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Army Modernization White Paper



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**“ARMY MODERNIZATION: WE NEVER WANT TO SEND OUR SOLDIERS INTO A FAIR FIGHT”**

Our Army, combat seasoned but stressed after eight years of war, is still the best in the world and “The Strength of Our Nation.” We are protected at home and our interests and allies overseas are defended by the Army—Active Component, Army Reserve, and National Guard—in a security environment that is more ambiguous and unpredictable than ever before. Our various intelligence assessments indicate the next several decades will be characterized by persistent conflict, protracted confrontation with global terrorists, and extremist ideologies. Future operations in this dynamic environment will continually span the spectrum of conflict from peace keeping operations to counterinsurgency to major combat operations.

Our Army must be balanced. We must be organized to be versatile; deployable enough to be expeditionary; responsive enough to be agile; precise enough to be lethal; robust and protected enough to be sustainable; and flexible enough to be interoperable with a wide range of partners. These are the defining qualities of a balanced Army. They describe not only the Operating Force, but also the Generating Force, and form the basis of this Modernization Strategy.

The imperative for the Army is that we must continuously and aggressively modernize our capabilities to ensure we remain the dominant force—capable of operating in all environments across the full spectrum of conflict, including: prevailing in protracted counterinsurgency campaigns; helping other nations build capacity; assuring our friends and allies; supporting civil authorities; and defeating varying threats.

With an ever-changing world and the current state of our national economy, we are functioning in a fiscally

constrained environment and it is critical that every dollar is spent in the most effective and efficient way possible. Army modernization is essential—but this effort must reflect an increased focus on cost, as well as the need to integrate lessons learned from ongoing operations. We must provide our Soldiers with the equipment improvements they need to give them a decisive advantage over any enemy: *we never want to send our Soldiers into a fair fight.*

The Army Modernization Strategy supports strategic guidance as outlined in the National Defense Guidance (achieving balance), the Army Campaign Plan (supporting transformation to a Modular Force), and the Army Posture Statement (meeting current critical challenges). It describes the operational environment and the Army’s concept for dominating in that environment while achieving strategic depth. It provides a summary of the ways and means by which the Army will modernize and equip itself in support of its ends—a versatile mix of tailorable and networked organizations, operating on a rotational cycle, to provide a sustained flow of trained 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 Army Modernization Strategy describes the three “Elements of Modernization”—the specific ways in which the Army’s modernization and equipping efforts support rebalancing and achieving full spectrum dominance, speeding incremental fielding of successes from our research and development base to meet the challenges of the current fight, while leveraging what we have learned over eight years of war to develop essential capabilities for the 21st Century. Finally, it describes our modernization objectives in terms of developing and fielding required operational capabilities over time to maximize operational impacts for the force, balancing them with the resources required to achieve our strategic national defense goals within manageable risk.



On April 6, 2009, the Secretary of Defense announced several key decisions greatly affecting Army Modernization, including halting development and procurement of the Manned Ground Vehicle component of Future Combat Systems (FCS). The Army was directed to “develop a new renamed, manned ground vehicle program based on revised requirements.” Other Secretary of Defense guidance to the Army is an increased focus on the incorporation of the experiences of today’s combat operations into modernization plans. He directed the acceleration of Spin-outs of proven technologies to all Brigade Combat Teams (BCTs); increasing Intelligence, Surveillance, Reconnaissance and Unmanned Aerial Systems (UAS) capabilities; limiting Active Component growth of BCTs to 45; and integrating the Mine Resistant Ambush Protected (MRAP) Family of Vehicles into combat formations.

The Army established Task Force 120 (TF 120) at the U.S. Training and Doctrine Command and was directed by the Chief of Staff of the Army (CSA) to develop a modernization plan that includes the incremental modernization of brigades and the development of a new Ground Combat Vehicle (GCV) to synchronize these key decisions with the Army’s modernization strategy. The task force led a comprehensive review of force designs, refining a BCT Modernization Plan, establishing integrated network architectures, and codifying new GCV operational requirements. The results of this work were presented to Army Senior Leaders late in September 2009 to refine Army modernization.

The task force delivered an incremental BCT Modernization Plan and will also provide an updated Army Capstone Concept to the CSA. To accomplish this, TF 120 studied the lessons learned from over eight years of war in Afghanistan and Iraq along with science and technology efforts to develop an integrated and inclusive approach to design, vehicle

mix, network architecture, and system capabilities. These efforts will generate new BCT capability packages and Network capability sets. Additionally, the Vice Chief of Staff of the Army sponsored a Ground Combat Vehicle Blue Ribbon Panel to inform Task Force efforts, drawing input from Joint-Service partners, retired general officers, think tank analysts, and representatives from the Office of the Secretary of Defense, as well as Army Soldiers and leaders with a wide range of operational experience. This effort, coupled with rigorous requirements analysis, will generate a new GCV strategy. Emerging insights for the Army to implement include:

- Deliver new capability packages every two years and make prudent decisions to sustain, improve, or eliminate current wheeled and tracked vehicles based on operational value, capability shortfalls, and available resources
- Provide commanders with a combination of platforms to organize for specific missions
- Incorporate the most mature technological advances and respond to recent operational lessons in the design of the GCV
- Field additional Capability Packages to upgrade our units every two years to get the best capabilities available to the Soldiers who need them most
- Test new technologies with the Army Evaluation Task Force (AETF) to ensure Soldier’s practical and combat experience factors into the design process



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- Preserve appropriate technologies developed in FCS to deliver them to the force
- Leverage the Army’s huge investment in current capabilities
- Provide high capacity, capabilities-based systems to our Soldiers through intermittent modernization of equipment capabilities
- Extend equipment utility while bridging capacity in technologies and Modular Force formations

Persistent conflict and an adaptive enemy form the basis for our requirement to constantly modernize. Continuous modernization is essential to transforming Army capabilities and maintaining technological advantage over adversaries across the full spectrum of conflict. It is a combined effort among the Department of Defense, Congress, and industry.

A critical element to implementing modernization is continuing support from a Congress who has ensured that our Soldiers have been equipped on time with the best modernized equipment the nation can provide. Sufficient investment in modernization provides a capable Army that is integral to Joint, Interagency, and Multinational success—and we are moving rapidly in that direction. To ensure our success, we must continue to integrate our efforts with the Office of the Secretary of Defense and the Joint Staff. We can then collectively identify some existing, but different programs that counter the same threats or accomplish roughly the same missions and produce force multiplying capabilities available across all of the Services. We will continuously work closely the Secretary of Defense and the Joint Staff to develop a portfolio—a mixture of systems whose flexibility allows us to respond to a spectrum of contingencies

beyond the horizon. The Army believes that establishing a common and shared commitment to modernization is essential to the success of this effort. We look forward to Public support as we advance the Army Modernization Strategy.

Our Nation has many strengths. When it calls its Army into action—it expects the Army to respond as “The Strength of Our Nation.” The Army must continuously modernize to counter the threats we face today, and are likely to face tomorrow. The costs of modernizing are measured in dollars, but the cost of failing to modernize on time, will be measured in future risk to the Nation and its Soldiers. ★★★



As the Army moves forward with modernization, the efforts of Soldiers assigned to the AETF are vital to ensuring new systems meet the operational needs. These Soldiers, many with combat experience, are currently testing the first Spin-outs which include the small robot, small unmanned aerial vehicles, urban and tactical ground sensors, a new non line-of-sight launch system (NLOS-LS) and Network integration kits. The AETF provides the Army with immediate feedback during the evaluation of future capabilities as well as the development of tactics, techniques, and procedures.

Our modernization goals ensure we field full spectrum forces today for the uncertain future, are two-fold:

- Leverage lessons learned from Soldiers in the current fight to speed fielding of enhanced capabilities to the Current Force
- Develop capabilities, concurrently, that Soldiers need today to set conditions for the future

To achieve these goals, we are pursuing a modernization strategy that both leverages what we are learning daily in the current fight to develop future designs, and then speeds the successful results of our research and development to Soldiers and units fighting our wars. The Army will achieve its ends by implementing three key elements of modernization. They are:

Upgrade and modernize selected systems for Soldiers going into combat

Our objective is to ensure that every Soldier, in every unit, going into harm’s way is equipped with the proper type and amount of equipment to accomplish their full-spectrum missions. The old ways of modernization of units in tiered readiness—some units always equipped well, others always less well, all based on a static Master Priorities List—have been replaced. Army modernization is enabled by a new

Equipping Strategy whose basic principle is to “Equip to Mission.” This effort will:

- Respond and adapt to changing situations—units are equipped based on their placement in the Army Force Generation model (ARFORGEN) cycle and equipped to mission
- Ensure our Soldiers have the best equipment that is useable in all operational environments and have the right equipment in the correct amounts, at the right level of modernization to meet mission requirements whether in combat, training to go to combat, as part of Army’s Generating Force, or conducting Civil Support or Homeland Defense missions
- Ensure, via cyclic modernization, that all units receive modernized equipment as they rotate through their ARFORGEN cycles

Transformation to a versatile mix of customized and networked organizations that provide operational capabilities across a rotational cycle will ensure a sustainable supply of trained and ready land forces for full spectrum operations. Transformation is a dynamic task, especially when coupled with increasingly changing external factors such as emerging threats, shifting funding and force structure levels, and technology breakthroughs or delays.

All of these factors make the planning and implementation of modernizing our Nation’s Army extremely challenging. Incorporation of equipment previously validated under the Capabilities Development for Rapid Transition (CDRT) process has provided an example of a method to meet this challenge. The CDRT successfully uses commanders’ wartime lessons learned to provide needed capabilities that are now fielded via Operational Needs Statements.



The CDRT process unfolds over a six-month cycle, but has been proven to reduce normal materiel development cycles by several years. Examples of vital materiel systems successfully worked through CDRT into acquisition programs and rapidly fielded to the Current Force include: Armored Security Vehicle, Raven Small Unmanned Aerial System, RG-31 (MRAP) vehicles, and Buffalo and Husky IED Route Clearance Packages.

Army senior leaders can point to recent successes: MRAPs, High Mobility Artillery Rocket System, Excalibur, Unmanned Ground Sensors, and UAS which are all great examples of Commanders recognizing a need for modernization and the institutional Army working tirelessly to meet that need. Experienced combat leaders are working hard daily to use their battlefield experience in shaping the force to meet future challenges, thereby reducing the burdens of future leaders.

Modernization and upgrade of selected core Army systems is a continuous process. Some of the existing programs and systems we are targeting for upgrades include: the M777 Howitzer, the Patriot Advanced Capability – Phase 3 Patriot Missile (PAC-3), the Buffalo Route Clearance Vehicle, Single Channel Ground to Air Radio System (SINCGARS) / Enhanced Position Location Reporting System (EPLRS), Distributed Common Ground System-Army (DCGS-A), Biological Integrated Detection System (BIDS), and the Stryker. Continuing to incrementally build the Network is also a high priority with the goal of the Network becoming the platform extended to the Soldier versus the Soldier coming into the Network.

Incorporate new technologies to all Brigade Combat Teams

The Army will deliver capability packages consisting of key technologies and warfighter urgent requirements in two year increments that will enable ARFORGEN beginning in fiscal year 2011. The Army will expand

the fielding of these capability packages to all BCTs by 2025. This capability package approach will link manned systems, unmanned systems, sensors, and munitions while incrementally improving the Network. This effort will provide increased capability to the war fighter:

- Evaluate technology using wartime lessons learned
- Test, evaluate, and re-evaluate using the AETF more advanced technology in preparation for future fielding
- Retain and accelerate the initial increment of the FCS program to field increased capability to all BCTs
- Exploit and leverage Research, Development, Test, and Evaluation efforts
- Grow new capabilities quickly and apply technology insertions
- Ensure technology is integrated into the equipping efforts leading to doctrinal, leader education, and training changes



Capability Package 11-12

<u>Spin-outs</u>	<u>Warfighter Urgent Requirement</u>
-Non Line of Sight Launch System (NLOS-LS)	-Persistent Surveillance (RAID)
-Small Unmanned Ground Vehicle (SUGV)	-Advanced Percision Mortar Initiative (APMI)
-Unattended Ground Sensors (UGS)	-Ground Soldier System (GSS)
-Class I Unmanned Aerial Vehicle (UAV)	-Human Terrain Teams (HTT)
-Network Integration Kit (NIK)	

FUTURE CAPABILITY PACKAGES MAY INCLUDE:

- More capable Unmanned Air Vehicles (greater range, loiter, and payload)
- Larger Unmanned Ground Vehicles (counter-mine capability)
- Improvements to the Network (more imagery and information at lower levels)

Enable Brigade Combat Teams through upgrades and modernization

We are transitioning immediately from a FCS BCT Strategy to a BCT Modernization Strategy. We will assess lessons learned from the last eight years of war in terms of their relevancy for current and near-future operations to identify key high capacity, capabilities-based systems to bring into the base acquisition budget. We will build a versatile mix of mobile, tailorable, networked BCTs organized on a rotational cycle that can leverage mobility, protection, information, and precision fires to conduct

effective full spectrum operations across the spectrum of conflict. This effort will:

- Fully integrate MRAPs into our formations
- Field Capability Packages to all 73 BCTs by 2025
- Develop a GCV concept focused on building a versatile platform that incorporates the lessons of the last eight years of war:
 - Intention is to field the GCV in 5-7 years from now
 - Design platform with sufficient margin for future capabilities
 - Incorporate only mature technologies for vehicle integration
 - Maintain continuous armor development to defeat emerging adapting threats
 - Design vehicle to accept current and future network capabilities including radios, sensors, and jammers