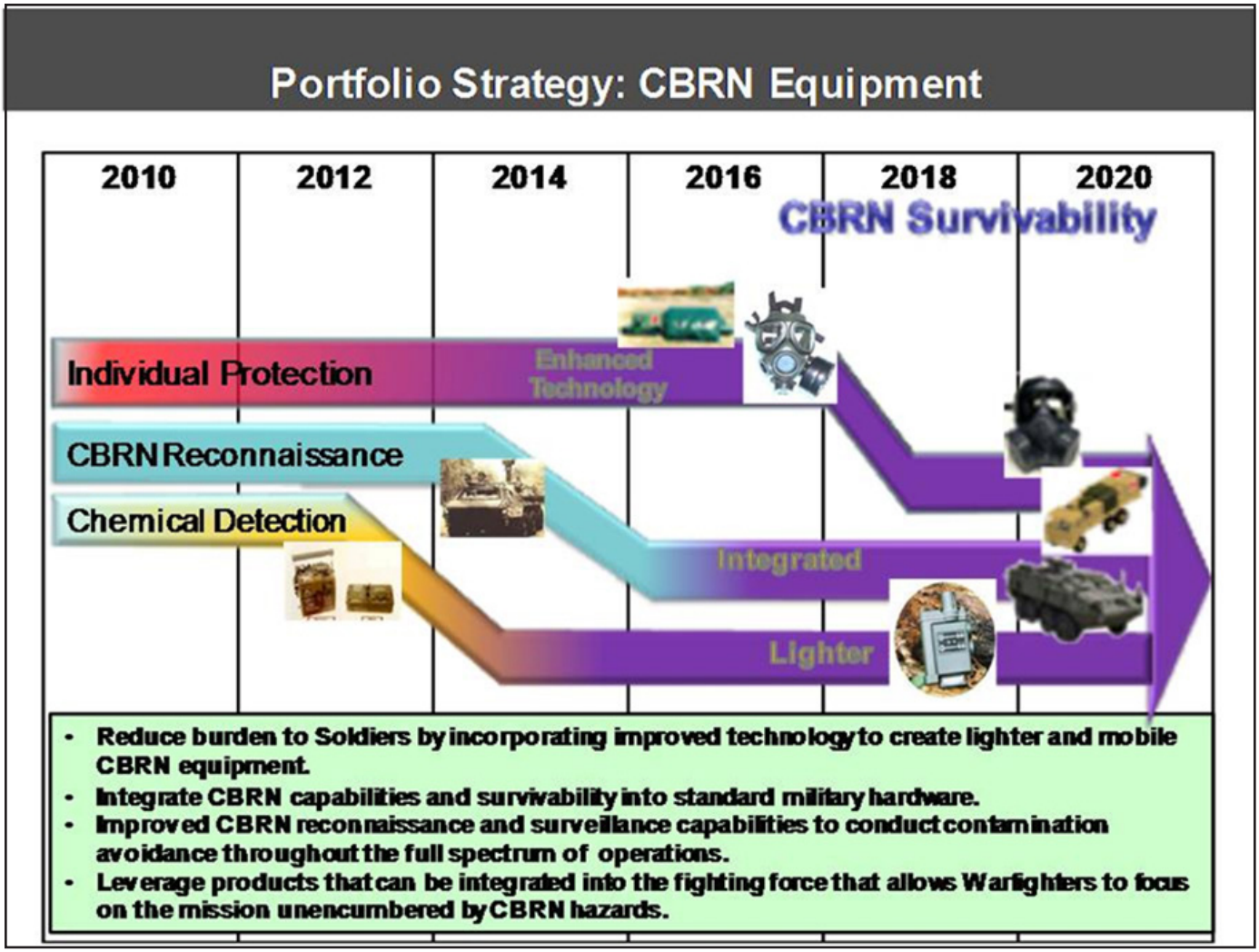
The Army must adopt an enterprise approach for a comprehensive investment strategy. We have established a leadership culture that develops and manages requirements with cost considerations as an integral component to decision making. Leaders continue to improve the effectiveness and efficiency of the unit's equipment readiness while striving to achieve the best value of cost versus new/enhanced capabilities.

Modernization Programs

The AMS provides the essential core materiel programs in FY11 to enhance our Soldiers' capabilities on the frontlines of freedom. These materiel programs will ensure Soldiers have the right equipment at the right time to maintain our Army's strategic momentum. Overviews of selected Army core materiel programs follow in sections:

Section 1: Full Dimensional Protection
Section 2: Battle Command
Section 3: Dominant Maneuver
Section 4: Tactical Wheeled Vehicles
Section 5: Soldier Systems
Section 6: Mobility Systems
Section 7: Fires
Section 8: Intelligence/ISR
Section 9: Aviation
Section 10: Focused Logistics

Section 1: Full Dimensional Protection



Chemical, Biological, Radiological, and Nuclear (CBRN) technological advances, proliferation, and the rise of global terrorism increase and diversify the threat posed by CBRN agents. Wide dissemination of CBRN knowledge worldwide and the range of diverse agents available to many state, non-state, and individual actors create a unique challenge that could threaten the Army's ability to protect U.S. military forces and civilians alike.

Today's rapidly changing operational environment involves a broad array of threats including diverse hazards such as Toxic Industrial Chemicals and Toxic Industrial Materials, as well as the more potential lethal threats posed by the emergence of Non-Traditional Agents (NTAs). The NTAs are chemicals and biochemicals researched or developed with a potential application or intent as chemical weapons, but they do not fall in the category of chemical weapon agents, as identified in the Chemical Weapons Convention. As a result, U.S. forces continue to face a significant evolving challenge from CBRN threats.

The Army's CBRN defense modernization plan meets these emerging threats by enhancing CBRN defense capabilities in support of full-spectrum operations, including homeland defense (HLD). The modernization plan seeks to reduce the burden on Soldiers by

incorporating improved technology to create light and mobile CBRN equipment while reducing operational risks and minimizing casualties. It also improves CBRN reconnaissance and surveillance capabilities to avoid contamination and leverages systems that can be integrated into the fighting force that allows Warfighters to operate unencumbered by CBRN hazards.

Currently, there are two armored mounted CBRN reconnaissance systems being employed—M93 series Fox Nuclear, Biological, Chemical Reconnaissance (Recon) Systems and Stryker Nuclear, Biological and Chemical Reconnaissance Vehicles (NBCRV). The Fox Recon System is a low-density system that will soon reach the end of its economic service life in 2012 and will be replaced by the NBCRV, which provides increased survivability, sensor sensitivity, and deployment capabilities. As NBCRVs are fielded, the Army will begin divesting of the Fox Recon system.

The Army's total validated requirement for mounted CBRN reconnaissance is 355 NBCRVs, which will be fielded to each Heavy Brigade Combat Team (HBCT) and Stryker Brigade Combat Team (SBCT). At Echelons Above Brigade (EAB), each Chemical Company (Combat Support) includes a CBRN Reconnaissance Platoon equipped with six NBCRVs. To date, the Army has fielded 21 NBCRVs and 95 additional vehicles are in production and scheduled to be fielded between FY10 and FY12. The Army anticipates requesting funding for the remaining 239 in future POM cycles. This will increase the capability for field commanders to perform combat missions overseas and for U.S. Army Reserve (USAR) and Army National Guard (ARNG) units to perform HLD related tasks.

Toxic Industrial Chemical Protection Detection Equipment fills a mission critical need to provide the warfighter with dismounted CBRN reconnaissance systems. In FY12, the Army will field Dismounted Reconnaissance Monitoring and Survey Sets, Kits, and Outfits (DR SKO) to units to improve their dismounted CBRN reconnaissance capabilities in Homeland Security (HLS), small scale, and major combat scenarios. Additionally, DR SKO will form the basis for the Monitoring and Survey Sets, Kits, and Outfits which is the next increment of DR SKO.

The Army has a variety of additional fielding initiatives designed to protect the Soldier and provide an increased capability to respond to a CBRN incident.

• The M50 Joint Service General Purpose Mask will begin to be fielded in FY12. This new mask provides better protection, a wider field of vision, and makes it easier for the Soldier to breathe when worn.

• Joint Chemical Agent Detector is a handheld piece of equipment, which can monitor, detect, and identify hazardous chemical agents in the environment.

• Joint Service Transportable Decontamination System-Small Scale a greatly improved decontamination system, which will be used by the Army and the Navy, as well.

The Army is also spearheading a rapid initiative to expedite the procurement and fielding of capabilities to counter NTA. The current plan calls for an operational demonstration that fields modernized capabilities to a general purpose CBRN company and expands the capability of an existing CBRN company, without requiring additional CBRN forces or expanding existing mission sets. Additionally, the CBRN defense enterprise solution is being extended to field analytic laboratories.

The Army will continue to augment maneuver units by task-organized forces focused on CBRN defense. Platforms across the Army will be equipped with technologically advanced CBRN sensing devices on both the unmanned and manned versions. Unmanned systems will provide the capability to execute many of the hazardous missions currently performed by Soldiers. The Army plans to have CBRN sensing,



Soldiers prepare to take their Stryker Nuclear, Biological and Chemical Reconnaissance Vehicles (NBCRV) on patrol. The NBCRV uses the newest nuclear, biological and chemical detection equipment in a Stryker chassis. These new vehicles provide Soldiers greater protection and increased ability to detect toxic chemical substances that are used as weapons.

decontamination, protection, and decision support systems for initial operational capability in FY15.

Current forces will be provided increments of proven technologies as these systems begin to mature to meet the designs of a modular force structure. Providing these technologies will allow Soldiers to continue operations in the event of a hazardous CBRN environment.

Current CBRN modernization initiatives will support the fielding of defense capabilities that allow the Army to accomplish its mission across the full-spectrum of conflict. Army CBRN forces are equipped to respond to potential WMD events at home, or on the battlefield. When directed these forces will also support our allies and coalition partners abroad.

In summary, the Army has placed more emphasis on:

- Providing lighter, highly mobile CBRN systems;

- Providing the ability to respond to emerging threats such as toxic industrial hazards and NTAs; and

- Delivering protective equipment that allows the force to operate unencumbered in CBRN environments.

For additional information, see the Weapon Systems section in the 2010 Army Weapons System Handbook at: https://www.alt.army.mil/portal/page/portal/oasaalt/documents/AWSH_2010_Book-web.pdf.

Section 2: Battle Command

The Army's BC Network modernization strategy is focused on converging several systems, providing increased information superiority on the move. The Army's Network includes non-developmental commercial off-the-shelf (COTS) systems, which were fielded to fill capability gaps primarily in OIF and Operation Enduring Freedom (OEF). Current and future Army BC programs will address these capability gaps and reduce the current growing number of products across the battlefield. Concurrently, there will be sufficient programmatic flexibility to allow us to incorporate, support, and field emerging capabilities. To achieve this, the Army will leverage key transport and application programs to deliver new equipment to maneuver BCTs and other units.

In FY12, the Army will incrementally transition from the current legacy and COTS network systems to a new network based on the latest increments of WIN-T and JTRS programs to provide secure data, voice, and video capabilities to a mobile force. Because the Army has funded programs for network, applications, and supporting systems modernization for FY10-15, it will reap the benefits of this investment as fielding begins deploying BCTs in FY11.

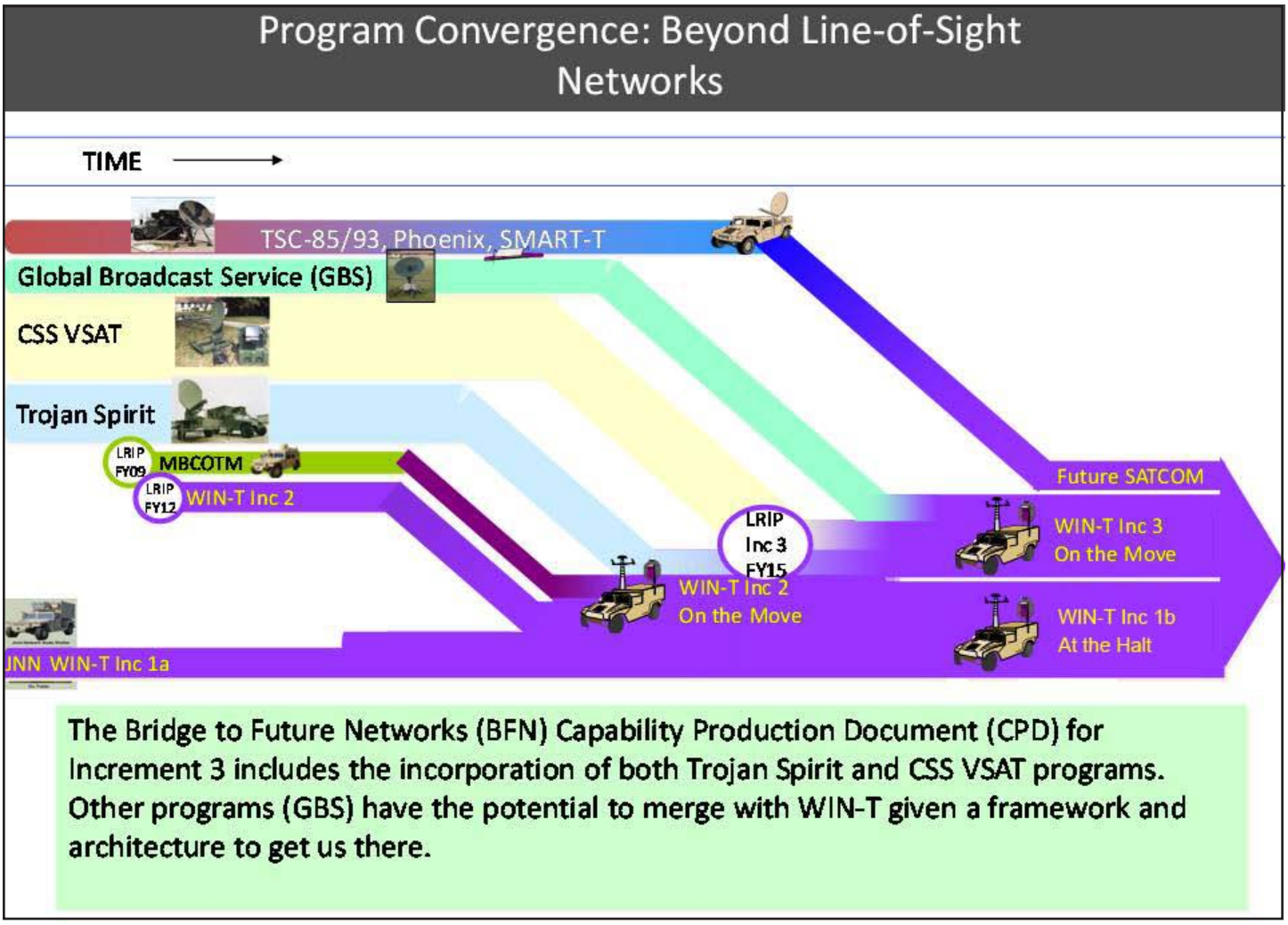
Network transport consists of WIN-T, Military Satellite Communications (MILSATCOM), and functional network systems that deliver services and information infrastructure to the Warfighter. The foundation for the Army's transport modernization strategy is WIN-T, which will employ an incremental strategy across the FYDP.

On logistics transport, deployment of Combat Service Support (CSS) Automated Information Systems Interface (CAISI) Very Small Aperture Terminal (VSAT) systems will be complete by 2012. The bridge to future networks Capabilities Production Document reflects the incorporation of CSS VSAT into WIN-T; however, the current WIN-T program cannot match the scope and deployment of CAISI and VSAT, in terms of points of presence on the battlefield for logistics enterprise. Therefore, the Army will complete fielding the full Army Acquisition Objective (AAO) of CSS VSATs of 3,300 systems and CAISI AAO of 39,135 systems by 2012, while reviewing the overall network capability requirements to determine efficiencies in stand-alone satellite network systems over the FYDP.

Leveraging commercial technology through the Joint Network Node, COTS/government off-the-shelf (GOTS) telecommunications networking technology is at the heart of WIN-T Increment 1a, which will complete fielding by FY12. For other network systems, we will sustain currently fielded Global Broadcast System, COTS Secret Internet Protocol Router Network/Non-secure Internet Protocol Router Network Access Point (SNaP), Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T), and Phoenix through the lifespan of each system. With the cancellation of Transformational Satellite, the Army will mitigate protected anti-jam/electromagnetic pulse work through satellite terminal shortages with one additional SMART-T to the HBCTs and Infantry Brigade Combat Teams (ICBT). The Army will also consider mitigating the protected OTM shortfall by leveraging Defense Advanced Research Projects Agency and industry initiatives to complete the RDT&E. Commercial SNaP and VSAT terminals will continue to augment MILSATCOM as required.

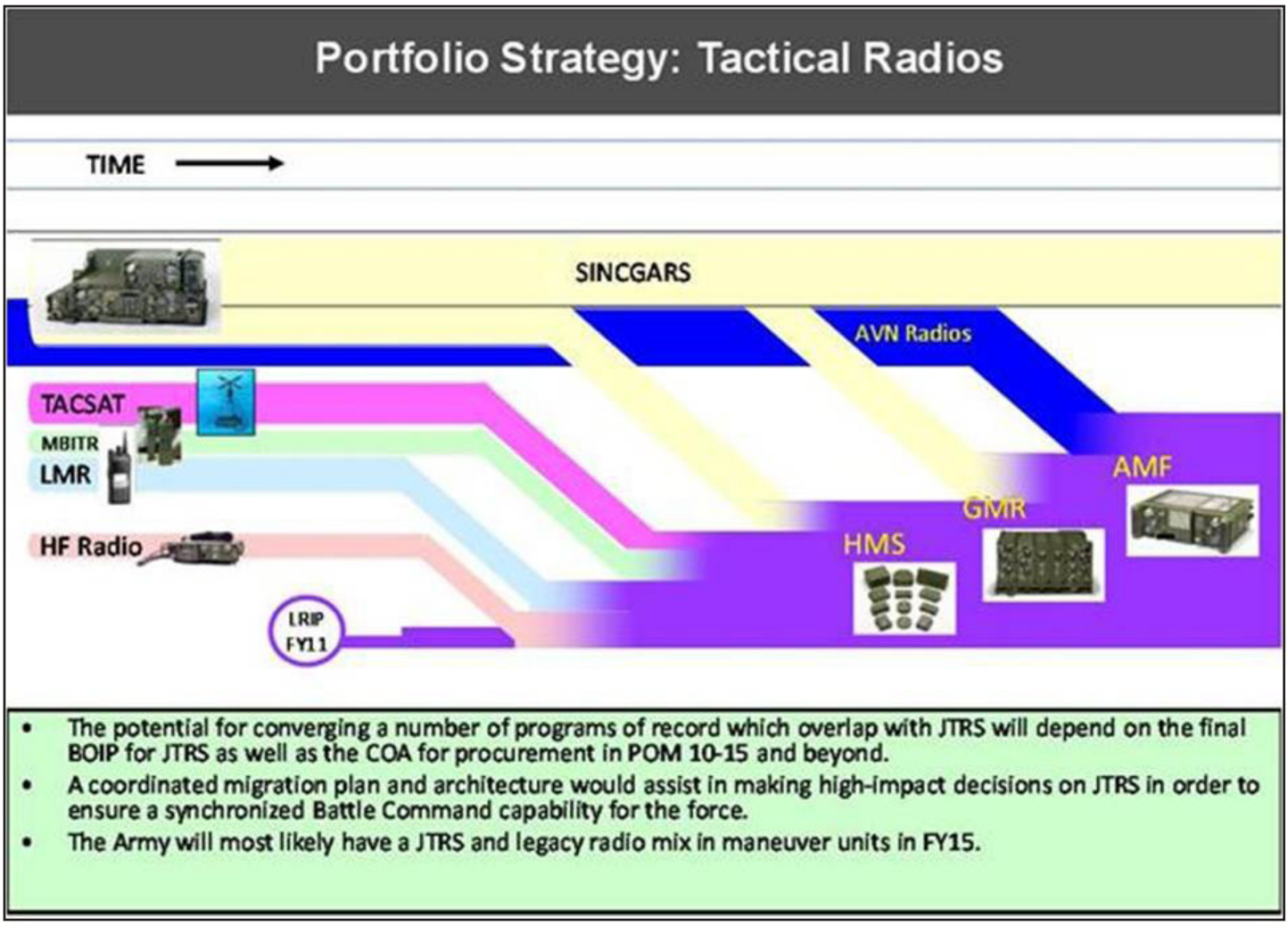
The keystone to the Army's tactical radio modernization strategy is the JTRS Family of Systems (FoS). After significant investment in JTRS, the Army will begin fielding JTRS starting in FY12. This will fill capability gaps currently mitigated by COTS and GOTS products procured through the ONS/Joint Urgent Operational Needs Statement process.

The JTRS Ground Mobile Radio begins to close the data capability gap at the BCT company level and provides the capability to build a data extension to the lowest



echelons, and then enables the extension of services from the Forward Operating Base to the platform. Hand-held, Manpack, Soldier JTRS radios extend the network to the dismounted Soldier. Rifleman Radio extends connectivity down to the individual Soldier, which delivers key networking capabilities to bring the individual Soldier into the network, and provide voice connectivity and visibility of the Soldier's position location information to the squad/team leader. Over time, the Army will divest the various commercial-grade hand-held radios (commonly called Land Mobile Radios or LMRs), making them available for Foreign Military Sales or other uses. The Single Channel Ground-Air Radio Systems will remain the primary Army tactical radio across units through 2020 and beyond.

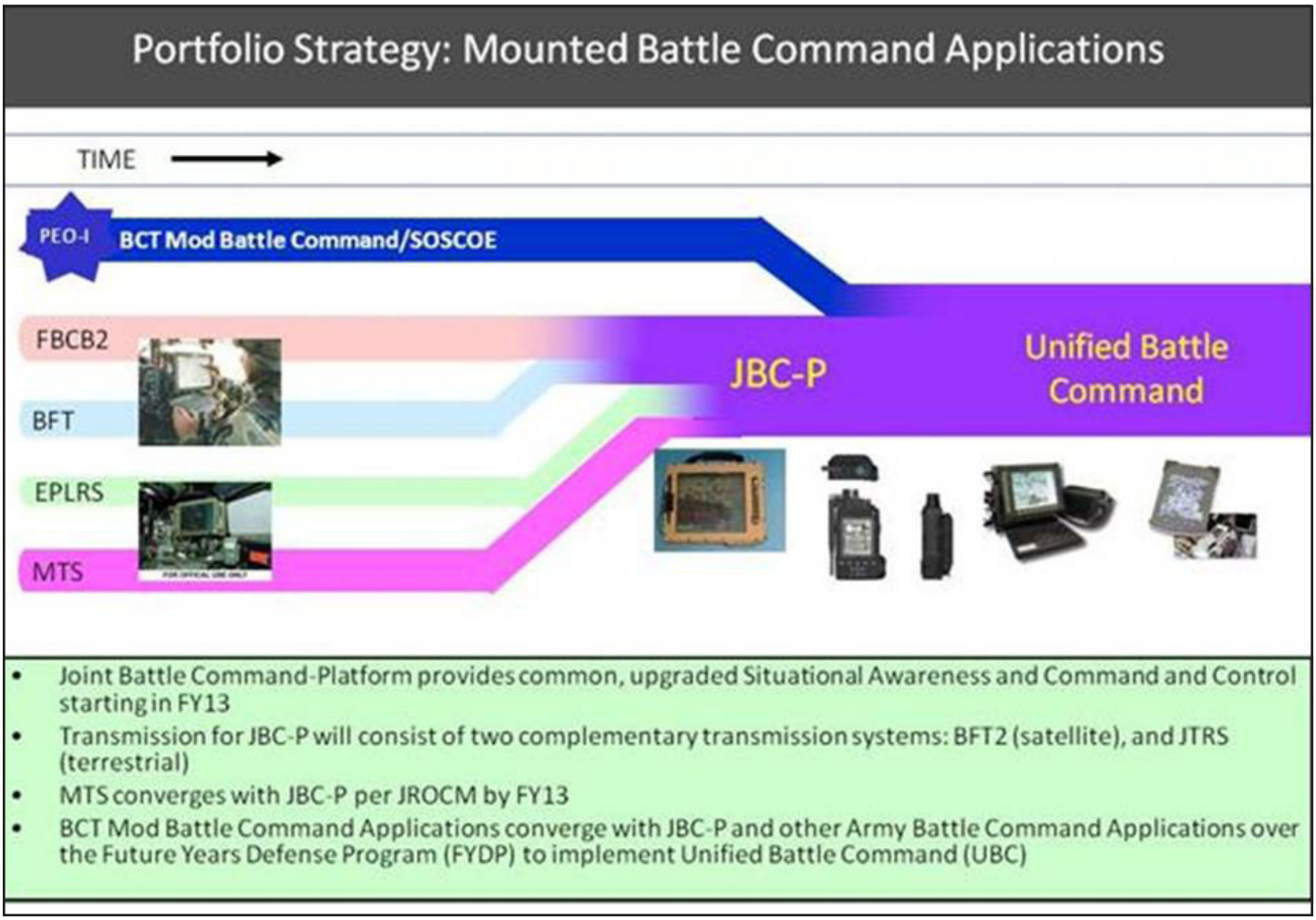
For BC Applications, the Army's modernization strategy has two main hubs: the static Command Post and the platform level (Soldier, sensor, vehicles, etc). In the Command Post, a critical element of ABCS applications is Tactical Battle Command (TBC), which combines multiple complex capabilities, such as Maneuver Control System and CPoF into an integrated server stack. The deployment of TBC servers and terminals will be funded fully by FY13, and CPoF and Personalized Assistant that Learns as well as potentially 3rd Generation will be spirally fielded into the force by integrating these initiatives into programs with aligned requirements and support systems. Supporting TBC for all key C2 applications will allow the Army to achieve AAO of 19,300 systems by 2014.



On platforms, FBCB2 delivers application, transport, and information service infrastructure to the BLOS users in theater through Blue Force Tracker (BFT). Beginning in FY11, Joint Capability Release (JCR) software upgrades with BFT2 and KGV-72s provides Type-1 security and enhanced (10X) L-band bandwidth to current FBCB2 terminals. Additionally, JCR will include the co-host of the TiGR and the Army will leverage to support HBCT to SBCT conversions starting in FY11. By FY13, the JBC-P tablet, dismount, and beacon versions will provide essential C2 and full SA convergence between Army JTRS Rifleman Radio-equipped units and the U.S. Marine Corps.

To establish and retain maximum flexibility in software development and fielding, current software applications will be aligned under a Common Operating Environment while the Army's common software systems program will provide a catalogue of readily available, pretested, and certified Information Technology (IT) products for rapid procurement and deployment to the Soldier. This will allow the Army to achieve economies of scale in the procurement and sustainment of standard, commercial IT hardware.

Finally, the Army must re-assess the System-of-Systems Common Operating Environment as the linkage from UGS to contemporary BC systems. The Army's investment in BCT modernization applications will enable the deployment of Enhanced-IBCTs starting in FY11. For beyond FY12, the Army must consolidate, align, and converge both middleware and applications to ensure maximum network and fiscal efficiencies and effectiveness.

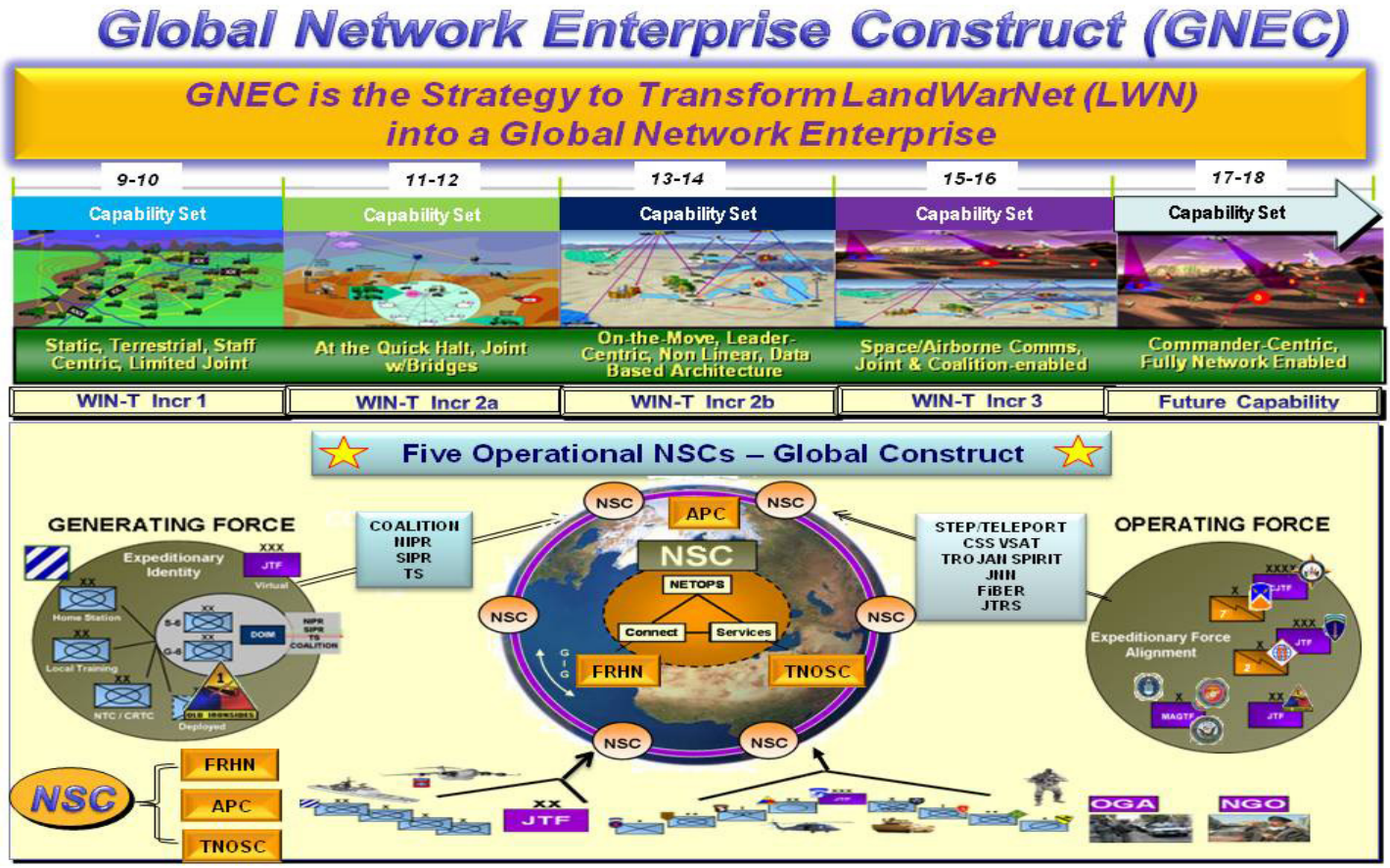


The Global Network Enterprise Construct (GNEC) is an Army-wide strategy that will transform LandWarNet to an enterprise activity. The GNEC is intended to be a single integrated enterprise, which will achieve an information environment with global access, standard infrastructures, unity of C2 across Army cyberspace, and common policies/standards that ultimately provide information services from the generating force to the tactical edge.

The GNEC challenges the Army to deliver services that are timely, relevant, and focused on the needs of the Warfighter while providing solution sets (e.g., operational outcomes, validated requirements, and architectures) to ensure stakeholder communities move toward a common network enterprise.

The Network Enterprise will provide Soldiers single identity from home station to the Area of Responsibility (AOR) and back; ensuring the information is managed so the Warfighter can access what information is needed from anywhere, anytime, and protect the network and information from any adversary. The Army must do what is necessary to ensure an information advantage and give Warfighters the tools they need to accomplish their mission.

The Network Service Center (NSC) is an Army global enterprise capability that links LandWarNet to the Warfighter. The GNEC conceptual approach is a global enterprise linked by five operational NSCs (and additional NSC to support training hosted by the Signal Center at Fort Gordon, Georgia).



Each of the five currently planned NSCs consists of three major geographically dispersed capabilities:

• Area Processing Centers are enterprise facilities that will provide standardized global enterprise BC and collaboration services;

• Regional Hub Nodes are high bandwidth satellite to fiber gateways that connect Army expeditionary operational forces to the Global Information Grid; and

• Theater Network Operation Security Centers (TNOSC) are forward deployed, theater-based facilities that provide Network Operations and Service Desk functions to ensure the seamless delivery of standardized enterprise services.

The TNOSCs represent the Army's key LandWarNet cyber defense capabiltity under the control of the Army's Global Network Operation and Security Center and, ultimately, U.S. Strategic Command's Joint Task Force-Global Network Operation Global Network Operations Center.

The NSC addresses a key capability gap between the Army's operational and generating forces and delivers seamless LandWarNet capabilities to each during day-to-day operations, training, simulation, emergency response, and wartime operations.

This strategy provides a new approach for managing the Army's BC Network and the decisions the Army must make to achieve its near- and long-term investment strategy objectives. The strategy also focuses on new approaches for programming and budgeting to achieve a supportable, full-spectrum BC Network. It also supports operations in OIF and OEF, Army leadership initiatives, BCT modernization, the Chief of Staff of the

Army's initiatives, and ensures Unified Battle Command for a comprehensive Army BC program for the Soldier.

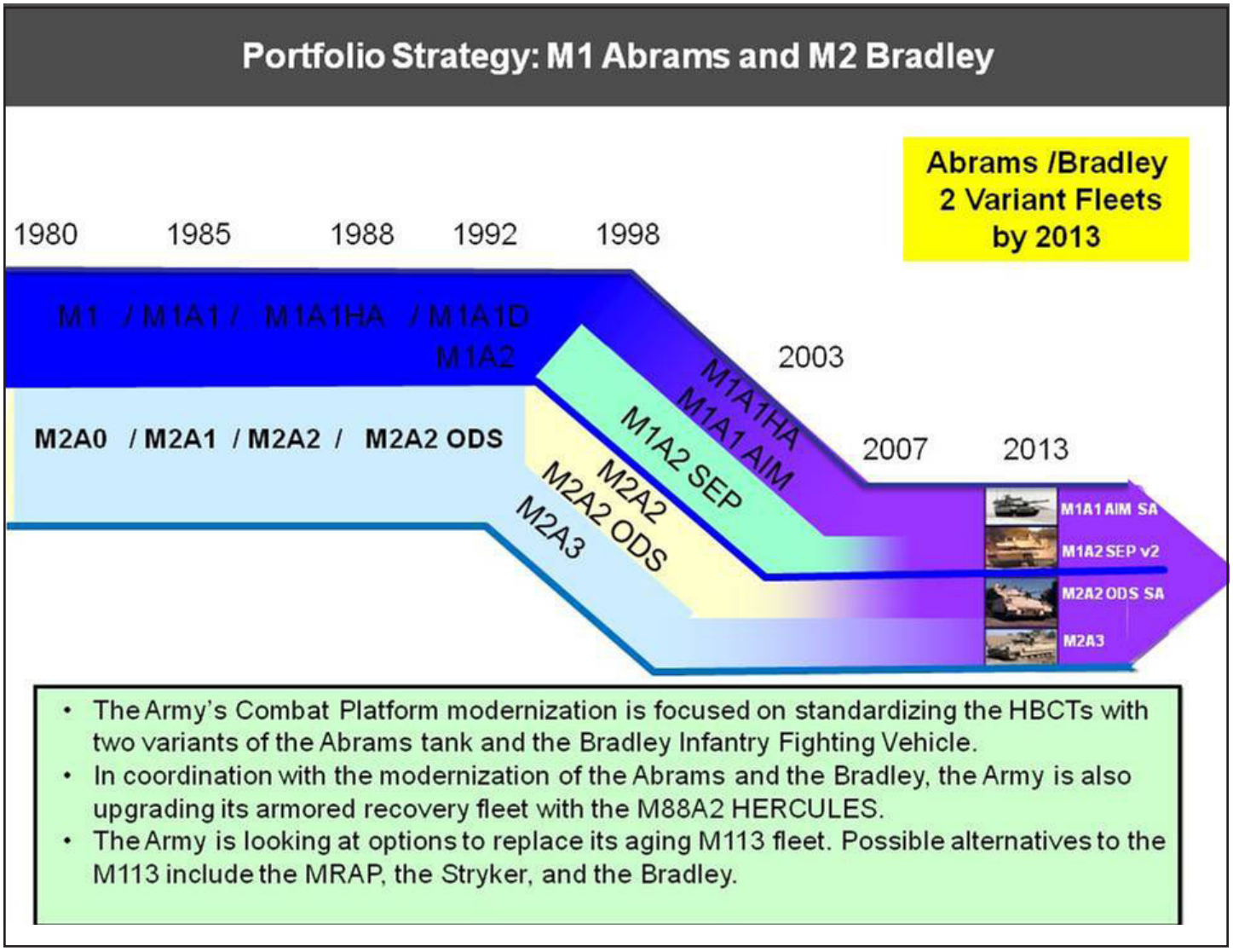
For additional information, see the Weapon Systems section in the 2010 Army Weapons System Handbook at: https://www.alt.army.mil/portal/page/portal/oasaalt/documents/AWSH_2010_Book-web.pdf.



The Army BC Network is a digital Command, Control, Communications, Computer and Intelligence system that allows Soldiers to obtain an automated view of friendly and enemy activities, supply movements, receive situation and intelligence reports and view the airspace.

Section 3: Dominant Maneuver

The Army's Combat Platform modernization program is focused on standardizing the HBCT with the two variants of the Abrams tank and the Bradley Infantry Fighting Vehicle. The Army has nearly completed the modular conversion of HBCTs giving every brigade a common structure. The Abrams M1A2 System Enhancement Program is paired with its partner, the Bradley M2A3, and the Abrams M1A1 SA is paired with the Bradley M2A2 Operation Desert Storm. This modernization aligns compatible combat platforms in common modular formations. For the future Infantry Fighting Vehicle, the Army is designing a new Ground Combat Vehicle as outlined in Chapter Two.



In coordination with the modernization of the Abrams and the Bradley, the Army is also upgrading its armored recovery fleet with the M88A2 HERCULES, giving the HBCT greater towing capacity, a longer 35-ton hoist capability boom, and a 140,000 pound constant pull main winch. The Hercules also incorporates improved hydraulics, enhanced propulsion system, and heavier suspension.





The Abrams Main Battle Tank is paired with the Bradley Infantry Fighting Vehicle as part of the Heavy Brigade Combat Team.

The Army is looking at options to replace its aging M113 fleet. The M113 has served for over 50 years as the Army's tracked ambulance, Mortar Carrier, C2 Vehicle, as well as a general purpose personnel carrier. Possible alternatives to the M113 include the MRAP, the Stryker, and the Bradley.

The Stryker provides a unique FoS approach, which maximizes commonality and integrated capabilities, while filling an immediate capabilities gap in the current force. The Army has fielded 10 configurations of the Stryker: the Infantry Carrier Vehicle; Reconnaissance Vehicle; Commander Vehicle; Mortar Carrier; Fire Support Vehicle; Anti-tank Guided Missile Vehicle; Engineer Squad Vehicle; Medical Evacuation Vehicle; Nuclear, Biological, and Chemical Reconnaissance Vehicle; and the Mobile Gun System.



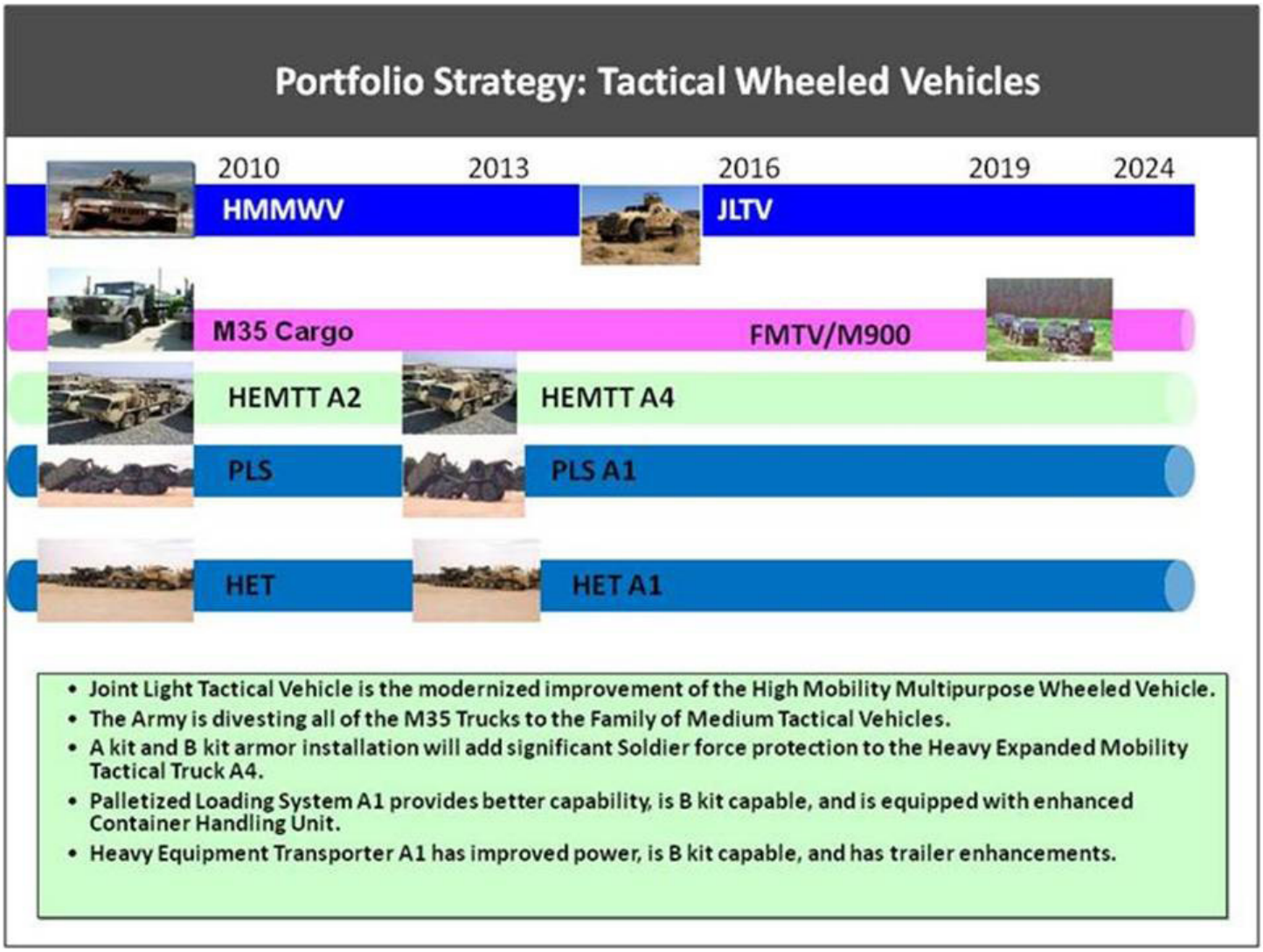
This Stryker, on patrol, is an eight-wheeled, all-wheel-drive, armored combat vehicle.This vehicle is part of the Army's Combat Platform modernization.

Eight of the ten Stryker variants are in full rate production (FRP) and the remaining two; the Stryker-NBCRV has completed Milestone C and the Stryker Mobile Gun System is expected to meet Milestone C FRP in third quarter FY11.

As a result of the cumulative effect of enhancements and the implementation of lessons learned in OEF and OIF, the current Stryker vehicle is approaching its limits for space, weight, and power (SWaP). The Army is executing a Stryker modernization program as an integrated solution to provide survivability upgrades, SWaP mitigation, and future technologies integration in two increments.

For additional information, see the Weapon Systems section in the 2010 Army Weapons System Handbook at: https://www.alt.army.mil/portal/page/portal/oasaalt/documents/AWSH_2010_Book-web.pdf.

Section 4: Tactical Wheeled Vehicles



The overall intent for the Army's TWV modernization program is to develop a tactical wheeled vehicle fleet that supports the execution of full-spectrum operations and balances the need for protection, payload, and performance. The program recognizes that MRAPs and MRAP-All Terrain Vehicle (M-ATV) provide enduring capabilities and plans for their selected long-term integration into the force.

Additionally, the program recognizes that there is no one vehicle able to provide all of the capabilities required for full-spectrum operations and seeks to leverage current technologies, which offer scalable protection based on mission needs. The Army's TWV modernization program focuses on the following:

• In conjunction with the Life Cycle Management Command's Fleet Management plan, the Army will divest TWVs more than 20 years old; recapitalize TWVs when feasible, and prioritize funding for procurement of new TWVs;

• Advance to fullest extent possible, the complete industrial base as a modernization tool to support the ARFORGEN cycle better within the Army's Equipping Strategy;

• Maximize Original Equipment Manufacturer and depot production flexibility to retain the capability to modify TWV production quantities and model mixes to meet senior leader guidance and react to changes in both operational and fiscal environments;

• Align the like capability Type Classified Standard equipment listed in Supply Bulletin 700-20 to reflect the Department of the Army's readiness posture of Army formations. This strategy seeks to optimize opportunities and investments in procurement, recapitalization, and sustainment.

TWVs support BCTs through expeditionary contributions through their mobility and transportability. TWVs are interoperable commodities that allow commanders to conduct Joint, multi-component operations, and couple versatility with agility to bring the fight to the enemy and simultaneously sustain the warfight throughout the depth of the theater of operations.

TWVs enable commanders at any level to seize and maintain the initiative and perform sustainment operations through aggressive planning and carefully coordinated execution of the plan. Commanders integrate TWVs into campaigns fought at the operational and tactical levels. The TWVs provide offensive, defensive, and sustainment capabilities, as well as carry Soldier force protection measures, such as the Long Term Armoring Strategy (LTAS) materiel solution B-Kit armor, which has been developed to upgrade the armor protection for crews while providing an easier way of fixing the cab in response to an incident. The LTAS B-Kit has bolt-on armor panels as well as transparent armor for the windows, so the field can replace certain panels instead of having to replace



Mine Resistant Ambush Protected vehicles quickly gained a reputation for providing superior protection for their crews.

the whole cab. The addition of the B-Kit has brought other changes in chassis strength and engine power to sustain the vehicles performance with the added weight of the armor kit applied.

The TWVs provide mobile platforms on which commanders rely to deliver lethal fires against threats as is evident in systems such as the MRAP. Overall, TWVs are highly valuable commodities to commanders because of their multiple capabilities. The Army's TWV enables synergy to flow rapidly during any operation.

In FY15-16, the development of the JLTV reinforces the Army's approach to interoperable platforms that provide expeditionary and protected maneuver to forces currently supported by High Mobility Multipurpose Wheeled Vehicles (HMMWVs). The intent of the JLTV is to facilitate BCTs symmetric and asymmetric approaches to tactical and operational maneuvers by improving their versatility and agility. The JLTVs also improve payload efficiency through chassis engineering that enables them to deploy with the appropriate amount of Soldier force protection with scalable armor.

The Army, in conjunction with industry, has been leveraging technologies to improve the TWV fleet. The Army has invested heavily in all three truck fleets to restore capabilities that suffered due to the requirement to improve Soldier protection. To the benefit of combat brigades and sustainment brigades, modernized TWV models will have longer economic useful life spans, more power, better stability, and more overall protection for the Soldier.

The TWV Modernization concept supports the Army's ARFORGEN-based equipping strategy. Based on a unit's position within the ARFORGEN cycle, some units can retain the fleet of legacy light utility HMMWVS, others should be equipped with the newer, armor-capable, expanded capability vehicle chassis HMMWVs, and select units would receive vehicles with increased protection, based on specific missions and phases of an operation (e.g., MRAP/M-ATV/JLTV vehicles). The Army has very carefully accepted risk in certain formations, based on the likelihood of that organization needing more advanced capabilities would be low. Simply put, the Army will ensure that Soldiers receive the right vehicles, with the right capabilities, at the right time.

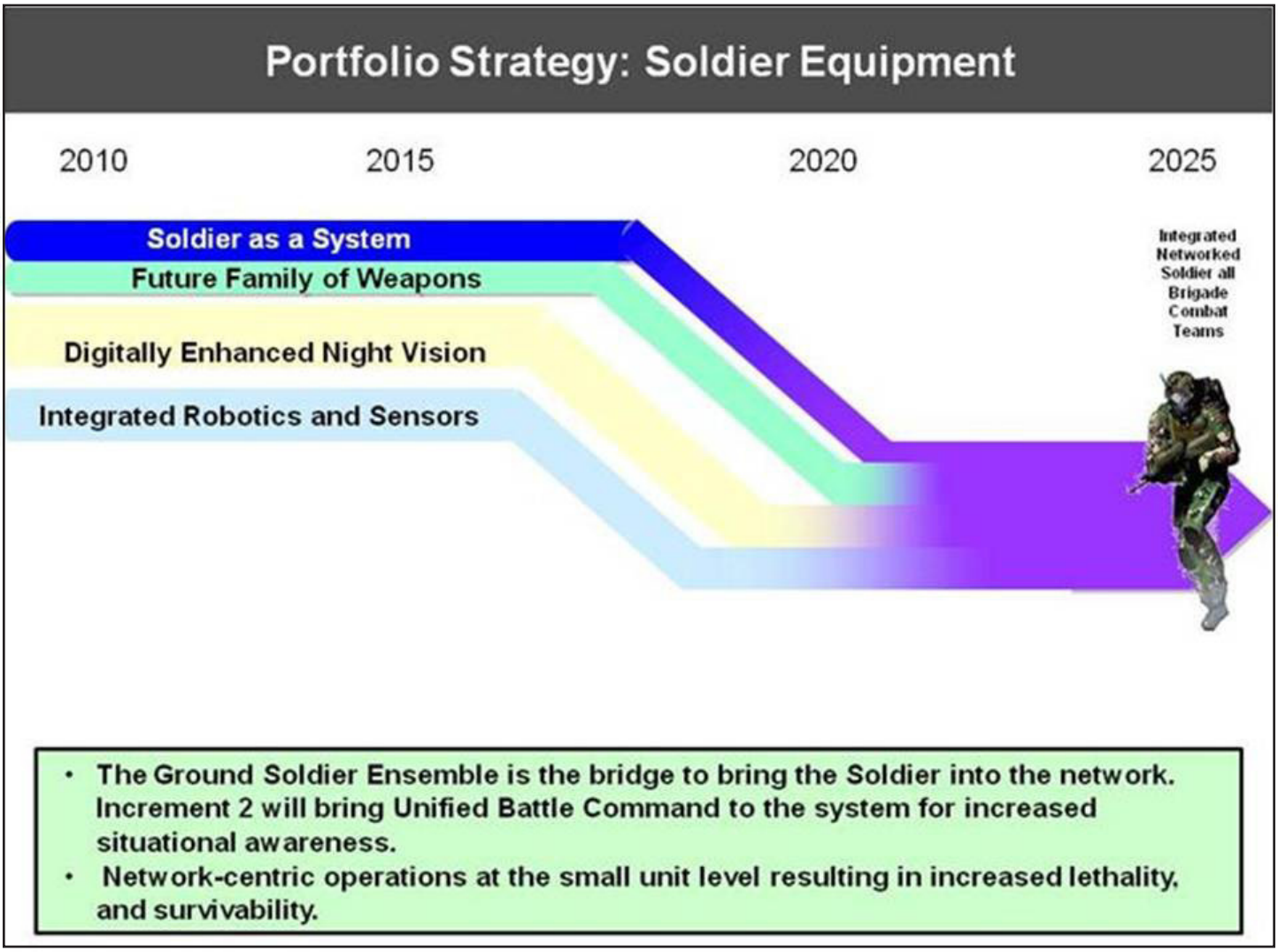
The Army is also developing a Long Term Protection Strategy (LTPS) to improve Soldier force protection on all TWVs. The goal of the LTPS is to implement a standard configuration of scalable (removable) TWV protection with inherent and supplemental armor that provides protection against direct fire, indirect fire, mines, and IED threats. The current variants of add-on-armor represent several years of reactionary developments to the threats faced by today's Soldier.

The Army will continue to transform existing TWV capabilities and maximize the values of versatility, agility, force protection, and sustainment. We have implemented a concerted effort of JLTV procurement, armor upgrades, engineering improvements, and overall fleet sustainment. The TWV modernization will fully leverage capabilities at the commanders' disposal, optimizing their courses of actions, while mitigating inherent limitations as they support the total force.

The complex and changing operational environment necessitates the TWV modernization strategy where increased asymmetric threats, long lines of communication, and ever-changing scenarios in the various theaters of war are realistic determinants to upgrade capabilities continuously throughout the Joint Theater. The ultimate objective of the Army's TWV modernization effort is to provide a versatile, agile, lethal, and protected tactical wheeled vehicle fleet.

For additional information, see the Weapon Systems section in the 2010 Army Weapons System Handbook at: https://www.alt.army.mil/portal/page/portal/oasaalt/documents/AWSH_2010_Book-web.pdf.

Section 5: Soldier Systems



Today's Army is the best-prepared and best-equipped force in the history of warfare. The individual Soldier is the Army's center of gravity. The Soldier as a System (SaaS) Program provides a systematic, fully integrated approach to Soldier modernization enabling all Soldiers to perform minimum essential Soldier tasks and battle drills. The modular system architecture of SaaS allows for individual Soldier mission tailoring to increase Soldier lethality, survivability, mobility, sustainability, and situational awareness while reducing Soldier load and decreasing Soldier power requirements. The Rapid Fielding Initiative supports deploying Soldiers and units through the SaaS Unit Set Fielding process in accordance with the ARFORGEN Cycle. This equipping process ensures that every Soldier and unit receives modernized mission tailored specific equipment when they need it.

The Army's SaaS concept is the implementation of an institutionalized management process focused on providing trained and ready Soldiers able to outperform any opponent in the full-spectrum of Army, Joint, and coalition force operations within the Army's current and objective force.

The Army established SaaS to improve the current capability of all Soldiers, regardless of their Military Occupational

Specialties (MOS). All Soldiers are equipped with the Core Soldier System, which enables them to train on and perform Basic Warrior Tasks and Battle Drills. The Core Soldier System establishes baseline capabilities for all Soldiers, and consists of clothing bag items, select organizational clothing and individual equipment, and Soldier protection items. Depending on capabilities required by mission, MOS, and duty position within the BCT, Soldiers are further equipped beyond the baseline capabilities provided by Core Soldier System to perform mission specific requirements. Ground, Mounted, and Air Soldier systems are modular components that expand the capabilities of the Soldier.



The Ground Soldier System makes it possible to bring the individual Soldier into the network.

The essential objective of SaaS is network-centric operations. This coincides with the number one goal of Soldier modernization, which is to intergrate the individual Soldier into the network. This is achieved by fielding Ground Soldier System integrated with the Rifleman's Radio. Ground Soldier System Increment 1 (GSS Incr. 1) is an integrated dismounted Soldier SA system that provides unparalleled SA to the dismounted Soldier, allowing for faster and more accurate decisions in the tactical fight.

The centerpiece capability of GSS is the ability to display the individual Soldier location graphically on a digital geo-referenced image. Digital mediums will also graphically display additional Soldier locations through the Army BC System, which is connected through a radio that will send and receive information from one to another thus connecting the dismounted Soldier to the network.

The GSS Increment # 1 integrates multiple components and takes advantage of emerging technologies providing overmatching operational capabilities to the small unit and individual Soldier formerly available only to higher-level units. Network centric operations will allow for user defined operating pictures, improved force protection against fratricide, increased battlefield collaboration including individual and tactical data playback, and most important, access to weapons, sensors, and external assets previously only available to the operator or higher headquarters.

The SaaS near-term (FY10-11) efforts in modernization lay the groundwork bringing network centric operations and capabilities to the Soldier. During this period, the Army will see the prototyping and operational testing of the GSS Increment # 1 system. In response to a commander's operational needs statement, the Army equipped an OEF deployed SBCT with Land Warrior to bring dismounted battle command capabilities to our current force. Land Warrior is the pre-cursor system to GSS Increment # 1 , providing the SBCT the capability to establish an enclave network interoperable with FBCB2 affording enhanced navigation, improved fratricide mitigation, and collaborative operations capability.

Additionally, the Army will enhance SaaS lethality capabilities through several individual weapon initiatives. In an effort to provide our Soldiers with the best individual weapon available, the Army will sponsor a full and open competition for a new carbine. This competition may provide a possible replacement for the current M4 Carbine. Simultaneously, to meet immediate needs, the Army will improve the durability and reliability of the M4 Carbine

through an upgrade program. The Army is also working to improve its suite of sniper rifles. Presently, the Army has both 7.62 and .50 Caliber sniper systems. The 7.62 sniper system was recently modernized with the fielding of the M110 Semiautomatic Sniper System (SASS). The M110 SASS is replacing the bolt-action M24 Sniper Rifle. The other sniper rifle in the Army inventory is the M107 .50 Caliber Sniper Rifle. The M107 is employed primarily in an anti-materiel role. Recent operations in Iraq and Afghanistan highlighted the need for a Precision Sniper Rifle (PSR) optimized for engaging personnel targets at ranges of at least 1,500 meters. The Army plans to develop a PSR to fill an emerging capability gap between the employment ranges of the current 7.62 and .50 Caliber sniper rifles.

In the near-term, the Army will field the Mounted Soldier System (MSS) enhancing the capabilities of the Soldiers in HBCTs. The MSS provides combat vehicle crewmembers and platform commanders with increased mission effectiveness in the areas of C2, SA, communications, force protection, survivability, mobility, and sustainability. The MSS cordless communications system with eye piece display provides combat crewmen uninterrupted viewing of their immediate surroundings while remaining connected to onboard platform C4ISR capabilities, providing continuous SA and communications whether in or out of the vehicle.

In 2012, SaaS achieves the goal of bringing the Soldier into the network by the fielding of GSS Incr. 1 as part of a Capability Package including spin-out capabilities modernizing selected BCTs in accordance with ARFORGEN. This allows Soldiers in the network to access the capabilities provided by the spin-out technologies. The GSS Incr. 1 also achieves its first preplanned product improvement incorporating the JTRS radio for increased interoperability, allowing for Voice, Data, and Video Communications.

In FY14 and beyond, the Army continues to field GSS Incr. 1 and MSS to the BCTs enhancing the capabilities of the Soldier. The GSS will undergo increment 2 improvements allowing for full integration into the future force BC Network. The SaaS systems architecture by design integrates other pieces of Soldier equipment as they are added to the force. As technologies evolve, other systems will be enabled with digital technologies to increase Soldier lethality and survivability. Future plans have the potential for digital upgrading of the individual Soldier weapons sight and sensors so they operate within the GSS framework. Systems such as the Digital Enhanced Night Vision Goggle could allow complete real-time SA and information sharing among integrated networked Soldiers within the BCT. This will allow Soldiers and leaders unparalleled freedom of operation at night and tap into an overlay information from the digital network onto their immediate field of view.



Soldiers train constantly so they'll be ready when they go into combat. The Army's modernization program ensures our Soldiers continue to be the best equipped, most lethal, and agile force in the world.

As the Army moves forward into the future, the Soldier continues as the Army's center of gravity. The SaaS provides a systematic, fully integrated approach to Soldier modernization. The modular system architecture of SaaS allows for individual Soldier mission tailoring increasing Soldier lethality, survivability, mobility, sustainability, and Sa while reducing Soldier load and decreasing Soldier power requirements. The Army's modernization program ensures our Soldiers continue to be the best equipped, most lethal, and agile force in the world.

For additional information, see the Weapon Systems section in the 2010 Army Weapons System Handbook at: https://www.alt.army.mil/portal/page/portal/oasaalt/documents/AWSH_2010_Book-web.pdf.

Section 6: Mobility Systems

Modular units are organized, manned, equipped, and trained to provide combat engineering capability, general engineering capability, and geospatial engineering across the full-spectrum of military operations.

Discussion of Key Mobility Materiel Programs

Engineer Construction Programs There is an enduring critical need for earth-moving systems that are capable of providing mobility, survivability, and counter mobility support across the entire range of military operations. The modernized engineer force consists of modular Family of Vehicles (FOV) such as Dozers, Loaders, Graders, Scrapers, and Excavators. The Army will sectionalize these vehicles for external air transport by a CH-47 helicopter or air droppable by C130 aircraft when required, and configured to accept an armor package. Fielded to the Army's BCT and Engineer units at echelons above brigade, engineer systems support repairing and filling craters on airfields, clearing and repairing drainage ditches, lifting debris, loading aggregate required for construction or repair, digging trenches for culverts, and rapid repair of existing roads.



A Buffalo Mine Protected Clearance Vehicle provides a blast resistant platform to protect Soldiers and their equipment during mine clearing operations.

Route Clearance and Area Clearance Vehicles
Route Clearance Vehicles consist of a family of mine-protected vehicles employed by combat engineers in route clearance operations. The three vehicles include the Buffalo Mine Protected Clearance Vehicle (MPCV), the Husky Vehicle Mounted Mine Detector (VMMD), and the Panther Medium Mine Protected Vehicle (MMPV).

These systems are located in route clearance squads with the MMPV serving as a C2 vehicle and providing local security to the squad. The VMMD is employed to detect and mark the mine or IED hazard so that the MPCV can investigate/interrogate the suspicious item with its articulating arm. All three vehicles provide the crew protection from explosive blasts and small-arms fire, and each is designed for rapid repair after an explosive incident. Current operations in theater are performed with similar COTS vehicles.



The unmanned MV-4 Mini Flail is designed to clear various types of terrain containing anti-personnel mines.

Area Clearance Vehicles consist of a family of mine-protected vehicles employed by combat engineers in area clearance operations. The two main vehicles are the Medium Flail and the MV-4 Mini-Flail. The Medium Flail neutralizes antipersonnel and antitank mines by destroying or detonating them with its rotating flail head. The Medium Flail neutralizes antitank and

antipersonnel mines in large areas and is designed to survive multiple antipersonnel and antitank mine blasts. The MV-4 Mini-Flail, a mobile, unmanned, tele-operated flail system, neutralizes antipersonnel mines by destroying or detonating them with its rotating flail head. The MV-4 can be tele-operated from within a blast protected MMPV or from a safe dismounted location. It neutralizes antipersonnel mines in small areas and footpaths.

Operations in Afghanistan and Iraq continue to inform and shape the Army's modernization strategy in Clearance Systems. Theater feedback has validated the designs and led to enhancements, which include modifications for the deployment of Counter IED robots remotely from the MMPV to improve crew protection; ground penetrating radar for the Husky (an objective capability); the Vehicle Optics Sensor System to detect explosive hazards in all weather and lighting conditions; and the Self Protected Adaptive Roller Kit Counter IED roller.

Military Bridging The military bridging program continues to modernize the Army's tactical and assault bridging systems. Highlights of the tactical bridging modernization program include procurement of the Improved Ribbon Bridge (IRB) and the Dry Support Bridge (DSB) for Multi-role Bridge Companies (MRBC). The IRB provides a dependable roadway or raft capable of crossing assault vehicles or tactical vehicles over non-fordable wet gaps up to military load classification (MLC) of 100 tons for wheeled vehicles and MLC 80 tons for tracked vehicles. The IRB fielding began in FY00 and fields to 26 MRBCs by FY13.

The DSB is a modular bridge that can span a 40m gap and can be emplaced in 90 minutes by eight Soldiers. One bridge set provides either a 40m or two 20m bridges. The Army Procurement Objective is 92 systems. Fielding began FY03 and will be complete in FY15.

The Joint Assault Bridge (JAB) replaces the Armored Vehicle Launched Bridge system in Army combat engineer Mobility Augmentation Companies to provide a rapid gap crossing capability to HBCTs. The JAB provides a MLC 70-ton bridge over wet or dry gap obstacles of up to 60 feet (18.29 meters). Production of the JAB began in FY07 with operational testing in FY09. The Army's First Unit Equipped is planned for FY15.

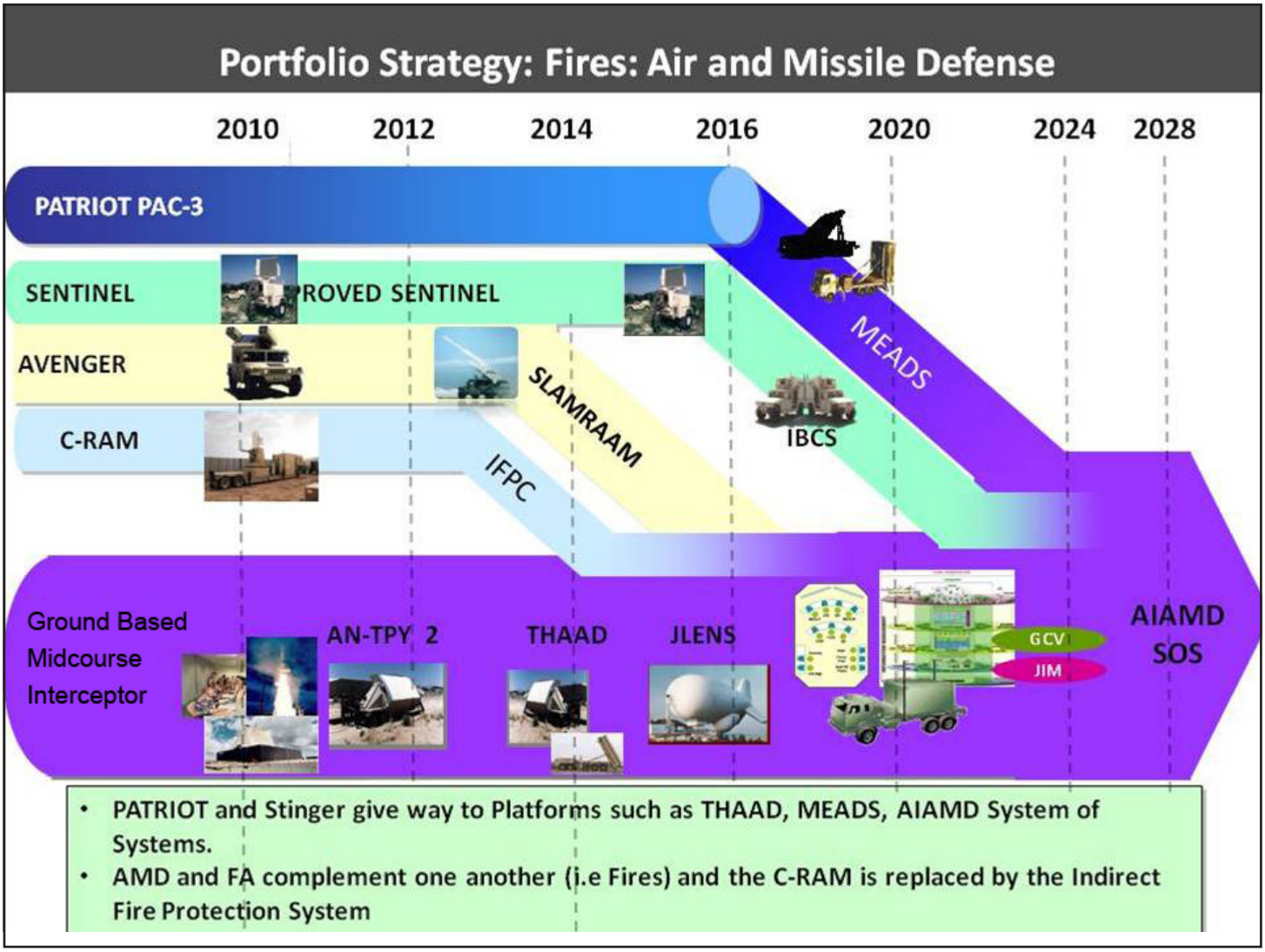
Networked Munitions The U.S. Landmine Policy directive, released in February 2004, mandates that non-self destruct anti-personnel and anti-vehicle landmines cannot be used after 2010. The policy directs the Department of Defense to develop alternatives to these prohibited non-self destruct anti-personnel and anti-tank landmines. The Department of Defense intends to meet the policy through the development of two new Networked Munition systems to replace persistent anti-personnel and anti-vehicle landmines. The Spider Networked Munition system provides an anti-personnel capability and the Scorpion Networked Munition System provides an anti-vehicular capability. With the elimination of persistent land mines, Spider and Scorpion will be the primary systems available to shape the battlefield for the future force and will allow commanders to turn, fix, disrupt or block enemy forces and to reinforce fires in engagement areas. Networked Munitions, integrated into complex obstacles protect battle positions, reinforce final protective fires, and allow the commander to protect flanks or perform economy of force missions. Sensors, target identification, turn on-off capabilities, and Man-In-The-Loop activation allows safe passage of lines and mitigates humanitarian concerns to local populations.

For additional information, see the Weapon Systems section in the 2010 Army Weapons System Handbook at: https://www.alt.army.mil/portal/page/portal/oasaalt/documents/AWSH_2010_Book-web.pdf.

Section 7: Fires

Fires incorporate both Air and Missile Defense and Precision Indirect Fires.

Air and Missile Defense



Air and Missile Defense (AMD) Modernization Overview

The AMD modernization strategy is based on the complex and changing operational environment where an increasing number of ballistic and cruise missiles, manned and unmanned aerial systems, rockets, artillery, and mortars are potential threats for use against the homeland and from inside and outside the Joint force commander's AOR.

PATRIOT The Patriot System is a combat proven weapon designed to counter, defeat, or destroy TBM, aerodynamic missiles, aircraft, and UAS as part of an integrated family of weapons. Patriot currently provides critical TBM defense and deterrence within the Pacific

Command and Central Command (CENTCOM) AORs. Patriot will complete its Pure Fleet initiative during FY10, ensuring all Patriot units have the most current capability. The Patriot employs the "hit to kill" PAC-3 missile and, will ultimately incorporate the Missile Segment Enhancement missile, capitalizing on new capability and further increasing the engagement zone to achieve a higher probability of kill for protection of the U.S. warfighter and critical assets.

Medium Extended Air Defense System (MEADS) The MEADS will provide joint and coalition forces critical assets and defended areas protection against multiple and simultaneous attacks by tactical ballistic missiles, cruise missiles, and other air-breathing threats. The MEADS battery, which will be scalable and tailorable to operational requirements, will consist of a Battle Management Command, Control, Communication, Computers and Intelligence tactical operations center, a lightweight launcher capable of transporting and launching up to eight missiles; a reloader; the MSE missile; and an ultra-high frequency Surveillance Radar. The MEADS Initial Operational Capability is planned for FY18.



The Medium Extended Air Defense System will provide low- to medium-altitude air and missile defense.

SENTINEL The Sentinel Radar accomplishes its primary mission by providing key target data to weapon systems and battlefield commanders via Forward Area Air Defense (FAAD) C2 data link or directly from the Sentinel using radio links. The Improved Sentinel upgraded with Enhanced Track Acquisition and Range Classification (ETRAC) began fielding in FY06, providing improved operations in a joint environment to detect smaller cross section targets at longer ranges and is critical for airspace SA/situation understanding, de-confliction, and advanced threat early warning. The ultimate program objective is to progress to one configuration of the Improved Sentinel which includes the ETRAC and Mode5 Identification Friend or Foe capabilities by FY14.

Surface Launched Advanced Medium-Range Air-to-Air Missile (SLAMRAAM) The SLAMRAAM is a mobile, deployable FMTV launch platform consisting of launch pods, launcher electronics, and C4 components. It fires the Tri-Service AIM-120 Advanced Medium-Range Air-to-Air Missile (AMRAAM) and provides Non-Line of Sight overmatch capability against advanced cruise missiles, UAS, rotary wing, and fixed wing aircraft. In the mid-to-long term, Avenger batteries for the active component (AC) and reserve component (RC) will be replaced with SLAMRAAM, extending battle space dominance by providing four-times the engagement range of Stinger and Stinger-based platforms. The SLAMRAAM provides proactive protection for BCT maneuver forces and other critical theater assets not later than FY14.

Counter Rockets, Artillery, and Mortars (C-RAM) The C-RAM is a fielded Force Protection System of Systems (SoS) capability, produced in response to an ONS to provide sense, warn, and intercept capabilities against indirect fire/rocket threats and to facilitate responses to these types of attacks. Key SoS components of C-RAM include the Sentinel Radar, Fire Finder Radar System (Q-36), and Lightweight Counter Mortar Radar (LCMR), as well as enhanced Tactical Automated Security System, a collection of various types of sensors and cameras. The FAAD C2 systems



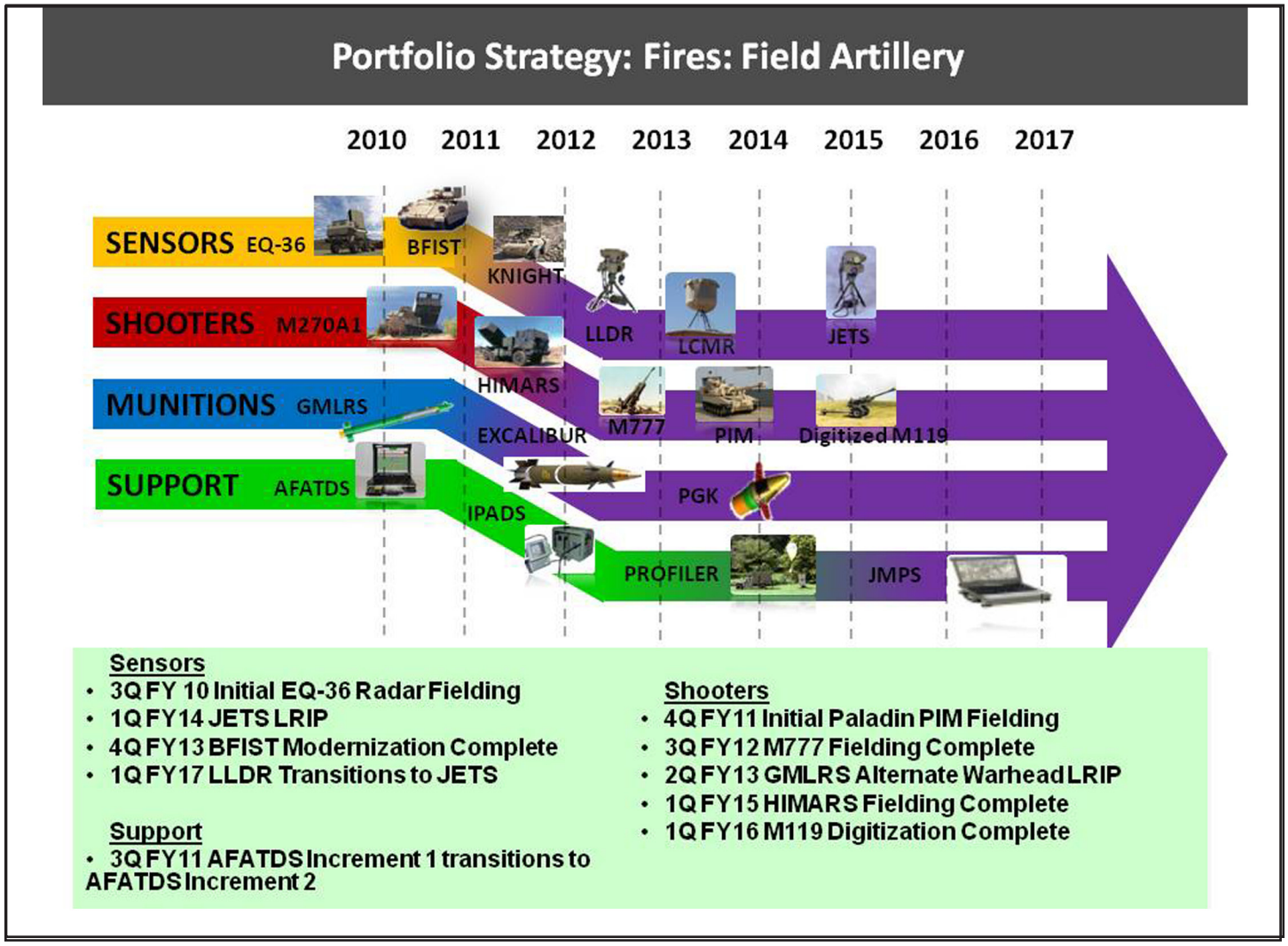
The THAAD provides the upper tier defense capability and, with Patriot, provides a robust and very effective multi-layered missile defense of critical assets.

integrate sensors, weapons, and warning systems for C-RAM. The C-RAM has Indirect Fire Protection Capability (IFPC) as an enduring requirement transitioning into the force incrementally, providing for continued sustainment of the currently deployed C-RAM systems. The initial increment is based on the IFPC Increment #1 Warn Capabilities Production Document and characterizes a Warn capability fielded to BCTs utilizing, for the most part, existing programs of record.

Terminal High Altitude Air Defense The THAAD, designated by Army leadership as a "clearly transformational" system, is designed to defend against short- and medium-range ballistic missiles both inside and outside the atmosphere. The THAAD batteries will be assigned to ADA Brigades, or aligned with the Army AMD Commands. The THAAD provides the upper tier defense capability and, with Patriot, provides a robust and very effective multi-layered ballistic missile defense of critical assets.

Army Integrated Air and Missile Defense (AIAMD) The Army and Joint approval of the AIAMD SoS capability signifies a paradigm shift in the means of achieving Joint Integrated Air and Missile Defense (IAMD). The AIAMD SoS exploits the full combat potential of all current and future AMD sensors and shooters through the establishment of an integrated fire control network, component plug and fight kits, and a common battle command capability that allows the warfighter rapidly to tailor, scale, and adapt the AMD force to defeat the full range of aerial threats across full-spectrum operations. The AIAMD SoS capability is scheduled to achieve initial operating capability in FY16. Initial fielding is planned to AMD Composite battalions, then to pure SLAMRAAM battalions and JLENS batteries with the goal of fielding to THAAD and MEADS not earlier than FY18.

Field Artillery



Precision Strike Essential Modernization Capabilities

Precision Strike is moving rapidly to achieve 21st Century Fire Support modernization. The immediate and long-term goals for Precision Strike are to continue the development of capable sensor systems that provide 360-degree coverage, and longer range distances for Rocket, Missile, and Cannon Munitions, to provide timely precision strike on the target, and reduced collateral damage.

Paladin Integrated Management (PIM) The M109A6 (Paladin) 155 millimeter howitzer is the most technologically advanced self-propelled cannon system in the Army. It provides primary artillery support for HBCTs and non-divisional heavy fires battalions. The PIM is the Army's fire support modernization effort for Paladins and their Field Artillery Ammunition Supply Vehicle platforms through the integration of Bradley and the Ground Combat Vehicle. Delivery of Low Rate Initial Production (LRIP) PIM sets begin in the third quarter of FY15, and will continue beyond FY17. The PIM Full Rate Production (FRP) decision is scheduled for the second quarter of FY17.

High Mobility Artillery Rocket System (HIMARS) The HIMARS will complete Army wide fielding in 2013. The HIMARS provides Joint early entry forces, special



EQ-36 Counter Fire Radar is designed to locate the firing positions of both rocket and mortar launchers.

operations forces, and BCTs with an indirect fire launch platform that provides long-range fires to a depth of 300 kilometers.

M777A2 The M777A2 Lightweight 155 millimeter Howitzer will complete Army-wide fielding in FY11. The M777A2 provides the Army with an advanced, towed, lightweight howitzer with self-firing capability and enhanced accuracy and autonomous emplacement, and the ability to fire the 155 millimeter Excalibur precision guided munition.

Counterfire Radars The Enhanced AN/TPQ-36 (EQ-36) Counter fire radar fielding begins in the 3d quarter FY10 with 12 systems for deployed forces. Full rate production begins in FY 13, and the EQ-36 will replace both the AN/TPQ-36 and AN/TPQ-37 radars. The LCMR AN/TPQ-50 is a lighter system that mitigates coverage gaps and compliments the current AN/TPQ-36 and 37 Fire finder Radars and the new Enhanced Q-36 Counter fire Radar.

M1200 KNIGHT The M1200 KNIGHT will complete Army-wide fielding in 2013. The M1200 KNIGHT is built on the Armored Security Vehicle chassis, which retains the essential mobility required for operations, while providing increased force protection.

Lightweight Laser Designator Rangefinder (LLDR) The LLDR completes Army-wide fielding in 2014. The LLDR provides a man-portable capability to laser designate for precision munitions. Beginning FY14, LLDR resources will shift to the Joint Effects Targeting System (JETS). Procurement and distribution of JETS is a Joint venture among the U.S. Army, U.S. Air Force, and the U.S. Marine Corps.

Guided Multiple Launch Rocket System (GMLRS) The GMLRS is composed of two currently fielded rocket variants; Unitary (Precision Strike) and Dual Purpose Improved Conventional Munitions (DPICM, cluster munitions). The GMLRS is the Army's primary guided rockets, system. The GMLRS Unitary has been utilized extensively in OIF/OEF and continues to provide 24/7 all weather field artillery support in theater with over 1,500 rockets fired as of January 2010. A new GMLRS rocket, the Alternative Warhead, is currently being developed as a materiel replacement to the DPICM warhead to meet the Secretary of Defense Cluster Munitions Policy, dated 19 June 2008. The Alternative Warhead is currently undergoing competitive development in preparation for the Milestone B review expected the fourth quarter of FY11.



The M1200 Armored Knight is designed to provide precision strike capability by locating and designating targets for both laser-guided and conventional munitions.

EXCALIBUR The EXCALIBUR cannon munitions began fielding in 2007, providing precision-guided, extended range 155 millimeter artillery projectiles that reduce collateral damage.

The Advanced Field Artillery Tactical Data System (AFATDS) The AFATDS pairs targets to weapons, and provides automated fires C2 and acts as the Fire Support node of ABCS providing fires solutions and fire support management tools. The AFATDS Increment 2 replaces AFATDS Increment 1 in 2011, a Joint C2 system that has been in the field since 1996. The AFATDS Increment 2 is a web-based, net-centric application with open modular software architecture and a decentralized processing approach.

PROFILER The Meteorological Measuring Set–Profiler (MMS-P) AN/TMQ-52 will complete Army-wide fielding in 2011, providing a meteorological capability for over a 60-kilometer battle space with potential to extend coverage to 500 kilometers of battle space. The MMS-P Block II fielding to all components and organizations will be complete no later than FY15.

Improved Position and Azimuth Determining System (IPADS) The IPADS will complete Army-wide fielding in 2010. The IPADS supports modernization of the Army's Field Artillery survey capabilities for all BCTs and Fires Brigades. It provides precision position location and directional data that is more accurate than that which is available from the Global Positioning System (GPS).

For additional information, see the Weapon Systems section in the 2010 Army Weapons System Handbook at: https://www.alt.army.mil/portal/page/portal/oasaalt/documents/AWSH_2010_Book-web.pdf.

Section 8: Intelligence



US Soldiers engage in the most basic form of Battlespace Awareness: personal observation.

Today's warfighter operates in complex security environments that are global in nature and characterized by both full-spectrum combat and asymmetric threats from nation-states and non-aligned terrorist networks.

Battlespace Awareness (BA) brings situational knowledge that commanders at all levels use to plan, C2, and conduct operations through the integration of ground, air, and human intelligence capabilities in an era of persistent conflict. This environment requires modern, enhanced capabilities in the hands of Army operators and analysts to collect, process, analyze, and disseminate actionable intelligence to Soldiers and decision makers at all levels at the right time for decisive results.

The Army aims to stay ahead of the threat by keeping pace with today's rapidly changing technologies. To maintain the edge in BA, the Army must design ISR systems with capabilities to integrate evolving techologies quickly and enhance Find, Fix, Finish, Exploit, Analyze, and Disseminate (F3EAD) capabilities. Military Intelligence (MI) is implementing lessons learned from OEF, OIF, and other Overseas Contingency Operations into the Army's ongoing modular design transition that shifts the Warfighting focus from Division level to BCT and below levels.

This shifting of emphasis creates a significant increase in demand for tactical intelligence elements. The Army is accelerating the development and fielding of "flat" network Distributed Common Ground System–Army (DCGS-A) capabilities down to Battalion and Company level, enhancing SIGINT capabilities with improved Prophet systems and SIGINT tool kits, expanding the Human Intelligence (HUMINT) force and capabilities, and revising its aerial ISR strategy to deliver a versatile mix of capabilities to the Soldier to meet this demand.

These on-going initiatives have resulted in major changes in the way Army intelligence operates, trains, and sustains combat readiness. This effort integrates advanced fusion, modern analytical tools, and rapid dissemination capabilities into battle command and operations processes at BCT, Battalion, and Company levels. It also adapts how the Army equips and trains units and Soldiers, shares information, and grows leaders. The modernization plan improves individual Soldier reasoning skills to enhance the capabilities necessary to generate actionable intelligence at the lowest levels of unit organization and is fully synchronized with the 2010 ACP.

Army BA is modernizing along two main lines of operation, DCGS-A and Aerial ISR, with supporting programs that combine to maximize ISR support to full-spectrum operations and hybrid warfare. The Army is programming holistic ISR support through complementary and reinforcing capabilities along the foundational, terrestrial, aerial, and space layers to capture, process, and deliver critical information and intelligence that empowers and drives Army operations. The ISR system modernization builds an enterprise of distributed networks and capability that will maximize Army flexibility to deliver a versatile mix of tailorable ISR to the warfighter across the full-spectrum of operations. These systems and capabilities include:

• DCGS-A which provides ISR integration, fusion, analysis, dissemination, and management of sensor information;

• Aerial ISR manned/unmanned aircraft revised strategy that provides real-time multi-sensor intelligence collection and processing packages on a variety of platforms;

• Aerial ISR system payloads that provide reconnaissance, surveillance, and target acquisition (RSTA) capabilities;

• Prophet Ground SIGINT which is an integral part of the SIGINT enterprise and provides near-real time ground based tactical SIGINT;

• Counterintelligence Human Intelligence Automated Reporting and Collection System (CHARCS) offers automated support for reporting, source and mission management, Document and Media Exploitation, biometrics, and interrogation management tools;

• Biometrics tactical collection devices that collect, store, and match fingerprints and iris scans;

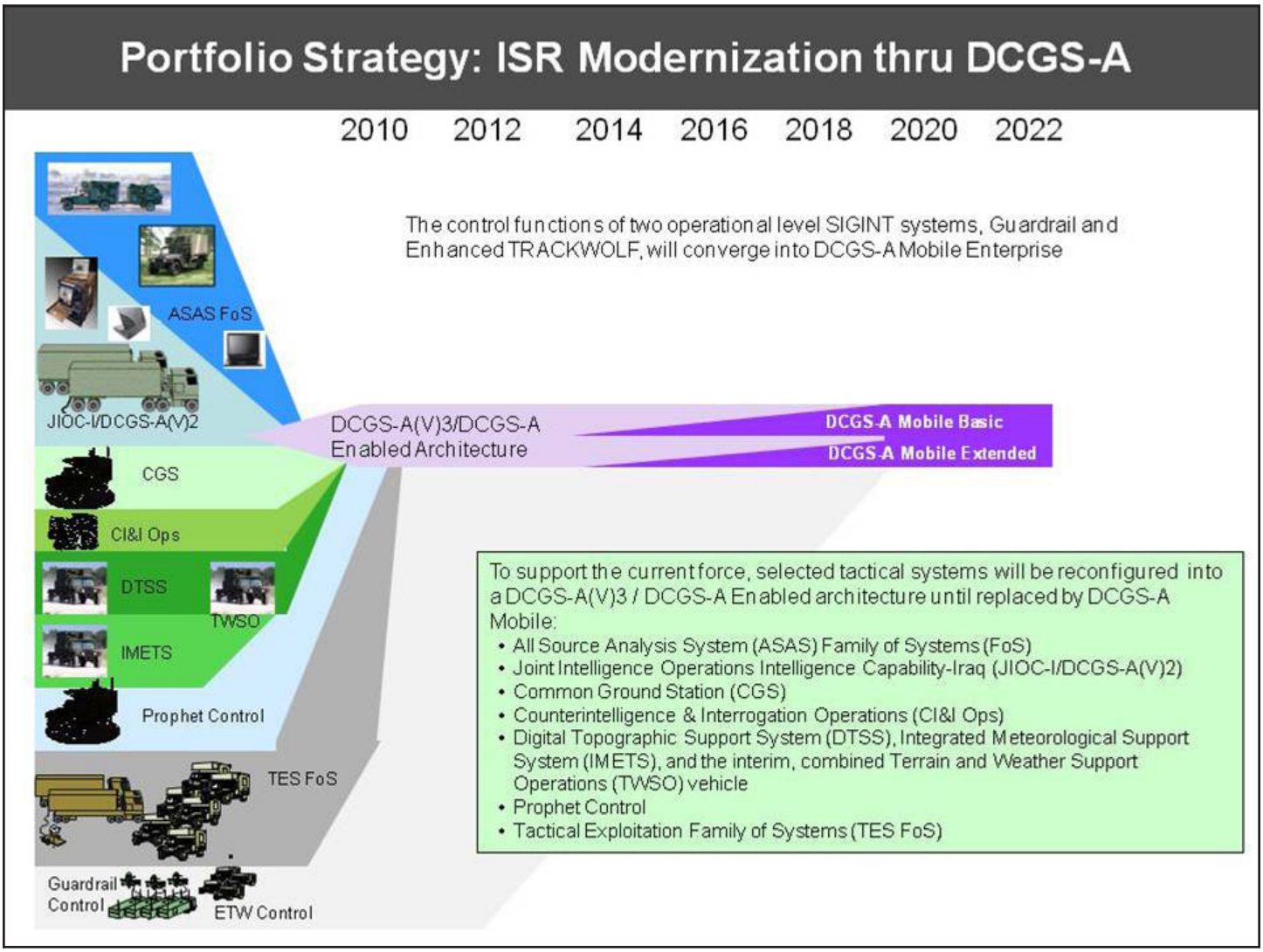
• TROJAN Special Purpose Integrated Remote Intelligence Terminal (SPIRIT) provides Top Secret/ Sensitive Compartmented Information (TS/SCI) satellite network communications from BCT through Echelon Above Corps (EAC); and

• MFLTS provides critical language translation services by enabling non-linguists with two-way automated speech and text communications capabilities on demand.

The DCGS-A and Aerial ISR programs are implementing a major system convergence plan and are cornerstones to Army ISR modernization strategy.



The MQ-1C Extended Range Multipurpose Unmanned Arial System provides airborne ISR for our Soldiers on the ground.



Distributed Common Ground System-Army

The DCGS-A is the Army's component of the Department of Defense DCGS program and is the Army's foundation for the Core Analytic Enterprise (CAE) and Core Processing, Exploitation, and Dissemination (C-PED) Enterprise that delivers combat information and intelligence to Warfighters at all levels. The modernization effort will enable the Army to reduce and consolidate 16 legacy systems with unique software baselines to 6 modernized systems and 4 baselines by FY17. The DCGS-A core functions are ISR processing, integration, fusion, analysis of sensor information and direction, and distribution of sensor information. It draws information from a wide variety of automated and manual sources, space platforms, manned, unmanned, and unattended air and ground sensors, existing and new ISR capabilities and an assortment of tactical, Joint, coalition, theater, and National databases at both Secret and TS/SCI security levels. Units deploying to OEF and OIF are being trained on and equipped with DCGS-A Enabled All Source Analysis System FoS equipment with DCGS-A(V)3.1 software. In FY10 and FY11, the Army will add DCGS-A enabled configurations of the Common Ground Station, Digital Topographic Support System, Guardrail Ground Baseline, and Tactical Exploitation System to this base capability.

Also in FY10, the Army will establish the initial operating capability of a tactical cloud computing architecture

in Afghanistan to provide deployed units the storage, advanced analytic capability, and computing power to exploit the expanded National, Joint, and tactical OEF ISR sensor architecture being emplaced in theater. The Office of the Secretary of Defense has designated development of the DCGS-A mobile capability a pre-Major Acquisition Information System program, and the Army anticipates it will be designated an Acquisition Category # 1 information management program in FY10. DCGS-A mobile increment 1 will be the mobile basic configuration designed for the BCT. Increment 2 consists of the mobile extended configurations to support all other Army units.

PROPHET

In conjunction with modernization in DCGS-A, the Army is modernizing Prophet to keep pace with technology and provide an integrated solution for delivering ground-based tactical SIGINT/Electronic Warfare into the CAE and C-PED enterprises. Prophet provides the BCT and the MI Battalion of the Battlefield Surveillance Brigade an all-weather, 24/7 capability that improves BA using electronic support sensors to detect, collect, identify, and locate selected emitters.

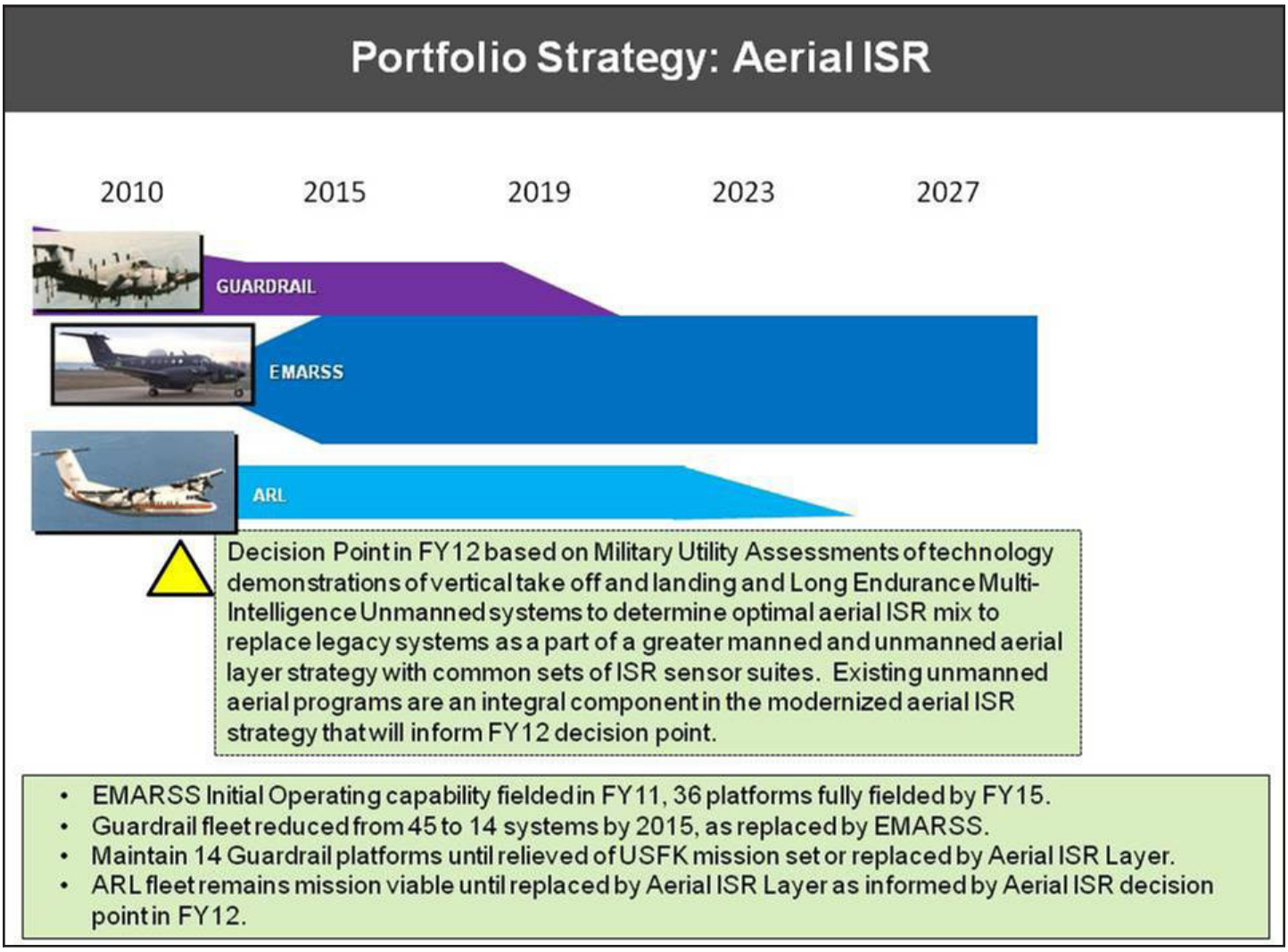
Prophet Enhanced advances the development and fielding of an open, modern architecture that enables speeding incremental capability into the program to keep pace with modern technology. In FY13, the Prophet Control will begin transition to become a component of DCGS-A. Prophet Enhanced Preplanned Product Improvements and technology insertions will continue to provide enhanced SIGINT capabilities to maintain relevancy in an ever-changing threat environment.

Counterintelligence Human Intelligence Automated Reporting and Collection System

CHARCS is a software centric information management system specifically designed for Army Counter-intelligence (CI) and HUMINT teams operating in a tactical environment, and elements of this program also converge with DCGS-A to bring a robust CI/HUMINT capability into the enterprise. CHARCS provides Soldiers the capability to collect, process, and disseminate information obtained through investigations, operations, collections, interrogations, debriefing, and document exploitation. The system is accredited for Secret level operation and uses commercial software applications for common tasks while using government developed software for CI/HUMINT specific tasks. CHARCS Increment 1 is fully fielded and Increment 2 Milestone B is scheduled for 2Q FY11. CHARCS is interoperates with DCGS-A.

Trojan Special Purpose Integrated Remote Intelligence Terminal

Trojan SPIRIT Lightweight Integrated Telecommunications Equipment (LITE) provides assured top secret/special compartmentalized Information satellite network communications to deployed warfighters from BCT to EAC. It is a key enabler to DCGS-A and the CAE and C-PED Enterprises by providing assured TS/SCI satellite network communications until the fielding of WIN-T Increment 3. There are three versions of the Trojan SPIRIT LITE: a transit case version used by Special Operations Forces and HMMWV-mounted versions used at the BCT through EAC levels. The program is beyond full-rate production, with last unit equipped currently scheduled in FY13.



Aerial ISR Strategy

To meet deployed commander critical requirements in the near-term and build on successful deployment of multi-intelligence capabilities to OIF/OEF, the Army is revising the Aerial Common Sensor single platform program into a sensor-centric construct with common payloads and architectures distributed over a mix of complementary manned and unmanned platforms. This program will deliver versatile, expeditionary, agile, and scalable aerial ISR support to deployed forces in support of ARFORGEN. The revised program will meet urgent operational requirements by leveraging existing investments in C-12 type multi-intelligence capabilities.

The Army will develop rapidly and deploy the Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) to increase capacity in multi-intelligence airborne support to the BCT as the initial element of this strategy. Follow on elements will assess the military utility of deployed prototypes of vertical takeoff and landing and long endurance hybrid vehicles to inform a decision on the overall optimum platform mix by FY12. Refer to Chapter 3, Section 9 (Aviation) of this publication for additional information on Army UAS programs. The Army's Aerial ISR program ensures a flexible, modular, responsive aerial ISR capability to BCT and below commanders while nested with Joint Aerial ISR Strategy that supports commanders at all levels.

Enhanced Medium Altitude Reconnaissance and Surveillance System

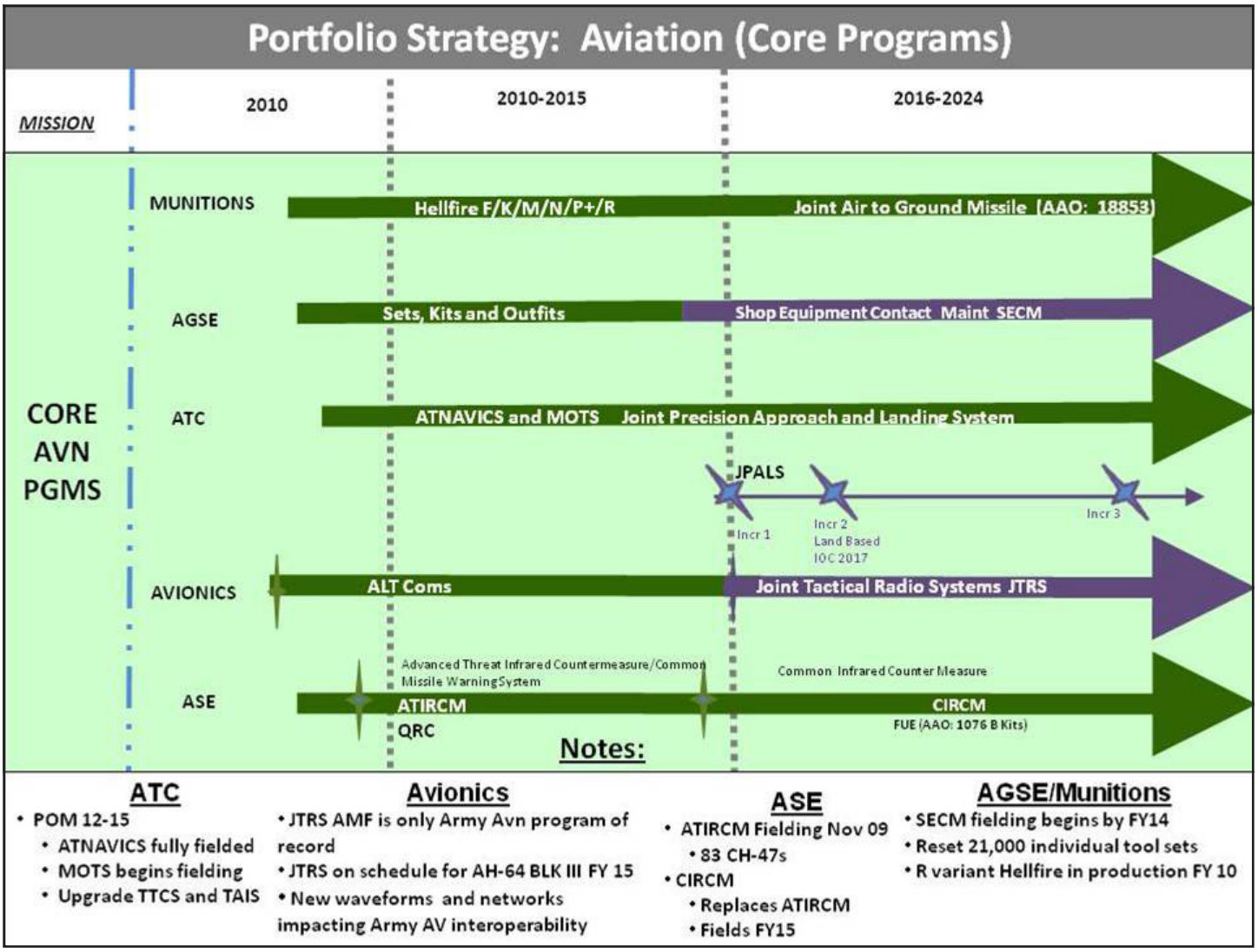
The EMARSS is an airborne RSTA/ISR capability directly supporting BA for tactical commanders. The EMARSS builds on the lessons learned from Aerial Reconnaissance Multi-Sensor and Medium Altitude Reconnaissance and Surveillance Systems successfully operated as part of Task Force Observe, Detect, Identify, and Neutralize (ODIN) in both OIE/OEF. The system combines the critical capabilities outlined in Department of Defense ISR cross cutting studies to provide the BCT commander rapid, assured support to F3EAD operations.

Aerial Intelligence, Surveillance, and Reconnaissance System Payloads

The Army is moving forward as part of the aerial ISR program to modernize ISR system payloads and payload suites. This program develops multiple RSTA sensor payloads for use on tactical manned and unmanned aircraft systems. The program will also take advantage of emerging technologies to provide improved/high definition camera resolution, counter-concealment, detection of dismounted personnel, and capturing emerging signals of interest and precision geolocation. All sensor payloads will complement and enhance the Army's overall aerial ISR layer concept and will evolve to counter the changing tactics and technology of an adaptive enemy.

For additional information, see the ASA(ALT) Weapons System Handbook, located at https://www.alt.army.mil/portal/page/portal/oasaalt/documents/AWSH_2010_Book-web.pdf.

Section 9: Aviation

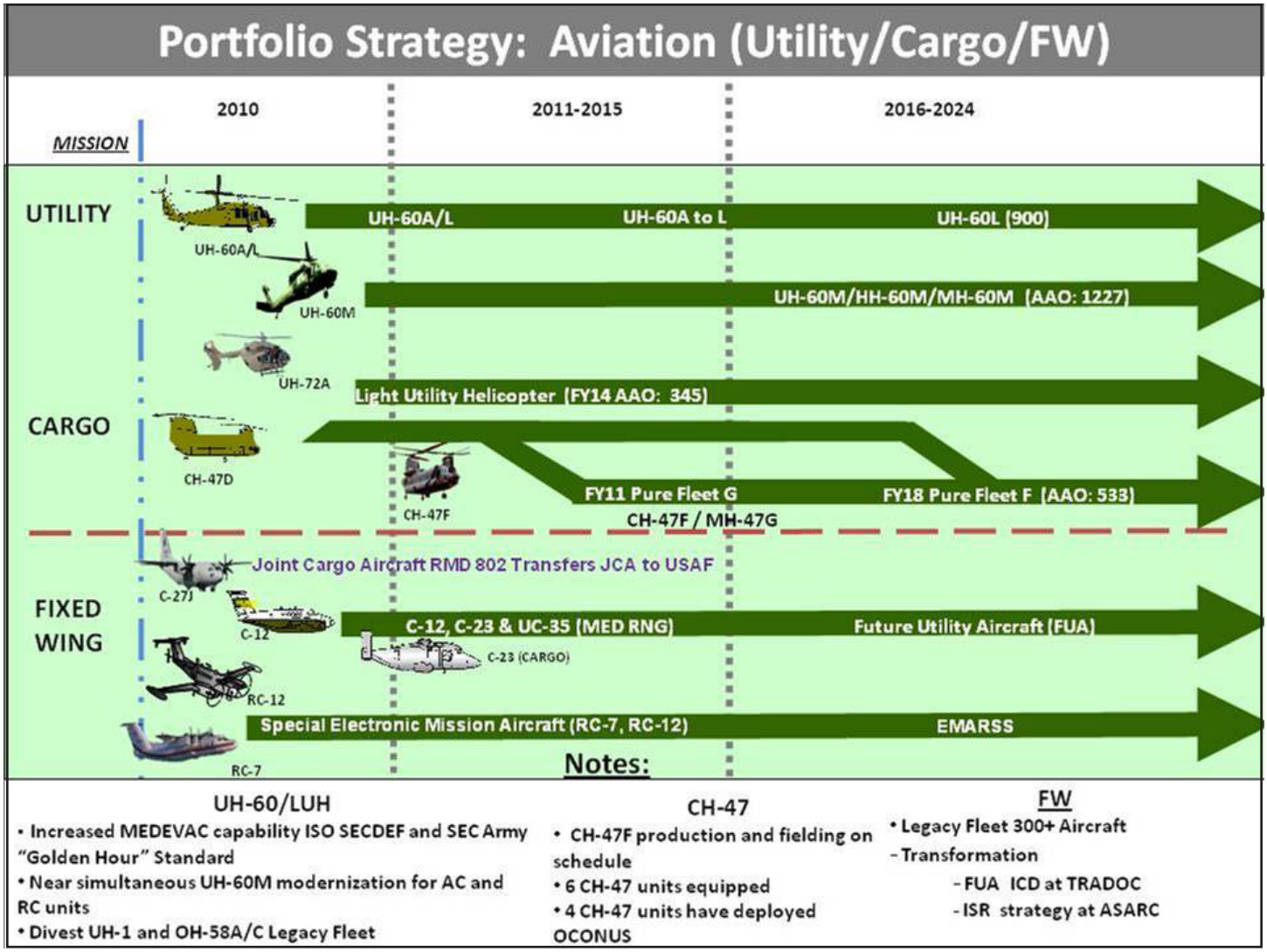


Aviation Overview

Army Aviation continues to transform and modernize to meet current and future full-spectrum aviation requirements. The Aviation Transformation Plan is based on a full Doctrine, Organization, Training, materiel, Leadership and Education-Personnel and Facilities analysis that integrates lessons learned from recent operations in OIF/OEF. The Plan restructures Army Aviation warfighting units into 21 Combat Aviation Brigades (CAB) (13 AC, 8 RC), ensuring aviation units are modular, capable, lethal, tailorable, and sustainable. Additionally, it directs the fielding of a Brigade Aviation Element in every BCT and Fires Brigade. It also converts four Aviation Classification Repair Activity Depots to the Theater Aviation Sustainment Maintenance Group.

The core assets of the CAB include the UH-60 “Blackhawk” (A, L or M models); CH-47 “Chinook” (D or F models); AH-64 “Apache” (A, D, Block II or Block III); and the OH-58D “Kiowa Warrior.” The Aviation community also includes a suite of UAS: **ER/MP (Divisional asset assigned to the CAB), Shadow and Raven (Both organic to BCT).** Each of these systems is required to deploy into theater with support

equipment including communications, navigation, surveillance, survivability, and ground support equipment. Our fleet of fixed wing aircraft (C-20s, C-12s, RC-12s, C-23s, EO-5s, and UC-35s), while not assigned to the CAB, are corps-level assets that are actively engaged in the current warfight.





The Chinook helicopter (seen here is the CH-47F) is the Army's only heavy-lift transport helicopter.

CH-47

The CH-47D and F Chinook are the only heavy-lift transport helicopters in the Army's inventory and are integral in Army's Aviation program for current and future combat operations. A total of 464 CH-47F model aircraft are planned for delivery to the Army over the next 12 years. Of these, 220 will be new builds and the remaining 244 "remanufactured" aircraft. The remanufactured aircraft have 97 items that are recapitalized from retired CH-47Ds. With the exception

of these items, all other components, including airframes, wiring bundles, and hydraulic systems on the remanufactured CH-47Fs are new.

UH-60

With 28 configurations and mission equipment package variants, the UH-60 Black Hawk is the Army's current and future force utility and MEDEVAC helicopter. The UH 60 Fleet is currently composed of 1,821 aircraft and will grow to 2,150 aircraft to support Aviation growth. The UH-60 A to L Recapitalization (RECAP) Program recapitalizes 238 UH-60A ARNG and USAR legacy fleet Black Hawk helicopters from FY10 thru FY15. The UH-60 A to L RECAP program is a complete depot level overhaul, which includes structural enhancement/repair and 100 percent replacement/overhaul of dynamic components. Additionally, the Army is refocusing the Black Hawk modernization program by procuring UH-60M Baseline helicopters versus procuring UH-60M Upgrade helicopters. The Army is pursuing a total procurement of 1,227 M Models (303 HH, 924 UH).



The UH-60-series Black Hawk Helicopter is the Army's Current and Future Force utility and MEDEVAC helicopter.

AH-64

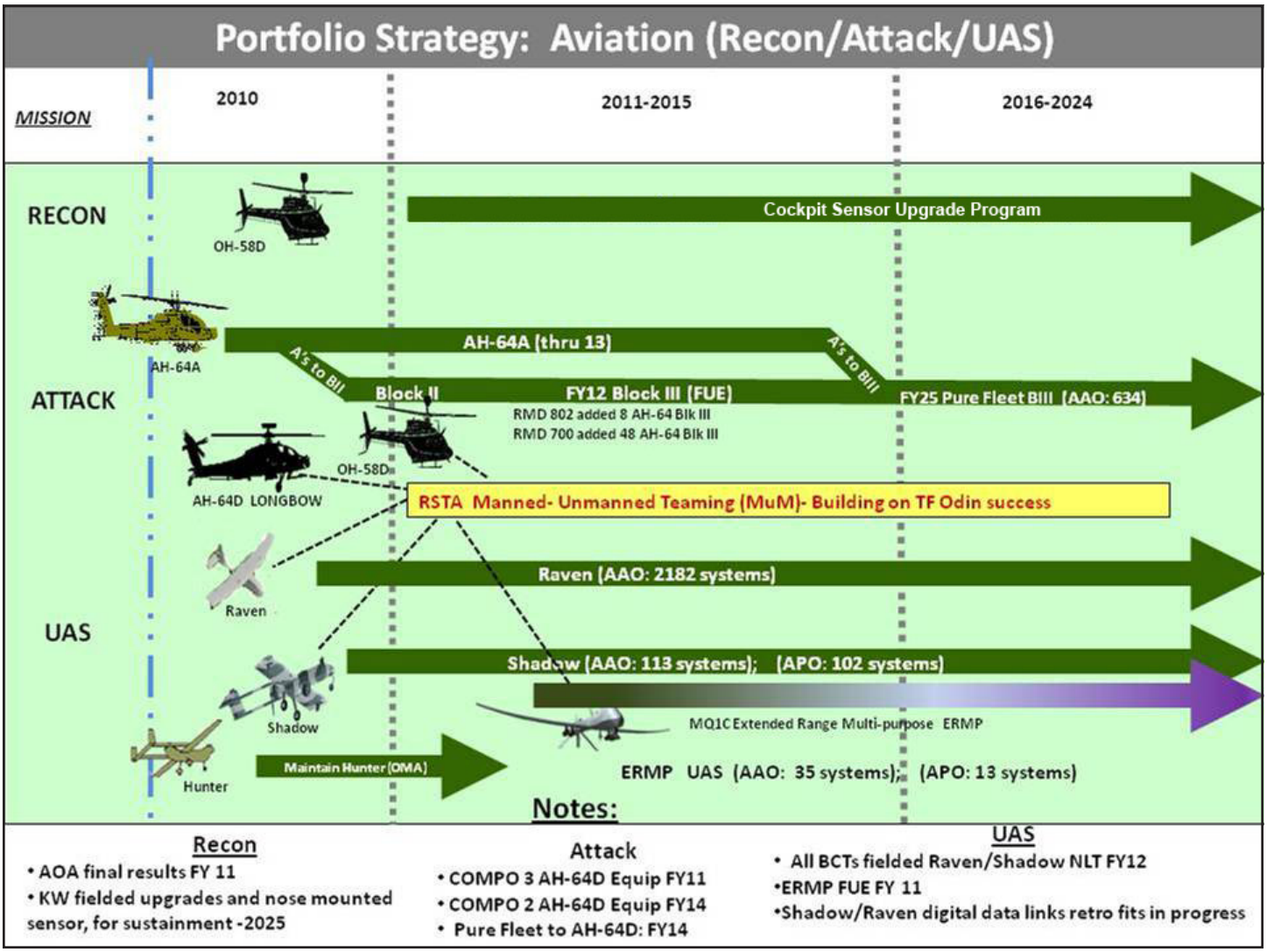
The AH-64 Apache is the Army's heavy attack helicopter for the current and future force assigned to Armed Reconnaissance Battalions (ARBs) and regimental aviation squadrons in both the AC and the RC. The Apache Block III modernization plan is the effort that delivers required operational capabilities ensuring that the AH-64D Longbow aircraft remains a viable combat multiplier beyond 2030. To date the Army has modernized 20 of the 27 AC and RC ARBs with AH-64D Longbows. Modernization of the remaining seven ARBs will be completed by FY17. Every Apache battalion will continue to receive a modernized Longbow crew training device with their aircraft. Fielding of the Modernized Target Acquisition Designation Sight/Pilot Night Vision Sensor will complete in 2011. In addition, the Army has been funded for 64 additional war replacement aircraft with deliveries scheduled through FY12.



The AH-64 Apache is the Army's heavy attack helicopter.

OH-58D

The mission of Kiowa Warrior helicopter is to provide a robust reconnaissance and security capability for the Joint combined arms air-ground maneuver team. The OH-58Ds are engaged in the warfight and unfortunately continue to be lost at a rate of 5-7 aircraft per year. As a result of the cancellation of the planned replacement for the Kiowa Warrior (Armed Reconnaissance Helicopter), the Kiowa Warrior fleet will receive replacement aircraft for combat losses as well as receive significant upgrades to address weight reduction initiatives and technology obsolescence. Production of replacement OH-58D helicopters began in FY10 and the first helicopter is scheduled to be received by the beginning of the second quarter of FY12. Current plans include the production of 32 replacement helicopters to get the fleet back up to its 368 aircraft requirement.



Unmanned Aerial Systems

The Army's UAS program consists of four separate aerial systems: Raven B Small Unmanned Aircraft System (SUAS), Shadow Tactical unmanned Aerial System (TUAS), ER/MP UAS, and the Class I UAS. The Class I UAS is discussed in Chapter 2.

The Raven SUAS is a small man portable UAS and is fielded at battalion level and below. The Raven is currently in full rate production and being used in operations in OIF and OEF. As of November 2009, over 1,300 systems have been fielded. The Army intends to procure and field 2,182 Raven systems by 2015.

The TUAS Shadow 200 provides the Army Brigade Commander with dedicated RSTA, Intelligence, Battle Damage Assessment, and Force Protection. The Shadow fleet is composed of 73 systems as of 30 November 2009. The Army intends to procure and field at least 102 TUAS Shadow systems through FY13. The Shadow tactical common data link retrofit effort will be applied to at least 48 Shadow systems. This retrofit implements the congressionally-mandated Standardized Agreement 4586 capability and provides a secure data link.



The Tactical Unmanned Aerial System Shadow 200 provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition; Intelligence, Battle Damage Assessment and Force Protection.



The Extended-Range Multi-Purpose UAS provides the Division Commander a real-time responsive capability to conduct long-dwell, wide area reconnaissance, surveillance, target acquisition, communications relay, and attack missions.

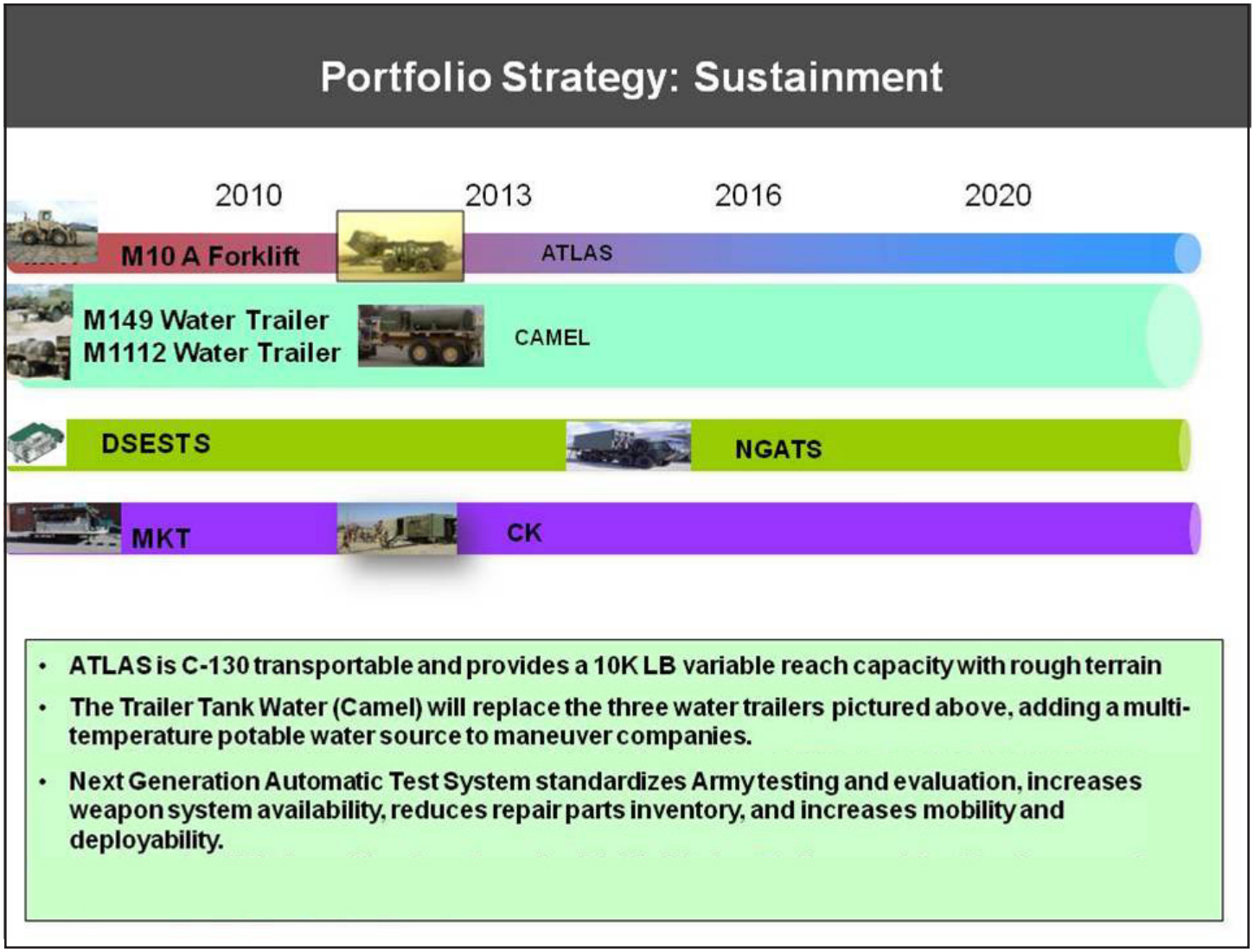
The ER/MP UAS provides the Division Commander a real-time responsive capability to conduct long-dwell, wide area reconnaissance, surveillance, target acquisition, communications relay, and attack missions (up to four Hellfire missiles). The ER/MP will be fielded as a system (Company) to each AC Division Headquarters (10) and each Company will reside with each associated AC Combat Aviation Brigade, providing a capability that is responsive to supported units based on the Division Commander's priorities. The ER/MP program successfully completed its Milestone C decision in February 2010. The first unit will be fielded in 2011, and will deploy in 2013. There is currently one QRC platoon (made up of four pre-production aircraft and two ground combat systems) deployed to OIF. A second QRC platoon will deploy in 2010. There are two airspace SA and C2 systems that are critical for increasing the safe use of unmanned aerial aircraft in the national airspace systems.

Fixed Wing

The Army fixed wing program currently consists of 298 aircraft performing 3 distinct missions: reconnaissance, utility (passenger movement), and cargo. The reconnaissance mission relies on the Special Electronic Mission Aircraft (SEMA) fleet of RC-12s and Airborne Reconnaissance Low EO-5s. The Utility and Cargo fleet consist of C12s, C-26s, UC-35s, C-37s, C-20s, and C-23s. Both the Fixed Wing Utility/Cargo fleet and the SEMA program are currently undergoing extensive reviews by the Army and Office of the Secretary of Defense. As part of this review, the Army rewrote the Fixed Wing Initial Capabilities Document and expects to conduct and Analysis of Alternatives in the fourth quarter of FY10 to evaluate potential materiel solutions to inform the path forward for its Utility fleet supporting passenger and light cargo deliver requirements. The SEMA fleet is also currently under review with the focus on finding a replacement aircraft for its RC-12 fleet, building a EMARSS capability, as well as addressing the aerial common sensor requirement.

For additional information, see the Weapon Systems section in the 2010 Army Weapons System Handbook at: https://www.alt.army.mil/portal/page/portal/oasaalt/documents/AWSH_2010_Book-web.pdf.

Section 10: Focused Logistics



Sustainment

Army Sustainment modernization is focused on capabilities that enhance the performance of campaign-quality modular brigades. The Army sustainment structure provides a capability that leverages emerging technology, links supporting to supported organizations, and interconnects the Army to Joint organizations. Planned modernization initiatives will result in the ability to build and maintain combat power rapidly, support strategic and operational reach, and enable Army forces with endurance for sustained operations. The chart above shows just a portion of recent modernization efforts in sustainment equipment. As the Army progresses to a modernized expeditionary force, Soldiers will encounter many austere environments. The following eight systems will enable Soldiers to accomplish better combat service support in those places.

The All Terrain Lifter, Army System (ATLAS) represents modernization of material handling. This focus area includes all container/material handling equipment (MHE) required to support the deployment of unit equipment and the distribution of sustainment items. The Army is moving away from EAB heavy bulk

distribution as the sole provider of supplies and down to company level materiel handling for faster, more responsive maneuverability to enhance the Soldier. The primary tactical MHE includes the Rough Terrain Container Handler (RTCH) and the ATLAS. The RTCH is the primary capability for handling 20- and 40-foot-long containers weighing up to 53,000 pounds. The RTCH is deployable by air, operates on all types of terrain, and is capable of stacking containers up to three high. The ATLAS has a 10,000-pound capacity, is capable of handling fully loaded 463L Air Force pallets, has a variable reach boom for removing items from 20-foot containers, and is capable of deploying by air. Sustainment of the force requires handling up to 500 containers of sustainment pallets per day. The maneuver sustain distribution system relies on MHE to load and unload ammunition, supplies, and equipment; and transfer cargo between watercraft, ground vehicles, and aircraft.

The Camel will displace outmoded and outdated water trailers. The modern Camel brings greater water capacity with the ability to heat and cool its contents, as well as twice the available water distribution points than legacy systems. Under the SBCT concept, the Camel will provide a maneuver company operating in a temperate environment two or more days of supply of water at a minimum sustaining consumption rate. It will have provisions for at least six retail-dispensing points, and be fully capable of stand-alone operation.

Aerial delivery options are critical to sustaining highly dispersed, remotely operating units with IED threatened or non-existent ground lines of communication. The Joint Precision Airdrop System (JPADS) is a high altitude, high glide, standoff capable airdrop system with significantly increased accuracy to a planned ground location. Available in 2 thousand pounds and 10 thousand pounds weight capability, both systems use an Autonomous Guidance Unit and GPS technology to navigate throughout descent. The Army is making Improvements to add even greater accuracy, terrain avoidance, and lower the cost. At the other end of the complexity spectrum is the Low Cost Low Altitude (LCLA) airdrop system being employed in current operations to support remote security posts. The pre-packed LCLA is disposable, with no recovery required. Dropped from altitudes of about 150-feet, the LCLA is very accurate.

With the Modular Fuel System (MFS), Soldiers will have one primary system for storing and issuing fuel in selected units at division level and below. The MFS will provide mobile fuel storage capability for the SBCT with an expected FY11 initial fielding timeline. The baseline for the MFS program calls for procuring 1 MFS for each of the 7 current SBCTs and 204 additional Tank Rack Modules (TRM) to equip additional BCTs. The modules are components of the system, but they can be independent of the primary system. The Combined Armed Services Command (CASCOM) TWV Study has proposed to add TRMs to the other BCTs to provide a reduction in the overall number of TWVs in the Army. Currently, the CASCOM study proposes a requirement to purchase two additional MFS for the two new SBCTs as well as 2,170 additional TRMs.

The Next Generation of Automatic Testing Systems (NGATS) is a mobile, rapid deployable, general purpose, reconfigurable test system directly engineered to support testing and screening of Army weapon systems to maintain their readiness to shoot, move, and communicate. By the time the system is fully fielded in FY14 and beyond, NGATS will be 100 percent compatible for use with all Test Program Sets currently employed by Army off-platform automatic test equipment. It will have full sustainment level diagnostic maintenance capability on the full-spectrum of current and future Army weapon systems. The NGATS improves the Army's ability to equip units with the most modern and capable systems to ensure the force is able to protect itself, fight at night, sustain itself in combat, and provide the most lethal capabilities available to the Soldier.

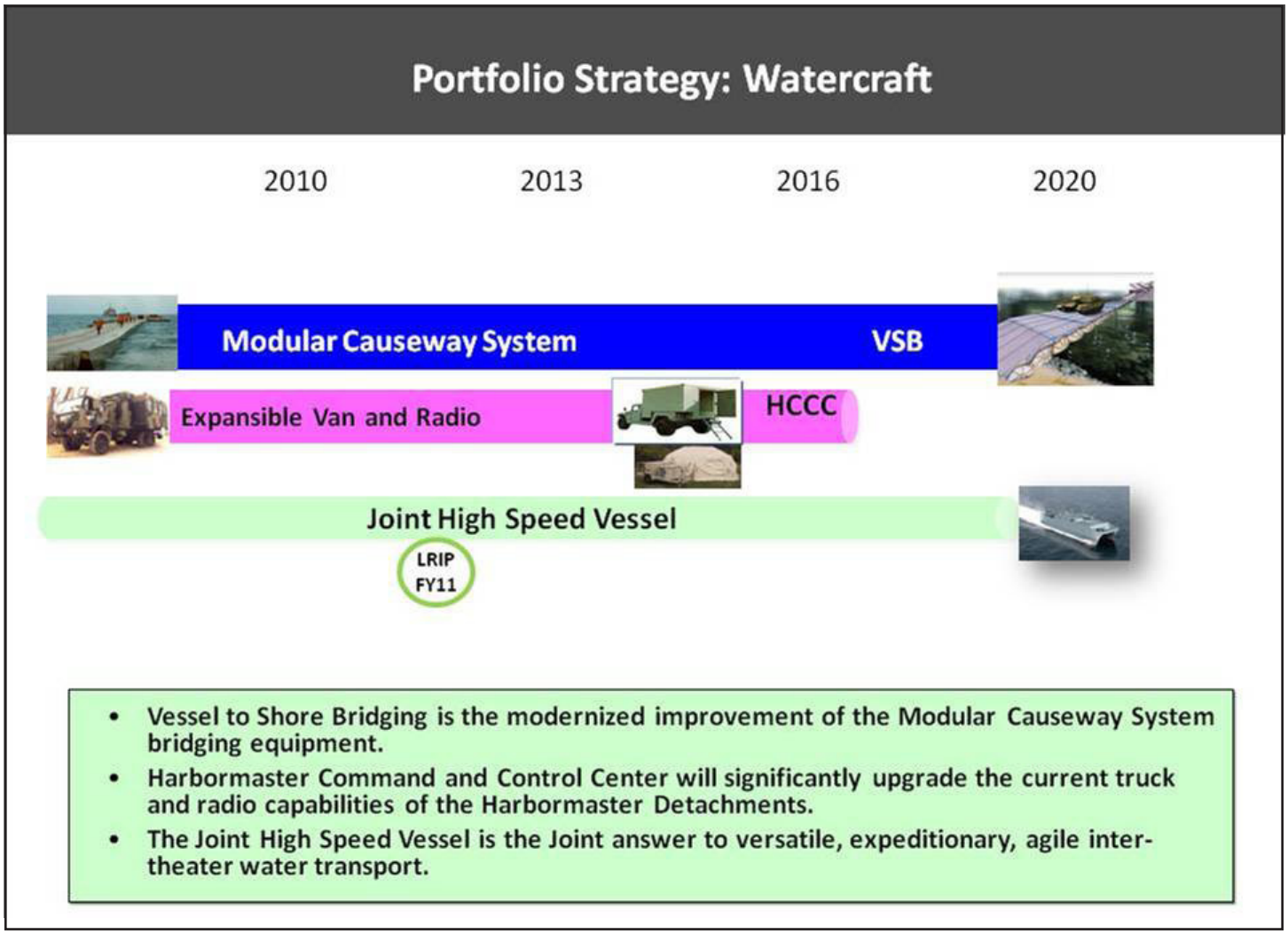
The Force Provider, the Army's premier base camp life support capability, is evolving to a more deployable, tailorable capability, with its conversion to the Force Provider Expeditionary configuration. The use of expandable Triple Container-based systems and air beam supported tents has significantly reduced setup time while reducing the transportation footprint. Based on a modular building block approach, the standard 600-person configuration can be tailored up or down in 150-person capability packages. The core 150-person capability can be deployed on a single C-17. Additional capabilities that are being pursued to meet identified warfighter requirements and reduce the overall sustainment footprint include Grey Water Recycling, Water Bottling, Ice Making, Solid Waste Disposal/Waste to Energy Conversion, Black Water Waste Disposal, and Modular Ballistic Protection.

The Assault Kitchen (AK) improves the field feeding capability in maneuver BCTs by providing a heat-on-the-move capability allowing re-thermalization of the Unitized Group Ration—Heat and Serve as well as providing a limited A-ration preparation capability.

The Multi-Temperature Refrigerated Container System is a 20x8x8, refrigerated International Standards Orginization container capable of storing both frozen and chilled rations simultaneously. Used in conjunction with a flat rack, the MTRCS supports up to 800 personnel with 3 days of operational rations.

The Department of Defense is committed to ensuring that all of the Country's fallen be handled with the utmost dignity, reverence, and respect, and that all remains are returned to their loved ones in the best possible condition. The Mobile Integrated Remains Collection System (MIRCS) is a completely self-contained, mobile, rapidly deployable, flexible remains recovery system, which enables Mortuary Affairs (MA) units to process, initially identify, and store human remains in support of the full range of military and peacetime disaster support operations. Other MA modernization efforts include the capability to preserve human remains on the move using active refrigeration, the means to submit fatality reports electronically, and the capability to decontaminate sufficiently human remains or transport contaminated human remains to facilities so they can be decontaminated.

The Army will continue to modernize sustainment equipment as advances are made to the equipment and materiel that it supports. Current systems require high levels of service support due to the extensive wartime wear and tear. As a result, sustainment equipment programs are ramping up development and procurement to ensure an exceptional support structure. The introduction of ATLAS, MFS, Camel, JPADS, AK, MTRCS, MIRCS, and NGATS has begun to close the technology gap between supported and supporting equipment. Further, these systems have created efficiencies by reducing man hours required to fulfill Support missions and reducing the size of the Army's logistical footprint.



Army Watercraft

This convergence chart represents Army's modernization program that is occurring in FY10-17 to achieve and maintain the minimum operational capabilities needed through 2024: to field the Joint High Speed Vessel (JHSV), Harbormaster Command and Control Center (HCCC), and Vessel-to-Shore Bridging (VSB). The JHSV and the HCCC are critical capabilities that fill significant gaps in closing, maneuvering, providing battle space awareness, and interoperability with Joint and Modular Forces. The VSB capabilities are a key enabler for the JHSV and current fleet vessels in meeting assured access requirements. The future force requires an Army watercraft fleet that possesses a range of lift capabilities. The JHSV helps to close capability gaps in operational and tactical maneuver, but the Army will continue to require the heavy sustainment lift provided by the Logistics Support Vessel (LSV) and Landing Craft Utility-2000 (LCU) fleets.



The increased speed and maneuverability of the Joint High Speed Vessel will facilitate delivery of Soldiers and their equipment.

Our plan is to maintain existing LSVs and LCUs, and focus our resources on making upgrades to C2 information systems; communications and computer systems; ISR systems; and force protection capabilities. These upgrades are currently in progress.

The essential qualities of Army Watercraft are designed support BCTs through expeditionary contributions to Joint inter/intra theater mobility and sustainment. The Army watercraft fleet currently consists of 119 vessels. The fleet is an interoperable capability though its contributions to Joint Logistics over the Shore with the Navy. Such operations vitally link forward forces with a steady supply of cargo and material. Watercraft assets couple versatility with agility to sustain the fight against the enemy. Vessels deliver munitions, wheeled and track vehicles, unit equipment, sustainment, and Soldiers deeper into the fight.



Watercraft assets are capable of delivering essential equipment such as this M1 Abrams tank and Soldiers deeper into the fight.

The self-sustainable watercraft fleet's ability to deliver lethal assets to commanders distinguishes the Army niche capability from other components, which must rely upon other assets or agencies. Overall, Army watercraft vessels deliver offensive, defensive, and sustainment capabilities, as well as possess Soldier force protection measures, such as M2 .50 caliber machine guns. These mobile platforms bring together synergistic efforts to face symmetric and asymmetric threats throughout the world.

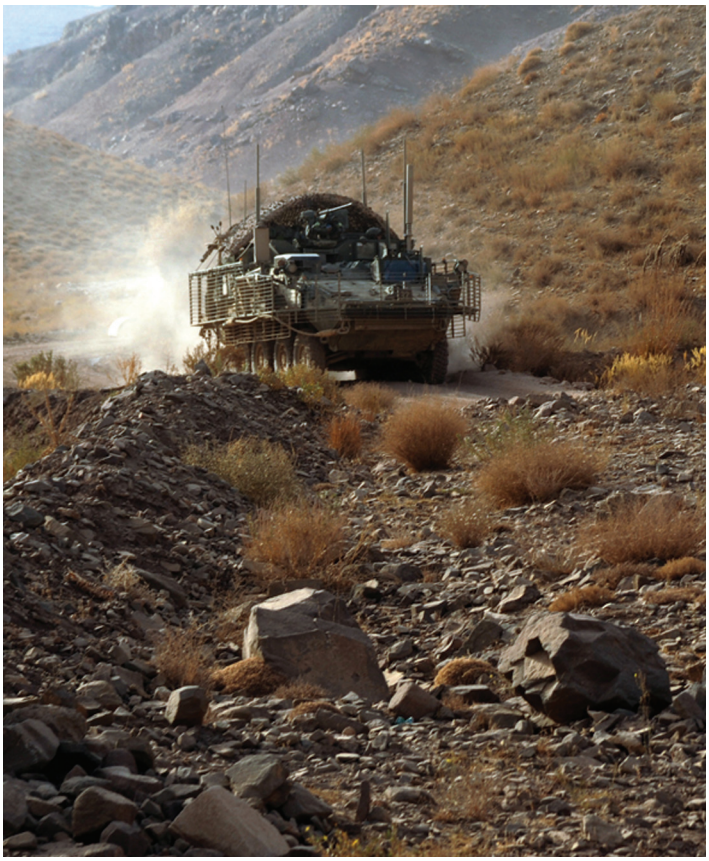
The Watercraft fleet will be in a better position to support BCTs and Joint Forces with the added VSB capability, by FY14 and beyond. The VSB will further enable JHSVs and other vessels to approach even closer to littoral areas.

Additionally, VSB will meet future force lift and access requirements by filling a capability gap to resupply deployed future BCT and Joint Forces rapidly. Future force operational concepts dictate that these platforms need a bridging technology that enables them to access any entry point, even bare-beach environments. The new VSB technology will enhance watercraft's ability to conduct self-supporting operations in an austere operational environment. Investing in VSB will enhance fort to port sustainment for the future force.

The watercraft modernization will leverage fully the BCT and Joint commanders' capabilities at their disposal, optimizing their COAs, while mitigating inherent limitations as they support the total force. The Army will continue to transform existing watercraft capabilities and maximize the values of versatility, agility, force protection, and sustainment. The complex environment in which we operate necessitates continual efforts to upgrade maritime capability throughout the Joint Theater. The Army's ultimate objective for watercraft modernization and system development is to provide BCTs and Joint forces a versatile, agile, sustainable, and protected watercraft fleet.

In conclusion, the watercraft modernization program is consistent with the Army's Transformation goals of building required capabilities today, to enhance Army and Joint operations, while developing the capabilities essential to sustaining dominant land-power capabilities of the future force.

For additional information, see the Weapon Systems section in the 2010 Army Weapons System Handbook at: https://www.alt.army.mil/portal/page/portal/oasaalt/documents/AWSH_2010_Book-web.pdf.



Transforming an Army at war requires a balance between enhancing the capabilities of the current force, while investing in our future force, so our Army will win the wars of tomorrow.

Summary

Today's strategic environment of persistent conflict requires the Army to modernize our capabilities continuously and aggressively to stay ahead of our adversaries. The goal of Army Modernization is to develop and field an affordable mix of the best equipment available to allow Soldiers and units to succeed in both today's and tomorrow's full-spectrum military operations.

The Army uses three means to modernize continuously:

Procure upgraded existing equipment such as the Paladin Integrated Management to provide new or enhanced capabilities to meet operational requirements.

Recapitalize existing equipment like the HMMWV to restore it to like new conditions with zero miles/zero hours.

Divest equipment with limited ability to adapt to new requirements at a reasonable cost such as the Land Mobile Radio.

As part of our modernization program, the Army is also:

• Validating and implementing affordable portfolio strategies for selected fleets of equipment. Approved Portfolio Strategies will provide a long-term plan for the management of fleets and resources to achieve Army goals and objectives over time.

• Developing processes to make fleet sustainment decisions routinely based on cost-benefit analyses. The Army is reviewing existing and developing new processes to review the status of fleet equipment, define and analyze COAs, cost the COAs, and conduct a cost-benefit analysis for review and approval by senior leaders.

• Capitalizing on technology-based initiatives. Operational, technical, and acquisition SMEs review technology-based initiatives to ensure those with the greatest potential benefit to the Army are funded.

• Adopting a comprehensive investment strategy for modernization within the realities of a constrained fiscal environment.

Transforming an Army at war requires a careful balance between enhancing the capabilities of the current force and sustaining existing equipment to win the war today—while investing in new capabilities that our future force will need to win our Nation's wars tomorrow. There will never be enough resources to accomplish 100 percent of what we desire of Army modernization. This represents risk Army leaders are mitigating through a variety of means to balance the Ends, Ways, and Means.

CHAPTER FOUR
LINE OF EFFORT 3: FIELD AND DISTRIBUTE CAPABILITIES IN ACCORDANCE WITH ARMY PRIORITIES AND ARMY FORCE GENERATION MODEL

Introduction

The Army's must be fully prepared to operate in the full-spectrum of operations. Our objective is to meet force requirements continuously in the current operational environment by fielding and distributing capabilities in accordance with Army priorities and the ARFORGEN Model.

The Army's equipping demands are influenced by a variety of factors. Nine years of war and our current operating environment forces us to think differently about equipping for full-spectrum operations. The Army has developed an equipping strategy to meet the variable equipping needs of a force being managed under cyclic readiness. Army Modernization is enabled by this new Equipping Strategy, whose basic principle is to equip to mission requirements: as a unit moves through the ARFORGEN cycle—Reset, Train/Ready, and Available—its mission changes, as do equipment requirements that must be managed to ensure units have the right types and amounts at the right times.

Fundamental to this effort is ensuring an understanding of the state of Army equipment readiness and take measures to improve, restore balance, and rapidly field and distribute equipment Soldiers need today and in the future. The major AMS objectives for this line of effort are the following:

Establish ARFORGEN as a Key Metric for Modernization Decisions. The Army will establish the ARFORGEN Model, examining the requirements for forces most likely to be needed quickly, as a key metric to view our modernization requirements. The Army will develop Capability Packages/Capability Sets and field these to units during their Train/Ready phase of ARFORGEN. While the goal remains to ensure our units deploy with the most modern, capable equipment; it is also imperative we field them with these capabilities at the proper time within the ARFORGEN cycle to allow adequate time to train with the new equipment and to minimize training distractions to the units.

Update the 2009 Army Equipping Strategy using Lessons Learned, Input from the Field, and Changes to the Strategic and Fiscal Landscapes. The Army Equipping Strategy discusses how the Army will field and provide capability to forces moving through a cyclical readiness model. The Army's Equipping Strategy is a living document that will change to meet the current situation. It will be adapted and updated as necessary. The changes will be informed by inputs from various sources, i.e., Army Equipping Enterprise and Reuse Conferences (AEERC), lessons learned about the efficacy of the strategy, and changes in force structure, missions, budgets, etc. Here are two examples of how the strategy will have to adapt: First, the Army's Equipping Strategy will adapt to the predicted reduction in future demand for deployed forces and the corresponding increase in demand for equipment to conduct full-spectrum operations training. Secondly, the Army will also need to address in the Equipping Strategy the integration of, what is currently, non-standard equipment such as MRAPs.

Establish Theater Provided Equipment in Afghanistan. As strategic and operational conditions change, the Army continuously monitors TPE requirements and adjusts to meet the needs of commanders. For example, some TPE from Iraq will be moved to Afghanistan to support the President's decision to deploy additional forces to OEF. Additionally, the Army is establishing stable sets of TPE in Afghanistan. The Army's intent is to provide deployed forces with the best available equipment while at the same time reducing the transportation of unit equipment to and from Afghanistan.

Equip for Full-Spectrum Operations. Units will be equipped to an ARFORGEN-based full-spectrum operations equipping requirement. As a unit enters RESET, it will hold and maintain a Baseline Unit Equipping Set. This set is less than the full full-spectrum operations requirement. The Baseline Set supports individual and lower echelon collective training. During the Train/Ready phase, the baseline set, through the

increasing scale of collective training, is supplemented with additional equipment to meet the training requirement. Upon completion of the Train/Ready phase and entry into the ARFORGEN Available Pool, unit equipping for deploying units will again be tailored based on the unit and the plans, if any, for the unit to be equipped in theater or from other portions of the Strategic Pool. Non-deploying units will be equipped to a posture suitable to their mission or installation-level training requirements.

Refine the Army Prepositioned Stocks 2015 Strategy. The APS remains a critical element of the Army Power Projection Program and supports operations and contingencies worldwide. The relevance of APS to an expeditionary Army at war continues to be demonstrated by continuing support to OEF and OIF. The APS remains relevant through the Army's continued commitment to ensuring APS equipment modernization stays on pace with Army units. Units that draw APS will be issued the best equipment available to use in combat.

Conduct Responsible Drawdown/Reset. The Army has instituted a Responsible Drawdown program for its equipment deployed in Iraq. As equipment is deemed no longer mission essential in Iraq, it is redistributed to other Army requirements. As part of the redistribution process, the equipment is reset to ensure it is restored to a desired level of combat capability commensurate with future missions. Equipment that can be rapidly reset, may stay deployed to fill other assigned CENTCOM requirements. Much of the equipment is greatly worn after multiple years deployed at a high operational usage rate. This equipment is redeployed to the U.S. where it is reset prior to being reissued to Soldiers, based on Army priorities.



A Stryker is transported to theater to provide mobility and lethality for America's Soldiers.

Improve the Synchronization of Documentation versus Resources. The command plan must focus on documented MTOEs using the ARFORGEN model. The Army Command Plan informs the Army Master Force (M-Force). The M-Force adjusts the force for the following FY, establishes force structure two years out, and aligns force structure requirements and authorizations—both military and civilian—with budget data and decisions. The M-Force also provides manpower, personnel and equipment requirements.

The Army Equipping Strategy as a Distribution Model and Subset of Modernization

The Army's equipping goal is to obtain equipping balance by ensuring that Soldiers always have the equipment they need to execute their assigned mission as they progress through ARFORGEN model. The Army's Equipping Strategy is an affordable equipping solution that ensures Soldiers have the right equipment amounts, types, and level of modernization to meet mission requirements, whether in combat, training for combat, operating as part of the generating force, or conducting Homeland Defense and Defense Support to Civil Authority (HLD/DSCA) missions. The strategy balances growing requirements and fiscal constraints across all areas within a cyclical readiness model to provide trained and ready units to Combatant Commanders. It is a logical, systematic way to manage equipment shortages.

The amounts and types of equipment Soldiers receive increase as they progress through the ARFORGEN process. The strategy includes equipping goals linked to each phase of the ARFORGEN cycle. These goals are



A U.S. Army MRAP leads a convoy on a resupply mission in Afghanistan. The Army's equipping goal is to obtain equipping balance by ensuring that Soldiers always have the equipment they need to execute their assigned mission as they progress through the ARFORGEN model.

achievable by 2011 for most equipment commodities. They represent aggregate goals. The specific allocation of resources against these goals will continue to reflect current Army priorities, as reflected in the Army Resourcing Priority List (ARPL). As equipping realities change, these goals will be re-addressed and equipping guidance updated. Units in RESET returning from deployment should not expect any specific equipping level except for ARNG, where the Army goal is to fill Critical Dual-Use (CDU) equipment to a minimum of 80 percent. As they transition to the Train/Ready Pool the goal is to receive at least 80 percent of their MTOE equipment. By the time units move to the Available Force Pool, the goal is to have at least 90 percent of their MTOE equipment and 100 percent of their Pacing items. Additionally, theater-specific equipment will be provided as their assigned mission dictates.

This strategy seeks to guarantee that available units receive fully capable and modernized equipment and that older, obsolete, or inoperable equipment is replaced or repaired. The strategy applies equally to both AC and RC. However, throughout the ARFORGEN cycle the goal will be to ensure ARNG units will be equipped adequately to meet their obligations in support of HLD/DSCA by maintaining CDU at a minimum of 80 percent.

High priority units that do not rotate through an ARFORGEN cycle (e.g., theater committed forces, Army Service Component Command Headquarters, Army Special Operations Forces, and other units) will be filled to an aggregate minimum of 90 percent of MTOE authorization and 100 percent for pacing items.

The Army deliberately chose to accept risk in equipping TRADOC, installations, and other TDA activities in the Generating Force to a lesser level than the operating force. Initially, the goal is to ensure a minimum of 65 percent fill, based on mission, against all authorizations. In most cases, the level of fill will be much higher. This strategy results in both quantitative and qualitative risks that must be mitigated by the Generating Force.

The Army Equipment on Hand Campaign Plan

The Army has been consuming readiness as quickly as it is built. Our Army's future readiness requires that we continue to modernize equipment to sustain an expeditionary and campaign capable force for the rest of this century. Building enduring readiness is measured by the Army's ability to continue to improve the utility of equipping goals and guidance over time to better understand how varying levels and types of equipment affect Army readiness in all phases of ARFORGEN. This enables the Army to bring resources and requirements into better synchronization with cyclic equipping readiness requirements.

A number of collective factors have combined to reduce equipment and supplies on hand/available, known as S-levels in AR 220-1, Unit Status Reporting (USR). These factors include but are not limited to: Line Item Number (LIN) shortages, Army modular transformation, increased equipment requirements of TPE sets, Pre-Deployment Training Equipment sets, the need for and duration of equipment in Reset and strategic transportation, resources consumed by the ongoing and persistent conflict, and changes in the manner in which we document equipment and report readiness. Collectively, these factors are referred to as "friction."

The Army Equipment on Hand Readiness Campaign Plan describes how the Army will strive to make valid gains in unit equipment and supplies on Hand/Available (S-level) and improves the accuracy of the S-level measured area as described in AR 220-1. The S-level measured area provides a common means for leaders to judge whether Army units are equipped to deploy and conduct their core and assigned missions. External audiences use S-level and the other measured areas to evaluate the efficacy of allocated funding to generate combat ready forces. Therefore, a deliberate and orchestrated effort to improve and sustain unit S-levels is appropriate.

The campaign plan describes how we will examine existing policy, analyze equipment shortfalls, and direct focused action to increase the S-levels of Army units. We will collectively take justifiable actions that correct legitimate shortages leading to improved S-levels. Underlying all of this effort is the tenet that the Army considers the USR to be a non-negotiable statement by the commander of his unit's equipment on hand readiness.

Improving Readiness through ARFORGEN



U.S. Army Soldiers attach cargo to the bottom of a Chinook Helicopter in preparation for transport from a Forward Operating Base in Southern Afghanistan

The equipping strategy enables cyclic readiness. Much of what is needed to build enduring readiness is new information as the Army continues to understand ARFORGEN. The Army has performed essential, creative, and effective work to develop new ways of dealing with equipping challenges brought on by the current strategic environment.

The Army must continue to scrutinize new and existing requirements. Affordability and risk are critical as the Army looks to move through balance and into enduring readiness, while fielding new equipment and continuing to reset and upgrade. The Army will reexamine its concepts and introduce new more affordable capabilities. We will tailor and adapt capability packages to units designated within the ARFORGEN cycle. This will limit our procurements to technologies that demonstrate maturity and make more frequent follow-on "buy decisions" which give the opportunity to insert technology and more readily adapt to threats.

Theater Provided Equipment

The TPE strategy saves time and money by not shipping similar equipment to and from theater. This is the Army's TPE pool, providing theater commanders with flexible response options and additional on-hand resources in theater. The TPE decreases direct and indirect costs for repeat transportation of rotational force equipment, reduces convoy exposure time to move equipment into and out of areas of operations, and increases equipment longevity at home by decreasing downtime associated with transporting and resetting equipment.

The TPE consists of items that have been deployed to and left behind in theater to support ongoing operations. As units finish their deployment, TPE is transferred to the incoming unit or placed in a centrally managed equipment pool, repaired, and reissued to other units upon their arrival in the area of operations. There are currently more than 9,000 types of equipment in TPE, including 3.8 million individual items. Much of this equipment is the Army's most modern and is critical

to Soldiers deployed in harm's way. The TPE consists of items such as anti-IED equipment and up-armored vehicles that are critical for the protection of Soldiers. Equipment left in theater is planned for Reset and for continued use.

As strategic and operational conditions change, the Army continuously monitors TPE requirements and adjusts to meet the needs of commanders. For example, some TPE from Iraq will be reset, and then moved to Afghanistan to support the President's decision to deploy additional forces in OEF.

Left Behind Equipment

The LBE is characterized as maintenance significant items on the unit's property book that remain at home station after the unit deploys. The intent of this program is to release units from responsibility for equipment units will not use while deployed, such as un-armored trucks, in the conduct of their assigned mission. This process ensures that equipment is maintained and accounted for to support ARFORGEN. When a unit redeploys, many items of equipment may be retained in theater and large amounts of its equipment may need to be repaired and Reset. This process results in a unit's equipment inventory being temporarily depleted. The LBE is often used to expedite capabilities to the Soldier by filling the temporary equipment gaps. This ensures redeploying units are fully equipped and set on a glide path to prepare for future deployments.

Army Pre-positioned Stocks

The APS have and continue to provide combatant commanders with a modern fleet of equipment to directly support contingency operations throughout the world. The APS consists of pre-positioned unit equipment sets, operational project stocks, and sustainment stocks for both major and secondary items. These are critical warfighting stocks of equipment, located in strategic land- and ship-based locations, thus reducing deployment response times for Army forces during contingencies. Pre-positioned stocks are important in reducing strategic lift requirements and improving force closure times. Whether on specially-designed ships, or stored in various strategic locations, APS provides a flexible, sustainable, and strategically responsive force that can rapidly engage in Army and Joint operations. Since 2003, the Army has extensively and repeatedly used equipment from its pre-positioned sets to support OIF and OEF. As the Army rebuilds and maintains APS, it has been resetting and reconfiguring prepositioned stocks to match Army modular force designs. Additionally as a part of Reset, items drawn from APS stocks will not only be replenished to pre-war levels, but also upgraded to the most capable Army equipment that enables Soldiers to conduct operations in support of short notice, full-spectrum military operations. This includes combat equipment, support equipment, repair parts, and other assets assigned to APS. All of these actions are in support of the current 2015 APS Strategy, a critical element of Army Power Projection Program, and must be a high priority for resource allocation.

The Army continuously evaluates its APS program to ensure that APS equipment provides the best capability to support an ARFORGEN-based Army in the current and projected security environment. Part of these APS evaluations have produced several APS initiatives which are either being incorporated (i.e., MRAPS) into the APS Strategy or are under consideration. The Army remains committed, through its APS management system, to equipping APS with the most modern equipment per Army priorities. Certain units in the "Available" cycle of ARFORGEN will be able to draw on modern, well-maintained, and strategically located equipment in APS allowing them to respond quickly to various contingencies.

Reset

The intent of Reset is to restore equipment to a desired level of combat capability and reliability, while returning combat units to full readiness after a deployment. This requirement postures the Army with the ability to execute unpredictable future contingencies and ever evolving global threats.



An M1078 Lightweight Medium Tactical Vehicle goes through Reset at the Red River Army Depot in Texas.

Reset is an essential element of readiness and restoring balance to the Army. It does not improve Army equipment shortfalls. Instead, Reset restores serviceability and capability of equipment on hand, and replaces battle losses with new equipment. Reset planning is synchronized with unit training and deployment schedules.

A fully funded Army Reset Program ensures equipment is operationally ready for use by combat forces in Iraq and Afghanistan, as well as for other missions the Army may perform. Reset funding should match requirements and be provided in a timely manner to promote cost efficiencies while ensuring Soldiers have the proper equipment first in training, then while deployed. Soldiers need to be confident in their equipment, and Reset provides them with a level of confidence, by placing the most capable equipment available in their hands.

Managing Immediate Equipping Needs

Use of the Army Equipment Allocation Processes

Reserve Component Equipping Transparency The transition of the RC from a strategic reserve to an operational force highlighted the need to equip the AC and RC forces in parity with each other, based on their full-spectrum missions until sourced as something different. The shift in the equipping paradigm, from tiered resourcing to cyclic resourcing, ensures all units, regardless of component, are adequately equipped for assigned missions. The implementation of the 2008 National Defense Authorization Act recognized the need for transparency and traceability, and mandated the Chief, National Guard Bureau, verify whether the ARNG was receiving equipment from funds allocated to that organization. The Army is instituting an automated enterprise approach that is scalable and auditable to track equipping from requirement validation through distribution.

Homeland Defense

The Army has a long tradition of support to civil authorities, while maintaining its primary mission of fighting and winning the Nation's wars. While the Army does not typically resource equipment specifically for Homeland Defense / Defense Support to Civil Authorities (HLD/DSCA), it does recognize priority ARNG equipment as Critical Dual Use (CDU) equipment which is used to support both combat and Civil Authorities missions. The Army Staff and the ARNG worked collaboratively to identify and prioritize the baseline LINs for HLD/DSCA missions. This baseline of LINs currently consists of equipment types, by LINs, identified as CDU items that are managed in 10 essential force structure capabilities: aviation, engineering, civil support teams, security, medical, transportation, maintenance, logistics, Joint Force Headquarters, and communications. The CDU LIN list assists in resource prioritization and the ability to assess the ability of a state to perform domestic missions.

The Army's goal is to ensure the ARNG always has at least 80 percent of its CDU equipment. This ensures state officials have the requisite assets to protect the citizens of their state. Through transparency as discussed above, assigning component distribution early in the process

enables deviations from planned resource allocation to be identified early. The reasons for the deviations are then evaluated by Army leadership to determine if a valid cause exists for such realignment. This evaluation is the core of transparency and traceability; and ensures CDU equipment to support HLD/DSCA is sent to the RC, regardless of where they fall within the ARFORGEN cycle.

The Army Equipment Enterprise and Reuse Conference

The AEERC is the forum the Army uses to synchronize the process of equipping units to mission. This includes equipping Army forces deployed in support of contingency operations, providing the RC capabilities they require as an operational reserve, building capabilities in the ARNG to meet HLD and HLS commitments, and finally modularizing and transforming units to support an expeditionary Army in an era of persistent conflict effectively.

The AEERC provides a holistic review of the Army's equipping posture, and policies to influence or improve Army equipping readiness. The AEERC's strategic goals are to facilitate "Enterprise" approaches by transferring specific equipping functions to the Readiness and Materiel Enterprises, provide comparative analysis to senior Army leadership, refine the 21-month distribution plan, audit the distribution of equipment for the RC, address special topics on Army equipping issues and policies, and sustain communication across the Army equipping community. Equipping options and comparisons are critical to the Army leadership's efforts to rebalance the force, while continuing to support the Army's Four Imperatives: Sustain, Prepare, Reset, and Transform.

Since 2003, members of the equipping and force development communities (including Army Commands, Army Service Component Commands, and both RC and AC) have convened semi-annually to discuss modular conversion plans, ARFORGEN prioritization, funding, production deliveries, Reset rates, TPE, and other essential issues to synchronize delivery of authorized equipment to units, and define mitigation strategies for addressing equipping shortfalls.

Equipment Synchronization Conferences (ESC)

At about Return + 90 days, the Equipment Synchronization Conference focuses on 100 percent to achieve a units' MTOE LINs for sourcing by HQDA G-8; the G-4, and AMC. The ESCs are based on the fielding of AMC, HQDA G-4, and G-8 LINs with unit master training calendars to support mission success. The conference confirms all units' equipment shortages of critical LINs and develops a coordinated plan to fill in accordance with ARPL. Furthermore, the conference provides efficient execution of equipping actions and helps identify obsolete LINs.

Both the ARNG and the USAR distribute bulk quantities of LINs at the Unit Identification Code-level of detail in accordance with ARFORGEN and specified priorities. Equipment fielding is based on units collaborating with the project manager, to coordinate time on the unit training calendar for New Equipment Training and equipment fielding. The end state is to ensure the unit has a fully integrated equipping plan that is synchronized with their unit training calendar to support ARFORGEN requirements.



U.S. Soldiers conduct a foot patrol in Afghanistan. Our Soldiers perform missions in varying enviroments all over the world.

Use of Army Processes That Help Measure Ongoing Equipment on Hand Status

The Command Operating Picture (COP) of the Army Equipping Enterprise System (AE2S) provides a visual synopsis of a unit's MTOE authorizations and equipment on hand for the current period and a projection for the next three quarters. The COP groups equipment authorizations into twenty-one major categories and breaks these into three to five subcategories to allow for a visual picture of current equipment on hand and future projections against authorizations. The COP combines information from several databases and automatically formats the data for management reviews.

The Logistic Information Warehouse (LIW) provides information on a unit's current equipment on hand status and other logistics information. The Property Book Unit Supply Enhanced is the Standard Army Management Information System that is used at unit level to account for property. The system provides several reports that allow management to track equipment on hand status.

Managing Future Equipping Needs

Army Equipping Enterprise System. The AE2S was developed to provide Army equippers with an authoritative, analytical, and collaborative set of tools. The AE2S seamlessly supports the equipping process from requirements determination, resourcing, and programming to the delivery of capabilities to the Army. The three major applications within AE2S are the Army Flow Model, Force Development Information Investment System, and EQUIPFOR (EQ4).

These tools are updated with the AEERC-generated EQ4 distribution plans, allowing for an up-to-date snapshot of the Army's equipping posture. Additionally, the AEERC provides a forum to address concerns regarding:

• Verifying and remaining aware of how and where Army equipment is being distributed;

• Continuing to improve automation tools;

• Assessing how well all available Army equipment is being used to fill equipment requirements based on Army priorities;

• Assessing the quality of key data sources such as the LIW (for on-hand data) and Logistics Structure & Composition System for equipment requirements; and

• Leveraging expertise at the conference to investigate selected "special topics" to provide the Army's senior leaders with a range of equipping options.

Knowing what equipment the Army has and being able to determine its status and location, is critical to maintaining a properly equipped Army. The AEERC provides a level playing field for all Army equippers and ensures that unit commanders have what they need, when they need it, to train for and perform their missions adequately. The AEERC provides a balanced approach to equippers, ensuring that our Soldiers and their commanders receive the best possible support and capabilities as soon as we can provide them, now, and in the future.

Materiel Enterprise. The Materiel Enterprise (ME) is one of the Army's four core enterprises and is responsible for materiel management. The ME brings together all of the organizations and stakeholders involved in providing materiel solutions for our Soldiers. It incorporates all the materiel life cycle functions of supply and all levels of maintenance, industrial base operations, and disposal. The goal is support the readiness of Army units as they progress through the ARFORGEN cycle with materiel support.

The ME leaders are designing and implementing an operational structure to provide efficient and effective material life cycle support to the Soldier. The establishment of the ME will foster a culture of innovation and high performance to deliver efficient and effective materiel life cycle support.



This Soldier depends on his equipment, in this case, an M4 Carbine equipped with an M203 Grenade Launcher, to function properly on any mission.

Summary

Our objective is to ensure that every Soldier, in every unit, conducting operations, is equipped with and trained on the proper type and amount of equipment to accomplish their full-spectrum missions.

The old ways of unit modernization in tiered readiness levels—some units always equipped well, others always less well, all based on a static Master Priorities List—has been replaced. Army modernization is enabled by ARFORGEN-based equipping. Fundamental to this effort is to ensure we understand the state of Army Equipment Readiness and take measures to improve, restore equipment balance, and rapidly field and distribute the equipment Soldiers need today and in the future.

CHAPTER FIVE ENABLING MEANS

Introduction

Equipping our Soldiers to win today's fight while setting the conditions for continuing success in future full-spectrum operations, involves trade-offs and risk. New equipment fielding; implementation of the BCT modernization and fleet investment strategies; complementary upgrade, recapitalization, and divestment initiatives; and support of the Army priorities and the ARFORGEN model involve multiple competing objectives that must be balanced against constrained resources and uncertainty. We rely on five mutually supporting enabling means to help overcome these challenges—focused leadership, operations analysis, a strong industrial base, strategic communication, and fiscal support. The goal is to ensure the Army's modernization efforts are supported with analysis and clearly articulated to engender the full support of Congress and the American people.

Separate, but equally vital to realizing the Army's modernization goals is protecting the critical intellectual capital, assurance of essential raw materials, and access to the Nation's defense-specialized industrial capacities.



Soldiers depend on their equipment in the harshest conditions.

Focused Leadership

As in all challenges, focused leadership—at all levels and across all activities—provides the principle and sustaining effort for achieving success. It ensures priorities, objectives, and risk avoidance measures are well-defined and effectively communicated.

This leadership also provides essential guidance and intent for the conduct of detailed assessments, Capability Portfolio Reviews, Configuration Steering Boards, Capability Needs Analysis, the development of implementation plans, and the analyses of alternative investment strategies. These activities serve to provide a critical review of our principle efforts. They also provide essential feedback to leaders when it proves necessary to refine guidance and refocus priorities in response to an evolving security environment.

Focused leadership helps build and maintain the trust and confidence of Congress and the American people. The theme of these engagements is that the Army is committed to providing the best possible equipment for its Soldiers, while ensuring taxpayer dollars are well spent. In addition, leaders must continuously emphasize the vital capabilities a modernized Army brings to the Nation in this era of persistent conflict.

Operational Analysis

Equipping and modernizing the Army involves an analysis of complex decisions involving multiple objectives and uncertainty. Leaders must balance Army current and future requirements against a backdrop of reduced fiscal resources and political constraints. Operations analysis augments leader using judgment and supports decision making using quantitative and qualitative methods. It provides a repeatable and reproducible framework that helps leaders achieve balance and greater understanding of the impact of resource decisions on equipping plans.

Applications of operations analysis focused on decision

analysis enables senior leaders to identify and develop explicit equipping objectives that are expressly linked to strategic imperatives described in documents such as the National Defense Strategy and the ACP. Measurable attributes are developed for each strategic objective, and then assessed using value analysis to determine how well each competing program supports Army equipping objectives. These results can be used in support of comparative cost-benefit analyses to assess potential performance distinctions between competing programs.

Operational analysis in the form of math programming is used to arrive at a portfolio of programs that maximize the achievement of the Army's equipping objectives when subjected to relevant constraints such funding, policy directives, production capacities, and system dependencies. Sensitivity analysis is applied to assess the robustness of the optimal equipment portfolio against changes in value contributions of each included program to determine which program(s) are most sensitive to minor changes in the model. This is especially important for constraints representing potential risk factors (e.g., niche production capacity). Similar methods support the development of alternative portfolios which can be used to inform leaders of the respective range of potential implementation strategies.

Operations analysis helps the Army leadership to articulate resource requirements better, based on sound and supportable analytics and serves to focus funding and budget decisions on the attainment of equipping objectives and not the programs themselves.

Strong Industrial Base

The Army must develop and execute flexible strategies that are adaptive to change to mitigate risks imposed by evolving threats, economic uncertainties, and technological breakthroughs. Furthermore, we must consider aspects of our national industrial base that are critical to resourcing plans and risk management by ensuring appropriate funding is applied to mitigate risks. Effective industrial base sustainment measures include emphasizing dual-use technology, keeping production at a sustainable rate, and promoting foreign military sales. A responsive industrial base is crucial to sustain combat forces in any future conflict. Other issues such as raw material availability from U.S. sources, production capacity, and market support for competitive sourcing must also be considered. In addition, the Army must consider the nation's intellectual capital as it is applied to the advancement of S&T and research and development in line with Army strategic modernization objectives.



These Soldiers and their vehicles function as a team to accomplish their missions.

Strategic Communication

Strategic communication is the process of integrating issues of audience and stakeholder perception into policy making, planning, and operations at every level. It entails sending the appropriate message to the target audience at the right time to achieve the desired effect.

Strategic communication is crucial for gaining the support of key stakeholders and educating internal and external audiences on the importance of Army modernization and equipping efforts. Key to this effort is the establishment of an overall vision and clear implementation strategies that help frame subsequent engagements. Simple,

honest, and consistently presented messages, will significantly improve our leadership's ability to garner and sustain support for the Army's modernization efforts.

Support of the Army Modernization Budget

Congress and the American people have consistently supported the Army's modernization needs based on careful analysis of the associated costs, benefits, and risks. The FY11 budget request ensures our Soldiers have the necessary equipment to perform the myriad of missions our Nation may ask of them.

Requested funding totals $31.7 billion for research, development, and acquisition.

Some major procurement efforts include:

- $459 million to add UAS reconnaissance and surveillance capabilities to the MQ-1 ER/MP.
- $1.4 billion for UH-60M/HH-60M Black Hawks to meet modular force requirements.
- $887 million for modernization of AH-64 Apache Helicopters.
- $505 million for modifications to RQ-7 UAS, Shadows.
- $1.159 billion for transition of CH-47 Chinook Helicopters from "D" to "F" Model.
- $480 million for Patriot PAC-3 Missiles.
- $14 million for modernizing the Ammunition Production Base.
- $300 million for Stryker Vehicles.
- $231 million for M1 Abrams Tank modifications.
- $1.468 billion for modernization of Medium and Heavy Trucks (FMTV; FHTV).
- $503 million for Tactical Surveillance Equipment (ex, Night Vision Thermal Weapon Sights and Long Range Advanced Scout Surveillance System)
- $630 million for WIN-T and JTRS.

Some of the major RDTE efforts include:

- $2.5 billion for BCT Modernization.
- $1.8 billion for continued development of Aviation, Intelligence, Air Defense, and Combat Range Vehicle Program.

Risk

While focused on building versatile, agile units capable of adaption to changing environments, the Army has continued to utilize processes and procedures primarily designed to support a static Army. The Army must have an agile generating force to support an agile operating force and minimize risk. This requires fundamentally transforming the generating force and supporting processes to prepare and provide trained and ready forces for combatant commanders more effectively and efficiently. The Army's commitment to institutional agility allows us to adapt to the realities of the future as they present themselves while accepting tolerable risk and mitigating unacceptable risk. The major risk areas to today's Army programs are quantitative, qualitative, and industrial. The risk scope includes: each program's scope, schedule, cost, and the quality of results. The characteristics of major risks are:

- Quantitative risk is the failure to procure desired quantity of systems;
- Qualitative risk is the failure to achieve the desired qualitative characteristics in Army systems; and

• Industrial risk is focused on ensuring the Army will always have the ability to obtain a steady flow of materiel from its suppliers and also have the ability to repair and upgrade capabilities to the Army core requirements.

Management of risk to Army programs is tied to proactive, process-based approaches to interdicting, decreasing, and controlling adverse events or issues before they can disrupt our program planning, funding, and operations. Our risk management planning is based on realizing Army senior leader's specific top management objectives and implementing the overall modernization vision through the employment of widely recognized interactive risk analysis processes designed to identify, assess, handle, monitor, and control risk.

Our strategic objectives are to develop flexible plans/programs with the ability to adapt to change to mitigate the risk of uncertainty caused by an evolving threat, change to our force structure to meet our missions, and changes in the economy that impact the Army budget.

Our plans/programs must maintain a healthy industrial base—both organic and commercial—as part of our overall national security. We will use a combination of new procurement, upgrades, and divestiture to achieve our strategic objective by addressing the readiness issues associated with shortages, proper mix, and age/usage in a cost effective manner. The Army will continue to take maximum advantage of existing platforms, making necessary improvements in both capability and reliability.



A U.S. Soldier engages enemy forces in Afghanistan. He expects and needs his equipment to work right the first time, every time.

Quantitative Risk

Managing quantitative risk is facilitated by how well the Army can see its own equipment inventories, make informed management decisions about how to allocate equipment inventory, and procure new equipment to build Army readiness.

Asset accountability and visibility are essential for full transparency and managing quantitative risk. The goal of this effort is to create an enterprise-wide accountability process that is capable of tracking equipment through its entire life cycle. Transparency can be defined as a process that provides accountability and traceability from budget submission through funding authorization and on to procurement and delivery to Army users. Asset visibility provides the ability to track that equipment through all stages of the equipment life cycle, as it is used across the force, regardless of location of equipment.

Together, transparency and asset visibility ensure that the Army and its Components have the information they need to manage, procure, and allocate the available equipment inventory efficiently and in accordance with Army priorities and statutory directions and obligations.

An ARFORGEN-based Army, operating in an era of persistent conflict, will always have some portion of its equipment in Reset. Great strides have been made in the Reset process. Sustainment level Reset conducted at Army depots and installation maintenance activities have been optimized using principles such as Lean Six Sigma, Prime Vendor Supply Chain partnerships, and other innovative concepts. Field level Reset has benefitted from the deployment of specialized teams

from the National level. The Army must continue to utilize such efficiencies in the Reset of equipment, examining the entire supply chain, from losing unit to gaining unit, to ensure we are achieving a "Velocity of Reset" commensurate with the demands of an ARFORGEN-based Army. The Army must also address life cycle management improvements to enable the Army to manage risk better.

Our oldest combat support systems need modernization funding and resourcing focus—for example, our MHE and combat engineer equipment that have service lives averaging 30-35 years. These fleets are critical in supporting combat operations and are also integral to effective stabilization, natural disaster, and humanitarian relief support.

Fleets, such as our aviation systems, though on their modernization paths, will require resource focus for a different reason. The fleet average life of 17 years is decreasing due to the reinvestment of Comanche funds as well as support from other investments. The Operations Tempo (OPTEMPO) demands on these systems, consistently five times higher in combat than in non-combat periods, is rapidly increasing the equivalent ages of much of the Army's fleet of approximately 3,500 airframes. This will decrease the investment planning period for the estimated 10,000 hour/40-year anticipated service life of the aircraft. Continued use at this high OPTEMPO will reduce the service life, thereby demanding resources be programmed now to begin the development of a replacement aviation platform (or to develop capability improvements and life-extension technologies).



An MRAP is secured and ready for transport to Afghanistan. Sustaining the U.S. industrial base ensures vital and quick-turn capabilities that are critical to providing Soldiers with the equipment they need to succeed across the full spectrum of operations.

Qualitative Risk

The Army must continue to adopt new ways to conserve resources while preserving the decisive edge for our Soldiers going into combat. Qualitative risk is the failure to achieve the desired qualitative characteristics in Army systems.

We now have, in essence, competing modernization efforts: rapid acquisition efforts to field against urgent combat-related gaps; and deliberate fleet management, designed to modernize forces against enduring requirements. Rapid acquisition efforts have admirably fielded urgently-needed capabilities. However, due to their immediate and near-term focus, the methods have led to increased life cycle investments and fielded performance risks.

Institutionalizing Army processes that facilitate the early teaming of the requirements, resourcing, and technology and acquisition teams will build effective and affordable programs with appropriate fleet flexibility and adaptability to changing environments and threats. Acquisition legislation and Departmental policies should be reviewed to identify issues that may conflict with acquiring urgent requirement necessities and opportunities created within the formal processes to permit rapid and disciplined acquisition. Acquisition teams preparing the development and procurement plans are more likely to address the risks in annual budgets,

fielding timelines, and system performance to meet requirements spanning emerging rapid combat needs, ARFORGEN, and enduring life-cycle support.

Recent changes in the acquisition process described in the Department of Defense Instruction 5000.02, dated December 2008, the Defense Acquisition Handbook, and the Weapons Systems Acquisition Reform Act of 2009 (Public Law 111-23) are increasing the Department of Defense standards for achieving the appropriate level of technology readiness and reducing anticipated life cycle costs prior to proceeding to each next acquisition phase. Programs now conduct more detailed systems engineering analyses, testing, and evaluation and have more oversight reviews by the appropriate Milestone Decision Review authorities.

Program acquisition strategies will also describe measures to ensure competition, or the option of competition, at both the prime and subcontractor levels throughout the program life cycle. These are steps in the right direction and will contribute toward increasing the probability that programs fully meet requirements within their baselines for both schedule and resources. Independent cost estimates will now be executed at each program milestone. The Army will be required to fund programs to their cost estimates. Given constrained resources, it will then be incumbent upon the Department and Program Managers to exercise sound discipline in controlling requirements creep, tracing system design and specifications to performance requirements, and to employ the appropriate acquisition techniques to deliver capabilities within the resources allocated.

Industrial Risk

The Army must pay close attention to the supporting Industrial base. We must account for the critical areas of our national industrial base that will impact our resourcing plans and risk management approach by ensuring funding is applied at appropriate levels to manage the industrial risks.

There are many issues, such as raw material availability from U.S. sources, simultaneous commercial demand against a plant's capacity, or the lack of multiple competitive sources due to the market, that must be considered. We must also consider the long-term health of civilian and government research bases, our nation's intellectual development and projected strengths, and our ability to influence science and technology investments to seed the industrial base.

The U.S. military relies heavily on private industry to develop and build the weapon systems and equipment it uses, in addition to operating unique defense-related arsenals, engineering development centers, and defense labs. The overall defense budget affects the size of the defense industrial base, which consists of privately-owned and government-owned industrial production and maintenance facilities. A small portion of the industrial base is laid away in plant equipment packages as a cold base. Plant equipment packages contain equipment required for mobilization production that is not readily available from industry. In most cases, an active production base is more effective than maintaining war reserve stocks.

Industrial base preservation measures include emphasizing dual-use technology, keeping production at a sustainable rate, and promoting foreign military sales. A responsive industrial base is crucial to sustain combat forces in any future conflict. During this time of declining resources, we will strive to balance resources to ensure we maintain minimum sustaining rates for critical items likely to be required in any future conflict while delivering needed capabilities for today's forces.

Additionally, we must ensure we have the government industrial capacity to support our core depot requirements. The core requirements will vary by program and will be reviewed for multi-service applicability. The programs will ensure that the Source of Repair (SOR) decision analysis, including depot core, risk, and best value analysis supporting the

SOR decision, is performed and documented. Each government depot is assessed for its minimum essential workload to support core capability requirements. The core is determined by assessing the required capabilities for maintenance/repair of weapon systems and military equipment that is identified by contingency scenarios. This allows the depots to respond to the challenges of mobilization, national crisis, and other emergencies in a timely manner.

It is essential that we sustain a production base that remains competitive, and for certain commodities, is positioned to increase production in a timely manner, should the future demand another war-effort surge.

Summary

Developing and fielding an affordable mix of the best equipment available to allow Soldiers to succeed in today and tomorrow's full-spectrum operations requires deliberate and decisive efforts guided by leadership, informed through analysis, effectively communicated, and adequately funded.





Soldiers need to succeed across the full spectrum of operations—from combat to civil support from Afghanistan to Haiti.

CHAPTER SIX CONCLUSION

Modernization is critical to the Army's success—without it—our Nation's Army and Soldiers will not remain a dominant force and be successful against our enemies.

After nine years of combat, the Army is stretched—the demand on forces exceeds our sustainable supply—putting the Army out of balance.

The goal of Army Modernization is to develop and field an affordable mix of the best equipment available and allow Soldiers and units to succeed in both today's and tomorrow's full-spectrum military operations. Soldiers should have a decisive advantage in any fight, and the Army must continue to transform into a land force that is versatile, expeditionary, agile, lethal, sustainable, and interoperable.

Modernization and equipping goals will be achieved through the 2010 AMS, using three interrelated lines of effort:

• Develop and field new capabilities to meet identified capability gaps through traditional or rapid acquisition processes;

• Continuously modernize equipment to meet current and future capability needs through procuring upgraded capabilities, recapitalization, and divestment; and

• Meet continuously evolving force requirements in the current operational environment by fielding and distributing capabilities in accordance with Army priorities and ARFORGEN.

Our plans depend on a steady stream of predictable funding to field required capabilities to Soldiers. Congress and the American people have consistently supported the Army's needs for modernization. We must make the best possible use of our limited funds and ensure that no significant modernization decision is made without a thorough review of costs, projected benefits, and the trade-offs that might be required.



Our Soldiers are on watch for the American people. America must do its best to support them.

Full Congressional support of the President's Budget Request enables the Army to meet current and future needs. This support is critical to maintaining our superiority and allowing the Army to modernize, maintaining readiness, and the capabilities needed to remain the pre-eminent land force in the world. It also ensures we can meet our anticipated national security requirements during this era of persistent conflict.

The FY11 Army Modernization base budget provides funding for new procurement, rebuild, upgrade of existing system fleets, and grows future capabilities through science, technology, research, and development efforts. This budget enables the Army to continue its efforts to balance the force with the most modern capabilities and solutions available, while integrating new cutting edge equipment to ensure our Soldiers always enter a fight overmatching any enemy. At the same time, we must provide stability and support to a host nation's national interests during periods of transition.

The resources needed for Army Modernization are not limited to fiscal. There are other key resources that must be developed and aligned which are just as important for Army modernization to succeed. They include focused leadership, effective strategic communication, and sound operations analysis.

Army modernization depends on the support of the Army and the Nation. We recognize this support must be earned and is not automatically conferred. Without this support, history has proven that Army programs flounder and our national security is at risk. Soldiers depend on our success—failure is not an option.



In the final analysis it's all about the Soldier.

ACRONYMS

AAO:	Army Acquisition Objective
ABCS:	Army Battle Command System
AC:	Active Component
ACP:	Army Campaign Plan
AE2S:	Army Equipping Enterprise Systems
AEERC:	Army Equipping Enterprise and Reuse Conferences
AFATDS:	Advanced Field Artillery Tactical Data System
AIAMD:	Army Integrated Air and Missile Defense
AK:	Assault Kitchen
AMC:	Army Materiel Command
AMD:	Air and Missile Defense
AMS:	Army Modernization Strategy
AOR:	Area of Responsibility
APS:	Army Prepositioned Stocks
ARB:	Armed Reconnaissance Battalions
ARFORGEN:	Army Force Generation
ARNG:	Army National Guard
ARPL:	Army Resourcing Priority List
ATLAS:	All Terrain Lifter, Army System
AWG:	Asymmetric Warfare Group
BA:	Battlespace Awareness
BATS:	Biometric Automated Tool Set
BC:	Battle Command
BCT:	Brigade Combat Team
BFT:	Blue Force Tracker
BLOS:	Beyond Line-of-Sight
C2:	Command and Control
C4ISR:	Force Protection, Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance
CAB:	Combat Aviation Brigade
CAE:	Core Analytic Enterprise
CAISI:	Automated Information Systems Interface
CASCOM:	Combined Armed Services Command
CBRN:	Chemical, Biological, Radiological, and Nuclear
CDRT:	Capabilities Development Rapid Transition
CDU:	Critical Dual-Use
CENTCOM:	Central Command
CHARCS:	Counterintelligence Human Intelligence Automated
CI:	Reporting and Collection SystemsCounter-Intelligence
CK:	Containerized Kitchen
COA:	Course of Action
COP:	Common Operation Picture

COTS:	Commercial off-the-shelf
C-PED:	Core Processing, Exploitation, and Dissemination
CPoF:	Command Post of the Future
C-RAM:	Counter Rockets, Artillery, and Mortars
CSS:	Combat Service Support
DCGS-A:	Distributed Common Ground System-Army
DOTMLPF:	Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities
DPICM:	Dual Purpose Improved Conventional Munitions
DR SKO:	Dismounted Reconnaissance Monitoring and Survey Sets, Kits, and Outfits
DSB:	Dry Support Bridge
EAB:	Echelons Above Brigade
EAC:	Echelon Above Corps
EMARSS:	Enhanced Medium Altitude Reconnaissance and Surveillance Systems
EQ-36:	Enhanced AN/TPQ-36
EQ4:	EQUIPFOR
ER/MP:	Extended Range/Multi Purpose
ESC:	Equipment Synchronization Conferences
ETRAC:	Enhanced Track Acquisition and Range Classification
F3EAD:	Find, Fix, Finish, Exploit, Analyze, and Disseminate
FAAD:	Forward Area Air Defense
FBCB2:	Force XXI Battle Command, Brigade and Below
FCS:	Future Combat Systems
FMTV:	Family of Medium Tactical Vehicle
FoS:	Family of Systems
FoV:	Family of Vehicles
FRP:	Full Rate Production
FY:	Fiscal Year
FYDP:	Future Years Defense Program
GMLRS:	Guided Multiple Launch Rocket System
GNEC:	Global Network Enterprise Construct
GOTS:	Government off the shelf
GPS:	Global Positioning System
GSS Incr. 1:	Ground Soldier System Increment 1
HBCT:	Heavy Brigade Combat Team
HCCC:	Harbormaster Command and Control Center
HIMARS:	High Mobility Artillery Rocket System
HLD/DSCA:	Homeland Defense and Defense Support to Civil Authority
HLD:	Homeland Defense
HLS:	Homeland Security
HMMWV:	High Mobility Multipurpose Wheeled Vehicles
HQDA:	Headquarters, Department of the Army
HUMINT:	Human Intelligence

IBCT:	Infantry Brigade Combat Teams
IED:	Improvised Explosive Device
IED:	Improvised Explosive Device
IFPC:	Indirect Fire Protection Capability
IPADS:	Improved Position and Azimuth Determining Systems
IRB:	Improved Ribbon Bridge
ISR:	Intelligence, Surveillance and Reconnaissance
IT:	Information Technology
JAB:	Joint Assault Bridge
JBC-P:	Joint Battle Command-Platform
JCR:	Joint Capability Release
JETS:	Joint Effects Targeting System
JHSV:	Joint High Speed Vessel
JLENS:	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor
JLOTS:	Joint Logistics over the Shore
JLTV:	Joint Light Tactical Vehicle
JPADS:	Joint Precision Airdrop System
JTRS:	Joint Tactical Radio System
LCLA:	Low Cost Low Altitude
LCMR:	Lightweight Counter Mortar Radar
LCU:	Landing Craft Utility
LIN:	Line Item Number
LITE:	Lightweight Integrated Telecommunications Equipment
LIW:	Logistic Information Warehouse
LLDR:	Lightweight Laser Designator Rangefinder
LSV:	Logistics Support Vessel
LTAS:	Long Term Armoring Strategy
LTPS:	Long Term Protection Strategy
MA:	Mortuary Affairs
M-ATV:	Mine Resistant Ambush Protected-All Terrain Vehicle
ME:	Materiel Enterprise
MEADS:	Medium Extended Air Defense System
MFLTS:	Machine Foreign Language Translator Systems
M-Force:	Master Force
MFS:	Modular Fuel system
MHE:	Material Handling Equipment
MI:	Military Intelligence
MILSATCOM:	Military Satellite Communications
MLC:	Military Load Classification
MMPV:	Medium Mine Protected Vehicle
MMS-P:	Meteorological Measuring Set-Profiler
MOS:	Military Occupational Specialties
MPCV:	Mine Protected Clearance Vehicle

MRAP:	Mine Resistant Ambush Protected Vehicles
MRBC:	Multirole Bridge Companies
MSS:	Mounted Soldier System
MTOE:	Modified Tables of Equipment
MTRCS:	Multi-Temperature Refrigerated Container System
NBCRV:	Nuclear, Biological and Chemical Reconnaissance Vehicles
NGATS:	Next Generation of Automatic Testing Systems
NIK:	Network Integration Kit
NSC:	Network Service Center
NTA:	Non-Traditional Agents
OEF:	Operation Enduring Freedom
OIF:	Operation Iraqi Freedom
ONS:	Operational Needs Statement
OPTEMPO:	Operations Tempo
POM:	Program Objective Memorandum
PSR:	Precision Sniper Rifle
Q-36:	Fire Finder Radar System
QDR:	Quadrennial Defense Review
QRC:	Quick Reaction Capability
RC:	Reserve Component
RDT&E:	Research, Development, Test, and Evaluation
RECAP:	Recapitalization
Recon: REF:	Reconnaissance Rapid Equipping Force
RSTA:	Reconnaissance, Surveillance, and Target Acquisition
RTCH:	Rough Terrain Container Handler
S&T:	Science and Technology
SA:	Situational Awareness
SaaS:	Soldier as a System
SASS:	Semiautomatic Sniper System
SBCT:	Stryker Brigade Combat Team
SEMA:	Special Electronic Mission Aircraft
SIGINT:	Signals Intelligence
SLAMRAAM:	Surface Launched Advanced Medium-Range Air-to-Air Missile
S-level:	Supplies on Hand/Available
SMART-T:	Secure Mobile Anti-Jam Reliable Tactical Terminal
SME:	Subject Matter Experts
SNaP:	Access Point
SOR:	Source of Repair
SoS:	System of Systems
SPIRIT:	Special Purpose Integrated Remote Intelligence Terminal
SUAS:	Small Unmanned Aircraft System
SWaP:	Space, Weight, and Power

TBC:	Tactical Battle Command
TBM:	Theater Ballistic Missile
TDA:	Tables of Distribution and Allowances
THAAD:	Terminal High Altitude Area Defense
TiGR:	Tactical Ground Reporting System
TNOSC:	Theater Network Operation Security Centers
TPE:	Theater Provided Equipment
TRADOC:	Training and Doctrine Command
TRM:	Tank Rack Modules
TS/SCI:	Top Secret/Sensitive Compartmented Information
TUAS:	Tactical Unmanned Aerial System
TWV:	Tactical Wheeled Vehicles
U.S.:	United States
UAS:	Unmanned Air System
UGS:	Unattended Ground Sensor
USAR:	U.S. Army Reserve
USR:	Unit Status Reporting
USSOCOM:	U.S. Special Operation Command
VMMD:	Vehicle Mounted Mine Detector
VSAT:	Very Small Aperture Terminal
VSB:	Vessel-to-Shore
WIN-T :	Warfighter Information Network-Tactical
WMD:	Weapons of Mass Destruction