

WEAPON SYSTEMS HANDBOOK 2020-2021

DESIGN | DEVELOP | DELIVER | DOMINATE


RCV-03



INTRODUCTION

Thank you for your interest in our biennial publication, which is designed to acquaint you with many of the U.S. Army's current and future weapon systems and equipment programs. We are three years into our biggest transformational change in the last four decades to modernize and build a multidomain-capable force. Additionally, we are coming out of one of our most challenging times in recent history, as we continue to work closely with industry to maintain program schedules while keeping our workforces and their families safe during the global pandemic. Our commitment to maintain overmatch and decisive technological advantages against adversaries on the battlefields of today and tomorrow is unwavering. Warfighters depend on us to get the right equipment into their hands at the right time to deter conflict or fight and win our Nation's wars.

Details within this handbook include program descriptions, status and specifications, projected activities, benefits to the Soldier, as well as names and locations of the Army's industry partners, to help you gain a better understanding of our collaborative efforts to empower, unburden, and protect our men and women in uniform. This year, we added a special section on the U.S. Army Futures Command and its Cross-Functional Teams to illustrate how we are working together to facilitate early and continuous teaming across the enterprise to enable the Army to achieve its modernization goals with greater speed, efficiency, and effectiveness.

In all our efforts, we are ever mindful that our most important asset is our people. They are essential to modernization. Our workforce professionals, both military and civilian, are charged with ensuring our organizations, policies, processes, and programs that consume time, money, and manpower deliver real value to the Soldiers we serve and the taxpayers who support us.

We hope you will find the "U.S. Army Weapon Systems Handbook 2020-2021" an informative and valued resource.

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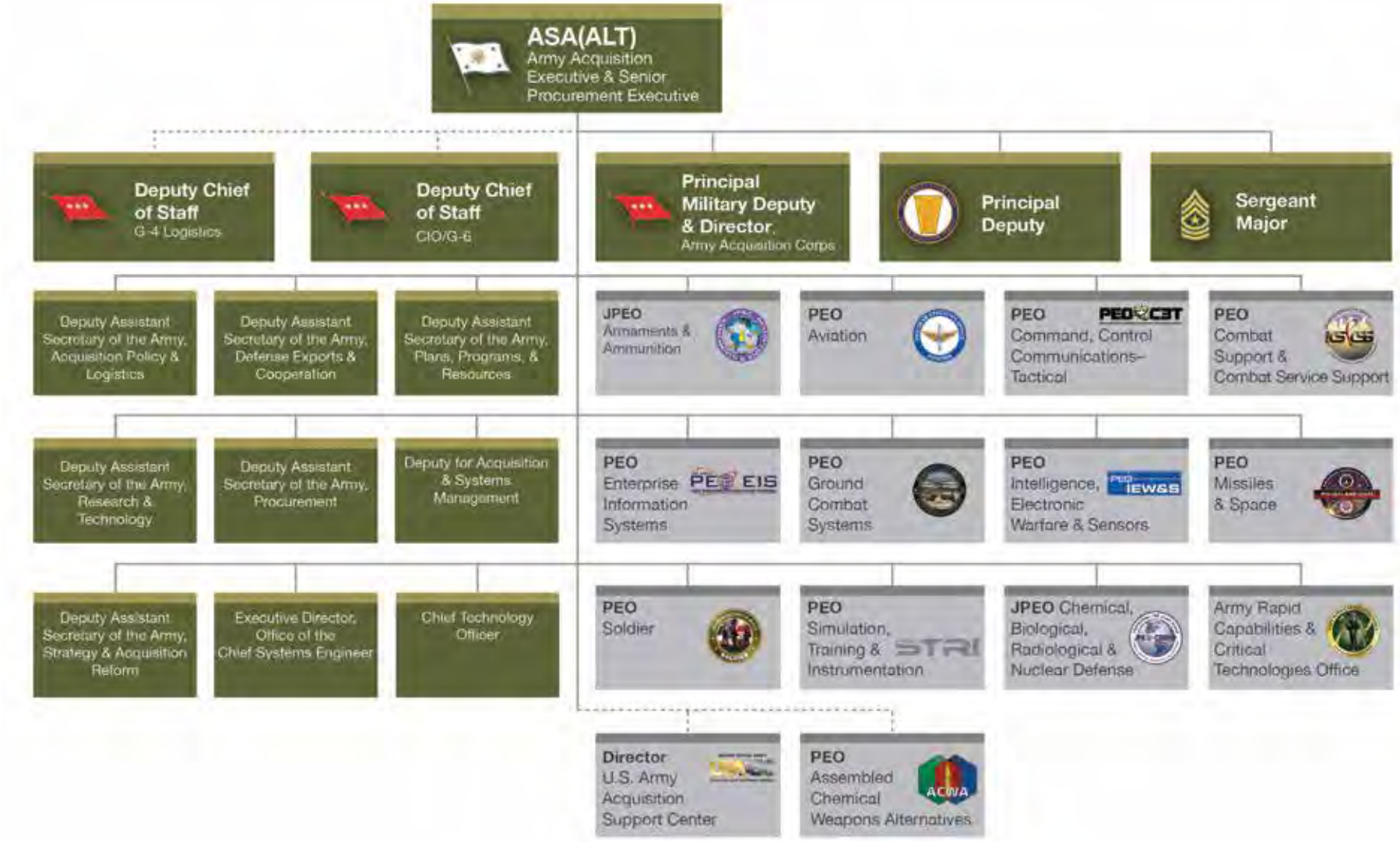




ASSISTANT SECRETARY OF THE ARMY
(ACQUISITION, LOGISTICS AND TECHNOLOGY)

(ASA(ALT)) ORGANIZATION

ASA(ALT) Organization Chart



ASA(ALT) Mission & Vision

ASA(ALT) Mission

Continuously modernize the U.S. Army through the timely development and delivery of overmatch capability to deter adversaries and win our Nation's wars.

ASA(ALT) Vision

A premier team of multiple discipline professionals integrated and effectively operating across the spectrum of the Army Modernization Enterprise to ensure land and cyberspace dominance for the United States, our partners, and allies.

DASA Acquisition Policy and Logistics

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Deputy Assistant Secretary of the Army for Acquisition Policy and Logistics (DASA APL) develops and oversees Department of the Army life cycle logistics policies and procedures for total life cycle systems management of weapon and support systems. The Acquisition Logistics Policy and Programs, Program Protection, and the Industrial Base Directorates formulate and guide execution of Army life cycle logistics and industrial base policies for an acquisition program portfolio.

The *Acquisition Logistics Policy and Programs Directorate* develops and refines acquisition logistics policies and procedures for all phases of the life cycle that align with Department of Defense policies and Army requirements. The directorate also provides logistics program oversight for Acquisition Category (ACAT) I and select ACAT II programs. This includes approving Life Cycle Sustainment Plans, reviewing Independent Logistics Assessments, and conducting Sustainment Reviews. The directorate also develops essential policy and business process reengineering for materiel developer property associated with new materiel fielding and Government furnished property.

The *Program Protection Directorate* organizes and coordinates U.S. Army efforts to mitigate security risks to U.S. Army program and research and development information and technologies to ensure the U.S. Army Warfighter retains the current and future technological advantage on the battlefield. The Directorate provides strategic management and oversight of all acquisition program protection and Defense Industrial Base cybersecurity and cyber incident damage assessment activities and policies. This includes consistent and adequate application of intelligence, security, system security engineering, supply chain risk management, counterfeit prevention, cybersecurity, hardware assurance, software assurance, and anti-tamper across the entire life cycle of all acquisition programs to protect critical program information, critical technologies, mission-critical components, and associated controlled technical information.

The *Industrial Base Directorate* provides integrated strategy, policy, and analysis and assessment of the health of the Defense Industrial Base, which is comprised of both organic and commercial sectors, ensuring the availability of current and future industrial capabilities to support Army Acquisition. This Directorate is the Army's lead for the Defense Production Act Title I (The Defense Priority Allocation System), Title III (create, expand, maintain, or modernize domestic production capabilities essential for national defense), and Title VII (Committee on Foreign Investment in the U.S.) policy and implementation.

In addition, DASA APL has been assigned the role of Army Corrosion Control and Prevention Executive (CCPE) in accordance with 10 U.S. Code 2228. The Army CCPE provides policy, guidance, and oversight for the Army-wide Corrosion Prevention and Control (CPC) program, which applies to all weapon systems, facilities, and infrastructure owned, operated, and supported by the Army. The Army-wide CPC program encompasses activities conducted throughout the acquisition life cycle, including research, development, test and evaluation, design, production, operation and maintenance, storage, and other sustainment functions. Furthering the DASA APL mission, the Environmental Support Office provides expertise in the areas of environmental, safety, occupational health, energy, and corrosion control and prevention.



DASA Defense Exports and Cooperation

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Deputy Assistant Secretary of the Army for Defense Exports and Cooperation (DASA DE&C) sets the strategic direction, develops policy, resources, and leads the Army's security assistance program, including Foreign Military Sales (FMS), export policy, and technology transfer. These programs build foreign partner capacity and enable interoperability with Army Forces. DASA DE&C is also responsible for executing the Army's armaments cooperation program. This consists of international cooperative research, development, and acquisition activities that leverage foreign technology, capabilities, and investment to support Army Readiness and Modernization.

The security assistance enterprise consists of nearly 24 agencies, offices, and commands, employing approximately 3,500 civilian, military, and contractor personnel. These security cooperation professionals work at U.S. Army Security Assistance Command, U.S. Training and Doctrine Command, the U.S. Army Corps of Engineers, Office of the Surgeon General, and international branches within the Army's Program Executive Offices (PEOs). Together, DASA DE&C and the security cooperation workforce manage and oversee FMS cases in more than 150 countries with an average total value exceeding $170 billion.

DASA DE&C bi-lateral armaments cooperation forums leverage foreign investment and emerging technology to help close Science and Technology capability gaps and enable the Army Acquisition process to quickly deliver the most advanced and capable systems to our Soldiers.

The United States does not fight alone. We fight and win wars alongside our allies and partners. Building our international partners' capabilities is an essential part of U.S. Army Readiness — enhancing our partners' capability and interoperability invests in forces that can contribute to global security, often operating in lieu of or alongside our Army in combined, Multi-Domain Operations. Together, FMS and armaments cooperation activities provide our allies and partners with creditable and interoperable military capability that exponentially amplify U.S. Army efforts to support our national security interests. Relationships fostered due to these programs contribute in providing U.S. Army forces with the strategic access necessary to project power and fight in combined operations with our partners. These relationships also free up human and materiel resources required to execute the Army's broader global defense mission.

DASA DE&C oversees the Army's International Military Education and Training program, which facilitates foreign military personnel attendance at Army schools and training to enhance military-to-military understanding and interoperability. Foreign and U.S. students train together gaining trust and confidence that will serve them in future operations.

DASA DE&C is the entry point and link between foreign partners and PEOs to define partner requirements and align production priorities with Army Readiness goals. FMS help to maintain production lines in the absence of Army orders, to protect critical workforce skills and to contribute to economies of scale.

DASA DE&C executes the Army's responsibilities to protect military technologies and prevent unauthorized proliferation of weapons, intellectual property, and sensitive information. American companies must obtain a license to market or sell military goods and services to an international customer. DASA DE&C reviews export license requests and provides the official Army position to the Departments of State and Commerce on whether to grant the license request, ensuring U.S. defense companies can compete in the global marketplace while maintaining our technological edge.

DASA DE&C is organized into four directorates:

- *Security Cooperation Integration and Exports Directorate* leads Army Headquarters review of FMS activities and develops export policy and Army positions on export licenses.
- *Armaments Cooperation Directorate* leads international armaments cooperation programs and activities.
- *Policy and Resources Directorate* develops overall security assistance policy to include international training agreements and serves as the resource manager for the enterprise.
- *Strategy, Outreach, and Operations Directorate* conducts strategic planning, forecasting, and outreach, and plans Army attendance at international trade shows to integrate security cooperation activities across the Army staff, Army Service Component Commands, Combatant Commands, and our industry partners.





DASA Plans, Programs and Resources

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The **Deputy Assistant Secretary of the Army for Plans, Programs and Resources (DASA PPR)** serves as Chief Financial Officer and Principal Advisor to the ASA(ALT) on budgetary and financial matters relating to Research, Development, Acquisition, and Operations and Maintenance (O&M) for Army acquisition programs. DASA PPR focuses on effective and efficient distribution and oversight of $44 billion in active appropriations for more than 900 programs supporting Army Readiness and Modernization. As the primary advisor to the Equipping and Sustaining Program Evaluation Group (PEG) ASA(ALT) co-chair, DASA PPR manages resources that enable the development, procurement, and deployment of weapon systems and equipment to Soldiers, and other Service members. DASA PPR plays a critical role in developing and implementing reform initiatives where efficiencies can be made to ensure sustainment of current systems through useful life while enabling Cross-Functional Teams to develop requirements for next generation systems.

The *Financial Operations Directorate* provides oversight of resource execution for Research, Development, Test and Evaluation, Procurement, and O&M funding for Army programs and the Army portion of the Defense Acquisition Workforce Development Account. The directorate accomplishes these goals through consistent engagement with Program Executive Offices (PEOs) and Army staff elements in coordinating and providing oversight of execution, rephasing, and reprogramming actions to meet Army Readiness and Modernization priorities. To ensure efficient execution, the team strives to provide programs the right resources when needed and to identify opportunities to reduce disruptions and maintain schedule.

The *Human Capital Resource Integration Directorate* focuses on planning, programming, and execution of manpower resources within the Equipping and Sustaining PEG, PEOs, and Army Acquisition community. This requires continual review, analysis, and validation of manpower requirements and programming requests to ensure ASA(ALT) input in Total Army Analysis and Program Objective Memorandum (POM) supports Army priorities. Recent reform initiatives to improve efficiencies and effectiveness include providing transparency in reimbursable rates, leading Professional Services Category Management, and transitioning personnel from reimbursable to direct funding.

The *Equipping and Sustaining PEG Directorates* collaborate with Army Futures Command, Army Materiel Command, Army G-8, and Army G-4 to identify key strategic decisions over the next 15 years to meet Army equipping and sustainment priorities. This group supports the development of the annual POM for both Equipping and Sustaining PEGs. The long-term strategic portfolio analysis review, integrated with POM builds, allows Army leadership to make decisions now, enabling future success.

The *Acquisition Domain Functional Office* focuses on the standardization and integrity of acquisition data to increase efficiencies and visibility into the acquisition portfolio for informed data-driven decision-making through Project Management Resource Tools. By collaborating with the Office of the Secretary of Defense, Deputy for Acquisition and Systems Management, PEOs, Office of Business Transformation, and U.S. Air Force, this directorate ensures defense business systems and acquisition reporting metrics are compliant with Title 10 U.S. Code 2222 and National Defense Authorization Act.

The *Audit Readiness Directorate* continues to improve the Army's ability to comply with standard accounting practices by working directly with PEOs to complete asset valuation of general equipment and Operating Materials and Supplies. The team works collaboratively with Army G-4 and the Assistant Secretary of the Army for Financial Management and Comptroller to improve compliance with accounting principles and internal controls of the existence and completeness of general equipment.

The *Management Support Directorate* provides timely and relevant service to support customers in performing the ASA(ALT) mission. This support includes assistance with antiterrorism/force protection, security, space and facilities management, property book requirements, information management, Defense Travel System inquiries, and mail support. The team collaborates with ASA(ALT)'s Chief of Staff, Directors, and Executive Officers to assess and analyze requirements to develop strategic solutions.





DASA Procurement

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The **Deputy Assistant Secretary of the Army for Procurement (DASA(P))** serves as the Principal Advisor for Procurement to the ASA(ALT), executing the full range of responsibilities for the Senior Procurement Executive, Functional Chief, and the Senior Official for the Acquisition of Services. DASA(P) leads the contracting community of practice, which is comprised of more than 8,500 contracting professionals, both military and civilian. DASA(P)'s mission is to procure systems, services, and goods when and where needed to enable the Army Mission. The vision of the organization is a *Synchronized Army Procurement Enterprise that Delivers*.

Ensuring the Army Contracting mission and achieving the vision is based on the strategic goals of: Developing People, Integrating Relationships, and Revolutionizing Contracting. As the contracting arm of ASA(ALT), DASA(P) is key to enabling the Army mission. From contract support through operational effects, Army Contracting delivers.

DASA(P)'s key initiatives include:

- **Developing People:** Prepare the Army Contracting Enterprise for the future, through strategic hiring, the application of analytics and technology, and increased training opportunities in order to foster an environment where the workforce is committed, prepared, and properly equipped with the knowledge, skills, and experience necessary to effectively execute, deliver, and support the Army mission.

- **Integrating Relationships:** Build a culture of trust among government and industry stakeholders by establishing consistent and reliable communication protocols, setting and proactively managing expectations, and facilitating partnerships and alliances that drive a deliberate contracting process that encourages innovation and collaboration throughout the acquisition lifecycle.

- **Revolutionizing Contracting:** Eliminate administrative barriers to efficiently transform business operations to enable more responsive contracting outcomes. Connecting initiatives at the strategic, operational, and tactical levels by harnessing the power of the entire enterprise – taking full advantage of our expertise, doctrine, and technology where it exists – and developing additional capability when needed.





DASA Research and Technology

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The **Deputy Assistant Secretary of the Army for Research and Technology (DASA(R&T))** is the senior official responsible for oversight of science, research, and technology within the Department of the Army. The DASA(R&T) serves as a science advisor to the Secretary of the Army and represents the Army in science, research, and technology matters to the Department of Defense (DoD), Congress, and non-DoD partners. To fulfill these responsibilities the DASA(R&T) provides strategic direction and supervision for science, research, and technology initiatives executed by Army Futures Command. This strategic direction is aligned to meet the strategic goals of both the National Defense Strategy and the Army Modernization Strategy. DASA(R&T) provides prioritization, programming, managing, and execution for the Army's Technology Maturation Initiatives (6.4) and the Manufacturing Technology Program (6.7). The DASA(R&T) is also responsible for Technology Readiness Assessments of Army Major Defense Acquisition Programs, advising the Milestone Decision Authority (MDA) at Milestone B (or at other events designated by the MDA) in the determination of whether program technologies have acceptable levels of risk.

DASA(R&T), in collaboration with Army Futures Command, ensures that the Army's science and technology (S&T) investments are focused towards the Army's Modernization priorities enabling the transition of S&T products to the Warfighter and providing the necessary cutting-edge technologies to counter near-peer threats. The expertise of academia, private sector, and non-traditional partners is leveraged by the DASA(R&T) to support the development of Army capabilities by coordinating Science, Technology, Engineering, and Mathematics educational outreach activities within the Army.

DASA(R&T) is also responsible for supervising the policies and programs of the Army Applied Small Business Innovation Research Program, which affords small businesses the opportunity to address critical Army problems. The Expeditionary Technology (xTech) Program, which aims to uncover novel science and technology concepts from small, non-traditional defense companies by connecting them with Army leaders, DoD, other government agencies, industry and academia partners, is managed by DASA(R&T) in collaboration with Army Futures Command. The Army's S&T program provides breakthrough research and technology innovation by creating, adapting, and developing leading-edge technologies for future Army capabilities; innovating technical solutions in response to urgent Warfighter needs; and informing affordable and achievable requirements through experimental prototyping and demonstrations that leverage early Soldier input and drive down technical risk.









DASA Strategy and Acquisition Reform

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The **Deputy Assistant Secretary of the Army for Strategy and Acquisition Reform (DASA SAR),** working collaboratively with other elements of the modernization enterprise, is charged with developing long-term institutional transformation to meet the Secretary of the Army's top priorities – Modernization, Readiness, and Reform.

Both Department of Defense (DoD) and Department of the Army are in the midst of significant changes. In an effort to streamline and improve the acquisition process, DoD established the Adaptive Acquisition Framework, a transformational change that simplifies acquisition policy, encourages tailored acquisition approaches, and empowers program managers more than ever before. Simultaneously, the Army is undergoing the most significant organizational change since 1973 with the establishment of the U.S. Army Futures Command. This drive for reform and organizational change across the Department provides unique opportunities to improve the efficiency and effectiveness of the Army's Modernization enterprise.

DASA SAR has principal responsibility to capitalize on these opportunities and to design and implement acquisition reform and modernization initiatives across the total life cycle of the Army's weapon and support systems to ensure continued materiel dominance in a near-peer adversary and multi-domain environment. Using Army leadership principles such as agility, centralized planning, decentralized execution, and cost- and resourced-informed decision-making, DASA SAR helps promulgate reform-driven regulation and policy initiatives. Areas of focus include:

- Developing and evaluating options for acquisition reform and modernization, including streamlining processes
- Developing strategies to manage complex acquisition challenges and emerging opportunities, including leading the Army's intellectual property management reform and advanced manufacturing initiative through the development of policy, implementation guidance, and additional implementation efforts
- Working with other stakeholders to create the new roles, responsibilities, and relationships of the ASA(ALT), and other parties of the Army Acquisition system
- Reviewing existing and proposed Army acquisition policies for consistency with the Army Acquisition Executive's priorities and mission
- Working with Congressional, DoD, Army, and industry stakeholders to incorporate reform initiatives into policy, regulation, and law
- Ensuring that Army Modernization and acquisition reform efforts are synchronized within the DoD to capitalize on best business practices





Deputy for Acquisition and Systems Management

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The **Deputy for Acquisition and Systems Management (DASM)** leads executive program oversight and implementation of acquisition policy for materiel capabilities. DASM oversight enables Army Acquisition portfolios to deliver timely, tailored solutions that meet statutory and regulatory requirements. The DASM office is the direct link between the ASA(ALT) and assigned Program Executive Offices (PEOs).

The DASM provides critical information, reviews budget justifications, and makes recommendations on acquisition programs to the Army Acquisition Executive, Headquarters, Department of the Army (HQDA), Army Futures Command, Army Materiel Command, the Joint Staff, Office of the Secretary of Defense (OSD), Congress, international stakeholders, and industrial base partners. The DASM also represents PEOs at Army, Joint, OSD, and Congressional engagements on program acquisition strategy, system performance characteristics, testing, employment, resourcing, and program baselines.

The DASM leads the ASA(ALT) portion of Army Program Budget Briefs to defend the Army's budget request to Congressional staffs; plans, executes, reports, and retains statutory and regulatory reviews for all acquisition programs; and assesses emerging statute and regulation pertaining to acquisition and systems management to advise ASA(ALT) and Army leadership. The DASM office also collects and reports acquisition program metrics for all levels of acquisition programs and collaborates with ASA(ALT) and PEO staffs to consolidate and streamline data collection, perform analyses, and report performance to inform senior leaders' decisions.

Through coordination, integration, and synchronization with HQDA, the DASM supports delivery of adaptive, expeditious, and effective materiel solutions to combatant commands and Army service component commands. The DASM advises Army senior leaders on Adaptive Acquisition Framework development activities to communicate and synchronize strategically with the Cross-Functional Teams.

The DASM advises PEOs/Program Managers (PMs) on test planning efforts and engages the test community with PEOs/PMs concerns, trains the next generation of acquisition leaders through the professional development of the Department of Army System Coordinators, and provides leadership and oversight of ASA(ALT)'s Forward Operations in Kuwait and Afghanistan.









Office of the Chief Systems Engineer

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Office of the Chief Systems Engineer (OCSE) delivers acquisition systems engineering governance to the Army. This is accomplished by synthesizing systems engineering best practices across the Program Executive Offices in support of the ASA(ALT)'s Mission, to include the establishment of System Engineering Policies, Processes, and Tools based on an underlying synergizing perspective. OCSE is the Army Acquisition Executive's trusted agent in assessing and providing recommendations to programmatic and technical reviews and in support of Milestone Decision Authority and other investment decisions.

OCSE focus areas include the governance of key elements of a system into one overall system engineering construct and managing it through major system engineering activities to ensure the fielding of integrated capabilities that meet the mission needs of the force against any potential adversaries. Key system engineering functions include mission engineering, systems engineering, and technical analysis; integrated System of Systems (SoS) architecture products; efforts in support of Common Operating Environment governance; modeling, simulation, experimentation, acquisition, logistics, and technology components; SoS-risk analysis; and mitigation planning to influence the Army's materiel portfolio.

OCSE also establishes Army systems engineering policies and implementation standards, requirements decomposition and alignment, and resource and acquisition synchronization to address cross-portfolio issues. Key tasks are the development of integrated architecture products; engineering analysis and design; portfolio analysis; systems security engineering process; interoperability assessments; acquisition, logistics, and technology data analysis; standards, and policies; and cybersecurity requirements analysis, compliance, and cyber policy assessments.

Architecture Development Kit

The Architecture Development Kit (ADK) will enable data sharing and product reuse, synchronize system engineering efforts to streamline architecture development processes, and should improve responses to Requests for Information and senior leadership queries on equipment modernization. The ADK effort also includes an Architecture Maturity Model, a stepping-stone approach that builds toward integrated Digital Engineering, a component analysis to determine what should be included in the ADK, and the path forward for implementation.

ASA(ALT) Integration into the Army Data Strategy

ASA(ALT) Acquisition Data Domain (ADD) supports Army Readiness and Modernization through the establishment of data necessary for the development and demonstration of capabilities within previously established data platforms through minimal viable products (MVP) of use case that are implemented and scaled to support the Army Modernization Enterprise. ADD efforts provide a path for ASA(ALT) to provide common enterprise data in a manner that integrates the product life cycle and includes all processes necessary to design, develop, test, produce, and support a product. ADD will advance data analytics, standards, and visualization capabilities while adding common platform services in a big data environment that is consistent with private industry. ADD pilot and MVP efforts will establish and mature data standards, governance, and security of common enterprise data in support of Army Readiness and Modernization priorities.

Digital Thread

The Digital Thread is an Army-wide effort to establish a framework that connects data flows and produces a holistic view of an asset's data across its product life cycle. This framework addresses protocols, security, and standards. Each digital thread establishes a single source of data truth creating consistency, collaboration, and alignment across functions through the data synchronization of related upstream and downstream derivative information. This scalable set of democratized data enables enterprise-wide accessibility and continuity across products, processes, and people.

Cybersecurity

OCSE performs the functions of the Principal Cyber Adviser to the Army Acquisition Executive, ASA(ALT) Engineering Governance for Cyberspace, and ASA(ALT) lead for Cyber Resilience. OCSE also leads a coordinated, comprehensive acquisition approach to enhance cyber resiliency and survivability across ASA(ALT) communities and the materiel enterprise.



JPEO Armaments and Ammunition

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Joint Program Executive Office Armaments and Ammunition (JPEO A&A) leads the development, procurement, and delivery of lethal armaments and ammunition providing joint Warfighters with overmatch capabilities to defeat current and future threats. JPEO A&A's vision of "innovative and empowered teams rapidly delivering dominating capabilities" ensures that the Munitions Enterprise meets its responsibilities now and in the future. JPEO A&A programs support the Secretary of the Army's Modernization Priorities with active programs in Long Range Precision Fires, Next Generation Combat Vehicle, Future Vertical Lift, Assured Positioning, Navigation and Timing/Space, Solider Lethality, and Air and Missile Defense Cross-Functional Teams under Army Futures Command. JPEO A&A is also designated as the Single Manager for Conventional Ammunition (SMCA) Executor. The SMCA objective is to achieve the highest possible degree of effectiveness and efficiency in the Department of Defense operations required to acquire conventional ammunition and integrate logistic functions for U.S. Armed Forces.

JPEO A&A's six subordinate offices accomplish the life cycle management of more than 600 Army programs, providing the joint Warfighter with superior munitions through a collaborative effort that leverages Government and industry partnerships. These offices include the following:

- *Project Manager Combat Ammunition Systems (PM CAS)* develops, produces, and equips Soldiers and Marines with conventional artillery and mortar ammunition, precision ammunition, mortar weapons, and mortar fire control systems. Under the SMCA responsibilities, PM CAS also procures ammunition for U.S. Marine Corps, U.S. Air Force, U.S. Special Operations Command, and allied nations.
- *Project Manager Close Combat Systems (PM CCS)* manages networked and analog technologies, energetics, and munitions that improve anti-area access/area denial and increase lethality, survivability, and overmatch of both the mounted and dismounted joint force in the close fight. PM CCS supports the spectrum of lethal, non-lethal, robotics, counter-measures, and counter explosives of unified land operations.
- *Project Manager Maneuver Ammunition Systems (PM MAS)* develops, equips, and sustains integrated lethal direct fire ammunition (small, medium, and large caliber) effects to enable joint and allied Warfighters overmatch capabilities throughout the battlefield. PM MAS also provides direct and indirect fire ammunition and rockets to allied nations that utilize previous Soviet Bloc weapon systems.
- *Program Manager for Towed Artillery Systems (PM TAS)* is a joint Army/U.S. Marine Corps program office. PM TAS provides direct, reinforcing, and general support of towed artillery fires to maneuver forces, including Stryker and Infantry Brigade Combat Teams, field artillery brigades, Army light forces, and all Marine Corps units. PM TAS also manages survey systems for the Army and Marine Corps and all legacy towed howitzers in the Army's inventory.
- *Project Director Joint Bombs (PD JB)* executes SMCA acquisition responsibility for product configurations managed by and/or primarily procured for other military services, including U.S. Air Force and U.S. Navy General Purpose, Penetrator, and Cast-Ductile Iron bombs and associated components, energetics, and 5-inch Navy Gun Ammunition product lines. PD JB also manages Army-funded procurement of Cartridge Actuated Devices and Propellant Actuated Devices.
- *Project Director Joint Services (PD JS)* executes life cycle management responsibilities for the SMCA in support of the industrial base, demilitarization, manufacturing technology and prototyping, and ammunition logistics research and development.









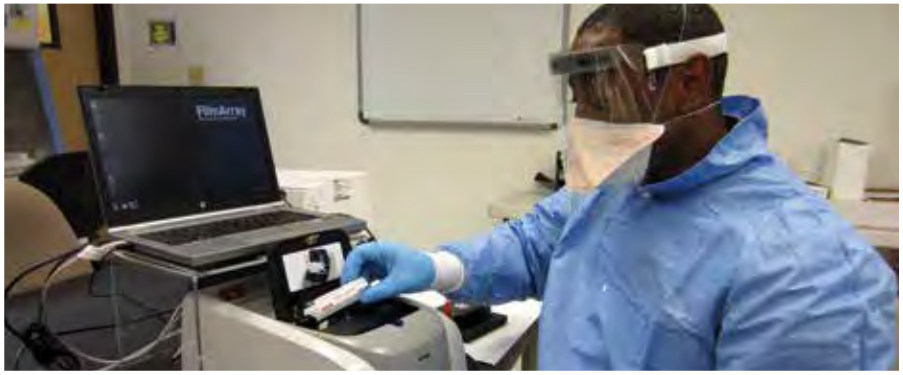
JPEO Chemical, Biological, Radiological and Nuclear Defense

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Joint Program Executive Office Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND) is the Joint Service's lead for the development, acquisition, fielding, and life cycle support of CBRN defense equipment and medical countermeasures. JPEO-CBRND puts capable and supportable systems in the hands of Service members and first responders, when and where it is needed, and at an affordable price. JPEO-CBRND's vision is a resilient and lethal joint force enabled to fight and win unencumbered by a chemical, biological, radiological, or nuclear environment; championed by innovative and state-of-the-art solutions. Joint Project Managers (JPM) and Joint Project Leads (JPL) manage the acquisition of CBRN defense equipment and medical countermeasures, serving as enablers to achieve national security strategies and support the U.S. Armed Forces. These JPMs and JPLs, collaborating with interagency, international, and industry partners, have the experience and expertise to rapidly deliver CBRN defense solutions.

- *Modernization:* JPEO-CBRND is changing the approach to modernization, considering multiple possible futures, and leveraging commercial innovations, cutting-edge Science and Technology, and Warfighter feedback. JPEO-CBRND is moving away from the old paradigm of developing items as single, stand-alone products, to a more holistic approach of developing and integrating capabilities. The result is sets of solutions that span the entire CBRN defense portfolio, providing an integrated and layered defense capability to the Warfighter. This strategy is vital to providing early warning, situational awareness, and understanding of asymmetric and unpredictable threats to the Nation's security. Additionally, JPEO-CBRND is leveraging structured approaches through experimentation to improve tools, adopt new processes, and assess and deliver technologies to the Joint Force on a multi-domain battlefield.
- *Readiness:* JPEO-CBRND addresses vulnerability gaps through responsible resourcing, technology insertion, and modernization to meet Warfighter and national security requirements. Readiness depends on the ability to collaborate with Department of Defense (DoD) partners, take advantage of academia, and engage with industry. By doing so, technologies in the field are greatly advanced and further integrated to provide early decision support.
- *Reform:* The National Defense Strategy and JPEO-CBRND's strategic guidance on streamlining acquisition calls for rapid iterative approaches to reduce risk and cost. JPEO-CBRND is streamlining acquisition and leveraging best business practices to maintain a technological edge and provide the Joint Force the equipment it needs to succeed in any environment. JPEO-CBRND is focused on rapid platform and autonomous technology development to maintain the technological edge. The future of defense acquisition is fast and agile, and JPEO-CBRND works closely with partners and end-users to rapidly deliver capabilities at the right cost.

JPEO-CBRND is taking advantage of acquisition tools that allow for engagement with industry and interagency partners sooner in the process, as well as receiving and incorporating feedback earlier from the Warfighter and end-user. JPEO-CBRND's contracting toolbox leverages Other Transaction Authority (OTA) in the medical space with the Medical CBRN Defense Consortium (MCDC). JPEO-CBRND created an overarching OTA that can be used by all of DoD for Combating Weapons of Mass Destruction. The MCDC Consortium leads collaboration with pharmaceutical, academic, and medical research entities in the U.S. Together they will enhance military mission effectiveness by providing advanced development in support of DoD's medical pharmaceutical and diagnostic requirements.





PEO Assembled Chemical Weapons Alternatives

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Program Executive Office Assembled Chemical Weapons Alternatives (PEO ACWA) is responsible for the safe destruction of the remaining U.S. chemical weapons stockpile in Colorado and Kentucky. The program's mission is to destroy the chemical weapons stockpile by December 31, 2023, the Congressionally mandated deadline. As part of this work, the U.S. Army Chemical Materials Activity (CMA) previously oversaw the safe destruction of 90% (27,474 U.S. tons) of the U.S. chemical weapons stockpile at seven chemical weapons storage sites. CMA retains the mission for the safe and secure storage of the chemical weapons stockpile at the U.S. Army Pueblo Chemical Depot in Colorado and Blue Grass Army Depot in Kentucky. Additionally, PEO ACWA maintains a supporting field office on the Anniston Army Depot in Alabama. Upon completion of PEO ACWA's mission, the program ends, and the United States will be in compliance with the Chemical Weapons Convention.

PEO ACWA is aligned under the U.S. Army Acquisition Support Center. This designation provides PEO ACWA with the necessary support and resources as an Army organization under the direct command and control of the Department of Defense. The PEO reports directly to the Deputy Assistant Secretary of Defense (Threat Reduction and Arms Control), under the umbrella of the Department's Chemical Demilitarization Program as mandated by Congress in Public Law 105–261.

The U.S. Army Pueblo Chemical Depot originally stored 2,613 U.S. tons of mustard agent in projectiles and cartridges. PEO ACWA worked with the community to select neutralization, followed by biotreatment as the destruction technology for the Pueblo Chemical Agent-Destruction Pilot Plant. Main plant destruction operations began in 2016. Additionally, Static Detonation Chamber (SDC) units, an explosive destruction technology, were selected to destroy mustard agent-filled munitions that cannot be easily processed through the main plant. In 2019, assembly of three SDC units began at the plant, with operations scheduled to begin in 2021. The U.S. Army Explosive Destruction System, another form of explosive destruction technology, augmented the main plant to destroy problematic chemical munitions from 2015 to 2018.

The Blue Grass Army Depot originally stored 523 U.S. tons of nerve and blister agents in rockets and projectiles. PEO ACWA worked with the community to select neutralization followed by supercritical water oxidation as the destruction technology for the Blue Grass Chemical Agent-Destruction Pilot Plant. Main plant destruction of nerve agent began in 2020. Additionally, SDC units were selected to destroy the entire mustard agent stockpile in Kentucky, many of which have been found unsuitable for processing through the main plant. SDC technology was also selected to process drained rocket warheads and overpacked rockets from the nerve agent stockpile to augment main plant destruction at the Blue Grass plant. In 2019, SDC operations began in Kentucky.









PEO Aviation

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Program Executive Office Aviation (PEO Aviation) supports Army commanders by delivering capabilities to the Combat Aviation Brigade (CAB). The organization supports Army Readiness by leading and executing life cycle management for all Army aviation weapons systems. PEO Aviation is preparing for future Multi-Domain Operations (MDO) by developing capabilities that will ensure an MDO-ready fleet by 2028 and an MDO-capable force by 2035.

PEO Aviation is statutorily responsible for Defense Acquisition Programs representing 30% of Army Acquisition, including nine Acquisition Category (ACAT) I programs and serves as the Milestone Decision Authority for 15 ACAT II and III Programs of Record. We also support other U.S. Government agencies with aviation acquisition through various programs and nearly 70 partner nations through Foreign Military Sales.

Army Aviation is best known for the enduring Apache, Black Hawk, Chinook, Gray Eagle, and Shadow platforms that serve with distinction around the world. Other notable PEO Aviation programs include: Lakota for aviation training and light utility; the C-12 family of fixed-wing aircraft; along with ground support and other equipment. Combined, they provide commanders with unmatched maneuver, logistical, intelligence, surveillance, and medical evacuation capabilities. As part of the Army's Readiness and Modernization mandate, PEO Aviation is preparing the enduring fleet for future operations by ensuring the readiness and relevancy of our systems through targeted modernization.

These efforts focus on increasing the reach, protection, and lethality of our platforms. The use of a modular open systems approach, manned-unmanned teaming, incremental enhancements, and breakthrough technologies to address both urgent and emerging threats will ensure the Army's Readiness and Modernization objectives are met.

To achieve this, PEO Aviation has changed its culture from working on individual programs to using an integrated approach to design, develop, and field systems that work and blend seamlessly across multiple platforms.

The targeted modernization efforts inserted into our existing fleet are also capabilities for the future fleet, which is essential for risk reduction. Technologies developed and implemented today will be the future fleet's mature and tested capabilities. The new equipment and programs will also significantly impact life cycle affordability, which is critical for the future fleet.

Future Vertical Lift (FVL) is one of the Army's top modernization priorities. The Future Long Range Assault Aircraft (FLRAA) and the Future Attack Reconnaissance Aircraft (FARA) Project Offices were established on July 12, 2019, and both have entered competitive risk reduction efforts. Working with the FVL Cross-Functional Team, the project managers are refining requirements and specifications, identifying risks, and setting the conditions for becoming weapons systems Programs of Record. FLRAA and FARA will enable MDO, providing the CAB with new capabilities to compete, fight, win, and return in a heavily contested battle space with a near-peer competitor.

The PEO Aviation workforce has adapted to the new culture, readily accepting new challenges and always exceeding expectations. It consists of the premier experts and leaders in the Army aviation value chain. Their expertise includes production, requirements validation, identifying optimal materiel solutions, acquisition, program planning and budgeting, technical and functional systems integration, training, and sustainment for the entire aviation portfolio.

PEO Aviation's mission is to serve Soldiers and our nation by "Designing, Developing, Delivering, and Supporting Advanced Aviation Capabilities" for operational commanders, and our allies. We are exploring emerging technologies that will provide the CAB with the capabilities to win on today's and future MDO battlefields.

PEO Aviation has 10 Project Offices:

- Apache Attack Helicopter
- Aviation Mission Systems and Architecture
- Aviation Turbine Engines
- Cargo Helicopter
- Fixed Wing Aircraft
- Future Attack Reconnaissance Aircraft
- Future Long Range Assault Aircraft
- Multinational Aviation Special Project Office
- Unmanned Aircraft Systems
- Utility Helicopter





PEO Combat Support and Combat Service Support

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Program Executive Office Combat Support and Combat Service Support (PEO CS&CSS) is headquartered at the Detroit Arsenal in the heart of the world's automotive capital. PEO CS&CSS is responsible for the life cycle of approximately 20% of the Army's total equipment programs spanning the Engineer, Ordnance, Quartermaster, and Transportation portfolios. PEO CS&CSS's nearly 1,500 military and civilian acquisition professionals are stationed in Michigan, Virginia, Massachusetts, and Alabama, and are assigned to our program management offices for Expeditionary Energy and Sustainment Systems; Force Projection; Joint Program Office Joint Light Tactical Vehicles; and Transportation Systems.

PEO CS&CSS's associates embody an innovative, proficient, and disciplined life cycle management team that enables Joint Warfighters by consistently providing integrated, tailored, and cost-conscious products and intensive fleet management across the portfolio, including the management of 200,000 military Tactical Wheeled Vehicles. PEO CS&CSS is the Army's Acquisition experts for commercial and Non-Developmental Items, rapidly delivering capabilities that reduce Soldier exposure, optimize manpower, and enable sustained mobility, lethality, and the network.

The PEO CS&CSS team enables Army lethality by providing the mobility, fuel and water, bridging, power generation and distribution, shelters, Army watercraft, and other key sustainment systems essential to employing and sustaining modernized Army formations in a multidomain environment – especially where modified commercial and Non-Developmental Item solutions accelerate technology and capability fielding. Nearly 67% of the organization's resources are aligned to enable Army Futures Command Cross-Functional Team-equipped formations through 30% of current PEO CS&CSS programs.

PEO CS&CSS acquisition professionals and their support teams:

- Manage the full complement of processes associated with the cost, schedule, and performance of a major portion of the Army's equipment programs
- Tailor and streamline program management initiatives using granted authorities, when appropriate, to bolster Warfighter capability by accelerating modernized equipment to the field
- Execute Foreign Military Sales cases within its vast equipment portfolio
- Develop its workforce through standard-setting talent management, education, and career-broadening opportunities to cultivate world-class Army Acquisition workforce members and the professionals who support them
- Collaborate with whole-of-Department of Defense enterprise stakeholders and industry partners to assure optimal program management, equipment fielding, training, and support for the Joint Warfighter.











PEO Command, Control, Communications–Tactical

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Program Executive Office Command, Control, Communications–Tactical (PEO C3T) is supporting the Army's new network modernization by delivering a tactical network designed to integrate unified network transport, deliver a common operating environment, enable Joint and coalition interoperability, and develop more mobile and expeditionary command posts.

PEO C3T manages 45 key acquisition programs, executing more than $2 billion annually, with a workforce of more than 1,600 employees. The organization provides operational units with radios, computers, servers, apps, and other hardware and software required for their missions, while also integrating those systems to function as cohesive capability sets.

Centered upon the proven industry practice of Developmental Operations (DevOps), the modernization strategy is placing developers side-by-side with Soldiers and commanders in operational units. DevOps enables the Army to evaluate potential technology concepts and solutions earlier and more frequently, incorporating real-time operational feedback and generating requirements that enable and empower innovation. PEO C3T, working closely with the Network-Cross-Functional Team (N-CFT), uses DevOps to inform tactical network design decisions, introduce new network enhancement alternatives, and gather Soldier-informed feedback and technical data. Key efforts include fielding standard mission command hardware and software across all component formations, accelerated fielding of the Joint Battle Command Platform mounted situational awareness and communications system, fielding advanced tactical data radios, and modernizing the satellite communications systems.

PEO C3T, with the N-CFT, is incorporating new commercial-off-the-shelf components and transport capabilities to enable network communications in disconnected, intermittent, and limited bandwidth network transport environments. This effort, termed the Integrated Tactical Network (ITN), provides a simplified, independent, mobile network solution that is available down to the small-unit dismounted leader to facilitate mission command, situational awareness, and air-to-ground integration. ITN will provide commanders with resilient communications that are part of their Primary, Alternate, Contingency, and Emergency (PACE) communications plan.

Commercial cellular networks are other options under consideration as part of a PACE plan. Commercial standards such as 4G/LTE and Wi-Fi, while not currently hardened against the kind of full spectrum Electronic Warfare (EW) environment envisioned, are being adapted to supplement and thicken the network and decrease the time it takes to get command posts up and running. Emerging commercial satellite communications constellations, promising high bandwidth anywhere across the globe, are other key elements of the modernization vision.

In addition to EW threats, defense against cyberattack and intrusion remains a critical underpinning of the strategy. Recently, the Army established new program efforts including Cyber Situational Understanding to aid operational units' understanding of the tactical network threat environment.

PEO C3T is executing the delivery of new technology every 2 years, beginning with Capability Set (CS) 21. This iterative approach enables rapid insertion of new technologies as they are developed and made available. CS21 will field to four Infantry Brigade Combat Teams (IBCTs) starting in Fiscal Year (FY) 2021, with five additional sets in FY22 to additional IBCTs and Stryker BCTS. The PEO and N-CFT teams are also developing CS23, with focus on network capacity, resiliency, and convergence.

Moving forward, experiments and evaluations will focus on driving network design changes across Security Force Assistance Brigades, Infantry, Stryker, and Armor Brigade Combat Teams, and tailoring the network and command post configurations to the unique needs of each formation. The output of these efforts will continue to generate informed network capability requirements, while enabling the Army and its industry partners to evolve the network at the pace of Warfighter demands and commercial innovation and to meet emerging threats.





PEO Enterprise Information Systems

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Program Executive Office Enterprise Information Systems (PEO EIS) provides and manages the information technology network and day-to-day business systems that directly support every domain, branch, unit, and Soldier in the Army. PEO EIS's diverse portfolio of 36 program offices and more than 70 acquisition programs support and field Army and Department of Defense communications, logistics, medical, finance, personnel, training, defensive cyber, and procurement systems for all 11 Combatant Commands, managing approximately $4.3 billion each year.

PEO EIS has two strategic areas of operations:

- *Business Mission Area:* Encompasses the Army's finance and accounting, human capital, and logistics programs
- *Enterprise Information Environment Mission Area:* Comprises the Army's defensive cyber, enterprise services, and network-related programs

Providing Army leaders with the data they need to make informed decisions is critical to readiness. PEO EIS leads the Army's effort to modernize and merge legacy stove-pipe systems into one integrated enterprise to make data accessible, reliable, and intuitive, so Soldiers have what they need to complete the mission. PEO EIS is building the Army's comprehensive data management platform designed to integrate data from new and legacy systems in any form and at any scale. PEO EIS's Enterprise Resource Planning systems provide timely logistics visibility, enhance operational decision-making, and deliver the Army's logistics, financial, and personnel solutions, improving operational readiness around the world. PEO EIS is a key partner in supporting Army data and cloud migration initiatives to transition the Army from the industrial age to the information age, improving the user experience for Soldiers, reducing costs associated with legacy systems, and improving reliability and disaster recovery.

The network is the military's foundational weapons platform. A resilient and interoperable joint network connected across the tactical, strategic, and enterprise levels is more critical than ever. Aligned with the Army's network modernization efforts, PEO EIS is shrinking the physical footprint of the existing network, piloting innovative modernization efforts, reducing costs, and introducing advanced technical solutions that increase capabilities and secure global connectivity. Delivering uninterrupted connectivity to Army posts, camps, and stations across the globe is critical and made possible through PEO EIS's terrestrial and satellite communications (SATCOM) systems and enterprise systems. PEO EIS also provides the hardware, software, and tools to proactively defend the Army's network from cyberattacks.

Improving software development and increasing use of other transaction authorities (OTAs) to speed up the acquisition process are two important ways in which cost savings and acquisition reform can be achieved. PEO EIS is helping support acquisition reform by using Agile approaches to software development, employing commercial-off-the-shelf products where feasible, and conducting rapid prototyping of new systems. The organization also has been making broad use of OTAs, enabling ongoing input from vendors, and hastening the implementation of systems that keep Soldiers connected and ready.

Some of the leading programs in the PEO EIS portfolio include:

- Army Vantage
- Defense Enterprise Wideband SATCOM System (DEWSS)
- General Fund Enterprise Business System (GFEBS)
- Global Combat Support System – Army (GCSS-A)
- Installation Information Infrastructure Modernization Program (I3MP)
- Integrated Personnel and Pay System-Army (IPPS-A)

PEO EIS is transforming the way the Army does business through innovative acquisition solutions that ensure Army Readiness. PEO EIS supports every Soldier, everywhere, every day.



PEO Ground Combat Systems

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Program Executive Office Ground Combat Systems (PEO GCS) is responsible for providing world-class affordable, relevant, and sustainable ground combat equipment to Soldiers. As the Army's Combat Vehicle Modernization strategy is focused on winning on the future battlefield, PEO GCS is at the leading edge of the spear. Through its work on the Army's top two modernization priorities — Long Range Precision Fires and fielding the Next Generation Combat Vehicle — PEO GCS is ensuring the Army will maintain over-match against its adversaries.

Improving Long Range Precision Fires is the Army's number one priority and the Self-Propelled Howitzer serves as the foundation for this effort through its work on the Extended Range Cannon Artillery (ERCA) Family of Vehicles. The goal of the ERCA effort is to close current cannon artillery capability gaps, building on the Paladin M109A7 Self-Propelled Howitzer mobility and survivability upgrades. This next-generation howitzer armament system provides the Army with an increased capability for Paladin Self-Propelled Howitzers, while also providing the architecture and growth margins for future propellant and projectile advancements.

Further ensuring overmatch against adversaries, PEO GCS's work on the Optionally Manned Fighting Vehicle (OMFV) answers the Army's second highest priority, fielding Next Generation Combat Vehicles. The Army's OMFV, a middle-tier rapid prototyping acquisition, is planned as the Armored Brigade Combat Team solution to maneuver the Warfighter on the battlefield to advantageous positions for close combat. In addition, the OMFV is intended to control robotic and semiautonomous ground systems.

PEO GCS ensures combat overmatch for America's Soldiers by modernizing, transforming, and sustaining the fleet while focusing on acquisition fundamentals. PEO GCS also modifies existing systems to meet near-term capability gaps for network, lethality, mobility, and survivability while sustaining systems for the current fight and divesting systems to free up sustainment resources.

Additionally, PEO GCS manages the modernization of the Army's legacy Combat Vehicle fleet with upgrades to the Bradley Fighting Vehicle, the Abrams Main Battle Tank, combat recovery systems like the M88A2 and the Stryker Family of Vehicles. In every case, PEO GCS is working to improve the ability to host the Army's future network. In cases where platforms cannot be upgraded, PEO GCS is leading the way in making sure obsolete vehicles are replaced with those that provide significant improvements to protection, mobility, and utility like the Armored Multi-Purpose Vehicle.







PEO Intelligence, Electronic Warfare and Sensors

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Program Executive Office Intelligence, Electronic Warfare and Sensors (PEO IEW&S) adheres to a simple, but powerful, mission statement: "Deliver capability to Soldiers now through affordable and adaptable programs that pace the threat." PEO IEW&S systems are proven lifesavers on the battlefield. Therefore, the men and women of this organization passionately tackle the mission of getting superior technological solutions into Soldier's hands to ensure overmatch that overwhelms any potential threat.

Headquartered at Aberdeen Proving Ground, Maryland, PEO IEW&S has teams located at Fort Belvoir, Virginia, Redstone Army Arsenal, Alabama, and Los Angeles Air Force Base, California. PEO IEW&S has seven subordinate organizations that manage more than 100 Programs of Record and quick reaction capabilities.

PEO IEW&S's extremely diversified portfolio supports a wide range of organizations throughout the Army, as well as joint and coalition partners. With multiple portfolios under one umbrella, PEO IEW&S is involved in Space; Force Protection; Intelligence, Surveillance, and Reconnaissance (ISR); Cyber; Electronic Warfare; Mission Command; and Aviation and Fires.

Each Project Manager (PM) is responsible for:

- *PM Aircraft Survivability Equipment* develops and fields world-class aircraft survivability systems that maximize the survivability of Army aircraft against a continually evolving threat without degrading combat mission effectiveness. The team ensures that aircrews and their aircraft are protected against all emerging threats, regardless of airframe or mission.
- *PM Department of Defense (DoD) Biometrics* systems capture, transmit, store, manage, share, retrieve, and display biometric data of non-U.S. threat forces for timely identification or identity verification. These systems are mission-enablers for force protection, intelligence, physical and logical access control, identity management/credentialing, detention, and interception operations. With a global footprint, PM DoD Biometrics provides biometrics support to overseas contingency operations, including counterintelligence, security force screening, detainee operations, cache and post-Improvised Explosive Device incident exploitation, intelligence operations, presence operations, local population control, seizure operations, and base access control.
- *PM Intelligence Systems and Analytics* fields and sustains modernized intelligence systems for the battlefield of tomorrow.
- *PM Electronic Warfare and Cyber* acquires integrated intelligence and electronic and cyber warfare capabilities that provide spectrum and cyberspace superiority to enable freedom of maneuver on the battlefield.
- *PM Positioning, Navigation, and Timing (PNT)* provides Warfighter-valued Assured PNT solutions. PNT systems enable Multi-Domain Operations in rapidly evolving denied environments, ensuring overmatch capability through innovative acquisition and rapid integration of cutting-edge Modular and Open System Assured PNT technologies.
- *PD Sensors Aerial Intelligence* develops, acquires, fields, and supplies life cycle support to modernized, integrated, tactically relevant aerial ISR sensor payloads while leveraging national capabilities, as well as providing for the processing, exploitation, and dissemination of intelligence products to support the Warfighter with actionable intelligence.
- *PM Terrestrial Sensors* ensures battlefield dominance by delivering innovative and persistent ISR and Force Protection sensor capabilities for our Army "to fight tonight."







PEO Missiles and Space

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Program Executive Office Missiles and Space (PEO MS) delivers integrated offensive and defensive fires materiel solutions to defeat the threats of today and tomorrow. Through an empowered and professional acquisition workforce, PEO MS streamlines internal acquisition processes, increases the use of innovative technologies and methods, enhances the interoperability of systems, and improves internal and external communications.

PEO MS is on the cutting-edge of the Army's Long Range Precision Fires, Air and Missile Defense, Hypersonic, Directed Energy, Counter-Unmanned Aerial Systems, and Aviation and Ground Missiles modernization initiatives. Of the Army's 31 Modernization priorities, five fall within the PEO MS portfolio: Army Integrated Air and Missile Defense, Initial Maneuver-Short Range Air Defense, Lower Tier Air and Missile Defense Sensor, Interim Indirect Fire Protection Capability - Iron Dome Defense System, and the Precision Strike Munition.

PEO MS increases force protection and enhances Warfighter lethality by developing, delivering, and sustaining air defense launch platforms and missiles, directed energy, radars and sensors, and command and control systems that provide Warfighters with integrated offensive and defensive fires across all domains beginning with target acquisition and culminating with target defeat.

In response to changes in the operational environment, PEO MS realigned its portfolio to provide a rapid, iterative approach to capability development that reduces duplication of effort, cost, technological obsolescence, and acquisition risk. Today, PEO MS is responsible for 34 Programs of Record managed by six Project Offices:

- *Integrated Fires Rapid Capabilities Office* delivers integrated offensive and defensive fires capabilities to the Warfighter and quick reaction capabilities to meet Urgent Operational Needs.
- *Integrated Fires Mission Command* develops, tests, acquires, fields, and sustains integrated fires capabilities to the Warfighter through weapon and sensor integration and a common mission command system across all domains.
- *Short and Intermediate Effectors for Layered Defense* develops, tests, acquires, fields, and sustains modernized kinetic and directed energy integrated air and missile defense capabilities to Warfighters, as well as enables them to compete, penetrate, disintegrate, and exploit in all domains.
- *Search, Track, Acquire, Radiate, Eliminate* develops, tests, acquires, fields, and sustains world-class radar and sensor technologies enabling the long-range detection, discrimination, tracking, and destruction of multi-domain threat capabilities through the integration with mission command and effector systems.
- *Strategic and Operational Missiles and Rockets (STORM)* develops, tests, acquires, fields, and sustains the STORM family of launchers and munitions to fulfill the strategic and operational artillery requirements of U.S. and allied Warfighters.
- *Tactical Aviation and Ground Munitions* develops, tests, acquires, fields, and sustains versatile air- and ground-launched weapon systems for Warfighters that provide a decisive battlefield advantage in all domains.

The PEO MS team of dedicated professionals work in collaboration with Army Futures Command, Cross-Functional Teams, Centers of Excellence, other Services, and the defense industry to pursue opportunities for combined research and development on emerging technologies.



PEO Simulation, Training and Instrumentation

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Program Executive Office Simulation, Training and Instrumentation's (PEO STRI) mission, "Develop, acquire, provide, and sustain simulation, training, testing, and modeling solutions to optimize Warfighter Readiness," is uniquely suited to meet the Army's top priorities. With a diverse and highly qualified workforce of more than 1,000 military, civilian, and contracted personnel, PEO STRI works closely with its industry, academia, other military services, and Government partners to ensure, through continued modernization efforts, Soldiers have the high-fidelity, realistic training and testing products needed to remain second-to-none on the battlefield.

Every deploying Soldier uses some type of simulation to train and hone their critical warfighting skills. With a close eye on the constantly evolving global challenges facing our Nation and our allies, PEO STRI remains committed to accomplishing its mission.

PEO STRI's five Project Manager/Project Lead offices ensure the Army's priorities are well-nested in their ongoing programs.

- *Project Manager Synthetic Environment (PM SE)* provides relevant integrated modeling and simulation capabilities to achieve Army Readiness.
- *Project Manager Soldier Training (PM ST)* improves Soldier Readiness using realistic training environments and equipment at home stations, Combat Training Centers (CTCs), and deployed locations.
- *Project Manager Cyber, Test, and Training (PM CT2)* provides and operates effective and relevant test, training, and threat capabilities.
- *Project Lead Training Aids, Simulators, and Simulations Support Operations* provides worldwide Training Aids, Devices, Simulators, and Simulations maintenance, operations, sustainment, and training support to U.S. Army garrisons, institutions, Combat Training Centers, and deployed areas of operations.
- *Project Lead International Programs Office (PL IPO)* builds partner capacity by providing training systems, training, and sustainment in line with the Combatant and the Army Service Component Commanders' operational plan.

PEO STRI's top priorities are:

- Synthetic Training Environment (STE) provides a cognitive, collective, multi-echelon training, and mission rehearsal capability for the operational, institutional, and self-development training domains. It brings together the virtual, constructive, and gaming training environments into a single STE. PEO STRI works closely with the STE Cross-Functional Team in that arena.
- Support to CTCs deliver capabilities to include Training Aids, Devices, Simulators, Simulations, and Multiple Integrated Laser Engagement Systems to support the CTCs in ensuring Soldiers increase their lethality and learn the skills necessary to accomplish the Army mission.
- Persistent Cyber Training Environment addresses an urgent need to provide a persistent and realistic training environment to Department of Defense Cyber Mission Forces. The Department of Defense has tasked the Army and subsequently PEO STRI's PM CT2, to take the lead in expanding National Cyber Ranges (NCRs) to meet the challenge. The NCRs provide advanced cyber research and development of new capabilities, analysis of malware, cyber training and exercises, and secure cloud computing and storage architectures.
- Medical Modeling and Simulation provides a centralized, total life cycle management approach for the materiel development and procurement of medical Training Aids, Devices, Simulators, and Simulations across the Medical Health System.

PEO STRI's priority to Strengthen Alliances, Attract New Partners is addressed through its International Programs Office to strengthen and evolve our alliances and partnerships into an extended network capable of deterring and decisively acting to meet today's challenges. Their motto, "We work for our Soldiers. It's the best job we've ever had," is not just a saying, it's with that thought that each and every aspect of their mission is accomplished.





PEO Soldier

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Program Executive Office Soldier (PEO Soldier) rapidly delivers agile and adaptive, leading-edge Soldier capabilities to provide combat overmatch today and be more lethal tomorrow. PEO Soldier supports the future force by being committed to delivering capabilities to Soldiers to ensure overmatch. Their focus is on ensuring Soldiers have enhanced capabilities in lethality, mobility, survivability, situational awareness, and sustainment. They treat the Soldier as an integrated weapons system and the squad as an integrated combat platform – from their uniforms to their personal protection to their weapons. Soldiers of the future will have adaptive, agile, modular, and scalable equipment that will be optimized for the mission without sacrificing capability or performance.

PEO Soldier rapidly fields our Soldiers with the finest equipment and protection available to ensure overmatch. They also provide the processes and tools to ensure a collaborative, iterative Soldier-centered approach to delivering integrated capability to Soldiers and squads. PEO Soldier's Project Management and Project Director Offices provide the best equipment to enable mission success.

- *Project Manager Soldier Survivability* develops and fields innovative Soldier protective equipment, functional uniforms, and individual equipment that is universal for all Soldiers, male and female, to enhance mission effectiveness to the occupational specialties of the force.
- *Product Manager Soldier Clothing and Individual Equipment* provides Soldiers safe, agile, adaptive, durable, and operationally effective organizational clothing and individual clothing. This increases the Warfighter's lethality and mobility by optimizing Soldier protection and effectively serving as the life cycle manager for all personal protective equipment.
- *Product Manager Air Warrior* integrates aviation life support and mission equipment into an ensemble that provides combat overmatch and improves the combat effectiveness of the Army aircrew member.
- *Project Manager Soldier Maneuver and Precision Targeting (PM SMPT)* provides Soldiers with improved lethality, mobility, and survivability in all weather and visibility conditions. Sensor and laser systems PM SMPT developed provide critical, on-the-ground direct support to U.S. forces.
- *Project Manager Soldier Lethality (PM SL)* ensures that Soldiers on the battlefield have overmatch capabilities in individual and crew-served weapons. PM SL supports Soldiers through the development, production, fielding, and sustainment of current and next generation weapons systems, as well as associated target acquisition/fire control products.
- *Project Manager Close Combat Squad* develops, integrates, acquires, fields, and sustains integrated Soldier systems that connect the Soldier with platforms and tactical networks; performs Soldier and Squad Integration and configuration management; and provides capability improvements in battle command, situational awareness, Soldier power, mobile handheld computing standards, systems integration, survivability, mobility, and sustainment.
- *Project Manager Integrated Visual Augmentation System* is a low profile ruggedized heads-up display with a body borne compute pack, conformal wearable battery, squad radio, and integrated sensors that provides the Close Combat Force a single platform to Fight, Rehearse, and Train.
- *Project Director Rapid Equipment Force's* mission is to provide innovative materiel solutions to meet the urgent requirements of U.S. Army forces employed globally, inform materiel development for the future force, and on order expand to meet operational demands.

Modernization to achieve overmatch against potential current and future adversaries is one of the Army's top priorities. From partnering with industry to developing more technologically advanced equipment for Soldiers, the Army has positioned itself to enhance close combat capability by focusing on the squad as an integrated combat platform.





Army Rapid Capabilities and Critical Technologies Office

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Army Rapid Capabilities and Critical Technologies Office (RCCTO) is uniquely chartered to execute rapid experimental prototypes and field residual combat capabilities to Soldiers. RCCTO works closely with other Army organizations such as Army Futures Command and the Program Executive Offices to deliver critical capabilities that meet the Army's Modernization priorities. Currently, RCCTO's focus is on the areas of hypersonics, directed energy, and mid-range capability (MRC), while executing additional missions in areas such as counter-small unmanned aircraft systems, hybrid electric vehicle technologies, and other innovative capabilities.

RCCTO, headquartered at Redstone Arsenal, Alabama, with office locations in Fort Belvoir, Virginia, and Aberdeen Proving Ground, Maryland, leverages innovation by other Government agencies and industry partners, as well as Warfighter feedback, to deliver solutions on an accelerated timeline. RCCTO works across Army stakeholders to ensure Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, and Policy support is in place to implement the new prototype capabilities within the operational Army. Ordinarily, enduring capabilities will be transitioned to a Program Executive Office for continued production, modification, sustainment, and support.

RCCTO reports to and accepts assignments through its Army Board of Directors, led by the Secretary of the Army, and including the Chief of Staff of the Army, Under Secretary of the Army, Vice Chief of Staff of the Army, Army Acquisition Executive, and the Commander of Army Futures Command. RCCTO's unique charter allows rapid navigation or exemption from many of the traditional processes that govern a Program of Record.

The RCCTO mission enables adaptation to changing conditions and threats, and incorporates Soldier-centered design throughout the development process. Early and reoccurring interactions with Soldiers are critically important to providing prototypes with residual combat capability. RCCTO prototypes will be fielded to Soldiers who can train and learn how to fight with these capabilities.

Hypersonics
Responsible for delivering the prototype Long Range Hypersonic Weapon (LRHW) to an Army battery by Fiscal Year (FY) 2023, RCCTO is also helping create a new U.S. industrial base for hypersonics. In developing the LRHW, the Army is working in close collaboration with the other services through a Joint Service Memorandum of Agreement on hypersonics design, development, testing, and production. This joint cooperation allows the services to leverage common technologies, while tailoring them to meet specific air, land, and sea requirements. On March 19, 2020, the U.S. Navy and U.S. Army executed a succesful flight test of a hypersonic glide body, marking a major milestone towards the goal of fielding hypersonic capabilities.

Directed Energy
As lead for Army directed energy efforts, RCCTO is charged with delivering the Army's first laser weapon system for tactical use by FY22. These 50 kilowatt (kW)-class lasers, heading to a platoon of Strykers, will improve Soldiers' defense against rocket, artillery, and mortar threats, and an increasing number of unmanned aerial systems. Additionally, RCCTO is prototyping a 300 kW-class Indirect Fire Protection Capability – High Energy Laser for delivery to a platoon in FY24, and is partnering with the Air Force to deliver an Indirect Fire Protection Capability – High Power Microwave prototype in FY24.

Mid-Range Capability
The Army is developing a ground-launched, prototype MRC for delivery to an operational battery in FY23. MRC, as part of the Army's number one modernization priority of Long-Range Precision Fires, will be designed to hit targets in the range between the Precision Strike Missile and the LRHW. MRC complements other critical systems in the Army's fires portfolio in support of Multi-Domain Operations.

Emerging Technologies
RCCTO is also executing missions and exploring emerging and disruptive technologies in areas such as the Bradley hybrid electric vehicle, counter-small unmanned aircraft systems, weapon system cyber resiliency, dismounted electronic warfare kits, and more.





U.S. Army Acquisition Support Center

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U.S. Army Acquisition Support Center (USAASC) is a Direct Reporting Unit of the ASA(ALT). USAASC enhances the readiness of the Army's Warfighter by providing support to the approximately 42,000-member Army Acquisition Workforce as well as to the 12 Program Executive Offices (PEOs) responsible for the prototyping, procurement, and fielding of equipment for the Army. USAASC's mission is to shape and develop the Army Acquisition community's capabilities through superior support and the development of world-class professionals.

USAASC has a number of key responsibilities, including:

- Conduct the Director, Acquisition Career Management (DACM) mission in support of the Army Acquisition Workforce
- Establish processes that facilitate communication, cooperation, information exchange, and collective decision-making between and among Army organizations, industry, academia, and other governmental entities
- Provide support to PEOs in the areas of resource management, human resources management, and program force structure support; and serve as the higher headquarters for Protection and Security

The Director, USAASC also serves as the DACM. Within USAASC, the Army DACM Office ensures a highly capable, agile, adaptive, and professional Army Acquisition Workforce in compliance with the Defense Acquisition Workforce Improvement Act.

The DACM Office's key responsibilities include:

- Champion the Army Acquisition Workforce Human Capital Strategic Plan as the framework for building the workforce
- Develop Army Acquisition Workforce policy with a clear understanding of Congressional, Department of Defense, and Army environments
- Provide acquisition career management advice support and training to leaders, supervisors, and acquisition workforce members
- Develop and execute acquisition leader development opportunities, education and incentive programs, and talent management initiatives









U.S. ARMY FUTURES COMMAND (AFC) & CROSS-FUNCTIONAL TEAMS (CFTs)

U.S. Army Futures Command

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DESCRIPTION

Army Futures Command's (AFC) establishment marks the most significant Army reorganization effort since 1973, when the Army established Forces Command and Training and Doctrine Command. AFC establishes unity of command and effort by consolidating the modernization enterprise.

Austin, Texas, was selected as the home of AFC due to its innovative and agile industrial and academic institutions. Here, the command can instill a culture centered around the cutting edge of new technologies and develop the synergy required to lead the Army's modernization efforts. AFC identifies and develops new prototypes and technologies and delivers them to Warfighters faster than ever.

Winning matters, but winning together matters more. Persistent modernization — and winning future wars — requires the integration of much more than the AFC, or even the Army. We must leverage every opportunity to maximize our own internal effectiveness and draw on the inventiveness that surrounds us within our Soldiers, academia, and traditional and non-traditional business, as well as our Allies and partners. Learning organizations get better with each step — and draw on the expertise and creativity of everyone around them. This is a team sport — it's about winning together.

AFC modernizes the Army for the future — we integrate the future operational environment, threat, and technologies to develop and deliver the organizational design, requirements, and materiel capabilities required for the future force. We are the custodian of Army modernization efforts, linking operational concepts to requirements to acquisition to fielding. Together we join concepts and requirements together with engineering and acquisitions functions into one team.

The linchpins of AFC headquarters are flexibility, collaboration, and speed. Everything we do is focused on faster innovation, experimentation, and demonstration.

Rapid prototyping is critical to our mission. Our goal is to move at the speed of relevance and if we fail – fail early and learn faster. This requires innovation and partnerships from our entire Nation.






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AFC Organization











AFC SUPPORTING COMMANDS

Futures and Concepts Center (FCC) assesses threats and future operational environment, develops concepts, requirements, and an integrated modernization path to increase lethality and overmatch to enable Soldiers and units to win on future battlefields.

Combat Capabilities Development Command (DEVCOM) headquartered at Aberdeen Proving Ground, Maryland, ensures the dominance of Army capabilities by creating, integrating, and delivering technology-enabled solutions to our Soldiers. DEVCOM is the Army's organic research and development capability

Medical Research and Development Command (MRDC) headquartered at Fort Detrick, Maryland, manages and executes research in five basic areas: military infectious diseases, combat casualty care, military operational medicine, chemical biological defense, and clinical and rehabilitative medicine.

The Research and Analysis Center (TRAC), headquartered at Fort Leavenworth, Kansas, produces relevant, objective, and credible operations analysis to inform key AFC, Army, and Joint Leader decisions. TRAC develops and maintains models and simulations, analytic methods and tools, and scenarios that underpin Army concepts and requirements. TRAC employs these resources to conduct force effectiveness modeling and analysis of the Army Future Force.

CROSS-FUNCTIONAL TEAMS

Cross-Functional Teams (CFTs) were established to narrow existing capability gaps by developing capability documents, informed by experimentation and technical demonstrations to rapidly transition leader-approved capability requirements to the Army Acquisition System.

AFC INTEGRATION AND SYNCHRONIZATION TEAMS

Army Artificial Intelligence Integration Center (AI2C) located at Carnegie Mellon University in Pittsburgh, Pennsylvania, leads and integrates the Army Artificial Intelligence (AI) strategy and implementation plan, synchronizes key development efforts, and sets the foundations for operationalizing AI within the Army Modernization Enterprise.

Army Applications Lab (AAL) based in Austin, Texas, aligns innovative solutions and technologies with Army problems, resources, and programs to rapidly discover, validate, and transition technology applications in support of Army Modernization.

AFC DIRECT SUPPORTING UNITS

Army Test & Evaluation Command (ATEC) headquartered at Aberdeen Proving Ground, Maryland, provides direct support to Army Futures Command and relevant, timely information to senior Army leaders through rigorous developmental testing and independent operational tests and evaluations.

75th Innovation Command (75th IC) is an Army Reserve command based in Houston, Texas. The command drives operational innovation, concepts, and capabilities to enhance the readiness and lethality of the Future Force by leveraging the unique skills, agility, and private sector connectivity of America's Army Reserve.

Combat Capabilities Development Command

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DESCRIPTION

The **U.S. Army Combat Capabilities Development Command (DEVCOM)** serves as the Science and Technology (S&T) foundation of the modernization enterprise, under the strategic guidance of Army Futures Command (AFC). DEVCOM integrates AFC's research, development, life cycle engineering, and analytical expertise to deliver S&T-driven capabilities required to modernize the Army.

DEVCOM supports Army Modernization and research priorities to inform concepts required for the AimPoint 2035 Force and Beyond. The team oversees the discovery, development, and transition of operationally relevant solutions and knowledge to acquisition, sustainment, Cross-Functional Team, and Futures and Concepts partners.

DEVCOM comprises the Army Research Laboratory, the Armaments Center, the Aviation and Missile Center, the Chemical Biological Center, the Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance Center, the Data and Analysis Center, the Ground Vehicle Systems Center, and the Soldier Center. Headquartered at Aberdeen Proving Ground, Maryland, the Command operates as a team-of-teams with dozens of locations across the U.S. and overseas. In addition to this global presence, the DEVCOM team leverages more than 600 Cooperative Research and Development Agreements and more than 10 formal partnership mechanisms to exchange ideas, bring partners into our facilities, transfer knowledge and technologies, and rapidly explore innovation that meets the needs of the Army and Department of Defense, both today and in the future of Multi-Domain Operations.

DEVCOM balances its portfolio across the entire capabilities development spectrum, leading efforts in the Army's nine research priorities, delivering the engineering required for new capabilities, as well as developing new technologies that support already fielded systems. This begins with a partnership between teams at DEVCOM and AFC's Futures and Concepts Center known as Team Ignite. This collaborative effort brings together technology forecasters and operational concept writers to enhance the AFC's ability to predict the future operational environment, the capabilities Soldiers will need to dominate that environment, and focus investments and efforts to meet those challenges.

DEVCOM employs a Soldier-centered design philosophy to ensure our teams develop capabilities our Soldiers need by taking our work out of the lab and into the dirt where Soldiers use our capabilities. This iterative experimentation enables the DEVCOM team to collaborate with the modernization enterprise, as well as industry, small businesses, and other external partners to integrate technologies in real-world environments and leveraging Soldier feedback to reduce risk and refine the development process to create more Soldier-focused prototypes and capabilities.

DEVCOM's design philosophy is driving the Army's Project Convergence (PC), the AFC premier campaign of learning where DEVCOM S&T solutions are tested in the dirt by scientists, engineers, and technicians at Yuma Proving Ground, Arizona, alongside partners and other problem solvers. The Command's team-of-teams operations enables data collection and deep analysis that contributes to advancing Army research projects, like the 3.8 million labeled images from multiple environments during PC20, that will help develop Artificial Intelligence-enabled capabilities for PC21 and beyond.

DEVCOM has more than 40 technologies on track for PC21, as well as expanding internal capabilities, such as the Joint Systems Integration Lab (JSIL). The DEVCOM JSIL is a realistic tactical network environment that will connect local Aberdeen Proving Ground labs to remote facilities hosting Army and Joint capabilities and systems as well as industry partners to advance emerging radio, network, and application technologies. Planning is underway to integrate our allies' technology to enable Combined Joint All Domain Operations for PC22.





Futures and Concepts Center

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DESCRIPTION

The **Futures and Concepts Center (FCC)** is a subordinate organization of Army Futures Command (AFC) and provides the intellectual foundation and disciplined approach to design, develop, and field the future Army. These efforts directly support the Army's modernization priorities of maintaining overmatch against adversaries and remaining the world's premier land fighting force and AFC's modernization priorities that provide future Warfighters with the concepts, capabilities, and organizational designs needed to dominate a future battlefield.

The center is located in Austin, Texas, and Fort Eustis, Virginia, with subordinate units consisting of the Joint Modernization Command and 10 Capability Development Integration Directorates (CDIDs) located across the United States. The CDIDs are functionally focused on concepts, requirements, experimentation, and Doctrine, Organization, Training, Materiel, Leadership Development, Personnel, Facilities, and Policies integration.

Readiness: The U.S. military faces a dynamically changing security environment characterized by great power competition, rapid technology advances and new challenges in all warfighting domains. The scale of future warfare will only expand in geography, domains, and types of potential adversaries. FCC supports the Army's pursuit of leap-ahead advances in technology through experimentation and integration while developing concepts and determining requirements for organizational reforms that will best support our efforts to deter aggression, dominate our adversaries, and win our Nation's wars.

Modernization: FCC supports modernization efforts by setting conditions to develop a Multi-Domain Operations (MDO) capable force with next-generation capabilities. MDO is the driving concept behind the entire modernization effort, describing how Army forces will operate across all domains — land, sea, air, space, and cyberspace — to enable the Joint Force to achieve its military objectives. FCC is a key component of AFC's execution of Project Convergence (PC). PC is the Army's campaign of learning, experimentation, and demonstration aimed at aggressively integrating the Army's weapons systems and command and control systems with those of the rest of the Joint Force. PC develops, integrates, and demonstrates emerging battlefield systems to deliver future battlefield effects and dominate in MDO.

Reform: FCC experiments to refine emerging concepts and identify required capabilities necessary to fight and win on the battlefield of the future. These actions inform and enable the Operational Environment used to train the current force and support efforts by the Army to make decisions on the size, composition, and equipment required by the future force. These decisions spin out to affect every part of the Army to include Leader Development, Installation Management, and service policies.







U.S. Army Medical Research and Development Command

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DESCRIPTION

U.S. Army Medical Research and Development Command's (USAMRDC) expertise in critical areas helps establish and maintain the capabilities the Army needs to remain ready and lethal on the battlefield. USAMRDC leverages medical research and development, partnerships, technology modernization efforts, and knowledge solutions to deliver products that meet the medical needs of the U.S. Army and Department of Defense (DoD), both today and future Multi-Domain Operations (MDO). USAMRDC directly supports the DoD and U.S. Army mission to provide state-of-the-art medical care to the deployed Warfighter. Medical information and products developed and fielded by USAMRDC enable MDO by protecting and sustaining the health and safety of the force, optimizing performance, and maximizing survival after injury in a far-forward environment.

USAMRDC's mission is to create, develop, acquire, and deliver capabilities for the Warfighter responsively and responsibly. The vision is to lead the advancement of military medicine. The Command is headquartered at Fort Detrick, Maryland, with eight subordinate commands located throughout the world. Six medical research laboratory commands execute the science and technology program to investigate medical solutions (knowledge and materiel) for the battlefield. An additional two subordinate commands focus on medical program management and contracting activities.

Readiness: USAMRDC's platform is the Soldier. Medical readiness enables Soldier readiness, which allows the Army to fight today and prepare for the fight tomorrow. USAMRDC investments provide innovative medical solutions to address validated high-risk capability gaps such as providing prolonged care at the point of injury. Improving Soldier readiness includes providing capabilities to prevent injuries, and when prevention fails, to improve patient care from the point-of-injury through the field hospital. USAMRDC's work ensures Soldiers are ready to meet the increased demand of MDO and solutions range from illness prevention to optimization of Soldier performance through targeted nutrition, injury prevention and screening, and behavioral health interventions all in the far-forward environment.

Modernization: USAMRDC encompasses science and technology (including basic to applied research for knowledge and materiel), product development, and systems management (including program management, assembly management, modernization, and developmental test and evaluation), and contracting and grants management. This integration allows for a holistic approach to create, develop, procure, and deliver medical materiel rapidly and effectively. When available, commercial solutions and innovations are leveraged to modernize existing capabilities. USAMRDC leads research and development when the issue is military unique, industry/academia lack interest, or a solution is urgently required or Congressionally directed.

Medical Prototype Development Lab: This asset can design, develop, and quickly prototype far-forward medical equipment. Core capabilities include 3D computer-aided design and manufacturing, as well as prototype development and fabrication.

Reform: USAMRDC is dedicated to rapidly delivering effective and operationally suitable medical solutions. In accordance with acquisition streamlining and reform, the Command established Acquisition Category IV programs and implemented "Smart Contracting," leveraging Other Transaction Authority (OTA) and the Economy Act.

Through a 10-year renewable OTA agreement with the Medical Technology Enterprise Consortium, USAMRDC accesses over 430 small and large business, academic, not-for-profit, and non-traditional Government contractor organizations. This contracting vehicle enables maximum flexibility, cost sharing, and prototype acceleration. USAMRDC leverages the Rapid Equipping Force to provide innovative potential solutions to address urgent requirements. This process assists with developing and validating solutions in the operational environment.



Air and Missile Defense Cross-Functional Team

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DESCRIPTION

Air and Missile Defense Cross-Functional Team (AMD CFT) drives the Army's Modernization priorities, reducing critical capability gaps by rapidly integrating and synchronizing developmental requirements to deliver AMD capabilities to the Warfighter faster. AMD CFT works to defeat missile threats against the U.S., deployed forces, allies, and partners. AMD is one of the Army's top Modernization priorities and is critical to winning in a fight against a near-peer adversary.

AMD CFT is focused on four Signature Modernization Efforts, working to create programs to meet the goals of Army Futures Command to support Army Modernization.

PROGRAMS

Army Integrated Air and Missile Defense (AIAMD) provides common mission command across all Army AMD echelons, improves combat identification and joint integration, and allows for flexibility in task organization. AIAMD will replace multiple disparate command and control systems enabling improvement in coordinated engagements, positive control of sensors and weapons, friendly protection, and shared situational understanding. It will also:

- Integrate sensors and weapons into a common command architecture via the IAMD Battle Command System (IBCS)
- Improve AMD engagement and force operations
- Incorporate interdependent operations and enabling tailorable/scalable force packages

Maneuver-Short Range Air Defense (M-SHORAD) defends maneuvering forces against unmanned aerial systems (UAS), rotary, and residual fixed-wing threats. The Army strategy is to deliver an initial 4 battalions (144 systems) by Fiscal Year (FY) 2023 with an existing mix of guns, missiles, rockets, and onboard sensor — integrated on a Stryker A1 platform. Follow on battalions will be equipped with enhanced effectors, such as a laser or improved missile.

- Provides Air Defense for the Maneuver Force
- Interim M-SHORAD (IM-SHORAD) is on a Stryker A1 (Double V Hull) platform with a mix of guns, missiles, and onboard sensors
- Incorporate High Energy Laser technology as it matures and becomes available for military operations

Indirect Fire Protection Capability (IFPC) defends fixed and semi-fixed assets against sub-sonic cruise missiles and UAS threats with a residual capability against fixed- and rotary-wing aircraft to provide an interim "gap filler" capability with existing systems while simultaneously developing enduring capability.

- Interim (Iron Dome)
  - Provides Air Defense for fixed and semi-fixed sites
  - Designed to destroy short-range rockets and artillery shells and has demonstrated counter-cruise missile performance
  - Fielding: First battery in 4QFY21; second battery in 1QFY22
- Enduring (IFPC Inc 2)
  - Mobile, ground-based weapon system
  - Designed to defend fixed and semi-fixed sites from UAS, cruise missiles, and rockets, artillery, and mortar projectiles
  - Integral to a tiered and layered AMD in contested environments
  - Defeats a complex threat set
  - Must be fully integrated (not interoperable) into the AIAMD architecture

Lower-Tier Air and Missile Defense Sensor (LTAMDS) delivers sensor capability to counter advanced threats and takes full advantage of the PATRIOT Missile Segment Enhancement (MSE) capability. The LTAMDS radar will replace the current PATRIOT radar and by design will be integrated into the AIAMD architecture to provide significant improvement over the current PATRIOT radar while enabling incremental growth.

- Advanced lower-tier sensor integrating with the IBCS architecture
- Increases system lethality, improves combat effectiveness, and enhances the Army's capability to counter complex and evolving AMD threats
- Supports battlespace expansion for the PAC-3 MSE interceptor and functions with the entire family of PATRIOT missiles
- Leverages modern technology to reduce Operations and Sustainment costs, mitigates obsolescence, and increases reliability and maintainability





Army Artificial Intelligence Integration Center

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DESCRIPTION

The **Army Artificial Intelligence Integration Center (AI2C),** formerly the Army Artificial Intelligence Task Force, was established October 2, 2018.

The mission of the AI2C is to develop an empowered team that rapidly integrates and synchronizes Artificial Intelligence (AI) across the Army and the Department of Defense (DoD) by connecting the Army with the broader AI community.

The AI2C Lines of Effort are:

- Set the Conditions (Infrastructure and Data)
- AI Workforce Development
- Modernizing our Platforms
- AI Governance and Partnerships
- AI Ethics

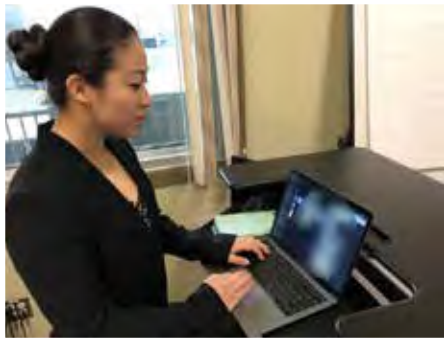
The AI2C engages in expert analysis, focused experiments, and technology demonstrations to inform requirements and the handoff of technologies to the Defense Acquisition System. The AI2C also conducts Science and Technology reviews to align projects to the Strategic Capability Roadmap. The AI2C is responsible for the life cycle of Army AI projects and projects that support the DoD-level National Military Initiatives.

To meet the Chief of Staff of the Army's (CSA's) first-order principles, characteristics, and warfighting requirements, AI2C is empowered to rapidly integrate and synchronize developmental operations across all Army Modernization efforts. Enabling the delivery of Warfighter required capabilities to the operating force, through appropriate acquisition channels at the best possible return on investment is a mission priority.

The AI2C will enable the Army to achieve Multi-Domain Operations through monitoring threat capabilities, researching advanced technologies, and developing and implementing pre-programmed product improvements to maintain resiliency against current and emerging threats.

Army Futures Command (AFC) established the "AI Hub" as the charter location for the AI2C. As part of AFC, the AI2C engages with world-class universities, cutting-edge commercial companies, and the vibrant technology community.







Assured Positioning, Navigation and Timing/Space Cross-Functional Team

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DESCRIPTION

Headquartered at the Redstone Arsenal in Huntsville, Alabama, the **Assured Positioning, Navigation and Timing (APNT)/Space Cross-Functional Team (CFT)** is one of eight CFTs supporting Army Futures Command (AFC). It is responsible for accelerating the delivery of advanced APNT, Tactical Space, and Navigation Warfare (NAVWAR) capabilities to the Soldier. Utilizing technological demonstrations, prototyping, science and technology reviews, and Soldier feedback, the APNT/Space CFT has accelerated and streamlined the requirements development process with the ability to learn fast, mitigate risks early, and achieve a higher level of technical readiness more rapidly. The APNT/Space CFT is in the process of evaluating various technologies that will make systems more resilient and secure, ensuring future generations of America's Soldiers get what they need, when they need it, and remain the most lethal and effective land force in the world.

PROGRAMS

APNT: A synchronized and integrated strategy that delivers innovative capabilities that complement and enhance the Global Positioning System (GPS), providing Soldiers accurate and trusted PNT even when their GPS signal is degraded or denied.

Tactical Space: An integrated strategy to provide survivable, responsive, and resilient space-based Reconnaissance, Surveillance, Target Acquisition, and Communications capabilities to enable Sensor to Shooter (S2S) operations through direct downlink and tasking at all echelons of command.

NAVWAR: Synchronizing Army activities into an overarching NAVWAR strategy to deliver offensive and defensive PNT warfighting capabilities in conjunction with existing Department of Defense NAVWAR policies.

APNT CFT is responsible for the S2S Campaign of Learning, finding new ways to employ deep sensing beyond the current reach of operational and tactical sensors. Thus ensuring the Soldier's ability to manage new and future operating environments by enabling an "all sensor – best shooter" approach.

To support force readiness, the APNT/Space CFT connects the Warfighter to new technologies and capabilities faster through consistent technology testing, demonstrations, and prototyping, allowing the Army to learn fast, mitigate risks, and achieve a higher level of technical readiness at an accelerated rate. The APNT/Space CFT works in a constant state of improvement, recognizing and rapidly adjusting to an ever-changing set of challenges and emerging opportunities.

The APNT/Space CFT delivers requirements for solutions that will evolve over time. Through innovation and incremental technology advancement, the APNT/Space CFT drives materiel development for the Multi-Domain Operations capable force to provide overmatch capabilities. The APNT/Space CFT modernization process leverages industry developments, Warfighter feedback, prototyping, and lessons learned from experimentation and testing to inform advanced requirements development for system acquisition. These capabilities and technologies will change the way Army Forces receive and use data, making them more adaptable to shifts in their operational environments.

Using a defensive and offensive approach, the APNT/Space CFT is developing requirements for solutions that will give Army Forces unhindered access to PNT information in an anti-access and area-denial environment. The APNT/Space CFT is currently developing requirement documents to support the ground, air, and space domains, to include precision munitions and weapons, which will deter adversaries and defeat highly capable near-peer enemies to gain U.S. military advantage and influence control over the operational environment.







Future Vertical Lift Cross-Functional Team

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DESCRIPTION

Army Futures Command's Future Vertical Lift Cross-Functional Team (FVL CFT) is located at Redstone Arsenal, Alabama. The team is committed to the development of critical combat systems ensuring Army Aviation maintains vertical lift dominance over enemy forces in future Multi-Domain Operations.

FVL will enable the joint force to operate dispersed over wide areas with increased lethality, survivability, and reach by penetrating enemy defenses and subsequently exploiting open corridors with enhanced attack/reconnaissance, air assault, and Medical Evacuation (MEDEVAC) capabilities.

PROGRAMS

Future Attack Reconnaissance Aircraft (FARA) Capability Set 1: As the aerial reconnaissance gap replacement, FARA will find, fix, and finish the enemy's defensive systems through a robust family of aerial vehicles comprised of the FVL eco-system. Armed with advanced future munition systems, like air launched effects (ALE), FARA will be fine-tuned for reconnaissance, surveillance, and target acquisition. FARA will be designed with a resilient and adaptable digital backbone allowing reconfiguration of communications and data link solutions. It will also maintain the leading edge of technology within the domain of communications through efficient upgradability using Modular Open System Architecture (MOSA) principles.

Future Long Range Assault Aircraft (FLRAA) Capability Set 3: FLRAA is the next generation lift, assault, and aeromedical evacuation aircraft. Its capabilities include increased reach (speed, range, endurance, and endurance at range), improved sustainability (reliability, availability, and maintainability), and enhanced maneuverability, agility, and survivability. FLRAA will rapidly exploit windows of opportunity on the battlefield and enable ground forces to effectively execute air assaults, air movements, and MEDEVAC prior to and during the penetration and exploitation of enemy Integrated Air Defense Systems. Combined with Next Generation Combat Vehicle and Long Range Precision Fires capabilities, FLRAA will execute deep operational maneuver to neutralize mid-range threats, enabling tactical effects at strategic and operational distances.

Future Unmanned Aircraft Systems (FUAS): The FUAS plan focuses on three key areas: ALE, Scalable Control Interface (SCI), and the Future Tactical Unmanned Aircraft Systems. ALE will conduct Reconnaissance Surveillance Target Acquisition, Electronic Warfare, and other offensive operations in support of the ground tactical commander. Current and future fleet aircraft, such as Apache, Gray Eagle, FARA, and FLRAA that will have the ability to launch ALE and to interact with ALE via the SCI.

Modular Open System Architecture (MOSA): MOSA cross cuts all the other signature efforts. The digital backbone (DBB) enables FVL platforms to host tailored Mission Equipment Packages by facilitating connections between the platform and the equipment. This DBB concept analogues to a smartphone that has a defined operating system but can accept hardware and software add-ons and still operate seamlessly as a system. MOSA will facilitate rapid adoption of new technologies, exceptional autonomy, and machine learning, all feeding continuous improvements sustaining overmatch.

With a commitment to staying on schedule and exercising disciplined requirements development based on known, proven technologies, the FVL CFT is postured to develop and acquire Army Aviation's next generation of aircraft and unmanned systems with revolutionary increases in reach, protection, lethality, and agility at the objective allowing FVL to fly, fight, and prevail in any environment.





Long Range Precision Fires Cross-Functional Team

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DESCRIPTION

The **Long Range Precision Fires Cross-Functional Team (LRPF CFT)** is a part of Army Futures Command (AFC) at Fort Sill, Oklahoma, with a mission to lead the development of select artillery modernization programs.

PROGRAMS

Strategic Long-Range Cannon is a science and technology effort to demonstrate lethal effects at strategic ranges to compliment current and projected long-range fires capabilities. Technical progress as well as operational utility and affordability will be assessed at project milestones culminating with a demonstration in 2023.

At the operational level, the LRPF team has been developing the Precision Strike Missile (PrSM). The PrSM is designed as the replacement for the aging Army Tactical Missile System (ATACMS) delivering increased range beyond 500 kilometers (km) and enhanced lethality with two missiles per launch pod container. With three successful flight tests under our belt, we are well on our way to delivering the first missiles in 2023 through an Urgent Materiel Release. Research and development with a multimode seeker is also on track for integration into the base missile for delivery in 2025. The seeker will enable the PrSM to strike adversary integrated air defense systems within land and maritime domains.

The focus of LRPF at the tactical level has been the development of the Extended Range Cannon Artillery (ERCA). In 2023 we will deliver the first battalion set of the ERCA system to the operational force for a 1-year assessment. The ERCA system will provide increased range, lethality, and improved rate of fire to the division commander and enable deep fires to shape the battlefield and set conditions for the Brigade Combat Team close fight. The ERCA system consists of an upgraded .58 caliber gun tube with a sliding block breech, improved ammunition propellant, and course-correcting fuse to deliver accurate effects at 70 km. Other initiatives include autonomous resupply and an autoloader to improve the rate of fire.

The Army is introducing the strategic field artillery system for the first time since the Pershing missile in the 1980s. The Long-Range Hypersonic Weapon, developed by the Army Rapid Capabilities and Critical Technologies Office, and the Strategic Long-Range Cannon are two systems under development to penetrate and disintegrate adversary anti-access/area denial networks at strategic ranges to create windows of opportunity for the Joint Force. Prototype development is on pace for initial combat capabilities for the Long-Range Hypersonic Weapon in 2023.







Network Cross-Functional Team

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DESCRIPTION

In 2018, the Army formally established the **Network Command, Control, Communication, and Intelligence Cross-Functional Team (Network CFT or N-CFT)**, which aligns with the Army's new network modernization strategy. The N-CFT adopts a proven industry developmental operations (DevOps) model; conducts Soldier-centered experiments, demonstrations, and prototyping to inform less prescriptive requirements; drives transitions of Science and Technology efforts into Programs of Record; synchronizes efforts to keep pace with current and future threats; and develops an optimized future network through the rapid insertion of new technology.

To achieve multidomain dominance, keep pace with industry advancements and deliver the network the Army needs by 2028, the Army accelerated tactical network capability insertion rates to a 2-year basis. Informed by Soldier-led experimentation, the Army is fielding network capability sets starting in Fiscal Year 2021. Inserting technology in 2-year capability sets provides flexibility to augment and integrate Information Technology capability as it emerges from industry.

The Army embraces the DevOps model of experimentation, demonstration, and direct feedback from operational units to inform fielding of each successive capability set. These experiments enable the Army to make informed network design decisions and capability tradeoffs. This approach introduces changes to the tactical network design through continuous assessments of integrated capabilities, speeds the development and approval of requirements, focuses on open architecture and standards to enable industry innovation, and puts in place modernization activities aligned to funded programs.

The N-CFT main efforts address: unified network to provide assured network transport; common operating environment to provide distributed mission command and rapid decision-making; joint interoperability and coalition accessibility; and mobile/survivable command posts.

PROGRAMS

Unified Network
What: Establish available, reliable, and resilient network that ensures seamless connectivity in any operationally contested environment
Why: The Army must be able to communicate through an assured network and operate in contested and congested environments.
Major Initiatives: Integrated Tactical Network, Tactical Radios, commercial-off-the-shelf technology, Expeditionary Signal Battalion – Enhanced, Tactical Network Transport, Signal Modernization, and Unified Network Operations

Common Operating Environment
What: Provide a simple, intuitive, single common operating picture through a single mission command suite operated and maintained by Soldiers
Why: Commanders must be able to command distributed forces, utilizing rapid decision-making skills.
Major Initiatives: Mobile/Handheld Computing Environment; Mounted Computing Environment; and Command Post Computing Environment

Joint Interoperability/Coalition Accessibility
What: Ensure Army Forces can more effectively interact (technically and operationally) with Joint and Coalition partners
Why: The Army needs to achieve and sustain a level of interoperability within the Army, Joint, and Unified action partners.
Major Initiatives: Mission Partner Environment

Command Post (CP) Mobility/Survivability
What: Enables Commanders to lead and fight in their formations from anywhere they choose, and ensure command posts' deployability, reliability, mobility, and survivability
Why: Command Posts must be mobile and survivable to meet today's operational needs – Fast, Agile, and Lethal.
Major Initiatives: Command Post Integrated Infrastructure

Program Executive Office Command, Control, Communications–Tactical (PEO C3T) is tasked with turning N-CFT vision into acquisition reality. The two organizations have a dynamic partnership in which PEO C3T leverages its acquisition expertise to drive the N-CFT's innovation and vision for the network of the future.

This partnership enables the PEO to focus on near-term fielding and program management, while the N-CFT focuses on the development of the next iteration of network capabilities and mapping that development to emerging industry technology and Army operational needs. All PEO C3T programs and efforts are linked to N-CFT lines of effort, and resources are managed according to CFT priorities. Select programs from within the portfolios of PEO Soldier, PEO Enterprise Information Systems, PEO Intelligence, Electronic Warfare and Sensors, and PEO Aviation are also linked to the Network CFT.





Next Generation Combat Vehicles Cross-Functional Team

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DESCRIPTION

The U.S. Army **Next Generation Combat Vehicles Cross-Functional Team (NGCV CFT)** was established in 2017 and charged with forging the future for Army ground combat vehicle design, development, and acquisition. NGCV CFT is located in Warren, Michigan, at the center of the Nation's automotive and innovative vehicle industry. NGCV CFT works closely with industry, academia, and Army technology centers to ensure the Army is equipped with the most capable ground maneuver systems to fight and win our Nation's wars.

- The NGCV CFT drives combat vehicle modernization to rapidly provide Soldiers with the most advanced combat platforms. The team actively synchronizes, coordinates, and resources programs to rapidly provide Soldiers with next generation combat platforms for the future fight.
- NGCV CFT is successfully bringing together organizations across the Army to speed up and enhance the development and acquisition of new combat vehicles. Key to the NGCV CFT's process is the frequent use of Soldier Operational Experiments (SOE) and other Soldier touchpoints opportunities to inform desired capabilities and refine system characteristics.
- The NGCV CFT examines and prioritizes Army investments in operationally relevant technologies to enable combat vehicle effectiveness for the future battlefield against pacing threats in a multidomain environment. Focus areas for technology development are lethality, robotics and autonomy, survivability, and mobility.
- The pairing of manned and unmanned teams (MUM-T) for ground combat vehicles represents a transformational change to the way the U.S. Army will conduct combat operations in the future. Ground MUM-T expands the geometry of the battlefield providing leaders more time and space to make decisions while reducing risk to Soldiers.

PROGRAMS

- **Optionally Manned Fighting Vehicle (OMFV)** will replace the Bradley Fighting Vehicle and is designed to maximize MUM-T options with Robotic Combat Vehicles (RCV) and other combat platforms providing increased survivability, lethality, mobility, and computing power. OMFV maneuvers Soldiers to a point of positional advantage to engage in close combat, deliver decisive lethality, and control autonomous vehicles. In late 2020, the Army issued a request for proposals for preliminary digital designs of the OMFV with the First Unit Equipped (FUE) planned in 2028.
- **Robotic Combat Vehicles (RCV)** are remotely operated vehicles that can deliver decisive lethality, increased situational awareness, and formation overmatch in a future multidomain battle operational environment. In summer 2020, NGCV CFT completed the first SOE with RCV, gaining critical Soldier feedback on system capabilities and integration. Preparation for the phase II SOE is now underway with execution in Fiscal Year (FY) 2022.
- **Mobile Protected Firepower (MPF)** is an armored vehicle that provides precise, large caliber, long-range direct fires to support maneuver for infantry brigades on the highly lethal future battlefield. MPF will improve the infantry's ability to neutralize prepared positions, heavy machine guns, and adversary armored vehicle threats while operating in restrictive terrain. The Army conducted a Soldier Vehicle Assessment in FY21 using system prototypes with the FUE planned for FY25.
- **Armored Multi-Purpose Vehicle (AMPV)** serves as the M113 fleet replacement and will provide Armored Brigade Combat Teams with a more survivable multivariant armored vehicle, which will keep pace with the formation with increased mobility while offering superior protection for the modern battlefield. Low-Rate Initial Production for AMPV began in spring 2020 with fielding in FY21.
- **Optionally Manned Tank (OMT)** is early in the development process. The NGCV CFT is analyzing the requirements and capabilities of a future OMT that would provide decisive lethality to the Army maintaining a clear advantage against peer/near-peer threats on the future battlefield. Comprehensive Army studies for the OMT including multiple Soldier touchpoints began in FY20 with an anticipated program decision point in FY24. Insights gained from the OMFV and RCV programs will help inform initial planning for the OMT.





Soldier Lethality Cross-Functional Team

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DESCRIPTION

The **Soldier Lethality Cross-Functional Team's (SL CFT)** mission is to lead the future force development process for the Army's Soldier Lethality modernization priority to ensure the Close Combat Force (CCF) gains and retains overmatch against current, emerging, and future threats. The SL CFT will align, synchronize, integrate, and accelerate requirements, science and technology, acquisition, testing, fielding, and sustainment efforts to increase lethality, mobility, situational awareness, protection, survivability, and human performance within the CCF.

Our goal is to improve and enhance the Close Combat Soldier's ability to fight, win, and survive in all environments, day and night. Toward that end, we employ an Adaptive Squad Architecture (ASA) design and development philosophy that treats the Soldier and the Squad within the CCF as an integrated combat platform. As the SL CFT develops signature modernization capabilities, the ASA will serve as a unifying and coherent structure, the central hub for all things connected to the individual Soldier to the Squad, and all other connected platforms and formations. The ASA will be adaptable to new power sources and power management methods as well as applications and software to run current and future devices. Additionally, the ASA will reduce redundancy in systemic components and the associated weight burden.

PROGRAMS

The SL CFT partners with Microsoft for the development of the Integrated Visual Augmentation System (IVAS), a military form factor mixed-reality device that is based on Microsoft's signature HoloLens technology. The primary objective for IVAS is to develop a fighting goggle with synthetic training capabilities that make Warfighters more lethal, effective, productive, and safer in their training and mission operations. The IVAS suite of capabilities will ultimately deliver the next level of situational awareness, giving the Warfighter the capability to acquire a target much faster and with greater accuracy under any condition, day and night. IVAS is the first system to integrate IVAS One World Terrain Tactical (a Cloud-based service that delivers a common synthetic representation of the whole Earth), training simulations software, and training management tools into one system.

The Next Generation Squad Weapons (NGSW) program will field the CCF with a new rifle, an automatic rifle, a common 6.8 mm cartridge, and a common squad fire control. The NGSW program capitalizes on advancing technologies to provide increased performance at range, integrated squad fire control, improved ergonomics of the weapon, lightweight case ammunition technologies, signature suppression capabilities, and data/power transfer rail designs through systems integration. The NGSW rifle will replace the M4/M4A1 Carbine currently used by the Army's dismounted force, and the NGSW automatic rifle will replace the M249 Squad Automatic Weapon. Both weapons will use a common 6.8 mm cartridge.

The SL CFT's third effort, the Enhanced Night Vision Goggle-Binocular (ENVG-B), was the first of Army Futures Command's original 31 modernization efforts to be delivered when the first unit was equipped in fall 2019. Developers continue to enhance the system now. The ENVG-B gives dismounted Soldiers a single device that allows them to see day or night in low light, no light, fog, smoke, or inclement weather. It offers better clarity and depth perception, rapid target acquisition, and augmented reality. The ENVG-B increases the Close Combat Soldier's situational awareness and lethality.







Synthetic Training Environment Cross-Functional Team

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DESCRIPTION

The **Synthetic Training Environment (STE) Cross-Functional Team's (CFT's)** mission is to rapidly expand the Army's STE and increase distribution of simulations capabilities down to the company level.

Exponential advances in virtual reality, augmented reality, and gaming technologies are creating new opportunities to modernize Army training. By integrating new capabilities and converging our current live, virtual, and constructive training environments, the Army can better support training throughout a Soldier's career – whether on the job, in the schoolhouse, or through self-directed learning.

The STE will enable tough, iterative, dynamic, and realistic multi-echelon combined arms maneuver, mission rehearsal, and mission command collective training at installations, armories, and deployed locations – anywhere units train. The STE will represent realistic, complex operational environments anytime and anywhere in the world, providing units the repetitions necessary for achieving and sustaining readiness. The STE also will support operational, self-development, and institutional training for Soldiers.

PROGRAMS

Software components comprising the STE Information System are currently in development. These include Training Simulation Software (TSS), Training Management Tool (TMT), and One World Terrain (OWT). Together, these components will converge live, virtual, and constructive environments and allow Soldiers to develop dynamic training scenarios that depict all player actions and battlefield effects in real-time using authoritative 3D terrain models.

TSS will serve as the game engine of the STE, supporting simultaneous training at numerous dispersed locations by representing and adjudicating all simulation entities and user inputs from multiple training platforms.

TMT will allow leaders to customize scenarios through access to military training and simulation databases. Users will build on previous repetitions to improve proficiency and increase readiness.

OWT will provide a fully accessible 3D representation of the globe for use in all simulation trainers. OWT's 3D data also has tactical applications, enabling route planning, line of sight analysis, mission rehearsal, and after-action review as well as supporting targeting and autonomous maneuver of air and ground platforms.

STE hardware in development includes:

- The Squad Immersive Virtual Trainer will use the Integrated Virtual Augmentation System's heads-up display to offer close combat formations the "sets and reps" needed to increase proficiency for complex operational environments.
- The Reconfigurable Virtual Collective Trainers (RVCT)-Air will enable collective air crew training by replicating the Army's inventory of rotary-wing aviation platforms, and RVCT-Ground will replicate the range of Army ground platforms to support vehicle crew and dismounted collective training.
- The Squad Virtual Trainer comprises Weapons Skill Developer to support weapons qualification at Army installations, the Joint Fires Trainer to train Soldiers on joint fires operations, and the Use of Force Trainer to support escalation of force training for Soldiers and units.

Accelerating the Future Live Training Environment is another focus area for the STE CFT. The Army is working with industry and academic partners to inform key technologies that will enable high-fidelity representation of real combat using instrumentation to replicate the effects of direct and indirect fire weapons and non-lethal fires for force-on-force and force-on-target training.

Future development of the Next Generation Constructive Simulations will provide a multidomain mission rehearsal environment for large-scale ground combat operations to support large Warfighter exercises that train staffs at brigade and higher echelons.

Once fielded, the STE capability will support training across all warfighting functions. It will improve training and assessment for Soldiers and squads at their point of need. It will model complex operational environments including jungles and megacities, enabling units to train realistically using the terrain where they will fight. In the end, STE will improve proficiency, human performance, and decision-making to better prepare Soldiers and units for Multi-Domain Operations.





Modernization Stakeholders

AIR AND MISSILE DEFENSE CROSS-FUNCTIONAL TEAM (AMD CFT)

Signature Efforts
- Army Integrated Air and Missile Defense (AIAMD)
- Indirect Fire Protection Capability (IFPC)
- Lower-Tier Air and Missile Defense Sensor (LTAMDS)
- Maneuver-Short Range Air Defense (M-SHORAD)

Strategic Partners/Stakeholders
- 10th Army Air and Missile Defense Command
- 263rd Army Air and Missile Defense Command
- 32nd Army Air and Missile Defense Command
- 94th Army Air and Missile Defense Command
- City of Lawton, OK
- Fort Sill and the Fires Center of Excellence
- Missile Defense Agency
- Program Executive Office (PEO) Missiles and Space: PM SHIELD, PM STARE, PM IFMC
- U.S. Army Combat Capabilities Development Command (DEVCOM)
- U.S. Army National Guard Bureau
- U.S. Army Space and Missile Defense Command
- U.S. Army Test and Evaluation Command
- U.S. Army TRADOC Analysis Center

ARMY ARTIFICIAL INTELLIGENCE INTEGRATION CENTER (AI2C)

Partners/Stakeholders
- AI Hub University Partners
- Assistant Secretary of the Army (Acquisition, Logistics and Technology)
- Combat Capabilities Development Command (DEVCOM)
- Joint AI Center (JAIC)
- Program Executive Offices (PEO)
- U.S. Army Materiel Command

ASSURED POSITIONING, NAVIGATION AND TIMING/SPACE CROSS-FUNCTIONAL TEAM (APNT/SPACE CFT)

Signature Efforts
- Assured Positioning, Navigation, and Timing (APNT)
- Naval Information Warfare Systems Command (NAVWAR)
- Tactical Space

Strategic Partners/Stakeholders
- 902nd Military Intelligence
- Academia
- Air and Missile Defense Cross-Function Team
- Army National Guard
- Defense Advanced Research Projects Agency
- Department of Homeland Security
- DEVCOM
- Director, Operational Test and Evaluation
- Future Vertical Lift Cross-Functional Team
- G-2 Military Intelligence
- G-8 Deputy Chief of Staff, G-8 Programs of the United States Army
- Headquarters Department of the Army (HQDA) G-3/5/7
- HQDA Chief Information Officer/G6
- Industry
- Joint Staff
- Joint Program Executive Office (JPEO) Chemical, Biological, Radiological and Nuclear Defense
- JPEO Armaments and Ammunition
- JPEO Armaments and Ammunition Joint Navigation Warfare Center
- Long Rang Precision Fires Cross-Functional Team
- National Reconnaissance Office
- Network Cross-Functional Team
- Next Generation Combat Vehicles Cross-Functional Team
- Office of the Secretary of Defense
- PEO for Simulation, Training and Instrumentation
- Soldier Lethality Cross-Functional Team
- Synthetic Training Environment Cross-Functional Team
- TENCAP (The Army Tactical Exploitation of National Capabilities)
- U.S. Air Force
- U.S. Army Forces Command
- U.S. Army Materiel Command
- U.S. Army Materiel Systems Analysis Activity (AMSAA)
- U.S. Army Medical Command
- U.S. Army Test and Evaluation Command
- U.S. Department of Education
- U.S. Marine Corps
- U.S. Navy
- U.S. Strategic Command

FUTURE VERTICAL LIFT CROSS-FUNCTIONAL TEAM (FVL CFT)

Signature Efforts
- Future Attack Reconnaissance Aircraft Capability Set 1
- Future Long-Range Assault Aircraft Capability Set 3
- Future Unmanned Aircraft System and Modular Open System Architecture

Strategic Partners/Stakeholders
- DEVCOM Aviation and Missile Center
- PEO Aviation
- U.S. Army Aviation and Missile Command
- U.S. Army Aviation Center of Excellence

- U.S. Army Special Operations Aviation Command

LONG RANGE PRECISION FIRES CROSS-FUNCTIONAL TEAM (LRPF)

Signature Efforts
- Extended Range Cannon Artillery
- Precision Strike Missile
- Strategic Long-Range Cannon

Strategic Partners/Stakeholders
- Army Applications Laboratory (Army Research Laboratory)
- DEVCOM Armaments Center
- DEVCOM Aviation and Missile Center
- DEVCOM Ground Vehicle Systems Center
- Fort Sill Fires Center of Excellence
- Project Manager Combat Ammunition Systems
- Project Manager Self-Propelled Howitzer Systems
- Project Manager Strategic and Operational Rockets and Missiles

NETWORK CROSS-FUNCTIONAL TEAM (N-CFT)

Signature Efforts
- Command Post Mobility/Survivability
  - Command Post Integrated Infrastructure (CPI2)
- Common Operating Environment
  - Command Post Computing Environment (CPCE)
  - Mobile/Handheld Computing Environment (M/HH CE)
  - Mounted Computing Environment (MCE)
- Joint Interoperability/Coalition Accessibility
  - Mission Partner Environment (MPE)
- Unified Network
  - Commercial-Off-the-Shelf Systems
  - Expeditionary Signal Battalion – Enhanced (ESB-E)
  - Integrated Tactical Network (ITN)
  - Tactical Network Transport
  - Tactical Radios
  - Signal Modernization (SIGMOD)
  - Satellite Communications (SATCOM)
  - Unified Network Operations (UNO)

Strategic Partners/Stakeholders
- Cyber Center of Excellence
- DEVCOM Armaments Center
- DEVCOM C5ISR Center
- DEVCOM Soldier Center
- Engineer Research and Development Center
- HQDA G-2, G-6, G-3/5/7, and G-8
- Intelligence Center of Excellence
- Mission Command Center of Excellence
- PEO Aviation
- PEO Combat Support and Combat Service Support
- PEO Command, Control, Communications–Tactical
- PEO Enterprise Information Systems
- PEO Intelligence, Electronic Warfare and Sensors
- PEO Soldier
- U.S. Army Communications-Electronics Command
- U.S. Army Cyber Command

NEXT GENERATION COMBAT VEHICLES CROSS-FUNCTIONAL TEAM (NGCV CFT)

Signature Efforts
- Armored Multi-Purpose Vehicle (AMPV)
- Mobile Protected Firepower (MPF)
- Optionally Manned Fighting Vehicle (OMFV)
- Robotic Combat Vehicles (RCV)

Strategic Partners/Stakeholders
- DEVCOM Ground Vehicle Systems Center
- PEO Combat Support and Combat Service Support
- PEO Ground Combat Systems
- U.S. Army Test and Evaluation Command

SOLDIER LETHALITY CROSS-FUNCTIONAL TEAM (SL CFT)

Signature Efforts
- Enhanced Night Vision Goggle – Binocular (ENVG-B)
- Integrated Visual Augmentation System (IVAS)
- Next Generation Squad Weapons (NGSW)

Strategic Partners/Stakeholders
- DEVCOM
- Maneuver Capabilities Development and Integration Directorate Soldier Requirements Division
- PEO Soldier
- U.S. Army Forces Command

SYNTHETIC TRAINING ENVIRONMENT CROSS-FUNCTIONAL TEAM (STE CFT)

Signature Efforts
- One World Terrain (OWT)
- Reconfigurable Virtual Collective Trainers (RVCT)
- Soldier Virtual Trainer (SVT)
- Squad Immersive Virtual Trainer (SiVT)
- Synthetic Training Environment Information System (STE-IS)
- Training Management Tools (TMT)
- Training Simulation Software (TSS)

Strategic Partners/Stakeholders
- Combined Arms Center-Training
- PEO Simulation, Training and Instrumentation





WEAPON SYSTEMS ACAT I – IV

Listed in alphabetical order

How to Use This Book

ACQUISITION CATEGORY

The first tab in the left column indicates the program's Acquisition or Business System Category. Programs that have not yet been delegated as an Acquisition or Business System Category are listed as "Other." Programs are arranged alphabetically.

ACQUISITION LIFE CYCLE PHASE

This tab identifies the program's Acquisition Life Cycle Phase(s).

- **Materiel Solution Analysis** performs analysis needed to choose a product or system concept, identifies capability gaps, translates into system-specific requirements, and conducts planning to support an acquisition strategy.
- **Technology Maturation and Risk Reduction** reduces technology risk, determines and matures the technologies to integrate into a full system, and demonstrates on prototypes. This is a continuous discovery and development process.
- **Engineering and Manufacturing Development** develops a system, completes full system integration, plans a feasible and affordable manufacturing process, and demonstrates system integration, interoperability, and utility. This phase includes system integration, system demonstration, and interim progress review.
- **Production and Deployment** achieves an operational capability that satisfies mission needs. Components of this phase include Low-Rate Initial Production, Full-Rate Production Decision Review, Full-Rate Production and Deployment, and Military Equipment Evaluation.
- **Operations and Support** executes a support program that meets materiel and performance requirements in the most cost-effective manner over the system's total life cycle.

Because the Army is spiraling technology to Warfighters as soon as feasible, some programs and systems may be in more than one acquisition life cycle phase at the same time. Mature programs are often only in one phase, such as Operations and Support, while newer systems are usually only found in the Materiel Solutions Analysis or Technology Maturation and Risk Reduction phases.

ACAT Level Tabs

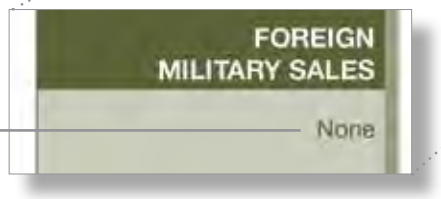
- ACAT I/BSC I
- ACAT II
- ACAT III
- ACAT IV
- Other



Highlighted tabs indicate Acquisition Life Cycle Phases



Foreign Military Sales List



System Name

PEO Name and Location

PEO Logo

Contractors and Location



Highlighted Contractor Locations

9/18/36K British Thermal Unit (BTU) Improved Environmental Control Units (9/18/36K IECU)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The 9/18/36K Improved Environmental Control Units (IECU) provide cooling in the range of 9,000 to 36,000 British Thermal Unit (BTU)/hour and supplemental heating for rigid and soft wall shelters for operation at extreme temperatures. IECUs weigh less than legacy Military Standard (MIL-STD) ECUs, provide increased energy efficiency (lower power consumption), and most importantly, eliminate the use of ozone depleting refrigerants. IECUs provide improved reliability by using modern logic/control systems and variable speed controls to reduce in rush current.

BENEFIT TO THE SOLDIER

The Family of IECUs support the Warfighter by providing the required cooling, heating, and dehumidification to protect Soldiers and Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance equipment from freezing or overheating. Command Post Integrated Infrastructure (CPI2) shelters will require this capability. The IECUs provide the next generation ECUs that use environmentally approved refrigerants, with zero ozone-depleting chemicals. The Family of IECUs are required to replace currently fielded legacy MIL-STD ECUs to comply with statutory and regulatory restrictions on the use of Class II Ozone Depleting Chemicals. This will increase the performance, efficiency, and reliability of military ECUs. IECUs more specifically support are used in Army Standard Family – Rigid Wall Shelters which are critical enablers for the Command Post Directed Requirement and (CPI2) program, each aligned with the Network Cross-Functional Team; Air and Missile Defense programs such as Phased Array Tracking Radar to Intercept of Target, Terminal High Altitude Area Defense, Cruise Missile Defense System, and others; Long Range Precision Fires programs; Army Medical programs; and a variety of Product Manager Sets, Kits, Outfits, and Tools programs.

SPECIFICATIONS

- Next generation ECUs use environmentally approved refrigerants, with zero ozone-depleting chemicals
- Provides cooling in the range of 9,000 to 36,000 BTU/hour and supplemental heating for rigid and soft wall shelters
- Weighs less than legacy MIL-STD ECUs
- Increased energy efficiency (lower power consumption)
- Improved reliability utilizing modern logic/control systems and variable speed controls to reduce inrush current

PROGRAM STATUS

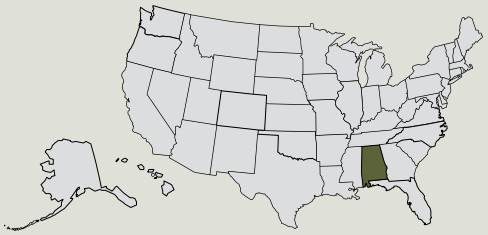
- **4QFY19:** Low-Rate Initial Production initiated
- **2QFY20:**
  - Initial delivery for CPI2 evaluation
  - Complete First Article Test (FAT)
  - Initial Delivery for CPI2 Evaluation
- **3QFY20:**
  - Initiated Independent Cost Estimate for Follow-on Production
  - Approved FAT Report

PROJECTED ACTIVITIES

- **1QFY21:**
  - Issue New Contract Solicitation

9/18/36K BTU IECU

CONTRACTORS
Tyonek (Huntsville, AL)



Abrams Main Battle Tank

PEO Ground Combat Systems | Detroit Arsenal, MI

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

M1A1: Australia, Egypt, Iraq, and Morocco

M1A2: Kuwait

M1A2/M1A2S: Saudi Arabia

DESCRIPTION

The Abrams Main Battle Tank closes with and destroys the enemy using mobility, firepower, and shock effect. The Abrams is a full-tracked, low-profile, land combat assault weapon enabling expeditionary Warfighters to dominate their adversaries through lethal firepower, unparalleled survivability, and audacious maneuver. The Abrams tank sends a message to those who would oppose the United States as to the resolve, capability, and might of the U.S. Army. A 1,500-horsepower turbine engine, 120 mm main gun and special armor make the Abrams tank particularly lethal against heavy armor forces.

The Abrams program is a mature, Acquisition Category IC program. Design decision authority is delegated to Program Executive Office Ground Combat Systems, further empowering leaders at the lowest level to execute. This creates great Acquisition agility and enables quick reactions to the Army's requirements while focusing on the real-time needs of the warfighting formations.

M1A1 Situational Awareness (SA): Currently in Sustainment and slated for divestment by Fiscal Year (FY) 2025, this variant has a single second-generation Forward-Looking Infrared (FLIR) sight and analog architecture. The M1A1 SA is as survivable and maneuverable as the more modern variants with upgrades such as powertrain improvements and a Blue Force Tracker – a digital command-and-control system that gives commanders information about their location relative to friendly forces.

M1A2 System Enhancement Package version 2 (SEPv2): The M1A2 SEPv2 brings the Abrams fleet into the modern era by upgrading the platform to digital architecture. M1A2 SEPv2 tanks have two sights, a gunner's and commander's sight, which increase the tank's lethality by enabling a hunter/killer technique – as the gunner destroys targets, the commander can simultaneously survey the battlefield for the next threat. To strengthen and continue the Abrams battlefield overmatch, the M1A2 is the first variant to integrate a Non-Developmental Item Active Protection System (APS)-Trophy. Other incremental upgrades through Modification Work Orders include a Common Remotely Operated Weapon Station-Low Profile, an Ammunition Data Link to fire improved smart rounds, and increased battery storage.

M1A2 SEP version 3 (SEPv3): The current production version of the Abrams tank is scheduled for First Unit Equipped in FY 2020. This version rectifies many of the space, weight, and power issues identified during Operation IRAQI FREEDOM and will be the foundational variant for all future incremental upgrades. In addition to having improved survivability, the Abrams M1A2 SEPv3 can host any mature technology the Army deems operationally relevant. Improvements focus on increasing the electrical power margin, Vehicle Health Management Systems, integrated counter-improvised explosive device protection, a new auxiliary power unit enabling silent watch, embedded training, and an ammunition data link. It is the most reliable Abrams tank ever produced, minimizes the Army's logistic footprint, and leads the Army in enterprise-level connectivity to maintenance and supply systems.

M1A2 SEP version 4 (SEPv4): The most lethal Abrams tank is now in development, featuring the third generation (3GEN) FLIR the cornerstone technology that will provide tank crews the ability to identify enemy targets farther than ever before. The 3GEN FLIR will be an upgrade to both sights and will be common with other combat platforms. With the upgrade, the Abrams will integrate a color camera, eye-safe laser range finder, and a cross-platform laser pointer to facilitate multidomain battle into the commander's sight. In addition to a lethality upgrade, the M1A2 SEPv4 will include full-embedded training to maximize crew proficiency of the system. This program began early enough to onboard any technology the Army deems critical to the future battlefield to include artificial intelligence, autonomy, APS, or advanced sensors.

Abrams

BENEFIT TO THE SOLDIER

Provides the lethality, survivability, and fightability necessary to defeat advanced threats well into the future. The Abrams tank is the Army's primary ground combat system.

SPECIFICATIONS

- Combat weight (tons): M1A1 SA – 67.6; M1A2 SEPv2 – 71.2; M1A2 SEPv3 – 73.6
- Speed: 42 mph, 30 mph x-country
- M1A1 SA: 120 mm/40 rounds
- M1A2 SEPv2: 120 mm/42 rounds
- Machine guns: .50 caliber – 900 rounds; 7.62 mm – 11,400 rounds

PROGRAM STATUS

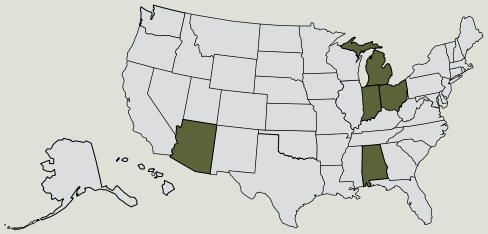
- **FY18:**
  - Start of M1A2 SEPv3 Production
  - Start of M1A2 SEPv4 Development program
- **FY20:**
  - M1A2 SEPv3 First Unit Equipped
  - First Brigade APS-Trophy delivery

PROJECTED ACTIVITIES

- **FY19–FY23:** M1A2 SEPv4 Development program continues

CONTRACTORS

Engine: Honeywell (Phoenix, AZ)
Prime: General Dynamics Land Systems (Sterling Heights, MI)
Transmission: Allison Transmission (Indianapolis, IN), Joint Systems Manufacturing Center (Lima, OH), and Anniston Army Depot (Anniston, AL)







Advanced Field Artillery Tactical Data System (AFATDS)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Multiple

DESCRIPTION

The Advanced Field Artillery Tactical Data System (AFATDS) provides fully automated support for planning, coordinating, controlling, and executing fires and effects such as mortars, field artillery cannons, rockets and missiles, close air support, attack aviation, and naval surface fire-support systems. AFATDS interoperates and integrates with more than 80 different battlefield systems, including U.S. Navy and U.S. Air Force command and control weapon systems and German, French, Turkish, and Italian fire-support systems.

AFATDS is the primary command and control system for Long Range Precision Fires Cross-Functional Team initiatives, such as Extended Range Cannon Artillery, Extended Range Guided Multiple Launch Rocket System, Precision Strike Missile Program, and Projectile Tracking System.

AFATDS fuses the essential situational awareness data, intelligence information, and targeting data in near real-time to make effective targeting decisions that align with Mission Command guidance and priorities. It pairs targets to weapons to provide optimum use of fire-support assets and timely execution of fire missions.

BENEFIT TO THE SOLDIER

AFATDS provides the U.S. Army, U.S. Navy, and U.S. Marine Corps with automated fire-support command, control, and communications. It is used to plan, execute, and deliver lethal and nonlethal effects. AFATDS also provides joint/coalition situational awareness for fires execution and mission management.

SPECIFICATIONS

- Windows software that runs on ruggedized laptop computer

PROGRAM STATUS

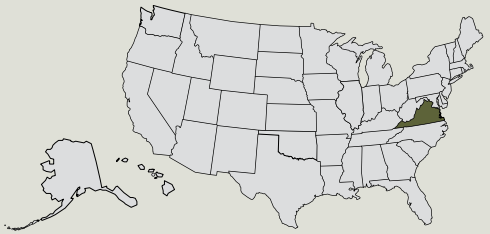
- **FY18:** Modernization Program Under Development
- **2QFY20:** AFATDS 6.8.1.1 P2: Began Fielding

PROJECTED ACTIVITIES

- **1QFY21:** AFATDS 6.8.1.H (Hypersonics): Final release to the Army Hypersonic Project Office
- **2QFY22:** AFATDS 6.8.1.2: Projected Fielding
- **4QFY23:** AFATDS 6.8.1.3: Projected Fielding
- **2QFY24:** AFATDS 7.0: (Under Development) Projected Fielding

AFATDS

CONTRACTORS
Leidos (Reston, VA)





Air and Missile Defense Planning and Control System (AMDPCS)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force system that provides integration of Air and Missile Defense operations at all echelons. AMDPCS shelter systems are centered on a single baseline shelter known as Air Defense Airspace Management (ADAM) Cells. Depending on echelon, ADAM Cells are fielded in different configurations at corps, divisions, Brigade Combat Teams (BCT), and Multi-functional Support Brigades. ADAM Cells provide commanders at divisions and BCTs with Air Defense situation awareness and airspace management capabilities. AMDPCS configurations are also deployed to Air Defense units including U.S. Army Air and Missile Defense Command (AAMDC), Air Defense Artillery (ADA) Brigades, and ADA Battalions.

AMDPCS provides two major software systems used in air defense force and engagement operations — the Air and Missile Defense Workstation (AMDWS) and the Forward Area Air Defense Command and Control (FAAD C2). The AMDWS operates on a staff laptop and is a staff planning and battlespace situational awareness tool that provides commanders at all echelons with a common tactical and operational air picture. FAAD C2 also operates on a staff laptop and provides commanders real-time situational awareness through a correlated air picture received from joint and local sensors.

BENEFIT TO THE SOLDIER

AMDPCS, at strategic commands such as AAMDC down to the maneuver BCT, utilizes a correlated, near real-time joint air picture that provides Soldiers the ability to track aircraft inside and outside of their operational airspace to identify friend-or-foe platforms and reduce fratricide. Furthermore, ADAMs at corps, division, and BCTs provide Soldiers with collaboration and staff planning capabilities such as development of air defense weapons emplacement, radar coverage, air corridors/routes, and airspace management within their respective battle space to include fires de-confliction. Additionally, ADAM provides Soldiers Theater Ballistic Missile early warning, allowing them to take appropriate actions.

SPECIFICATIONS

- AMDPCS/ADAM provide commanders with Secure Internet Protocol Router Network/Non-Secure Internet Protocol Router interfaces; high frequency, ultra-high frequency, very high frequency, satellite voice communications; and secure tactical data link interfaces that enable/support tactical ballistic missile early warning and air defense planning/ airspace management
- AMDPCS includes shelters, automated data processing equipment, tactical communications, standard vehicles (i.e., M1152 High Mobility Multipurpose Wheeled Vehicle (HMMWV)), and tactical power. It also includes the following software systems for force and engagement operations:
  - AMDWS – a staff planning and battlespace situational awareness tool
  - Air Defense System Integrator – a joint data link processor and router providing external joint messages
  - ADAM – a standard Command Post Platform shelter mounted on a HMMWV with multiple radios, processors, and servers

PROGRAM STATUS

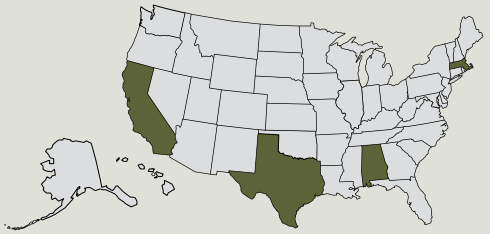
- **FY09–FY18:** Fielded AMDPCS to all echelons of Air Defense
- **FY18–FY21:** Field four Mobile Short-Range Air Defense battalions (BNs) to Active Component (AC)
- **FY20**
  - Field three Multi-Domain Task Force BNs to AC
  - Field V Corp Headquarters BN to AC

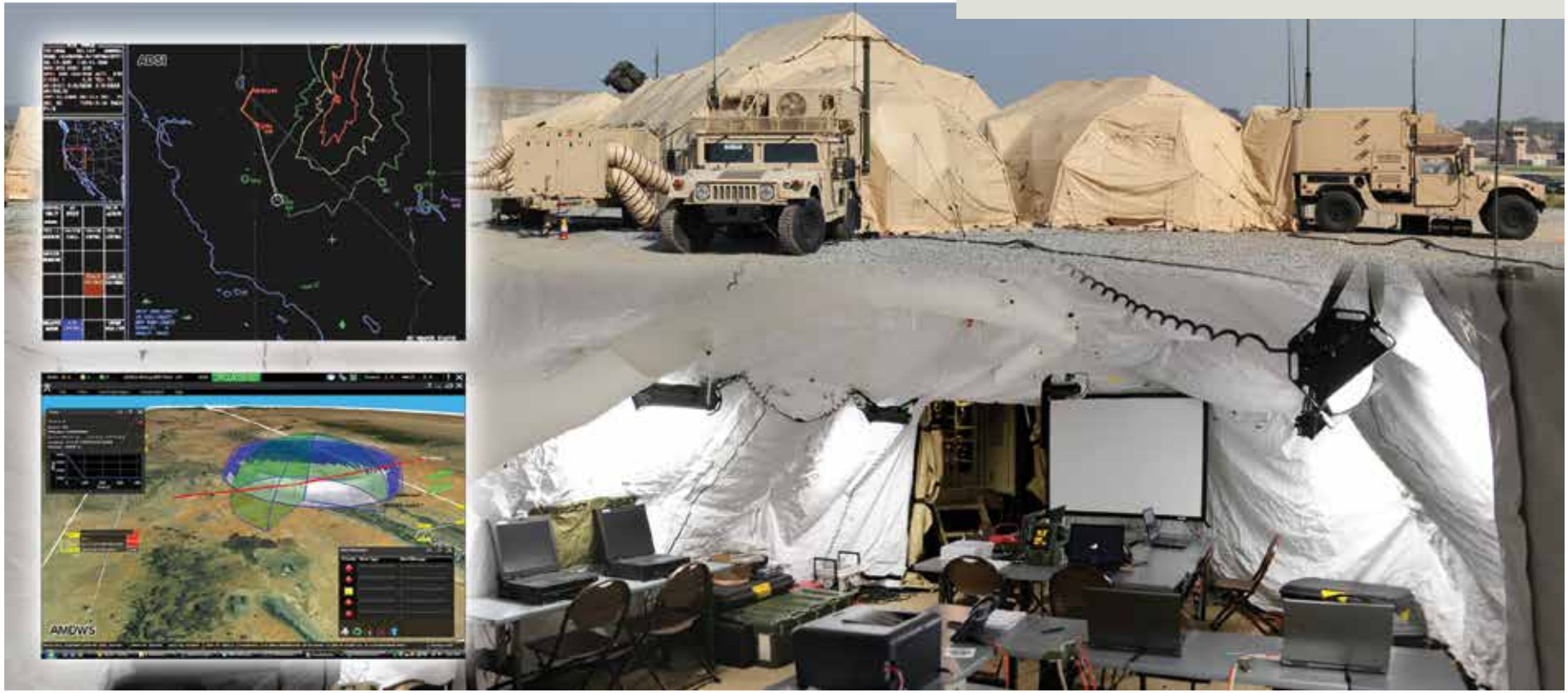
PROJECTED ACTIVITIES

- **4QFY24:** Last Unit Equipped

AMDPCS

CONTRACTORS
General Dynamics (Taunton, MA)
Northrop Grumman Corporation (Huntsville, AL, and Redondo Beach, CA)
Ultra Electronics (Austin, TX)





Air Soldier System (Air SS)

PEO Soldier | Fort Belvoir, VA

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Air Soldier System (Air SS) is flight crew life support and mission equipment that improves aircrew lethality, mission effectiveness, and protection by integrating protective clothing, personal electronics, and survival equipment.

BENEFIT TO THE SOLDIER

Air SS mission and survival gear sustains the aviation Soldier in hostile environmental conditions and protects the Soldier from flash fire, crash impacts, and chemical and ballistic threats. Air SS reduces bodyworn bulk and weight and provides a helmet-mounted display with symbology to improve flight crew Situational Awareness (SA), survivability, and mission effectiveness.

SPECIFICATIONS

- Electronic Flight Bag tactical tablet with growth path to be the Nett Warrior-Aviation mission planning and execution end-user device
- Common helmet-mounted display enhanced SA and safety via digital, wide field-of-view, color flat-panel display for UH-60 and CH-47 aviators
- Enhanced aviator heads-up display symbology improves SA and safety for UH-60 and CH-47 aviators
- Aircrew Combat Equipment (ACE) includes a new survival vest w/ body armor and flotation, rotary-wing helmet, and protective clothing to improve survivability and mission effectiveness.

PROGRAM STATUS

- **3QFY19:** Program Milestone C
- **4QFY19:** Electronic Flight Bag Production Decision
- **1QFY20:** First Unit Equipped (FUE) with Soldier Kit
- **3QFY20:** FUE with Aircraft Kit

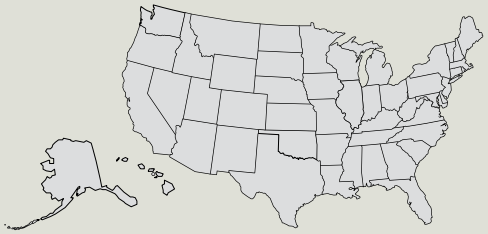
PROJECTED ACTIVITIES

- **1QFY21:** ACE Low-Rate Initial Production

Air SS



CONTRACTORS
Government is the prime integrator with various vendors providing components.





Airborne Reconnaissance Low (ARL)

PEO Aviation | Redstone Arsenal, AL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Airborne Reconnaissance Low-Multifunction (ARL-M), designated EO-5C, is a legacy manned multisensor, day and night, all-weather Aerial Intelligence, Surveillance, and Reconnaissance (AISR) system. It consists of a modified De Havilland Canada (DHC)-7 fixed-wing aircraft equipped with Communications Intelligence and Imagery Intelligence (COMINT/IMINT), Ground Moving Target Indicator/Synthetic Aperture Radar (GMTI/SAR), and Electro-Optical and Infrared (EO/IR) Full-Motion Video (FMV) capability. Onboard operators control the payloads via open-architecture, multifunction workstations. Intelligence collected can be analyzed and disseminated from the onboard workstations in real time and recorded for post-mission analysis.

The Airborne Reconnaissance Low-Enhanced (ARL-E), designated RO-6A, is the Army's newest manned multisensor, day and night, all-weather AISR system. ARL-E consists of a modified DHC-8-Q315 fixed-wing aircraft equipped with a reconfigurable payload with enhanced COMINT/IMINT sensors including a long-range and a short-range GMTI/ Dismounted Moving Target Indicator/SAR, high-definition EO/IR FMV, and Hyperspectral Imagery. The sensors are controlled and operated using onboard Distributed Common Ground Station-Army (DCGS-A) multifunction workstations. Intelligence collected on the ARL-E can be analyzed and disseminated in real time, transmitted via Beyond Line-of-Sight satellite communication, or stored onboard for post-mission analysis.

The more capable DHC-8-Q315 based ARL-E will replace the ARL-M systems (DHC-7) with the first unit equipped in Fiscal Year (FY) 2021. By leveraging former Quick Reaction Capability DHC-8 programs, the Army has capitalized on the reutilization of previous Army investments, non-reoccurring engineering, improved airworthiness, and improved system availability for the Army Acquisition Category II Program of Record requirements.

There are currently four ARL-M configured systems; there will be eight ARL-E configured systems and one trainer.

BENEFIT TO THE SOLDIER

ARL provides tactical commanders with day and night, all-weather, real-time airborne COMINT/IMINT collection, and a designated area surveillance system. The reconfigurable payload provides flexibility to the commander. ARL provides real-time down-link of actionable intelligence to Brigade Combat Teams and higher echelons across the full range of military operations, including coalition support processes.

SPECIFICATIONS

- Dual EO/IR Day/Night High-Definition FMV Sensors with Laser Range Finding and Target Designation Capability
- Tactical Signals and COMINT/Direction Finding Subsystems with Theater Net-Centric Geolocation
- Synthetic Aperture Radar and Ground/Dismount-Moving Target Indicator Radar
- Hyperspectral Imagery/Long Range Radar and Short Range Radar
- DCGS-A Enabled Workstations

PROGRAM STATUS

- **FY18–FY20:** Project Directorate Sensors Aerial Intelligence (PD SAI) performed Systems Integration Laboratory/aircraft Mission Equipment Package (MEP) integration
- **2QFY18:** Project Manager Fixed Wing (PM FW) awarded a contract for ARL-M and ARL-E aircraft Sustainment
- **FY18:** PM FW delivered two ARL-E aircraft with upgraded cockpits and Aircraft Survivability Equipment suites to PD SAI
- **FY19:**
  - Two ARL-M aircraft were divested

- PM FW delivered trainer aircraft to 204th Military Intelligence Battalion
- PD SAI completed the integration of the first MEP on the first ARL-E aircraft

• **4QFY19:**
- PM FW utilized a modification contract for the APX-119 mode 5 level 1 elective improvement of three EO-5 aircraft to meet Global Air Traffic Management (GATM) 2020 compliance
- PD SAI awarded Sustainment Contract for Operations and Logistics to provide operations and support for ARL-E and ARL-M

• **FY20:**
- One ARL-M aircraft was divested
- PD SAI completed Developmental Testing of the first ARL-E system

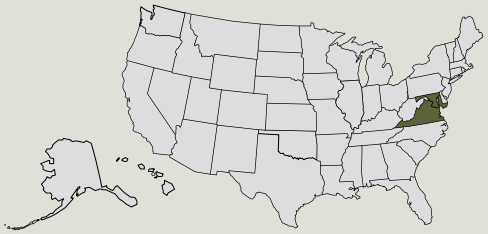
• **2QFY20:** PM FW utilized a modification contract for the APX-119 mode 5 level 1 elective improvement of one EO-5 aircraft to meet GATM 2020 compliance

PROJECTED ACTIVITIES

• **FY19–FY25:** Support force generation and sustainment of ARL-E and ARL-M
• **2QFY21:** Follow-on Operational Test and Evaluation to be conducted for the ARL-E

ARL

CONTRACTORS
Aranea Solutions, Inc. (Reston, VA)
Leidos (Reston, VA)
Northrop Grumman Corporation (Linthicum, MD)





Aircraft Survivability Equipment (ASE)

PEO Intelligence, Electronic Warfare and Sensors | Aberdeen Proving Ground, MD

ACAT I/IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

CMWS: Egypt, Jordan, Korea, Netherlands, Qatar, Saudi Arabia, Spain, Tunisia, Turkey, and United Kingdom

LDS: Egypt, Indonesia, Jordan, Korea, Netherlands, Qatar, Saudi Arabia, Sweden, Taiwan, Tunisia, and United Arab Emirates

DESCRIPTION

The current suite of Aircraft Survivability Equipment (ASE) systems includes the AN/AAR-57 Common Missile Warning System (CMWS), Advanced Threat Infrared Countermeasure (ATIRCM), Common Infrared Countermeasure (CIRCM), Limited Interim Missile Warning System, the Laser Detection System (LDS), and the Radar Warning Receivers. Project Manager ASE seeks near-term improvements in the current ASE suite while maintaining state-of-the-art protection to counter the ever-changing threat and planning for the future requirements of the Multi-Domain Operations ready force and Future Vertical Lift with scalable and selectable levels of autonomous aircraft and mission system functionality.

The CMWS and ATIRCM programs form the core element of the Army operational requirements concept for infrared (IR) countermeasures systems. CMWS can function as a standalone system with the capability to detect missiles and provide audible and visual warnings to pilots. When installed with the Advanced IRCM Munitions and improved countermeasure dispensers, it activates expendables to decoy and defeat IR-guided missiles.

ATIRCM protects crews and aircraft from advanced threat Man Portable Air Defense Systems (MANPADS) until CIRCM is fielded. The CIRCM program is being developed to replace ATIRCM. CIRCM will be lighter weight, more reliable, and have more affordable life cycle costs. It is also designed to operate with CMWS and future missile warning systems to provide protection of rotary-wing, tiltrotor and small fixed-wing aircraft across the Department of Defense (DoD).

BENEFIT TO THE SOLDIER

MANPADS are proliferated worldwide and pose a strategic threat to all DoD rotary-wing and fixed-wing aircraft. Threat detection sensors are the first step in the detection-and-defeat engagement sequence. Improving sensor capability and exploiting new sensor technology translates into seeing the threat sooner and at greater distances, buying more time for the Warfighter to successfully engage with an effective countermeasure solution. The combination of CIRCM and flares helps provide tiered defense for DoD aircraft.

SPECIFICATIONS

Threat Detection Systems:

- CMWS (ACAT I): Detects threats in the ultraviolet spectrum, warns pilots, and deploys flares to counter threat
- LDS (ACAT IV): Detects laser-guided threats and warns pilots
- Modernized Radar Warning Receiver (MRWR) (ACAT III): Detects Radio Frequency (RF)-emitting and RF-guided threats and warns pilots

Threat Defeat Systems:

- CIRCM (ACAT I) system, next generation lightweight laser-based system: Defeats IR-guided MANPADS threats
- ATIRCM (ACAT I), legacy laser-based IR countermeasure system: Fielded only to the CH-47F fleet due to its size, weight, and power requirements

PROGRAM STATUS

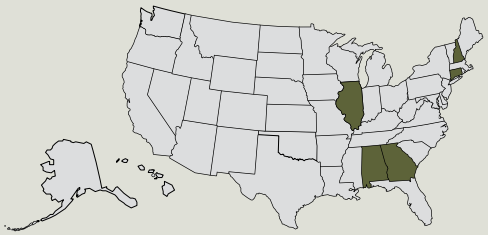
- **4QFY18:** CIRCM Milestone C and Low-Rate Initial Production Decision
- **2QFY20:** CIRCM First Unit Equipped
- **4QFY20:** CIRCM Full-Rate Production Decision

PROJECTED ACTIVITIES

- **1QFY22:** CIRCM Initial Operating Capability
- **4QFY22:** MRWR Production Decision

ASE

CONTRACTORS
ATIRCM and CMWS: BAE Systems (Nashua, NH)
CIRCM and MRWR: Northrop Grumman Corporation (Rolling Meadows, IL)
Data Analysis and System Integration Laboratory Development: Georgia Tech Applied Research Corporation (Atlanta, GA)
Engineering/Tech Production Support: SAIC (Huntsville, AL)
LDS: Danbury Mission Technologies (Danbury, CT)
Logistics Support: Navigator Development Group, Inc. (Enterprise, AL)
Programmatic Support: Quantitech, Inc. (Huntsville, AL)
Software Configuration Management Support: SAIC (Huntsville, AL)
System Engineering Support: SAIC (Huntsville, AL)
Test Support Data Analysis: SAIC (Huntsville, AL)









Common Infrared Countermeasure (CIRCM)



Ammunition — Large Caliber

JPEO Armaments and Ammunition | Picatinny Arsenal, NJ

ACAT III/IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Large Caliber includes 120 mm, 105 mm, and 50 mm direct fire ammunition. Platforms supported include the Abrams Tank, Stryker Mobile Gun System (MGS), the emerging Next Generation Combat Vehicles – Optionally Manned Fighting Vehicle (OMFV), and Mobile Protected Firepower.

120 mm Family of Ammunition

To support the Armored Brigade Combat Teams, the current 120 mm family of tactical tank ammunition consists of a fifth generation Kinetic Energy (KE) round (M829A4) and a multipurpose round (XM1147). The M829A4 KE ammunition is optimized to defeat the latest advanced armor threats and is in Full-Rate Production. The XM1147 Advanced Multi-Purpose (AMP) Cartridge is a high-energy multipurpose munition designed to deliver blast, armor penetration, and fragmentation effects of close-in and longer range targets. The AMP round consolidates the capabilities of four legacy rounds: the 1st generation M830 High Explosive (HE) Anti-Tank (HEAT) round, the 2nd generation M830A1 HEAT round, the M908 Obstacle-Reduction round, and lastly the M1028 Canister cartridge. The M1028 is a shotgun shell-like cartridge that provides lethal fire against massed assaulting infantry. The AMP cartridge can be programmed in three different modes depending on engagement including point-detonate, point-detonate-delay, or airburst.

The current 120 mm family of tank training ammunition consists of the following cartridges in production: the M865 Target Practice (TP) Cone-Stabilized (CS) Discarding-Sabot (DS) with Tracer (TPCSDS-T), simulating the KE tactical; and the M1002 trainer, which simulates the M830A1 tactical round. Of note, the 2nd generation M865 (M865A1) is being developed and will be qualified by the end of 2021. Also, the 2nd generation of HE trainer, the M1002E1, is in development, and will simulate the tactical AMP cartridge in the near future.

105 mm Family of Ammunition

To support the Stryker force, the 105 mm MGS is supported by its own families of KE and HE ammunition, as well as canister cartridges. The M1040 Canister cartridge provides rapid, lethal fire against massed assaulting infantry at close range. The new 105 mm M724A2 is a reduced range training cartridge intended to provide the Soldier with the training capability to maximize the effectiveness of the tactical 105 mm M900 (APFSDS-T) KE Cartridge, which provides armor-defeat capability. The 105 mm M467A1 Tank Squash Head TP-T Cartridge is a ballistic match to the M393A3 HE/HE-P tactical round.

50 mm Family of Ammunition

To support the next generation Bradley Fighting Vehicle (i.e., OMFV), the 50 mm family of ammunition consists of the XM1202 TP-T, XM1203 APFSDS-T and XM1204 HE Air Bursting-Trace (HEAB-T). All rounds are currently in development.

BENEFIT TO THE SOLDIER

Standard ammunition provides the Warfighter with the necessary lethality needed to defeat the enemy.

SPECIFICATIONS

- Various specifications used depend on weapon platform, caliber, target set, and effect

PROGRAM STATUS

- **FY20:**
  - M829A4, M830, M830A1, M1002, M908, M1028, M1040, M393A3, M724A2, M467A1 Fielded
  - 120 mm M865A1 Engineering Change Proposal qualification
  - 120 mm AMP Engineering Manufacturing and Development (EMD)
  - 50 mm Department of Defense Ordnance Technology Consortium award for XM1204 HEAB-T EMD

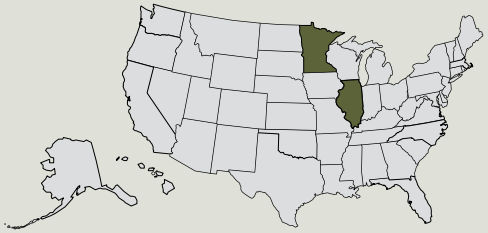
Ammunition — Large Caliber

PROJECTED ACTIVITIES

- **FY21–FY25:** M829A4 and Tank Training Cartridge continue Production
- **FY21:**
  - 50 mm XM1202 TP-T and XM1203 APFSDS-T Contract Award
  - AMP Milestone C/Type Classification and Full Materiel Release
- **FY24:** 50 mm XM1202 and XM1203 Milestone C Decision

CONTRACTORS

General Dynamics Ordnance and Tactical Systems (Marion, IL)
Northrop Grumman Defense Systems (Plymouth, MN)





Ammunition — Medium Caliber

JPEO Armaments and Ammunition | Picatinny Arsenal, NJ

ACAT III/IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Multiple

DESCRIPTION

Medium Caliber Ammunition (MCA) includes 20 mm, 25 mm, 30 mm, and 40 mm Armor-Piercing (AP), High-Explosive (HE), smoke, illumination, training, and antipersonnel cartridges with the capability to defeat light armor, materiel, and personnel targets. These munitions provide overwhelming lethality in MCA and point- and area-target engagement via medium handheld, crew-served, ground-platform, and aircraft-mounted weapons.

BENEFIT TO THE SOLDIER

Standard ammunition provides the Warfighter with the necessary lethality to defeat the enemy. Specialty cannon caliber and 40 mm cartridges provide unique capabilities for the Warfighter (e.g., airburst, illumination).

SPECIFICATIONS

Specifications vary based on weapon platform, caliber, and target set and effect.

- 20 mm cartridge is a multipurpose tracer with self-destruct capability used in the Land-Based Phalanx Weapon System
- 25 mm Target Practice (TP), HE incendiary, and AP cartridges are fired from the M242 Bushmaster Cannon from the Bradley Fighting Vehicle
- 30x113 mm TP and HE Dual Purpose (DP) cartridges are fired from the M230 Chain Gun mounted on the Apache and 160th Special Operations Aviation Regiment Black Hawk helicopters
- Varieties of 40 mm TP, HEDP, and specialty cartridges are designed for use in the M203 Grenade Launcher, M320 Grenade Launcher, and the MK19 Grenade Machine Gun
- 30x173 mm TP, HE incendiary, and AP cartridges are fired from the XM813 Cannon from the Stryker Infantry Combat Vehicle

PROGRAM STATUS

- **FY18:**
  - 30x173 mm Stryker Ammunition Urgent Materiel Release/ Operational New Equipment Training
  - 40 mm High Explosive Dual Purpose Airburst (HEDP-AB) Milestone (MS) B
  - Medium Caliber Family of Ammunition Contract Award Buy #2
- **FY19:**
  - 20 mm Improved M940 Joint Urgent Operational Need Statement (JUONS) Fielding
  - 30x173 mm Armor Piercing Family (XM1170 APFSDS-T, XM1172 TPDS-T) Materiel Development Decision, and Engineering, Manufacturing, and Development (EMD) Contracts Award
  - 30x113 mm XM1198 HEDP-self-destruct (SD) development, XM1211 High Explosive Proximity (HEP) development, and XM1206 HEDP-AB Technology Maturation Contract Award
  - 40 mm High Explosive Airburst (HEAB) MS B
  - 40 mm HEAB EMD Contract Award
  - 40 mm HEDP-AB EMD Contract Award
- **FY20:**
  - Demonstrated 30x173 mm contact fuze setter capability with XM813 autogun and airburst munition
  - 30 mm Multi-Function Munition (Airburst) Capability Development Document (CDD) Approval
  - 30x173 mm Airburst and Trainer (XM1182 HEAB-T, XM1173 TP-T) MS B, and EMD Contracts Award
  - Cannon-caliber and 40 mm legacy Production and Sustainment ongoing

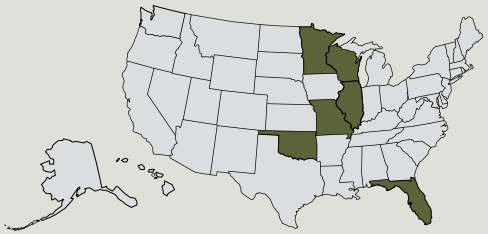
Ammunition — Medium Caliber

PROJECTED ACTIVITIES

- **FY21:**
  - 30x173 mm MK310 Programmable Airburst Munition with Tracer Fielded as an Urgent Materiel Release (UMR)
  - 30x113 mm XM1198 HEDP-SD and XM950 TP UMR and JUONS Fielding
  - 40 mm Low Velocity (LV) Family of Ammunition CDD
- **FY22:**
  - New multiyear 40 mm Production Contract
  - 30x113 mm XM1211 High Explosive Proximity (HEP) UMR and Fielding
  - 30x113 mm XM1206 HEDP-AB EMD in support of Project Manager Apache and foreign customer
  - 40 mm HEDP-AB and HEAB Low-Rate Initial Production Award
- **FY21–FY22:**
  - 40 mm High Velocity/Low Velocity Day Night Trainer Type Classification/Full Materiel Release (TC/FMR) and Full-Rate Production (FRP)
- **FY23:**
  - 30x173 mm Armor Piercing Family (XM1170 APFSDS-T, XM1172 TPDS-T) MS C
  - 30x173 mm Airburst and Trainer (XM1182 HEAB-T, XM1173 TP-T) MS C
  - 30x173 mm Ammunition in FRP and Fielding for Stryker brigade
  - 20 mm multipurpose cartridge development in support of Future Vertical Lift
- **FY24:**
  - 30x113 mm multimode proximity airburst development for ground applications in support of Air and Missile Defense
  - 40 mm HEDP-AB and HEAB MS C, TC/FMR, and FRP

CONTRACTORS

AMTEC Corporation (Janesville, WI)
General Dynamics Ordnance and Tactical Systems (Marion, IL)
Global Ordnance (Tampa, FL)
McAlester Army Ammunition Plant (McAlester, OK)
Northrop Grumman Corporation (Independence, MO)
Northrop Grumman Defense Systems (Plymouth, MN)
Ultra Defense Corporation (Tampa, FL)







Ammunition — Precision Guidance Kit

JPEO Armaments and Ammunition | Picatinny Arsenal, NJ

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Precision Guidance Kit (PGK) technology is state-of-the-art and provides a first-of-its-kind capability. PGK contains a Global Positioning System (GPS) guidance kit with fuzing functions and an integrated GPS receiver to correct the inherent errors associated with ballistic firing solutions, reducing the number of artillery projectiles required to defeat targets. The increase in efficiency that PGK's precision capability provides allows operational commanders to engage assigned targets and rapidly achieve desired effects while minimizing collateral damage.

PGK currently has three Department of Defense Identification Codes (DODIC): NA28, NA29, and NA36. The 2,399 kits procured for early fielding under an Urgent Materiel Release to Operation ENDURING FREEDOM have the NA28 DODIC. The PGKs procured in Low-Rate Initial Production and early Full-Rate Production use the NA29 DODIC. The PGKs currently in production have the NA36 DODIC. PGK is also being qualified for use with the XM1128 and XM1113 extended range artillery projectiles and for compatibility with the future M-Code GPS. In parallel, a development program for the next generation PGK, known as the Long Range (LR)-PGK, is being executed to develop a course correcting fuze for use in the Extended Range Cannon Artillery weapon system and to operate in near-peer GPS-degraded environments out to 70 kilometers.

BENEFIT TO THE SOLDIER

PGK provides improved fire support to the maneuver force commander through effectively reducing target delivery error of conventional artillery munitions. It also reduces the number of projectiles required to execute a fire mission.

SPECIFICATIONS

- Demonstrated accuracy: Less than 30 meters circular error probable
- Compatible with the M795, M549A1, XM11128, XM1113, and 155 mm high-explosive projectiles
- Mission-critical flight data is inductively loaded into PGK using the Enhanced Portable Inductive Artillery Fuze Setter

PROGRAM STATUS

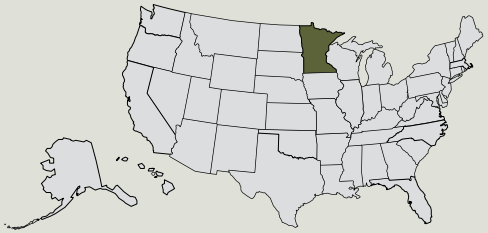
- **FY18:** LR-PGK Technology Maturation and Risk Reduction initiated
- **FY20:** 41 consecutive Production Lot Acceptance Tests completed to date

PROJECTED ACTIVITIES

- **FY22:**
  - LR-PGK Milestone B
  - LR-PGK Engineering and Manufacturing Development award
- **FY24:** LR-PGK Milestone C

Ammunition — PGK

CONTRACTORS
Orbital Alliant Techsystems, Inc (Plymouth, MN)







Ammunition — Small Caliber

JPEO Armaments and Ammunition | Picatinny Arsenal, NJ

ACAT III/IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Multiple

DESCRIPTION

Small caliber ammunition is .50 caliber and below. Conventional small caliber ammunition in production and deployment consists of 5.56 mm, 7.62 mm, 9 mm, 10- and 12-gauge, .22 caliber, .30 caliber, .38 caliber, .45 caliber, .300 Winchester Magnum (WinMag), and .50 caliber. The 5.56 mm cartridge is used in the M16 Rifle, M4 Carbine, and M249 Squad Automatic Weapon. The 7.62 mm cartridge is used in the M240 Machine Gun, M24 Sniper Weapon System, M110 Semi-automatic Sniper System, and M14 Rifle. The 9 mm cartridge is fired in the M9, M17, and M18 pistols. The M2010 Enhanced Sniper Rifle uses the .300 WinMag cartridge. The M2 Machine Gun and the M107 Sniper Rifle use .50 caliber cartridges. The remaining small caliber ammunition is used in a variety of pistols, rifles, and shotguns.

Small caliber ammunition in research and development consists of 6.8 mm Next Generation Squad Weapon (NGSW) Ammunition, advanced armor-piercing capabilities to engage broad spectrum of targets at longer rangers, one-way luminescence trace ammunition to decrease vulnerability, lightweight case to lighten the Soldier's load, and reduced range ammunition for enhanced training readiness.

Three categories of small caliber ammunition are currently in use. War reserve ammunition is ammunition with overmatch capability that supports individual and crew-served weapons during combat operations. Training standard ammunition is dual-purpose and can be used to support both training and operational requirements. Training-unique ammunition is designed specifically for use in training and is not authorized for use in combat (i.e., blank, dummy-inert, close combat man marking, and short-range training ammunition).

BENEFIT TO THE SOLDIER

Standard ammunition provides the Warfighter with the necessary lethality needed to defeat the enemy.

SPECIFICATIONS

- Vary based on weapon platform, caliber, target set, and effect

PROGRAM STATUS

- **6.8 mm NGSW Ammunition**
  - **2QFY20:**
    - GFM projectile deliveries
    - Rapid Prototype Test 1
  - **2QFY21:** Rapid Prototype Test 2
- **7.62 mm Advanced Armor Piercing (ADVAP)**
  - **4QFY19:** Urgent Materiel Release
  - **1QFY20:** Milestone (MS) C/Type Classification Standard
- **7.62 mm One-Way Luminescence (OWL)**
  - **1QFY19:** System Requirements Review and Design Verification Test
- **.50 Caliber Reduced Range Ammunition (RRA)**
  - **4QFY20:** Approved Acquisition Program Baseline Post MS B
- **7.62 mm RRA**
  - **2QFY20:** Preliminary Design Review

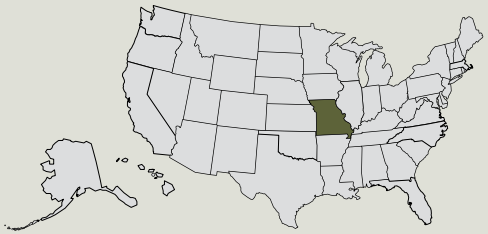
PROJECTED ACTIVITIES

- **6.8 mm NGSW Ammunition**
  - **2QFY21:** Prototype Test 2
  - **1QFY22:** System downselect and Production decision
- **7.62 mm OWL**
  - **2QFY21:** Critical Design Review (CDR)
  - **4QFY21:** Production Qualification Testing
- **7.62 mm Lightweight Case**
  - **2QFY21:** Product Improvement Development Request for Proposal and award
  - **4QFY21:** Phase II Product Validation Testing 4QFY20 Preliminary Design Review
  - **1QFY23:** CDR

Ammunition — Small Caliber

- **3QFY23:** Phase III Validation Testing
- **7.62 mm ADVAP**
  - **2QFY21:** Full Materiel Release
- **7.62 mm OWL**
  - **2QFY21:** Trace Development Competitive Downselect, CDR
- **5.56 mm OWL**
  - **3QFY21:** MS B, Engineering, Manufacturing, and Development Contract Award
- **7.62 mm RRA**
  - **1QFY21:** MS B
  - **3QFY21:** Pre-Production Qualification Test (PPQT)
- **.50 Caliber RRA**
  - **2QFY21:**
    - Preliminary Design Review
    - PPQT
  - **3QFY21:** PPQT

CONTRACTORS
Olin Winchester (Lake City Army Ammunition Plant, Independence, MO) and Others





Apache Attack Helicopter — AH-64D/E

PEO Aviation | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Egypt, Greece, India, Indonesia, Israel, Japan, Korea, Kuwait, Morocco, Netherlands, Qatar, Saudi Arabia, Singapore, Taiwan, United Arab Emirates, and United Kingdom

DESCRIPTION

The Apache AH-64D/E is the Army's attack helicopter. It is capable of destroying armor, personnel, and materiel targets in obscured battlefield conditions. The Apache is a twin-engine, four-blade tandem-seat attack helicopter equipped with an M230 30 mm cannon, Hydra-70 2.75-inch rockets, and HELLFIRE missiles (both laser-guided and radio frequency). The current Army Aviation fleet contains both AH-64D Longbow Apaches and AH-64E models. The Apache is fielded to both Active Army and Army National Guard armed reconnaissance battalions and cavalry units. The aircraft is designed to support Brigade Combat Teams across the full spectrum of warfare.

The AH-64E program is the most current evolution of the Apache. It is designed and equipped with an open systems architecture to incorporate the latest communications, navigation, sensor, and weapon systems. The E-model has multiple upgrades from its predecessors, such as the improved Modernized Target Acquisition Designation Sight/Pilot Night Vision System (MTADS/PNVS). This system includes a new integrated infrared laser that allows for easier target designation and enhanced infrared imagery that blends infrared and night vision capabilities. The E-model also has an updated Small Tactical Terminal radio that includes the LINK 16 capability required to communicate in a joint environment. The updated Fire Control Radar can operate in a maritime mode, enabling the Apache to be an integral asset in most environments. The E-model fleet's Manned-Unmanned Teaming ability enables Level of Interoperability 4 to Apache crews, providing the ability to receive Unmanned Aerial Systems (UAS) video in the Apache cockpit, control UAS sensors, and direct the flight path of the UAS.

The aircraft is also undergoing further modernization modifications such as the Modernized Day Sensor Assembly. This upgrade eliminates obsolescence issues while enhancing day-sight capabilities equivalent to the changes made with MTADS/PNVS. Other modifications include Manned-Unmanned Teaming that provides non-line-of-sight communications, video transmission/reception, and maintenance cost reductions.

The Apache is provided to U.S. allies through a robust Foreign Military Sales program with more than 500 Apaches currently in operation or development across 16 partner nations. The current acquisition objective is 812 aircraft.

BENEFIT TO THE SOLDIER

The Apache provides security to ground forces, fixed based operations, and aerial escorts; conducts reconnaissance to provide situational awareness to ground forces and higher headquarters; and decisively engages single or multiple enemy combatants to allow freedom of maneuver or protection. It maneuvers into enemy territory to conduct deep attacks on strategic targets to set the conditions for favorable ground commander operations. With the Manned-Unmanned Teaming capability, the AH-64 can send real-time situational awareness of the environment and enemy forces to Soldiers in contact.

SPECIFICATIONS

- Designed and equipped with a Modular Open Systems Approach to incorporate the latest communications, navigation, sensor, and weapon systems
- Combat mission speed: AH-64D 145 knots (max speed); AH-64E 164 knots (max speed)
- Combat range: 260 nautical miles
- Combat endurance: 2.5 hours
- Maximum gross weight: 20,260 pounds
- Ordnance:
  - 16 HELLFIRE missiles
  - 76 2.75-inch rockets
  - 1,200 30 mm chain gun rounds
- Crew: Two (pilot and copilot gunner)
- Rate of Fire: 600–650 rounds per minute

Apache Attack Helicopter — AH-64D/E

PROGRAM STATUS

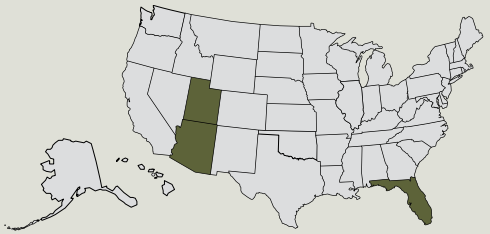
- **3QFY18:** Department of Army G-8 memo adjusting Army Procurement Objective from 767 to 812 and Army Acquisition Objective of 791 for the AH-64E Apache Helicopter
- **3QFY19:** Follow-on Test and Evaluation 2
- **4QFY20:** V6 Longbow Crew Trainer Fielding

PROJECTED ACTIVITIES

- **1QFY21:** V6 Fielding begins

CONTRACTORS

Boeing (Mesa, AZ)
L3 Technologies (Salt Lake City, UT)
Lockheed Martin (Orlando, FL)
Longbow LLC (Orlando, FL)





Armored Multi-Purpose Vehicle

PEO Ground Combat Systems | Detroit Arsenal, MI

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Armored Multi-Purpose Vehicle (AMPV) is the replacement for the M113 Family of Vehicles (FoV) within the Armored Brigade Combat Team (ABCT), comprising approximately 30% of its tracked vehicle fleet.

The General Purpose variant accommodates two crew and six passengers, and it is reconfigurable to carry one litter and mounted crew-served weapon.

The Mortar Carrier variant accommodates two crew, two mortar crew, a mounted 120 mm mortar, 69 rounds of 120 mm ammunition, and M95 Mortar Fire Control System.

The Mission Command variant is the cornerstone of the Army's ABCT Network Modernization Strategy. It takes advantage of increased size, weight, power, and cooling limitations and provides a significant increase in Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance capability. The variant accommodates a driver, commander, and three workstation operators, and its red side network provides full Tactical Command Post capabilities at brigade and battalion levels.

The Medical Evacuation variant includes room for three crew, six ambulatory patients or four litter patients, or three ambulatory and two litter patients, and storage for Medical Equipment Sets.

The Medical Treatment variant includes room for four crew, one litter patient, and a patient treatment table.

BENEFIT TO THE SOLDIER

AMPV provides significant capability improvement over the M113 FoV in force protection, survivability, mobility, and power generation to incorporate the Army's inbound network and other future technologies.

SPECIFICATIONS

- Weight: 75,000–80,000 pounds
- Sustained speed: 34–38 mph
- Acceleration (0–30 mph): 24 seconds
- Cruising range (at 30 mph): 225 miles
- Crew Size: Two to four
- Weapons: Hosts M249, M240, M2, or MK-19; 120 mm mortar

PROGRAM STATUS

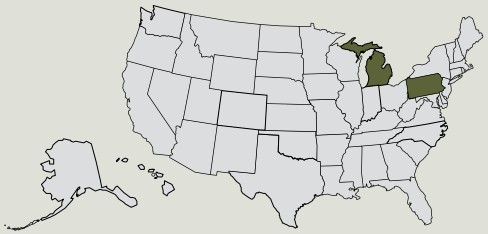
- **3QFY18–4QFY18:** Limited User Test, Fort Hood, Texas
- **4QFY18:**
  - Army Requirements Oversight Council for Capabilities Production Document
  - Production Readiness Review
- **2QFY19:** Milestone C Decision

PROJECTED ACTIVITIES

- **4QFY21:** First Unit Equipped

AMPV

CONTRACTORS
BAE Systems (Sterling Heights, MI, and York, PA)



Army Integrated Air and Missile Defense (AIAMD)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Poland

DESCRIPTION

Army Integrated Air and Missile Defense (AIAMD) integrates current and future Air and Missile Defense (AMD) Sensors, Weapons, and Mission Command technologies into an Integrated Fire Control System, provides a single air picture, increases defended area, and provides flexibility in systems deployment. The Integrated Battle Command System (IBCS) is the fire control and operational center capability that provides greater defense effectiveness than what can be provided in the current single sensor fire unit construct. IBCS develops composite tracks from sensor measurement data provided by each sensor in the task force and develops weapon firing solutions based off the composite track data. This method provides a more accurate target track and more weapon battlespace than current systems can provide. The IBCS provides a common engagement operations center and data sharing capability for all echelons of Army AMD, through all domains of military operations.

BENEFIT TO THE SOLDIER

The AIAMD architecture provides the framework to distribute fire control quality data, commands, and messaging among components in near real-time to provide a coordinated and integrated response to synchronized complex threat raids. The data construct is a self-healing system capable of automatic fail-over and rapid reconfiguration of components providing a more resilient defense with fewer single point failures. IBCS provides dynamic defense design capability to maintain optimal defense in accordance with supported force scheme of operations and maneuver. The architecture enables extended range and non-line-of-sight engagements across the full spectrum of AMD threats. It mitigates coverage gaps and single points of failure, and reduces manpower, operation, and support costs while providing enhanced training capability.

SPECIFICATIONS

- Engagement Operations Center components provide a common Integrated Fire Control capability and include the Integrated Collaborative Environment and a trailer
- Integrated Fire Control Relay for fire control connectivity and distributed operations includes a Fire Control Network Radio
- Plug-and-fight kits network enable multiple sensor and weapon to communicate with the IBCS Engagement Operations Center
- Common software fuses data, creates a Single Integrated Air Picture, and will select the most appropriate weapon needed to defeat AMD threats effectively and efficiently

PROGRAM STATUS

- **3QFY19–1QFY20:**
  - Developmental Test (DT)
  - New Equipment Training in preparation for Limited User Testing (LUT)
- **4QFY19:** DT Flight Test 4 Success
- **1QFY20:** DT Flight Test 5 Success
- **2QFY20–3QFY20:** Collective training in preparation for LUT
- **4QFY20:** LUT

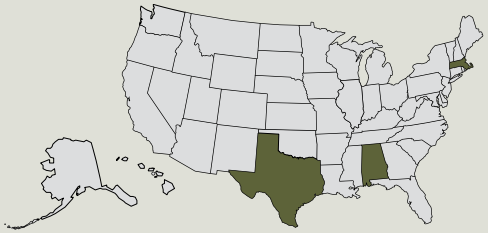
PROJECTED ACTIVITIES

- **1QFY21:** Milestone C
- **1QFY22:** Independent Operational Test and Evaluation
- **3QFY22:** Initial Operating Capability

AIAMD



CONTRACTORS
Lockheed Martin (Grand Prairie, TX)
Northrop Grumman Corporation (Huntsville, AL)
Raytheon (Andover, MA)









Army Standard Family of Rigid Wall Shelters (ASF-RWS)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Army Standard Family of Rigid Wall Shelters (ASF-RWS) are used for mission command, maintenance, medical, and any other function that can be integrated, either permanently or temporarily, into a shelter. The ASF-RWS program objective is to modernize and standardize an aging and expensive Army fleet of tactical rigid wall shelters. The program incorporates the latest material and manufacturing technologies into shelter designs to improve energy efficiency, transportability, emplacement/displacement, modularity, and standardization. It also reduces production unit prices to curtail the proliferation of non-standard shelters. ASF-RWS is structured as three sub-programs, each focused on a variant:

- Phase One (P1) – Expandable/Non-Expandable Variant
- Phase Two (P2) – Vehicle Mounted Variant
- Phase Three (P3) – Panelized Variant

BENEFIT TO THE SOLDIER

The ASF-RWS program has widespread impact and importance across the Army. Energy efficiency not only saves fuel, but also extends Warfighter reach and lethality in contested, resource-constrained environments. Transportability and faster emplacement/displacement translate into better Soldier survivability and responsiveness to operational tempo. Modularity allows for interoperability and scalability during Multi-Domain Operations. Suitability in extreme conditions ensures mission effectiveness around the globe. Implementing all these features with a mind for sustainability, in turn, reduces total life cycle cost. These shelters enable programs and signature efforts within the Network, Air and Missile Defense, Long Range Precision Fires, and Future Vertical Lift modernization priorities, along with numerous other Army programs.

SPECIFICATIONS

- 20-40% more energy efficient – extended reach, better lethality
- 30-35% lower unit price – more affordable, fewer non-standard buys
- Faster/simpler deployment – more survivable, more responsive
- More modular and standardized – more interoperable, more scalable
- Lighter weight/greater payload – broader mission set
- Suitable in harshest environments – effective all around the globe

PROGRAM STATUS

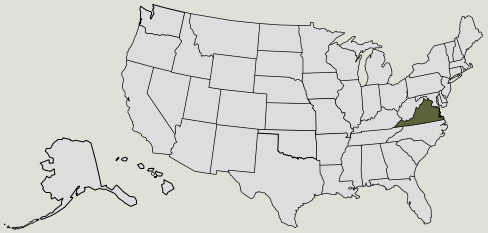
- **3QFY19–4QFY19:**
  - Phase I Milestone B
  - Critical Design Review
  - Other Transaction Authority Element 2 Award
- **FY20:**
  - Technical Manual Validation/Verification
  - Prototype Build and Test

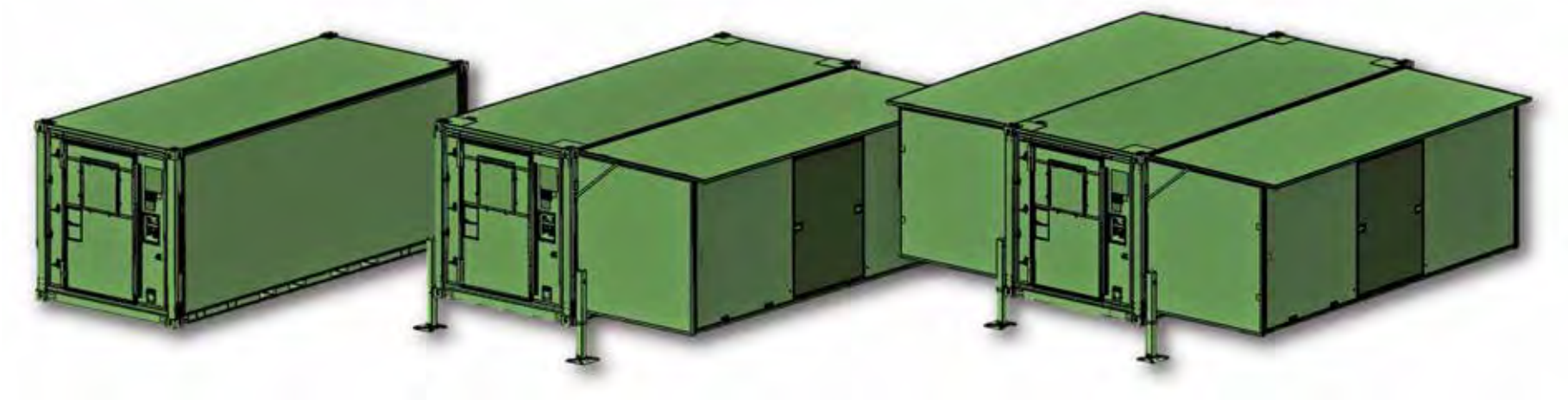
PROJECTED ACTIVITIES

- **FY21:**
  - Prototype Build and Test continues
  - Maintainability Evaluation
  - Phase I Milestone C
  - Phase II Milestone B

ASF-RWS

CONTRACTORS
General Dynamics Mission Systems, Inc. (Marion, VA)





Army Tactical Missile Systems (ATACMS)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Procurements are underway

DESCRIPTION

The suite of Army Tactical Missile Systems (ATACMS) are 24/7, all-weather, surface-to-surface, inertially guided missiles used to engage targets in the corps/Army area of influence. ATACMS were used extensively in both Operation DESERT STORM (1991) and in Operation IRAQI FREEDOM (2003) ground wars for shaping operations by the joint force, Joint Special Operations Forces, and Army Land Component Command operational levels. There is one missile per launching assembly (missile pod) with two missiles per launcher load in the M270/M270A1 Multiple Launch Rocket System and one missile in the M142 High Mobility Artillery Rocket System launcher.

Targets include air defense artillery sites, surface-to-surface missile units, logistics sites, command and control complexes, and helicopter forward operating bases.

The ATACMS Modification program converts expired Block I/IA Anti-Personnel, Anti-Materiel (APAM) missiles to Unitary missiles and resets the original 10-year service life. The Unitary Service Life Extension Program (SLEP) configuration includes a Cluster Munitions policy compliant warhead, obsolescence refresh, re-grained rocket motor, and a proximity sensor.

BENEFIT TO THE SOLDIER

ATACMS provides the Warfighter the ability to engage both point and area high value targets with precision fires out to 300 kilometers (km).

SPECIFICATIONS

- M39 Block I
  - Range: 25–165 km
  - Payload: 950 APAM bomblets
  - Guidance: Inertial
- M39A1 Block IA
  - Range: 70–300 km
  - Payload: 300 APAM bomblets
  - Guidance: Inertial with Global Positioning System (GPS) aided
- M48 Quick Reaction Unitary
  - Range: 70–300 km
  - Payload: Unitary Warhead
  - Guidance: Inertial with GPS aided
- M57 TACMS 2000 Unitary
  - Range: 70–300 km
  - Payload: Unitary Warhead
  - Guidance: Inertial with GPS aided
- M57A1 TACMS Height-of-Burst Unitary
  - Range: 70–300 km
  - Payload: Unitary Warhead
  - Sensor: Proximity sensor for height-of-burst capability
  - Guidance: Inertial with GPS aided

PROGRAM STATUS

- **4QFY17:** SLEP 1 Production Contract Award
- **2QFY18:** ATACMS Unitary Height-of-Burst Operational Test #1 and #2 at White Sands Missile Range, New Mexico
- **3QFY18:** SLEP 2 Production Contract Award
- **3QFY19:** SLEP 3 Production Contract Award with two Options
- **2QFY20:** SLEP 4 Production Contract Option 1 Award

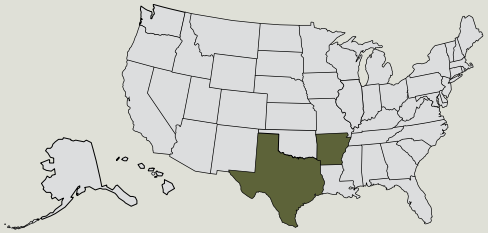
PROJECTED ACTIVITIES

- **3QFY21:** SLEP 5 Production Contract Option 2 Award



ATACMS

CONTRACTORS
Lockheed Martin Missiles and Fire Control (Grand Prairie, TX, and Camden, AR)



Army Vantage

PEO Enterprise Information Systems | Fort Belvoir, VA

BCAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Army Vantage is an enterprise operations, analytics, and data management platform enabling U.S. Army users at every echelon and across classification levels to make data-driven decisions. The platform presents information in a way that is immediately understandable and actionable for a wide range of technical and non-technical users. Vantage strengthens the real-time decision-making capabilities of senior leaders, enabling the organization to "see itself" and analyze the current and predicted future state(s) of the Army.

In December 2019, the Army awarded a four-year production agreement for Army Vantage (formerly known as the Army Leader Dashboard), which is now managed by Program Executive Office Enterprise Information Systems' Army Data and Analytics Platform. Army Vantage provides thousands of users with near real-time visibility and access to more than 135 Army source systems and Enterprise Resource Planning systems (ERPs). The platform facilitates rapid decision-making while supporting strategic, operational, and tactical planning; standardizes the way the Army views and manages current, legacy, structured, and unstructured data; provides a continuous real-time perspective into the pulse of the entire Army; and rapidly accelerates Artificial Intelligence (AI), analytics, and infrastructure initiatives.

BENEFIT TO THE SOLDIER

- Operates on unclassified and classified networks; connects to and draws relevant data across all data domains, powers a set of configurable views, and provides collaborative tools for making data-driven decisions
- Enables non-technical users to leverage state-of-the-art data analytics and AI applications
- Provides active-duty commanders and staff — from the division to company level — with tools to automate essential daily tasks. Specifically integrates critical personnel and equipment data sources into one Command Toolkit, enabling a near real-time view of individual and unit-level readiness, providing trend analysis at the division level, and surfacing actionable levers and insights.
- Integrates dozens of critical, sensitive personnel datasets securely into one coherent view to ensure commanders are empowered to help their most vulnerable Soldiers. Commanders can effectively monitor high-risk behavior and engage with Soldiers at the earliest sign of a potential issue.
- Enables installation commanders, unit-level leaders, logisticians, and Army senior leaders to assess training and installation reopening risks with a single, unified view of COVID-19 case growth, unit response requirements, personal protective equipment allocation, and virus testing capacity across the globe
- Enables Army finance personnel to make data-driven decisions regarding Army cost savings. Unifies financial and contracting systems data, automating de-obligation reconciliation. By identifying contracts with excess funds, enables the Army to reroute funding and generate substantial savings.
- Supports G-3/5/7 and Headquarters, Department of the Army leaders and analysts by integrating enterprise readiness and operational planning source systems and automating strategic readiness reporting

SPECIFICATIONS

- Provides visibility into and unifies data across Army and Department of Defense source systems and ERPs
- Serves as a central environment for data ingestion, data storage, metadata management, and advanced analytics for structured, semi-structured, unstructured, and raw data
- Provides open application programming interfaces and data sharing capability to enable mission partners to integrate data and models in Army Vantage to support their mission requirements on both unclassified and classified networks

Army Vantage

- Enables secure and automated interfaces from existing systems via the Army Vantage Data Connection Adapter
- Provides an automated Cross Domain Solution capability for transferring data, models, and business logic from the Non-classified Internet Protocol Router (NIPR) Network to the Secret Internet Protocol Router (SIPR) Network in real time
- Provides self-service training and analytical capabilities, including state-of-the-art data analytics and AI applications
- Accessible by Soldiers, commanders, analysts, and operational users online via NIPR and SIPR from a web-browser using a cloud-based architecture
- Provides the ability to collaborate seamlessly while respecting granular access control and permissions requirements
- Enables analysts to reuse data and work products

PROGRAM STATUS

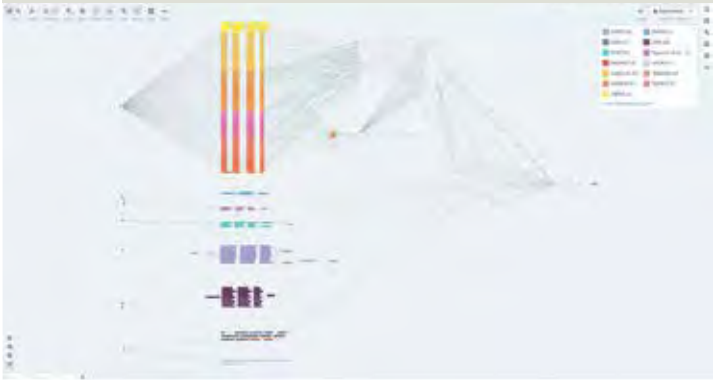
- **4QFY18:** Awarded five contracts for prototypes
- **1QFY20:** Awarded final contract
- **FY20:**
  - Release production versions of the Strategic Readiness Update and Strategic Readiness Tenets, Unliquidated Obligation, and COVID-19 Readiness applications
  - Provide limited releases of the Commander's Risk Reduction Toolkit (CRRT) and Command Toolkit (Division Readiness Review and Readiness Tracker) applications

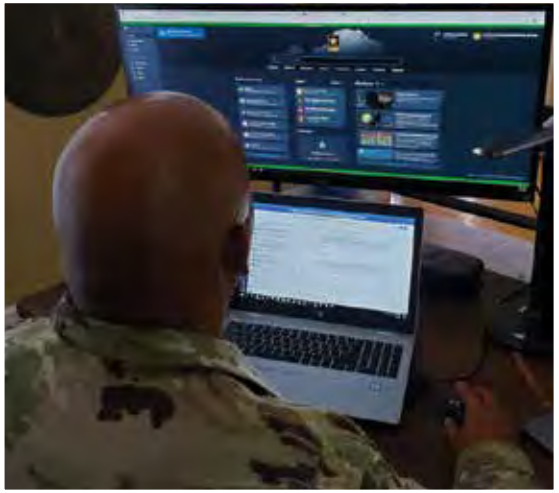
PROJECTED ACTIVITIES

- **FY21:**
  - Release CRRT and Command Toolkit across the Army
  - Identify, scope, and begin technical implementation of additional lines of effort in support of senior leader priorities

CONTRACTORS
LMI (Tysons Corner, VA)
Palantir (Palo Alto, CA)











Army Watercraft Systems (AWS)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Army Watercraft Systems (AWS) expand commanders' movement and maneuver options in support of unified land operations. The Army's current fleet of 132 AWS enables commanders to operate through fixed, degraded, and austere ports, conducting expeditionary sustainment and movement and maneuver of forces for missions across the spectrum of military operations. Except for the newest Maneuver Support Vessel (Light) (MSV(L)) platform, the legacy vessels vary widely in age and do not have a single manufacturer.

BENEFIT TO THE SOLDIER

Army watercraft provide responsive, cross-domain capability to move combat configured forces, equipment, and sustainment supplies close to the point of need throughout a theater of operations creating multiple, complex operational dilemmas for adversaries throughout all phases of operations.

SPECIFICATIONS

Landing Craft: Provide inter- and intra-theater transportation of personnel and materiel, delivering cargo from advanced bases and deep-draft strategic sealift ships to harbors, inland waterways, remote and unimproved beaches and coastlines, and denied or degraded ports.

- Logistic Support Vessel
- Landing Craft Utility (LCU-2000)
- Landing Craft Mechanized (LCM-8) to be replaced by MSV(L)

Ship-to-Shore Enablers: Enable the discharge of strategic sealift ships when suitable ports are unavailable while at anchor or onto degraded ports or bare beaches; causeway systems enable joint and Army forces to load, transload, and off-load equipment, personnel, and sustainment cargo during sea-based operations, operations in degraded or austere ports, and bare-beach, joint logistics over-the-shore operations. The Modular Causeway System (MCS) is comprised of the following systems:

- Modular Warping Tug
- Roll-on/Roll-off Discharge Facility
- Floating Causeway
- Causeway Ferry

Towing and Terminal Operations: Provide heavy lifting, ocean, and port/harbor towing and salvage operations in open, denied, or degraded ports; used for general port management and husbandry duties (storing fuel, repositioning barges, firefighting, docking, and undocking large ships); can clear and operate ports (fixed, degraded, and austere), while providing coordinated, simultaneous support to multiple sustainment operations sites widely distributed throughout the area of operations:

- Large Tug (LT-800)
- Small Tug (ST-900)
- Barge Derrick (BD 115-ton)

PROGRAM STATUS

MSV(L) Engineering and Manufacturing Development (EMD):

- **FY19–FY20:** Critical Design Review
- **FY20–FY21:** Prototype Build (delivery planned for 2QFY21)

LCU-2000 Service Life Extension Program (SLEP):

- **FY20–FY21:** SLEP Phase I Vessel Deliveries (3)

MCS SLEP:

- **FY19–FY20:** Critical Design Review
- **FY20:** Prototype Delivery

PROJECTED ACTIVITIES

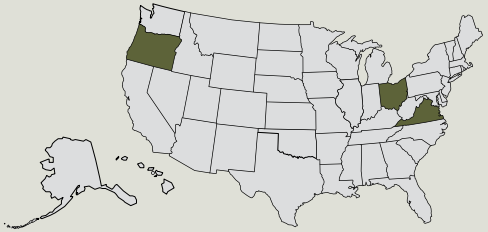
MSV(L) EMD:
- **FY21:**
  - Prototype Vessel Delivery and Testing
  - Milestone C and Low-Rate Initial Production start

LCU-2000 SLEP:
- **FY20–FY26:** SLEP Phase II Vessel Production

MCS SLEP:
- **FY20–FY21:** Operational Testing
- **FY21:** SLEP Vessel Production

AWS

CONTRACTORS
LCU SLEP Phase I: Alion Science and Technology (McLean, VA)
MCS SLEP: Battelle Memorial Institute (Columbus, OH)
MSV(L) EMD: Vigor Works LLC (Clackamas, OR)







Artillery Ammunition

JPEO Armaments and Ammunition | Picatinny Arsenal, NJ

ACAT III/IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Afghanistan, Australia, Austria, Bahrain, Brazil, Canada, Estonia, India, Iraq, Israel, Japan, Jordan, Korea, Latvia, Lebanon, Morocco, New Zealand, Niger, Philippines, Portugal, Saudi Arabia, Singapore, Sweden, Taiwan, Thailand, Tunisia, and United Kingdom

DESCRIPTION

The U.S. Army's artillery ammunition program includes 75 mm (used for ceremonies and simulated firings), 105 mm, and 155 mm projectiles and their associated fuzes and propelling charges. Semi-fixed ammunition for short and intermediate ranges, used in 105 mm Howitzers, is characterized by adjusting the number of multiple propelling charges. Semi-fixed ammunition for long ranges contains a single bag of propellant optimized for obtaining high velocity and is not adjustable. The primer is an integral part of the cartridge case and is located in the base. The 105 mm cartridges are issued in a fuzed or unfuzed configuration. Both cartridge configurations are packaged with propellant.

Separate-loading ammunition, used in 155 mm Howitzers, has separately issued projectiles, fuzes, propellant charges, and primers. After installing the appropriate fuze on the projectile, the fuzed projectile is loaded into the cannon along with the appropriate amount of propellant charges and a primer.

The artillery ammunition program includes fuzes for cargo-carrying projectiles, such as smoke and illumination, and bursting projectiles, such as High Explosives (HE). This program also includes bag propellant for the 105 mm semi-fixed cartridges and modular artillery charge system for 105 mm Howitzers.

BENEFIT TO THE SOLDIER

Artillery ammunition improved unmatched fire power to the maneuver force commander through effectively illuminating, obscuring, and defeating enemy targets.

SPECIFICATIONS

- Insensitive Munitions fill is used in the following HE rounds, making the inventory safer: 105 mm M1, 105 mm M1130, 155 mm M1122, and 155 mm M795
- The Army is working on extending the range of its existing fleet of Howitzers. The effort is part of the Long Range Precision Fires Cross-Functional Team. To achieve this objective, the Project Manager for Combat Ammunition Systems is executing an incremental acquisition approach and the first increment (range upgrade) will arm the current fleet of 39 caliber systems (M777A2/M109A6/M109A7) with a new HE Rocket Assisted Projectile (XM1113 HE RAP) that engages targets at 40 kilometers (km) (unguided) and 35 km (with the Precision Guidance Kit). The second increment, will focus on the 58 caliber Extended Range Cannon Artillery system with associated new propulsion systems and will feature a modified HE RAP round (XM1113ER) that achieves 70 km range with precision, is compatible with an autoloader that facilitates a rate of fire upgrade, and will be initially fielded in 2023.

PROGRAM STATUS

- **FY19:** Stood up new smoke mixing/pressing facility at Pine Bluff Arsenal, Arkansas
- **FY20:**
  - Stub Charge achieved Preliminary Design Review (PDR) 1
  - Achieved Critical Design Review (CDR) for the Extended-Range (ER) 155 mm HE Projectile XM1128
  - Achieved Full Materiel Release (FMR) for the 155 mm M1121 ER Smoke White Phosphorus Projectile
  - Execute 155 mm XM1113 Initial Safety Test

PROJECTED ACTIVITIES

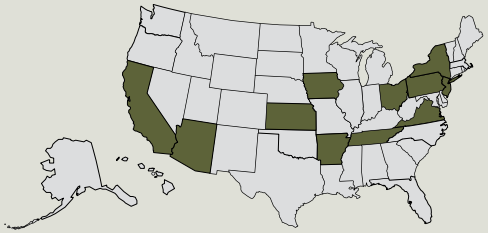
- **FY21:** 155 mm Bag Supercharge PDR
- **2QFY21:**
  - Achieve Milestone B for the 155 mm XM1113ER
  - 155 mm Stub Charge CDR
- **3QFY21:** 155 mm Bag Supercharge CDR
- **4QFY21:** Achieve Urgent Materiel Release (UMR) for the HE RAP 155 mm XM1113
- **2QFY22:** Achieve MS C/Type Classified – Standard for the HE ER 155mm XM1128

Artillery Ammunition

- **1QFY23:** Achieve CDR for Cased Supercharge
- **4QFY23:**
  - Achieve FMR for HE RAP 155 mm XM1113
  - Achieve FMR for HE ER 155 mm XM1128
  - Achieve UMR for 155 mm XM1113 ER
  - Achieve UMR for 155 mm Stub Charge
  - Achieve UMR for 155 mm Bag Supercharge

CONTRACTORS

Accurate Energetic (McEwen, TN)
Action Manufacturing (Bristol, PA)
American Ordnance (Iowa Army Ammunition Plant (AAP), Middletown, IA)
Amtec Corporation (Queens Village, NY)
Armtec Defense Technologies (Coachella, CA)
BAE Systems (Holston AAP, Kingsport, TN)
Day & Zimmerman (Parsons, KS)
General Dynamics Ordnance and Tactical Systems (Scranton AAP, PA, and Repentigny Quebec, Canada)
Junghans (Dunningen, Germany)
L3Harris (Cincinnati, OH)
Nammo Pocal (Scranton, PA)
Pyrotechnique by Grucci (Radford, VA)
Spectra (East Camden, AR)
Yoland Corp. (Patterson, NJ)



Assembled Chemical Weapons Alternatives (ACWA)

PEO Assembled Chemical Weapons Alternatives | Aberdeen Proving Ground, MD

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Assembled Chemical Weapons Alternatives (ACWA) enhances national security by destroying the remaining United States chemical weapons stockpiles at the U.S. Army Pueblo Chemical Depot (PCD) in Pueblo, Colorado, and Blue Grass Army Depot (BGAD) in Richmond, Kentucky, in a safe and environmentally sound manner.

Established by Congressional legislation in 1996, PEO ACWA reports directly to the Under Secretary of Defense for Acquisition and Sustainment through the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs. PEO ACWA is responsible for pilot testing selected alternative technologies and accelerating destruction of the chemical weapons stockpiles located at PCD and BGAD.

PEO ACWA is specifically responsible for managing the construction, systemization, operation, closure, and any contracting related to the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) and the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP). Bechtel Pueblo was selected as the systems contractor to design, construct, systemize, pilot test, operate, and close the PCAPP. Bechtel Parsons Blue Grass was selected as the systems contractor to design, construct, systemize, pilot test, operate, and close the BGCAPP. Construction of the main facilities at both sites is complete, and operations to destroy chemical weapons are underway. BGCAPP is operating one Static Detonation Chamber (SDC), a type of explosive destruction technology, while adding a second, larger unit. PCAPP is preparing to start operations using three SDC units. At both sites, the program is using this technology to destroy rounds deemed unsuitable for processing in the highly automated main facility.

BENEFIT TO THE SOLDIER

Resources allocated for the safe, secure storage of the obsolete U.S. Chemical Weapons Stockpile and the demilitarization of these weapons will be reallocated for other Department of Defense programs.

SPECIFICATIONS

- **PCAPP:**
  - Destroy Mustard Agent in 4.2-inch mortars, and 105 mm and 155 mm projectiles
  - Operational Concept: Neutralization followed by biotreatment, pilot plant augmented by SDC units to destroy rounds deemed unsuitable for processing in the highly automated main facility
- **BGCAPP:**
  - Destroy Mustard and Nerve Agents in 155 mm projectiles, 8-inch projectiles, and M55 rockets
  - Operational Concept: Neutralization followed by Super Critical Water Oxidation, pilot plant augmented by SDC units to destroy rounds deemed unsuitable for processing in the highly automated main facility

PROGRAM STATUS

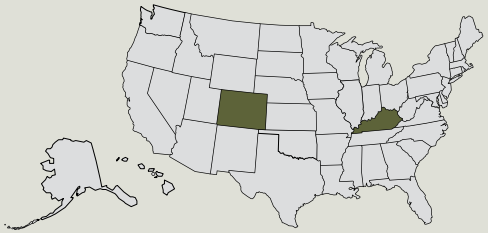
- **3QFY20:**
  - Completed destruction of half the remaining U.S. Chemical Weapons Stockpile tonnage
  - BGCAPP completed destruction of all 8-inch projectiles containing GB and is preparing for the next campaign to destroy VX projectiles while operations to destroy Mustard projectiles continues in the SDC. Site preparation work to assemble second, larger SDC is ongoing.
- **4QFY20–1QFY21:** PCAPP completed their first major campaign, destruction of more than 290,000 155 mm projectiles containing Mustard agent

ACWA

PROJECTED ACTIVITIES

- **FY20–FY23:** Per Congressional mandate, both sites are to complete destruction no later than December 31, 2023

CONTRACTORS
BGCAPP: Bechtel Parsons Blue Grass (Richmond, KY)
PCAPP: Bechtel Pueblo (Pueblo, CO)







Assured Positioning, Navigation, and Timing (APNT) — Dismounted APNT System (DAPS)

PEO Intelligence, Electronic Warfare, and Sensors | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Dismounted Assured Positioning, Navigation, and Timing (APNT) System (DAPS) provides a small, lightweight solution that acquires, protects, and distributes secure PNT to the dismounted Soldier. The first generation of DAPS integrates onto the Nett Warrior (NW) system, distributes PNT information to the NW End-User Device, and replaces the Defense Advanced Global Positioning System (GPS) receiver and commercial GPS receiver on the NW ensemble. It also delivers APNT data through NW Integrated Soldier Power and Data System via wired USB connection. Additionally, DAPS uses NW Conformal Wearable Battery for power and includes modernized M-code receiver and non-GPS augmentation for positioning and navigation integrity.

DAPS is a potential source of APNT for non-NW systems. Future generations will include a standalone handheld form factor that incorporates complementary PNT, including Alternative Navigation (ALTNAV) and integrates PNT modernization technologies that continually pace/overmatch the threat.

BENEFIT TO THE SOLDIER

DAPS provides critical timing and position information to the dismounted Soldier when in GPS-denied or degraded peer/near-peer and Joint All Domain Operations.

SPECIFICATIONS

- Directed Requirement for DAPS (March 19, 2019), enabling rapid prototyping
- Directed Requirement for ALTNAV (August 10, 2019), enabling prototyping and assessment of ALTNAV capability
- DAPS/ALTNAV Trace Memo for Handheld (April 16, 2020), enabling prototyping and assessment of ALTNAV Capability (ALTNAV Handheld)
- Capability Development Document Army Requirements Oversight Council approval anticipated in the fourth quarter of Fiscal Year (FY) 2021

PROGRAM STATUS

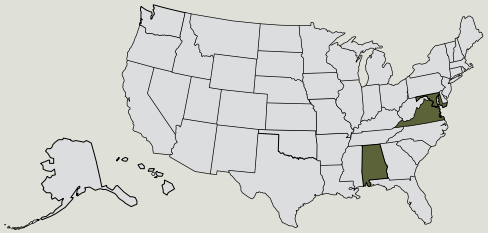
- **FY18–FY21:** DAPS risk reduction and prototyping activities
- **FY20:**
  - DAPS Prototype Lab and Field Testing
  - Soldier Touchpoints
  - Single vendor selection completed to begin maturation and production to meet DAPS Directed Requirement
- **FY21:**
  - DAPS GEN 1.0 Production

PROJECTED ACTIVITIES

- **1QFY22:** DAPS Directed Requirement First Unit Equipped
- **2QFY22:** DAPS Milestone C Decision
- **3QFY22:** Initial Operating Capability

APNT — DAPS

CONTRACTORS
Integrated Solutions for Systems, Inc. (Auburn, AL)
NAL Research Corporation (Manassas, VA)
TRX Systems, Inc. (Greenbelt, MD)





Assured Positioning, Navigation, and Timing (APNT) — Mounted APNT System (MAPS)

PEO Intelligence, Electronic Warfare and Sensors | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Mounted Assured Positioning, Navigation, and Timing (PNT) System (MAPS) enables Army forces to shoot, move, and communicate in a contested Global Positioning System (GPS) environment. This includes distributing PNT information to multiple mounted platform vehicle systems.

- **MAPS Generation (GEN) I:** Current solution protects access to GPS, including Selective Availability Anti-spoofing Module, timing, and anti-jam antenna.
- **MAPS Program of Record:** Next generation capability that provides PNT without GPS, including M-code, Alternate Navigation, timing, sensor fusion, anti-jam antenna, and beam steering.

This program supports the Assured PNT Cross-Functional Team that has been established to support the Army's Modernization Priorities.

BENEFIT TO THE SOLDIER

MAPS provides accurate and trusted PNT information to Soldiers on mounted platforms to continue combat operations/ battle rhythms under conditions where space-based PNT GPS may be limited or denied.

SPECIFICATIONS

- U.S. Army Europe (USAREUR) Operational Needs Statement (ONS) for Electronic Warfare Capabilities
- 8th Army Cyber-Electromagnetic Activities ONS
- MAPS Directed Requirement
- MAPS Capability Development Document

PROGRAM STATUS

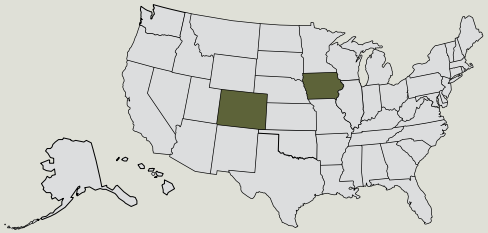
- **1QFY19:** MAPS Other Transactional Authority (OTA) Phase I Contract Award
- **2QFY19:** MAPS Directed Requirement signed
- **4QFY19:**
  - Initial equipping of 2nd Cavalry Regiment with MAPS GEN I for USAREUR ONS
  - MAPS OTA Phase II awarded
- **4QFY20:**
  - Capability Development Document planned approval
  - Army Test and Evaluation Command Operational Technology Demonstration with 3rd Cavalry Regiment
  - MAPS OTA Phase III awarded to single vendor for Production maturation prior to Milestone C

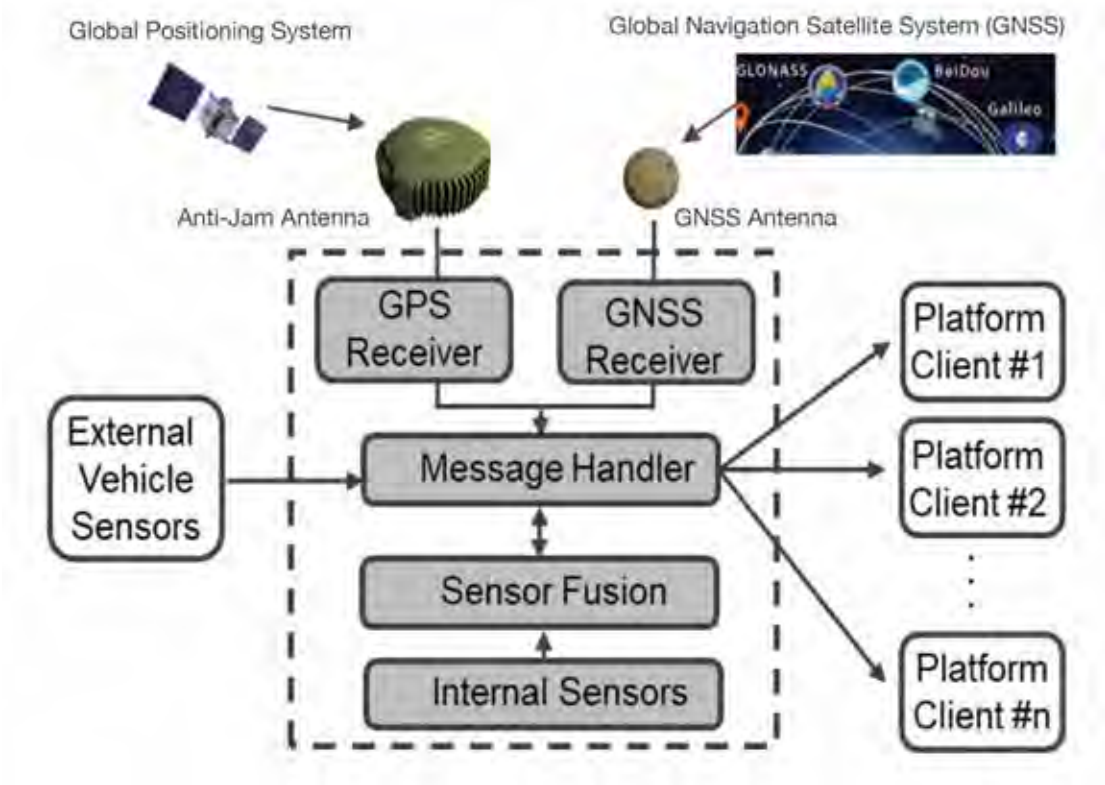
PROJECTED ACTIVITIES

- **1QFY21:** 1st Infantry Division MAPS GEN I Equipping
- **2QFY21:**
  - 2nd Cavalry Regiment MAPS GEN I Equipping
  - MAPS Milestone C
- **4QFY21:** Achieve Initial Operational Capability

APNT — MAPS

CONTRACTORS
GENERATION I & I.X: GPS Source (Colorado Springs, CO)
GENERATION II: Collins Aerospace (Cedar Rapids, IA)







Avenger Air Defense System

PEO Missiles and Space | Redstone Arsenal, AL

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Avenger is in service with U.S. Army (Active Component and National Guard) and FMS cases with the Government of Egypt.

DESCRIPTION

The Avenger Air Defense System is a lightweight, highly mobile, short-range, surface-to-air missile and gun weapon system mounted on an M1097 A1 High Mobility Multipurpose Wheeled Vehicle (HMMWV). Avenger is designed to counter hostile, low-flying Unmanned Aerial Systems (UAS), cruise missiles, rotary-wing aircraft, and fixed-wing aircraft. Avenger, operated by two crewmen, is capable of day, night, and adverse weather operations, can be transported by a UH-60L helicopter or C-130 aircraft, is air-droppable (M45 version), and can shoot on the move. The system can also be operated by remote control from a protected position up to 50 m away from the fire unit. The Avenger Fire Unit consists of two turret-mounted Stinger missile pods equipped to employ eight Stinger Missiles, .50 caliber M3P automatic machine gun, Forward Looking Infrared Receiver (FLIR) for day/night target tracking, Laser Range Finder (LRF) for establishing target range, as well as an Identification Friend-or-Foe (IFF) System that aids in the identification of friendly aircraft to minimize the potential for fratricide. The system is integrated into the Forward Area Air Defense Command and Control (FAAD C2) architecture. The Avenger comes in two variants — Basic and Slew-to-Cue (STC) of which the digital STC enables faster target detection and engagement.

Fielded configurations include a basic Avenger (M47A1), STC Avenger (M47A2), an air-drop-capable Avenger (M45A1), Foreign Military Sales versions (M46A1 and M46A2), and a dismounted version used for Homeland Defense of the National Capital Region (M47A2). Fire units equipped with the STC upgrade are capable of automatically slewing to a specific target reported by the FAAD C2 system, placing it directly into the gunner's field of view. Equipped with eight Stinger Missiles, Range: Stinger (more than 6 kilometers (km)); .50 caliber machine gun (more than 1 km); Day/Night Target Tracking (10 km), shoot on the move capability, and adverse weather capable. A portion of the fleet has digital STC to enable faster target detection and engagement.

On March 27, 2015, the Army Acquisition Executive approved the Modification Service Life Extension Program (MOD-SLEP) for the Avenger System. The MOD-SLEP addresses obsolescence challenges with Line Replaceable Units and compliance with Information Assurance requirements needed to ensure Avenger maintains operational capabilities and is sustainable through Fiscal Year 2031.

BENEFIT TO THE SOLDIER

Avenger is highly mobile with shoot on the move capability and can be operated from a remoted position. The STC variant enables the gunner a time to launch on target of 17 seconds. More importantly, the MOD-SLEP will ensure the Soldier has the most current IFF and internal communication systems and is sustainable through the end of its useful life.

SPECIFICATIONS

- Mounted on a M1097 series HMMWV
- Guidance: Advanced Proportional Navigation
- Two-man crew
- Two standard vehicle mounted launchers each holding a maximum of four stinger missiles
- M3P .50 Cal Machine Gun is a secondary weapon for Self Defense and Stinger Dead Zone
- Engagement: Basic load of 250 rounds
- FLIR for Day/Night Target Acquisition and Magnified Target Identification
- LRF for target engagement
- IFF to reduce fratricide

Avenger Air Defense System

- Able to operate up to 50 m from vehicle with the Remote-Control Unit
- FAAD C2 Capability Air Battle Situation Display and Messages

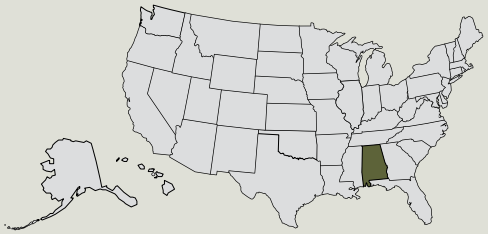
PROGRAM STATUS

- **2QFY19:**
  - 72 M3P .50 Cal Machine Guns delivered to Germany to Support European Defense Initiative
  - Completed Air Traffic Control Radar Beacon System, IFF, Mark XII/Mark XIIA Systems Certification
- **3QFY19:**
  - Mode 5 IFF Contract Awarded
  - Completed Avenger Log Demo
  - Completed the Mode 5 IFF Joint Interoperability Exercise; Joint Base Elmendorf-Richardson, Alaska
- **4QFY19:** Completed Mode 5 IFF First Article Inspection/First Article Testing
- **1QFY20:**
  - Phase II Technical Manual Verification completed
  - Software Qualification Testing completed
- **2QFY20:** Successfully completed Army Interoperability Certification
- **4QFY20:**
  - Avenger Fire Control Computer Production begins
  - Avenger Modification Work Order

PROJECTED ACTIVITIES

- **1QFY21:** Materiel Release
- **2QFY21:** Hardware Fielding

CONTRACTORS
Boeing (Huntsville, AL)













Aviation Combined Arms Tactical Trainer (AVCATT)

PEO Simulation, Training and Instrumentation | Orlando, FL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Aviation Combined Arms Tactical Trainer (AVCATT) is Army Aviation's only Collective Training Program of Record for Active, Reserve, and Army National Guard Aviation Units. AVCATT enables unit collective and combined arms air-ground training for AH-64, UH-60, CH-47, and UH-72 aircrews within the Live, Virtual, Constructive, and Gaming Integrated Training Environment. The AVCATT also supports the training of non-rated crew members in crew coordination, flight, aerial gunnery, hoist, and sling-load related tasks via the Non-Rated Crewmember Manned Module (NCM3), which can be linked to AVCATT's UH-60 and CH-47 cockpit configurations to support a unit's specific Mission Training Requirements.

BENEFIT TO THE SOLDIER

AVCATT enables unit collective and combined arms air-ground training for AH-64, UH-60, CH-47, and UH-72 aircrews and non-rated crew members via the NCM3.

SPECIFICATIONS

- AVCATT is a two semi-trailer training device consisting of six reconfigurable aircraft Manned Modules, a dedicated After-Action Review (AAR) space and a Battle Master/Exercise Control (BMC) space.
- AVCATT utilizes Synthetic Environment Core Terrain Database and the One Semi-Automated Forces.
- NCM3 can be used stand-alone or connected to the AVCATT for complete crew coordination training.

PROGRAM STATUS

- **FY20:**
  - AVCATT entered Operations and Support (O&S)
  - Headquarters Department of the Army Execution Order 016-20 reduced Fielded AVCATT capabilities from 21 to 15 and NCM3 from 21 to 11

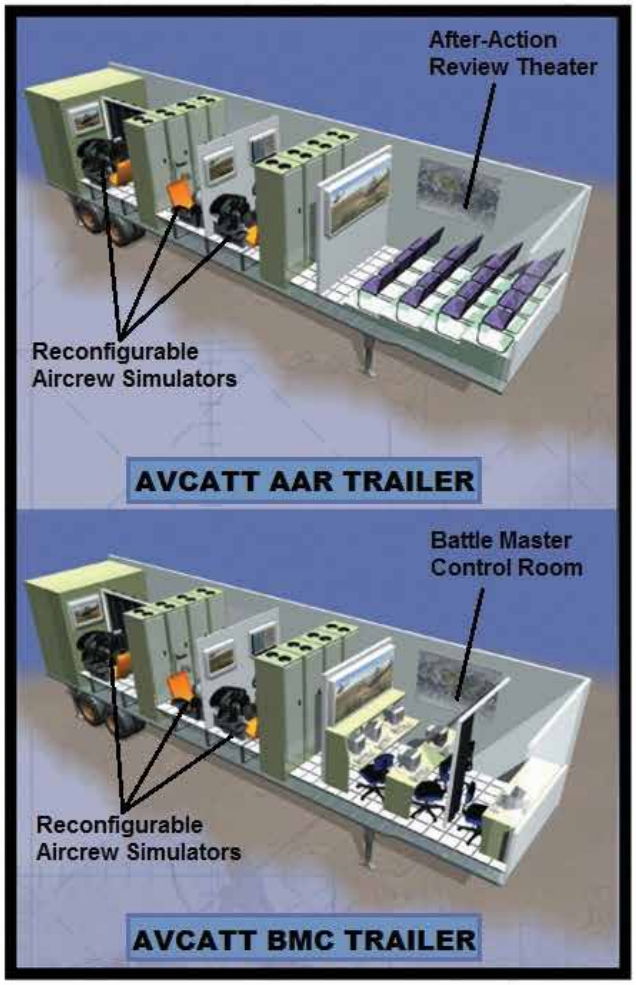
PROJECTED ACTIVITIES

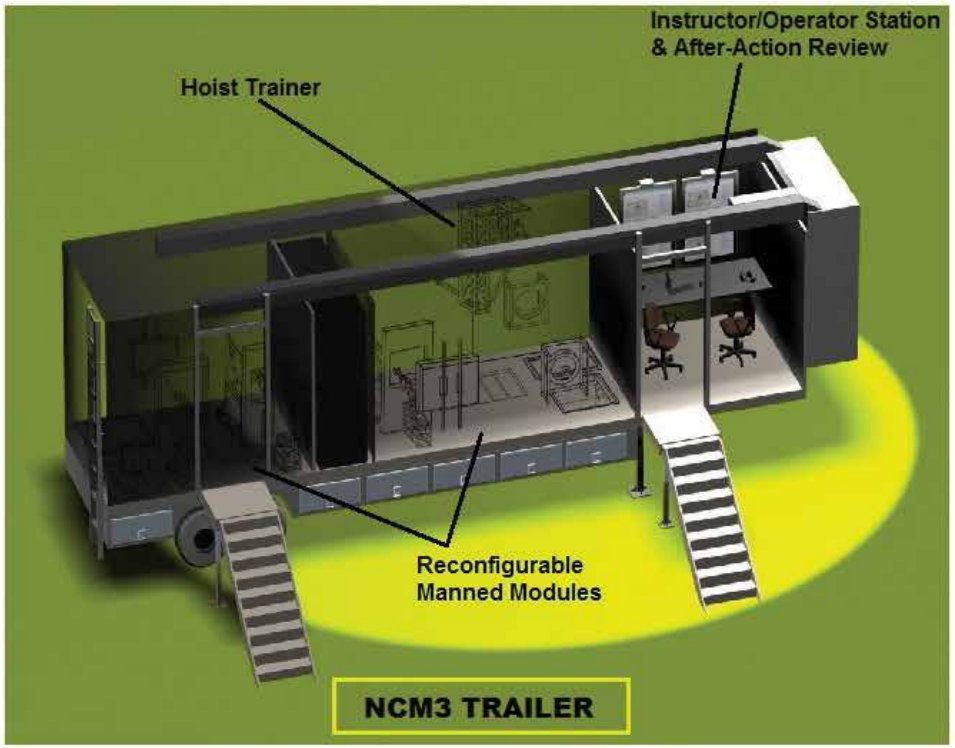
- **1QFY21:**
  - Software version 19.0 Government Acceptance Test and Fielding
  - Achieve AH-64E v4.0 concurrency
- **FY22:** NCM3 enters O&S
- **4QFY23:** AVCATT and NCM3 Funding for the Program Office ends. Remaining AVCATT and NCM3 devices transitioned to the Program Executive Office Simulation, Training and Instrumentation Training Aid Devices, Simulations, and Simulators Sustainment Operations for continued support.

AVCATT

CONTRACTORS
Applied Visual Technology Simulation (Orlando, FL)
Cole Engineering and Services Incorporated (Orlando, FL)
Collins Aerospace (Carlsbad, CA)







Black Hawk Utility Helicopter — UH/HH-60M

PEO Aviation | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Afghanistan, Bahrain, Brazil, Colombia, Egypt, Israel, Jordan, Mexico, Saudi Arabia, Slovakia, South Korea, Sweden, Taiwan, Thailand, Tunisia, and United Arab Emirates

DESCRIPTION

The Black Hawk UH/HH-60M multirole helicopter serves as the U.S. Army's primary frontline, medium-lift, utility helicopter supporting assault, air cavalry, and aeromedical evacuation units. Designed and manufactured to meet evolving warfighting needs, the UH/HH-60M is a modernized version of the legacy Black Hawk helicopter intended to be Joint forces capable and execute missions 24 hours a day under all-weather conditions.

The M model Black Hawk has multiple upgrades over its predecessors including multimission capabilities and a new airframe and advanced digital avionics features. It also has a powerful propulsion system that can be used to perform tactical transport, utility, search and rescue, airborne assault, command and control, medical evacuation, aerial sustainment, disaster relief, and firefighting. Since 2007, this aircraft has fought its way in and out of countless combat zones to deliver and extract troops, save lives as a Medical Evacuation (MEDEVAC) platform, provide critical supplies to troops, deliver emergency supplies during natural disasters, and perform as an aerial firefighter and border patroller.

At 22,000 pounds max gross weight, the utility version of the Black Hawk helicopter transports 11 fully equipped troops supporting any of the following mission sets:

- Internal/External Lift
- Combat Assault
- MEDEVAC
- Command and Control
- Disaster Relief
- Aerial Firefighting
- Search and Rescue
- Special Operations
- VIP Transport

Fielded to Active Army, Army Reserve, and Army National Guard Aviation units, UH/HH-60M is undergoing further modernization modifications such as Integrated Area Navigation (I-RNAV) and improved turbine engine (ITE). I-RNAV will provide the field with certified Flight Management System software to enable aircraft to perform RNAV/Required Navigation Performance approaches. This will increase the unit's capabilities to execute missions under instrument flight rules conditions. The ITE program T901 engine is a 3,000-shaft horsepower class engine intended to replace the existing 701D engines in the UH/HH-60M and AH-64E fleets. The T901 provides improved high/hot capability with increased range and endurance as well as better fuel consumption.

BENEFIT TO THE SOLDIER

On the asymmetric battlefield, the Black Hawk UH/HH-60M enables commanders to get to the fight quicker and to mass effects throughout the battlespace across the full spectrum of conflict. A single Black Hawk can transport an entire 11-Soldier, fully equipped infantry squad faster than a predecessor system in all-weather conditions. The aircraft's critical components and systems are armored or redundant, and its airframe is designed to crush progressively on impact to protect crew and passengers. The UH/HH-60M is a digital networked platform with greater range and lift to support maneuver commanders through air assault, command and control, general support, and aeromedical evacuation.

SPECIFICATIONS

- Max cruise range: 276 nautical miles
- Max speed: 151 knots (174 miles per hour)
- Max gross weight: 22,000 pounds
- Ceiling: 15,000 feet
- Crew: 4-person
- External lift: 4,888 pounds
- Troop transport: 11 troops

Black Hawk — UH/HH-60M

- Ordnance options: None
- Vertical rate of climb: 725 feet per minute

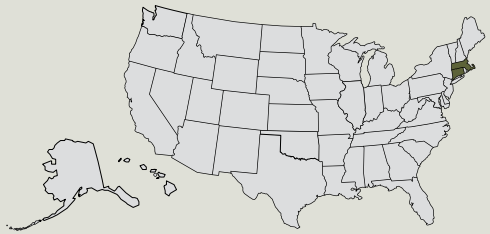
PROGRAM STATUS

- **FY20:**
  - Multiyear 10 Contract in progress
  - Finalize UH/HH-60M Manpower Requirement Criteria Study

PROJECTED ACTIVITIES

- **FY21:**
  - Last Federated Advance Navigation System Modification Work Order installation for 82nd Combat Aviation Brigade
  - UH/HH-60M Aircraft Externally Mounted Rescue Hoist validation

CONTRACTORS
Sikorsky (Stratford, CT)
Engine Original Equipment Manufacturer:
General Electric (Lynn, MA)





Bradley Fighting Vehicle — M2A4

PEO Ground Combat Systems | Detroit Arsenal, MI

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Lebanon and Saudi Arabia

DESCRIPTION

The M2A4 Bradley Fighting Vehicle is a totally digital, full-tracked, medium armored vehicle that provides cross-country mobility, mounted firepower, communications, and protection to mechanized infantry when mounted, and overwatch support when dismounted. The M2A4 has three seats for crew members and seven seats for squad members. Its primary weapon is the M242 25 mm Automatic Cannon. Other weapons include a 7.62 Coaxial Machine Gun and a dual-tube Tube-Launched, Optically Tracked, Wireless-Guided (TOW) Anti-Tank Missile Launcher. The M2A4 also has a commander's independent viewer that allows the commander to scan for targets and maintain situational awareness while remaining under armor and without interfering with the gunner's acquisition and engagement of targets. Platform modifications under the Bradley Engineering Change Proposal (ECP) program include upgraded engine and transmission, improved track (dual pin), torsion bars, road arms, and shock absorbers.

The M7A4 Bradley Fire Support Team (BFIST) Vehicle with Fire Support Sensor System (FS3) is an integrated Bradley-based fire support platform, based on the A3 BFIST vehicle that enables company Fire Support Teams (FIST) and company fire support officers to plan, coordinate, and execute timely, accurate indirect artillery and mortar fires. It provides the capability of automation enhanced surveillance, target acquisition, target identification, target designation, target tracking, position location, and communications functionality under armor while mounted and target acquisition and designation while dismounted. The M7A4 BFIST with FS3 has four seats for a FIST. Its weapons include the M242 25 mm Automatic Cannon and a 7.62 Coaxial Machine Gun. Scheduled modifications under the Bradley ECP program include upgraded engine and transmission, improved track (dual pin), torsion bars, road arms, and shock absorbers. BFIST is assigned to the Armored Reconnaissance Battalion and Combined Arms Battalions of the Armored Brigade Combat Team.

BENEFIT TO THE SOLDIER

The Bradley Fighting Vehicle ensures Warfighters can continue to maintain combat overmatch battlefield capabilities to include reconnaissance, fire, and maneuver, and "hunter-killer" engagement opportunities.

SPECIFICATIONS

- Weight: 80,000 pounds
- Speed: 38 miles per hour (mph)
- Acceleration (0–30 mph): 22 seconds
- Range: 230 miles
- Crew Members: 3
- Vehicle Weapons: M242 25 mm Automatic Cannon, TOW Missiles II, 7.62 Coaxial Machine Gun
- M2A4 Mean Miles Between Combat Mission Failure (Required/Demonstrated): 400/427 miles
- Deployable Aircraft: C-17, C-5

PROGRAM STATUS

- **FY19–FY20:**
  - Track and Suspension ECP Unit Installs
  - A4 ECP (Mobility) Upgrade Testing and Production
- **3QFY20:**
  - First Bradley M2A4s delivered to Government
  - Under-Belly Interim Solution (UBIS) Government Blast Test
- **4QFY20:** Active Protection Systems (Iron Fist-Light Decoupled) Full System Demonstration

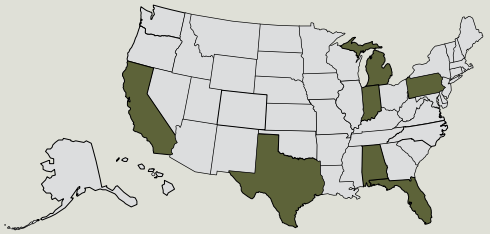
Bradley Fighting Vehicle — M2A4

PROJECTED ACTIVITIES

- **1QFY21:** A4 ECP (Mobility) Follow-On Test and Evaluation
- **4QFY21:** A4 ECP (Mobility) First Unit Equipped
- **FY21–FY22:** UBIS Testing and Production
- **FY24:**
  - Track and Suspension ECP installs continues
  - A4 ECP (Mobility) Production continues

CONTRACTORS

BAE Systems (York, PA, Santa Clara, CA, Sterling Heights, MI, Temple, TX, and Anniston, AL)
Cummins (Seymour, IN)
DRS (Melbourne, FL, and Huntsville, AL)
L3Harris, Combat Propulsion Systems (Muskegon, MI)
Loc Performance (Plymouth, MI)







Calibration Sets (CALSETS)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Afghanistan, Egypt, Japan, Lithuania, Saudi Arabia, Taiwan, and United Arab Emirates

DESCRIPTION

The Calibration Sets (CALSETS) program has two Mobile Maintenance Shops for the deployment of Area Test, Measurement, and Diagnostic Equipment (TMDE) Support Teams (ATST). Six variations of CALSETS for TMDE maintenance and two variations of local area networks (LAN) allow use of automated maintenance procedures and transfer of maintenance information. TMDE maintenance facilities use this hardware to provide calibration and repair support for weapon system maintenance TMDE.

Mobile Maintenance Shops: The AN/GSM-705 is a 37-foot semitrailer with a production control desk communications and network rack, five work benches, and eight instrument racks necessary to house a calibration set and a LAN. The AN/GSM-421A(V)2 is an 8-foot by 20-foot International Organization for Standardization shelter similar to the AN/GSM-705 with only three benches, two tall racks, and two short racks. This system operates at secondary locations with a smaller calibration set and LAN. These Mobile Maintenance Shops are fielded with up-armored prime movers, power generation, environmental control, and communication equipment.

CALSETS: CALSETS have different capabilities, both to support different requirements and to keep cost down. CALSETS are used in Mobile Maintenance shops and in fixed calibration facilities. The AN/GSM-440 is the primary tactical CALSETS and has the most capability of the mobile sets. This set supports more than 90% of the types of TMDE in the U.S. Army. The AN/GSM-439 Tactical CALSETS is the smallest and has the least capability of the sets. Its primary mission is to support the high-density workload which accounts for 70% of Army TMDE. This can be co-located with the AN/GSM-705 or setup in a separate location. The AN/GSM-286 and AN/GSM-287 sets are less capable than the AN/GSM-440 and used by Table of Distribution(s) and Allowances (TDA) National Guard (NG) and Army civilian organizations to support the NG, industrial base, and to also provide support when tactical ATSTs are deployed. The AN/GSM-442 is a training set used at the 94H Military Occupational Specialty school. The Reference Set is a high-accuracy, high-capability set used by TDA civilians to support the field calibration sets and TMDE they cannot support. These sets ensure measurements made by weapon system maintainers, with their TMDE, are accurate and traceable to national standards.

LAN: The AN/GYM-26(V)1 and AN/GYM-26(V)2 are both used to provide a means to perform automated maintenance, download necessary maintenance data, and upload test data.

BENEFIT TO THE SOLDIER

CALSETS provides Warfighters with calibration and repair support capabilities for instrumentation and maintenance devices within a theater of operations.

SPECIFICATIONS

- Various dimensions depending on equipment

PROGRAM STATUS

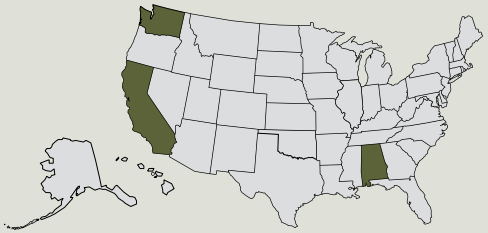
- **FY20–FY21:**
  - Sustainment and Modernization
    - Secondary Transfer Standards Basic, AN/GSM-286
    - Secondary Transfer Standards Augmented, AN/GSM-287
    - Transfer Set, Standards, AN/GSM-439, and AN/GSM-440
    - Calibration Set, Secondary Transfer Standards, AN/GSM-421A(V)2, and AN/GSM-705
  - Fielding
    - Secondary Transfer Standards, AN/GSM-421A(V)2 to School House and NG Units

CALSETS

PROJECTED ACTIVITIES

- **4QFY20–3QFY21:**
  - AN/GSM-421A(V)2 continued Fielding
  - Acquisition of 96040A Signal Generator, 5730A, and Multi-Product Calibrator

CONTRACTORS
Dynetics (Huntsville, AL)
Fluke Corp. (Everett, WA)
Keysight Technologies, Inc. (Santa Rosa, CA)



Chemical Biological Protective Shelter (CBPS) — M8E1

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Chemical Biological Protective Shelter (CBPS) is a mobile, self-contained, rapidly deployable, chemically, and biologically protected shelter system. CBPS provides a contamination-free, environmentally controlled medical treatment area. It is intended to be fielded to the Army, Army Reserves, and Army National Guard.

BENEFIT TO THE SOLDIER

The CBPS provides medical treatment teams and squads, consisting of four medical personnel, with a contamination-free and environmentally controlled medical treatment area. It can treat up to eight litter and ambulatory patients without the encumbrance of individual protective clothing and equipment. The CBPS is capable of being transported by ground, rail, sea, or air.

SPECIFICATIONS

- Rigid Wall Shelter
- Heating, ventilation, and air conditioning system
- Nuclear, biological, and chemical filtration system
- Onboard primary and auxiliary electric power sources
- Deployable chemical biological protective fabric shelter with ambulatory and litter airlocks
- Utilizes a Model M1085 Medium Tactical Vehicle to move the CBPS system as well as the medical treatment team's equipment

PROGRAM STATUS

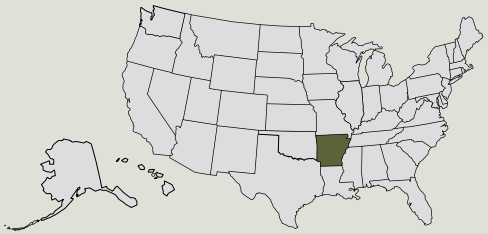
- **2QFY20:** Program defunded to support other efforts; Production of additional systems ceased
- **3QFY20–4QFY20:** Production of final CBPS M8E1 system under the acquisition program; executing program close out

PROJECTED ACTIVITIES

- **FY21:** Complete Fielding of remaining CBPS M8E1 systems; assist in establishment of Sustainment plans

CBPS — M8E1

CONTRACTORS
Pine Bluff Arsenal (Pine Bluff, AR)





Chemical, Biological, Radiological, Nuclear Dismounted Reconnaissance Systems (CBRN DRS)

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Chemical, Biological, Radiological, Nuclear Dismounted Reconnaissance Systems (CBRN DRS) will consist of commercial- and government-off-the-shelf equipment that will provide detection, identification, sample collection, decontamination, marking, and hazard reporting of CBRN threats, as well as personnel protection from CBRN hazards.

CBRN DRS is composed of handheld, man-portable detectors that identify potential Weapons of Mass Destruction (WMD) and WMD precursors. CBRN DRS will determine the levels of protection required to assess a sensitive site. The system supports dismounted reconnaissance, surveillance, and CBRN site-assessment missions to enable more detailed CBRN information reports for commanders. These site locations may be enclosed or confined, therefore making them inaccessible by traditional CBRN reconnaissance-mounted platforms.

CBRN site assessments help planners determine if more thorough analysis is required to mitigate risks or gather intelligence on adversaries' chemical warfare agents, biological warfare agents, or toxic industrial material capabilities. Explosive Ordnance Disposal (EOD) variants have been added for U.S. Marine Corps (USMC) and Army EOD units to provide CBRN protection and detection capabilities for use in render safe operations.

BENEFIT TO THE SOLDIER

CBRN DRS provides a comprehensive, all-hazards dismounted reconnaissance and site assessment capability to protect against, detect, and decontaminate chemical warfare agents, biological warfare agents, toxic industrial chemicals, and other hazards.

SPECIFICATIONS

- Commercial- and government-off-the-shelf equipment provides detection, identification, sample collection, decontamination, marking, and hazard reporting of CBRN threats
- Supports dismounted reconnaissance, surveillance, and CBRN site-assessment missions to enable more detailed CBRN information reports for commanders

PROGRAM STATUS

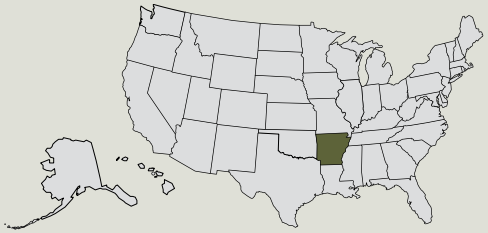
- **FY18:** USMC CBRN Full Operational Capability (FOC)
- **FY19:**
  - Army EOD Initial Rate Operational Capability (IOC)
  - USMC EOD IOC
  - Air Force IOC

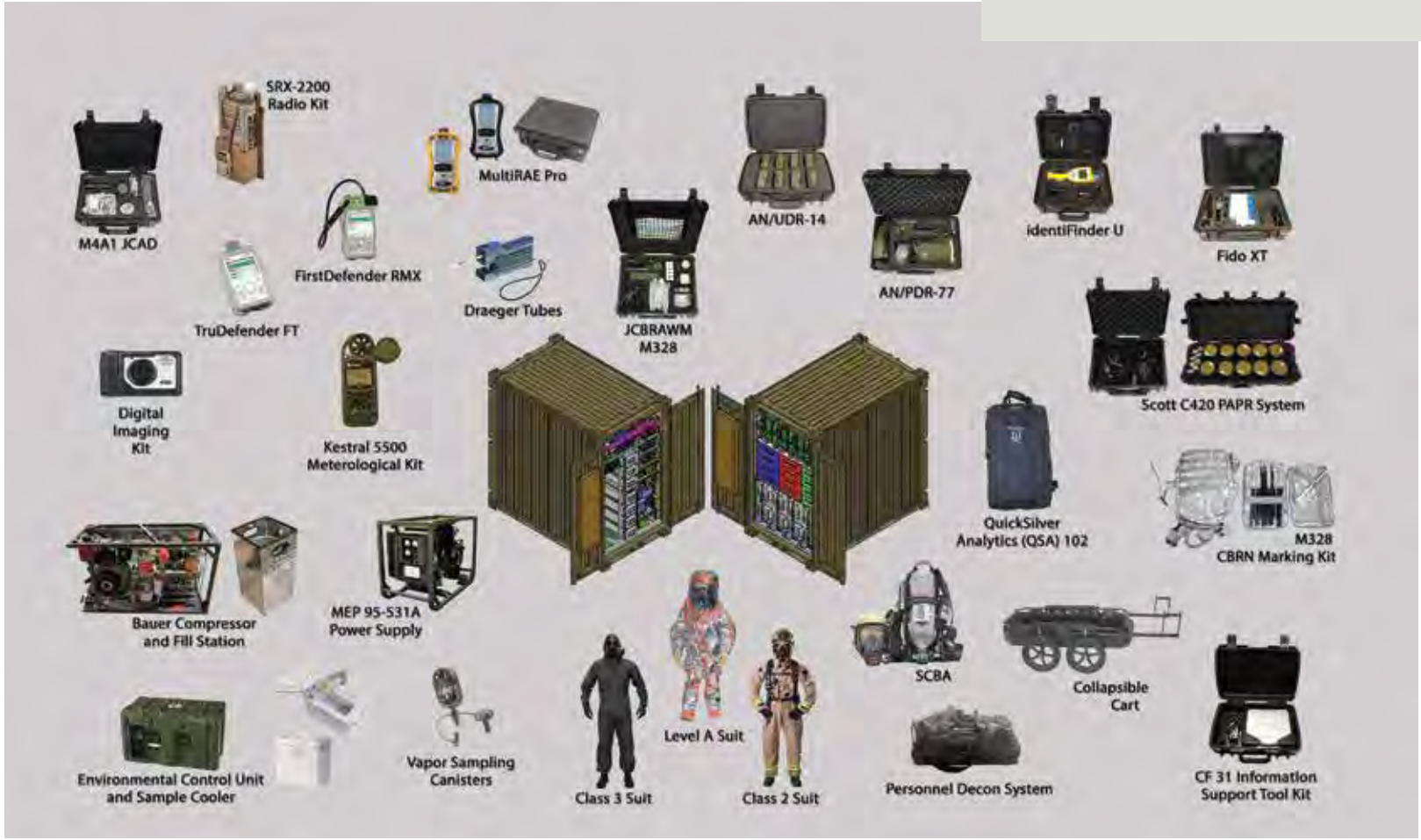
PROJECTED ACTIVITIES

- **FY21:**
  - Army CBRN FOC
  - Air Force FOC
  - Navy FOC
- **FY23:**
  - Army EOD FOC
  - USMC EOD FOC
  - Initial Modernization Package deployments

CBRN DRS

CONTRACTORS
Pine Bluff Arsenal (Pine Bluff, AR)





Chemical, Biological, Radiological, and Nuclear (CBRN) Medical — BIO1

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Canada and United Kingdom

DESCRIPTION

The mission of the Joint Project Manager for Chemical, Biological, Radiological, and Nuclear Medical (JPM CBRN Medical) is to deliver safe and effective medical solutions to counter CBRN threats for joint forces.

The BIO1 portfolio consists of:

- **Plague Vaccine (VAC PLG)** is a highly purified polypeptide produced from bacterial cells transfected with a recombinant vector from the Yersinia pestis bacterium formulated with an aluminum hydroxide adjuvant and delivered intramuscularly to prevent pneumonic plague.
- **Botulinum Vaccine (VAC BOT)** is comprised of nontoxic botulinum toxin heavy chain fragments of serotypes A and B formulated with an aluminum hydroxide adjuvant and delivered intramuscularly prior to potential exposure to botulinum toxin.
- **Western, Eastern, and Venezuelan Equine Encephalitis Vaccine (VAC WEVEE)** addresses an essential capability gap for protecting Warfighters against aerosolized alphavirus for which there is no current therapeutic. Target alphavirus strains include Venezuelan, Eastern, and Western Equine Encephalitis.

BENEFIT TO THE SOLDIER

BIO1 provides protection to the Warfighter against aerosolized biological warfare agents.

SPECIFICATIONS

- System attributes established in requirements documentation

PROGRAM STATUS

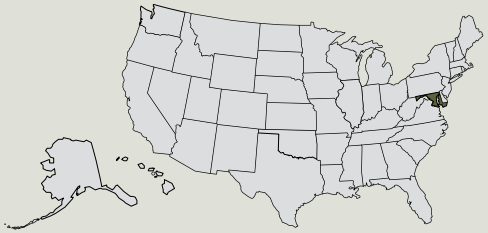
- **FY18:** VAC WEVEE Other Transaction Authority agreement award for VEE development
- **FY19:**
  - VAC BOT granted Orphan Drug Designation resulting in cost-reduction incentives
  - VAC PLG initiated immune response titration study to interchangeably utilize multiple origins of non-human primates for animal testing
- **FY20:** VAC BOT and VAC PLG received general acceptance from the U.S. Food and Drug Administration for particulate resolution strategy

PROJECTED ACTIVITIES

- **FY21–FY25:** Funding for both VAC BOT and VAC PLG was eliminated as part of the Defense Wide Review. Programs are manufacturing Good Manufacturing Process Drug Product and initiating close-out activities
- **FY21–FY23:** VAC WEVEE initiating close-out activities until more advanced candidates are ready for transition

CBRN Medical — BIO1

CONTRACTORS
VAC PLG and VAC BOT: DynPort Vaccine (Frederick, MD)









Chemical, Biological, Radiological, and Nuclear (CBRN) Medical — BIO2

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The mission of the Joint Project Manager for Chemical, Biological, Radiological, and Nuclear Medical (JPM CBRN Medical) is to deliver safe and effective medical solutions to counter CBRN threats for joint forces.

The BIO2 portfolio consists of:

- **Antiviral Therapeutics (AVTX)**, which provides therapeutic or protection using broad-spectrum therapeutics against the effects of Hemorrhagic Fever Virus (HFV) families (Filoviridae and Bunyaviridae) and Encephalitic Alphaviruses (Togaviridae), thus sustaining the Warfighter to complete the mission. HFV countermeasures will mitigate the threat of illness or death and lessen issues with performance degradation resulting from exposure to HFVs (Ebola and Marburg). Due to the severity of the diseases, HFV therapeutics will be administered to exposed Warfighters while under direct medical observation.
- **Botulinum Monoclonal Antibody (BOT mAb)**, an Anti-Botulinum Neurotoxin (types A and B) (Anti-BoNT(A/B)) monoclonal antibody (mAb)-based medical countermeasure is in development as part of the Advanced Development and Manufacturing Antibody Technologies platform stand-up activities.
- **Anthrax Vaccines Absorbed (AVA)** is the only U.S. Food and Drug Administration (FDA)-licensed anthrax vaccine in the United States that provides protection against cutaneous, gastrointestinal, and aerosol infection by battlefield exposure to Bacillus anthracis. AVA is managed within the Strategic National Stockpile (SNS) for Sustainment.
- **Smallpox Vaccine System (SVS)** provides both the ACAM2000™ smallpox vaccine and the Vaccinia Immune Globulin, Intravenous to vaccinate and protect the Warfighter from potential exposure to smallpox. Both products are FDA approved and managed within the SNS for Sustainment.

BENEFIT TO THE SOLDIER

JPM CBRN Medical BIO2 provides medical countermeasures against traditional, emerging, and engineered biological threats.

SPECIFICATIONS

- System attributes established in requirements documentation

PROGRAM STATUS

AVTX:

- **FY16–FY23:**
  - Stood up Joint Mobile Emerging Disease Intervention of Clinical Capability to execute human clinical research of experimental therapeutics in an emerging infectious disease outbreak setting
  - Initiation of second site Non Human Primate pivotal efficacy study design
  - Initiation of regulatory path to licensure for Marburg
- **FY19:** Natural History Study Results (Ebola Zaire)
- **FY20:**
  - Expanded Access Protocol approval for treatment of Coronavirus disease 2019 (COVID-19)
  - Initiated clinical trials for COVID-19 treatment
  - Dose Ranging Study Results (Ebola Zaire)

PROJECTED ACTIVITIES

AVTX:

- **FY21:**
  - Natural History Study Results (Marburg)
  - Phamacokinetics Study for Marburg
- **FY22:** Dose Ranging Study Results (Marburg)
- **FY23:**
  - Dose Ranging Study (Ebola Zaire)
  - Milestone (MS) C
  - FDA licensure

BOT mAb:

- **FY20–FY21:**
  - MS A
  - MS B
  - Drug Substance Manufacturing Initialization
- **FY21–FY22:** Non-Clinical Studies
- **FY23:** Interim Fielding Capability/Pre-Emergency Use Authorization
- **FY22–FY25:**
  - Phase 2 Clinical Study
  - Drug Product Manufacturing
- **FY25:** Biologics License Application Submission

CONTRACTORS
AVA: Emergent BioSolutions (Gaithersburg, MD)
AVTX: Gilead Sciences (Foster City, CA)
SVS: Acambis plc (Cambridge, MA) and Cangene Corporation (Canada)





Chemical, Biological, Radiological, and Nuclear (CBRN) Medical — Chemical Defense Pharmaceuticals

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Joint Project Manager for Chemical, Biological, Radiological, and Nuclear Medical Chemical Defense Pharmaceuticals portfolio consists of:

Treatments

- **Advanced Anticonvulsant System (AAS)** program will provide an improved intramuscular autoinjector with a faster acting and more effective anti-seizure drug (midazolam) for treatment after exposure to toxic nerve agents (replaces Convulsant Antidote for Nerve Agents (CANA)). U.S. Food and Drug Administration (FDA) approval and initial fielding is expected in Fiscal Year (FY) 2022.
- **Improved Nerve Agent Treatment System-Centrally Acting (INATS-CA)** is an enhanced treatment regimen to counter the effects of nerve agent poisoning. Components include adding a CA anticholinergic agent to the treatment regimen to increase survival and decrease morbidity against nerve agents, and modernization of Soman Nerve Agent Pretreatment Pyridostigmine. INATS-CA U.S. FDA approval is expected in FY26.
- **Rapid Opioid Countermeasures System (ROCS)** is a rapid prototype development program for the development of medical countermeasures to treat the symptoms of ultra-potent opioid exposure. Opioids are a class of pharmaceutical-based agents that are highly lethal at very low doses, and of which synthetic opioids (i.e., fentanyl, carfentanyl) are a high priority. FDA approval and initial fielding is expected in FY22.

Strengthening the Industrial Base

- **Alternative Autoinjectors Effort (AUTOINJ)** has multiple initiatives focused on identifying and qualifying additional manufacturing sources for autoinjector-delivered nerve agent treatments to expand the industrial base for FDA-approved, lifesaving, Soldier-carried autoinjectors. This will better ensure consistent availability of these rescue treatments to the Warfighter, U.S. Government agencies, and international partners.

Legacy Fielded Products

- **Antidote Treatment Nerve Agent Autoinjector** is a U.S. FDA-approved intramuscular injection of atropine and 2-pyridine aldoxime methyl chloride (PAM), in a single autoinjector, for treatment after onset of nerve agent poisoning symptoms.
- **Soman Nerve Agent Pretreatment Pyridostigmine** is a U.S. FDA-approved pretreatment drug (pyridostigmine bromide tablets) for use when operating under a nerve agent threat environment, in which use of Soman cannot be ruled out, that protects against Soman nerve agent poisoning and must be used with post-exposure treatments, such as atropine and 2-PAM.
- **CANA** is a U.S. FDA-approved intramuscular injection of atropine and 2-PAM, in a single autoinjector, for treatment after onset of nerve agent poisoning symptoms.

BENEFIT TO THE SOLDIER

Chemical defense pharmaceuticals and therapeutics play a critical and strategic role in chemical defense by providing the Warfighter with protect-and-mitigate capabilities against known or novel threats.

SPECIFICATIONS

- System attributes established in requirements documentation

PROGRAM STATUS

- **FY20:**
  - ROCS
    - Pre-New Drug Application (NDA) meeting
    - Investigational New Drug (IND) submission

- INATS-CA Phase 1 Clinical Safety Trial
- Alternative Diazepam Pre-IND meeting

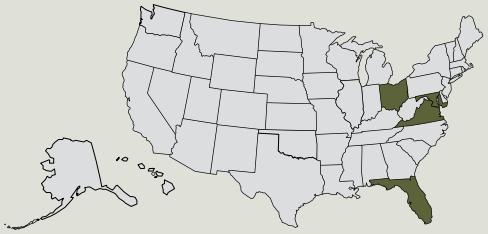
- **FY21:**
  - AAS
    - IND submission, initiate Bioequivalence study, initiate device reliability testing
    - NDA submission
  - ROCS
    - Initiate clinical bioequivalence/bioavailability study
    - NDA submission
  - INATS-CA Milestone B
  - Dual Drug Delivery Device Pre-NDA Meeting
  - Alternate Diazepam Pre-NDA Meeting

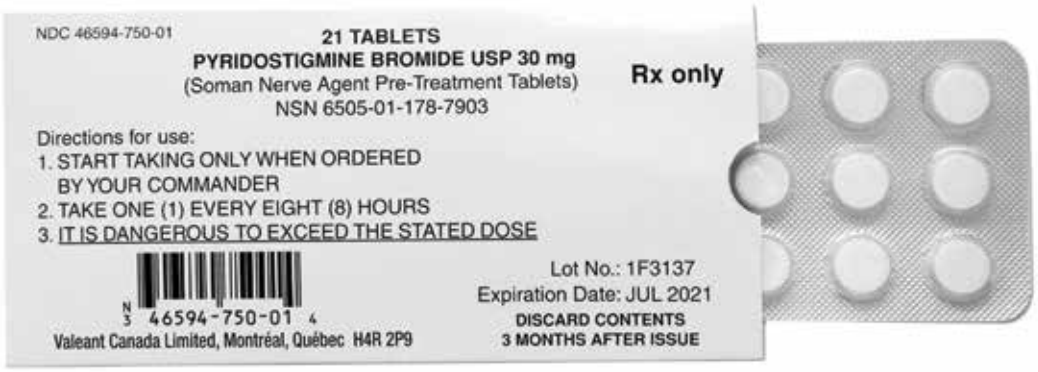
PROJECTED ACTIVITIES

- **FY22:**
  - AAS FDA approval and initial Fielding expected
  - ROCS FDA approval and prototype Fielding expected
- **FY23:**
  - Dual Drug Delivery Device FDA approval expected
  - Alternate Diazepam FDA approval expected
- **FY26:**
  - INATS-FDA licensure expected

CONTRACTORS

AUTOINJ: Battelle Memorial Institute (Columbus, OH); Ology Bioservices (Alachua, FL); Emergent Biosolutions (Gaithersburg, MD); and Rafa Laboratories (Israel)
INATS-CA: Battelle Memorial Institute (Columbus, OH)
Legacy Fielded Products: Meridian Medical Technologies (Columbia, MD) and Bausch Health Companies, Inc. (Laval, Quebec, Canada)
ROCS: kaleo, Inc. (Richmond, VA)







Chemical, Biological, Radiological, and Nuclear (CBRN) Medical — Diagnostics

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The mission of the Joint Project Manager for Chemical, Biological, Radiological, and Nuclear Medical (JPM CBRN Medical) is to deliver safe and effective medical solutions to counter CBRN threats for joint forces.

The JPM CBRN Medical – Diagnostics portfolio consists of:

- **Next Generation Diagnostics System 1 (NGDS 1)** is a U.S. Food and Drug Administration (FDA)-cleared reusable, adaptable biological pathogen diagnostic and identification system capable of rapidly analyzing clinical and environmental samples. The Biological Warfare Agent (BWA) Warrior Panel (Anthrax, Plague, Tularemia, Q Fever, Ebola, and Marburg) is cleared by the FDA for use with blood culture, whole blood, and sputum samples to aid in human diagnosis. The Sentinel Panel includes targets for Anthrax, Tularemia, Q Fever, Ebolavirus, Marburg, Yersinia pestis, Burkholderia psuedomallei, Burkholderia mallei, Brucella sp, Brucella melitensis, Rickettsia prowazekii, Eastern Equine Encephalitis, Venezuelan Equine Encephalitis, Western Equine Encephalitis, Orthopox, Variola, Ricin, Botulinum, training assays (Bacillus globigii, Bacillus thuringiensis, yeast), and for surveillance and environmental applications.
- **Next Generation Diagnostics System 2 – Man Portable Diagnostic System (NGDS 2 MPDS)** will provide a simple-to-use, portable diagnostic device capability that can be used in far-forward and austere battlefield environments to assist in the diagnosis of infectious disease and biological warfare agents in symptomatic individuals.
- **NGDS 2 – Chemical Diagnostic System (ChemDX)** is a rapid, hand-held, point-of-care device. It utilizes an electrochemical assay for the quantitative detection of acetylcholinesterase (AChE) activity in finger stick and venous whole blood samples of individuals suspected of being exposed to cholinesterase inhibiting substances, such as nerve agents.

BENEFIT TO THE SOLDIER

- **NGDS 1** protects the force through identification of BWA and infectious disease in a human clinical specimen (i.e., blood, blood culture, sputum) and provides diagnostic information that facilitates delivery of appropriate medical countermeasure(s) or implementation of physical protection measures to minimize debilitating effects of disease. Field analysis of environmental sample supports force protection decisions to prevent and mitigate effects of chemical, biological, or radiological hazards.
- **NGDS 2 MPDS** will enable earlier patient diagnosis by its placement on the battlefield. Concepts of employment support use by small teams and medical providers at Roles 1 and 2 echelons of care. Earlier diagnosis of infectious diseases improves decision support for treatment and evacuation, improves command situational awareness, and mitigates the effects of exposure to unknown infectious disease and biological agents.
- **NGDS 2 ChemDX** diagnostic capabilities will be employed in U.S. Army, Air Force, Navy, Marine Corps, and Special Operations Command (Roles 1–3), with applicability to routine health care at higher echelons. NGDS 2 ChemDX test results are to be used to aid in the diagnosis of cholinesterase inhibition in an individual suspected of exposure to non-traditional agents and treatment decision with an Antidote Treatment Nerve Agent Autoinjector: self-aid, buddy aid, combat lifesaver, or medic.

SPECIFICATIONS

- **NGDS 1:**
  - Sample preparation to result: 75 minutes
  - Samples analyzed per run: 1 sample – multiple agents
  - Targets analyzed per run: 14–27 targets depending on panel

CBRN Medical — Diagnostics

- Samples analyzed for: BWAs, many common infectious disease agents (125+ additional targets)
- Configuration: Instrument, laptop with software, assay panels, sample preparation kits, and consumables
- Total weight and size: 62 pounds and 6 cubic feet

- **NGDS 2 MPDS:**
  - FDA cleared for diagnostic use
  - Sample preparation to result: 75 minutes
  - Samples analyzed per run: 1 sample – multiple agents
  - Targets analyzed per run: 4–6 targets depending on panel
  - Samples analyzed for: BWAs, endemic infectious diseases
  - Configuration: Instrument, mobile device controller, assay cartridges, sample kits, and consumables
  - Total weight and size: Less than 5 pounds and less than 300 cubic inches
- **NGDS 2 ChemDX:**
  - No sample preparation time
  - Total time to result: Less than 1 minute
  - Samples analyzed per run: 1 sample – Biomarker for AChE Inhibition
  - Samples analyzed for: Quantitative detection of AChE activity in finger stick and venous whole blood samples
  - Configuration: Analyzer, single-use disposable test strips, and reusable shipping/storage container
  - Total weight and size: Less than 2 pounds (including consumables) and approximately 3 inches by 2 inches by .05 inches

PROGRAM STATUS

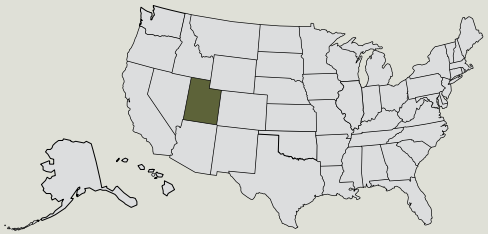
- **NGDS 1**
  - **FY19:** U.S. Army Initial Operational Capability (IOC)
  - **2QFY20:** U.S. Navy Full Operational Capability (FOC)
  - **3QFY20:**
    - IOC (All Services)
    - IOC U.S. Army
  - **4QFY20:** U.S. Army FOC
- **NGDS 2 MPDS**
  - **4QFY19:** Milestone (MS) B
- **NGDS 2 ChemDX**
  - **FY17:** MS A

PROJECTED ACTIVITIES

- **NGDS 2 MPDS**
  - **FY22:** MS C and FDA Clearance
  - **FY23:** U.S. Special Operations Command (USSOCOM) IOC
  - **FY24:**
    - USSOCOM FOC
    - U.S. Air Force, U.S. Marine Corps, U.S. Navy IOC
  - **FY25:**
    - U.S. Marine Corps, U.S. Navy FOC
    - U.S. Army IOC
- **NGDS 2 ChemDX**
  - **FY21:** MS B
  - **FY24:** MS C
  - **FY25:** IOC
  - **FY27:** FOC

CONTRACTORS

BioFire Defense, LLC (Salt Lake City, UT)









Chinook Helicopter — CH-47F

PEO Aviation | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Netherlands, Saudi Arabia, and Spain, in Production. Continuing to support potential Afghanistan, Israel, Korea, and United Arab Emirates cases.

DESCRIPTION

The CH-47F Chinook is the U.S. Army's only heavy-lift cargo helicopter supporting combat and other critical operations. The CH-47F has a suite of improved features such as an upgraded digital cockpit featuring the Common Avionics Architecture System, a new monolithic airframe with vibration reduction, and the Digital Automatic Flight Control System, which provides coupled controllability for operations in adverse environments (reduced visibility, brown out, and high winds). The CH-47F's common cockpit enables multiservice digital compatibility and interoperability for improved situational awareness, mission performance, and survivability, as well as future growth potential. The CH-47F Block II will provide an increased payload and operational reach beyond the existing CH-47F capabilities. The Block II will also enable the Army to better support the rapid response capability necessary for forcible and early entry contingency missions as well as tactical and operational nonlinear, noncontiguous, simulations, or sequential operations.

BENEFIT TO THE SOLDIER

The CH-47F tactically transports forces and associated equipment and provides routine aerial sustainment of maneuver forces. Secondary missions the Chinook executes to support Soldiers and commanders include medical evacuation, search and rescue, parachute drops, disaster relief, and aircraft recovery. The CH-47F Block II program provides additional capability to the field with greater reach, increased payload capacity, and an increase in maximum gross weight to 54,000 pounds.

SPECIFICATIONS

- Empty aircraft weight: 24,578 pounds (Block I); 26,800 pounds (Block II (estimated))
- Maximum gross weight: 50,000 pounds (Block I); 54,000 pounds (Block II)
- Total lift capability at hover in 4,000-foot pressure altitude and 95 degrees Fahrenheit: 46,280 pounds (Block I); 47,928 pounds (Block II)
- Maximum cruise speed: 160 knots (Block I and Block II)
- Capacity: 36 (Block I and Block II)
- Litter capacity: 24 (Block I and Block II)
- Sling-load capacity: 26,000 pounds center hook; 17,000 pounds forward/aft hook; 25,000 pounds tandem (Block I and Block II)
- Minimum crew: 3 (pilot, copilot, and flight engineer) (Block I and Block II)

PROGRAM STATUS

- **1QFY20:**
  - Completed the Fielding of new Production, Multiyear II aircraft to all active duty units
  - Completed Fielding of the Common Avionics Architecture (9.2) and Digital Automatic Flight Control System (2.5) to every aviation unit
  - Completed Fielding of the Cargo Platform Health Environment aircraft system to all active duty units
- **2QFY20:** Began Fielding of Common Avionics Architecture System (9.4) and Digital Automatic Flight Control System (3.3) updates

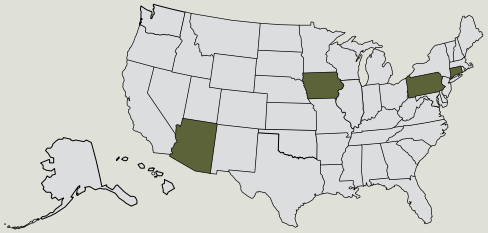
PROJECTED ACTIVITIES

- **2QFY21:** Limited User Test, CH-47F Block II
- **4QFY21:**
  - Milestone C, CH-47F Block II
  - Low-Rate Initial Production, CH-47F Block II

Chinook Helicopter — CH-47F



CONTRACTORS
Aircraft and Advanced Chinook Rotor Blades: Boeing (Philadelphia, PA)
Engine: Honeywell (Phoenix, AZ)
Engine Controls: Goodrich (Danbury, CT)
Software: Rockwell Collins (Cedar Rapids, IA)





Close Combat Tactical Trainer (CCTT)

PEO Simulation, Training and Instrumentation | Orlando, FL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Close Combat Tactical Trainer (CCTT) is a critical readiness enabler for Armored Brigade Combat Team units. CCTT simulators support Commanders' home station collective training and readiness requirements in conducting pre-deployment training in preparation for worldwide combat operations. The primary audience operates from full-crew simulators, reconfigurable command posts, and live battalion command posts to accomplish their combined arms training tasks.

CCTT is a ground-based, collective training device composed of two systems: the CCTT and the Reconfigurable Vehicle Tactical Trainer (RVTT). CCTT is comprised of full fidelity, immersive, manned simulators for the M1 Abrams main battle tank, M2 Infantry Fighting Vehicle variants, M3 Cavalry Fighting Vehicle, and the High Mobility Multipurpose Wheeled Vehicle (HMMWV). RVTT is a Reconfigurable Vehicle Simulator comprised of full fidelity, immersive, manned simulators for the HMMWV and Heavy Expanded Mobility Tactical Truck.

BENEFIT TO THE SOLDIER

Provides Armor, Cavalry, Infantry, Mechanized Infantry, and Armored Reconnaissance units from crew through Battalion/Squadron level and their staffs with virtual, collective training capability.

SPECIFICATIONS

- 8 CCTT fixed suites
- 8 CCTT mobile suites
- 4 RVTT fixed suites
- 356 training manned modules
- CCTT software version 20.0
- Synthetic Environment Core integrated
- One Semi-Automated Forces integrated
- Force XXI Battle Command, Brigade and Below 6.5 integrated
- Joint Capabilities Release integrated
- Windows 10
- Red Hat Enterprise License 6

PROGRAM STATUS

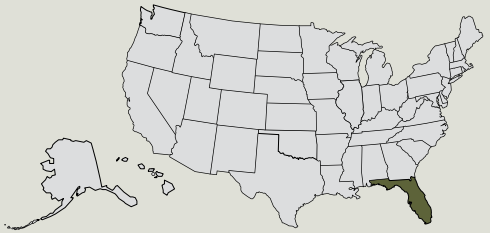
- **1QFY20:** Program enters Operations and Support (O&S) Phase
- **2QFY20:** Start divestment of 16 RVTT suites

PROJECTED ACTIVITIES

- **1QFY21:**
  - Input/Output (I/O) modernization Non-Recurring Engineering (NRE) complete
  - Complete divestment of 16 RVTT suites
- **2QFY21:** Start I/O modernization Production and Fielding
- **3QFY21:** Program renewal of Authority to Operate
- **4QFY21:** Government Acceptance Test software version 21.x
- **1QFY22:** Infrastructure NRE complete
- **2QFY22:** I/O modernization Production and Fielding complete
- **3QFY22:** Start transition of CCTT program to Program Executive Office Simulation, Training and Instrumentation Training Aid Devices, Simulations, and Simulators Sustainment Operations
- **1QFY23:** Start extended O&S

CCTT

CONTRACTORS
Applied Visual Technology Simulation (Orlando, FL)
Lockheed Martin Rotary and Mission Systems (Orlando, FL)



Combat Training Center — Instrumentation System (CTC-IS)

PEO Simulation, Training and Instrumentation | Orlando, FL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Combat Training Center-Instrumentation System (CTC-IS) is an information technology-based communications, analysis, and feedback system at the Maneuver Combat Training Centers (MCTCs) that provides a realistic operational environment for training the Brigade Combat Team and Below in preparation for deployment to conduct decisive actions. It is comprised of voice, video, and data instrumentation subsystem networks that include software, hardware, workstations, base station equipment, communications infrastructure, voice radios, data devices, and interfaces. The IS provides the Observer Controller/Trainers critical situational awareness for training safety, analysis, and feedback to conduct After-Action Reviews (AARs).

The CTC-IS is a key part of the Live Training Transformation–Family of Training Systems (LT2-FTS) and is based on the Common Training Instrumentation Architecture (CTIA). LT2 leverages advanced technology in a modular and component-based manner and provides the foundation for common components across the live training product line. Common components such as exercise planning, exercise preparation, exercise control, and AAR preparation and presentation, in concert with CTIA services, processes, rules and standards, support the full spectrum of training. The CTC-IS is interoperable with other external systems through Distributed Interactive Simulation or an interface to CTIA services. The CTC-IS program also gives the Joint Multinational Readiness Center (JMRC) a mobile instrumentation system that provides a movable training capability to support the Sustainable Readiness Model and Unified Land Operations.

BENEFIT TO THE SOLDIER

CTC-IS provides modernization and life cycle management of the MCTCs' instrumentation system to satisfy current and future training requirements. It also provides the Operations Group tools to establish high-fidelity cause and effect analysis if Brigade and Below collective training performance in Cross Domain Maneuver, in a variety of operational environments.

SPECIFICATIONS

- Combat Training Center Live Fire
- Aviation Tactical Engagement Simulation System
- Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) Combat Vehicle Tactical Engagement Simulation System
- I-MILES Individual Weapon System 2
- I-MILES Tactical Vehicle System
- Future Army System of Integrated Targets
- Vehicle Tactical Engagement Simulation System
- Integrated Air Defense System
- Common Training Instrumentation Architecture
- Joint Land Component Constructive Training Capability

PROGRAM STATUS

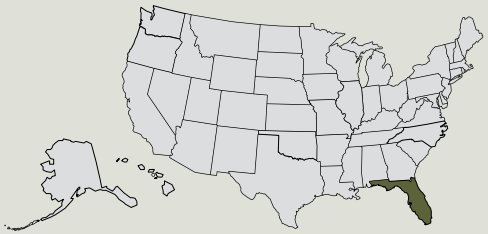
- **FY18–FY20:**
  - Component and subcomponent hardware devices maintained through Continuous Technology Refreshments at the MCTCs
  - Post Deployment Software Support with a focus on maintaining concurrency with Army systems and doctrine

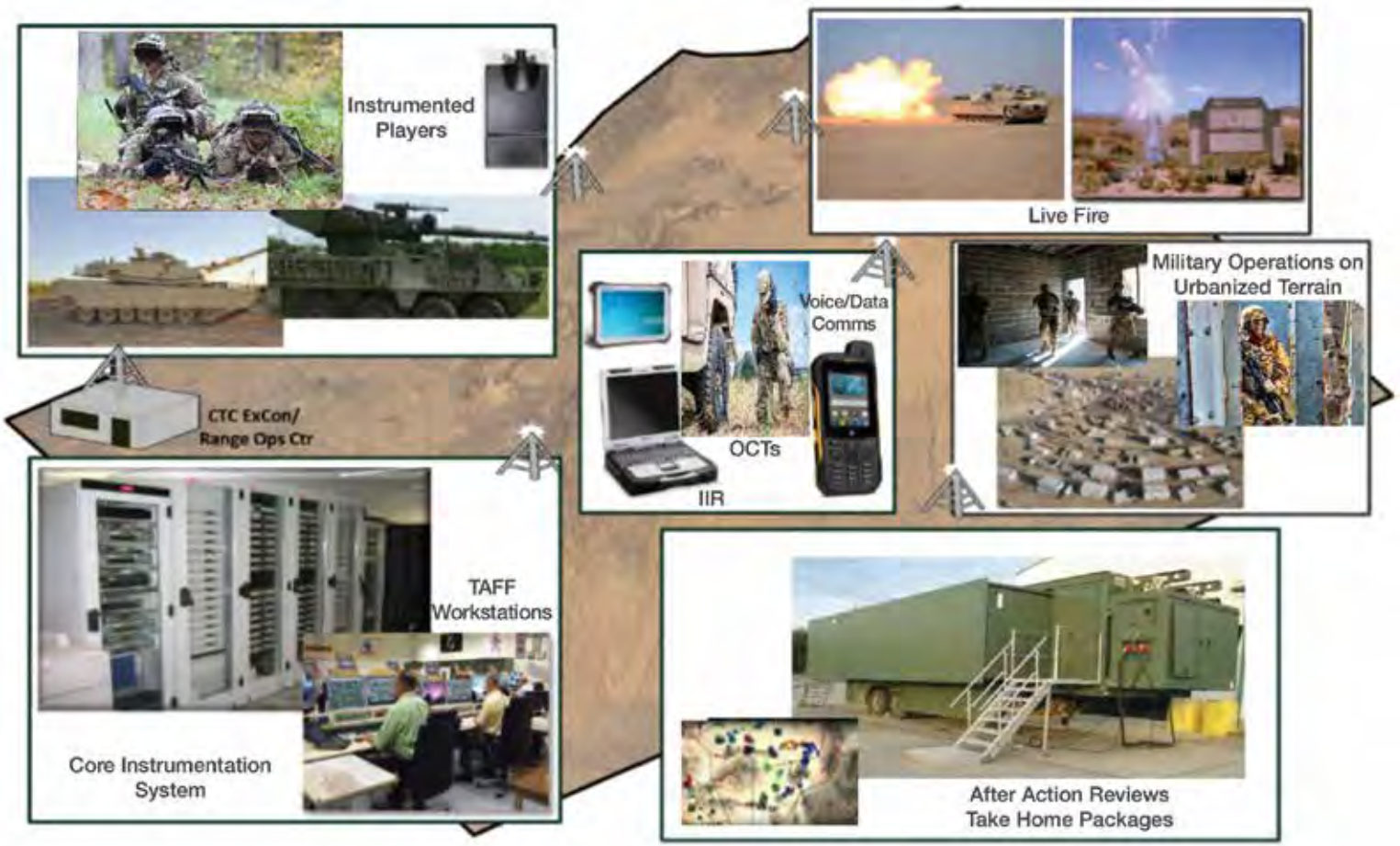
CTC-IS

PROJECTED ACTIVITIES

- **FY21:**
  - Migrating to a micro-services deployment strategy; CTC-IS is coordinating with the Live Synthetic Training Environment (STE) for integration of STE products
  - National Training Center (NTC) CTC-IS is in the instrumentation design phase for the expansion of the Western Training Area as an increase in geographical battlespace to the current NTC primary training area providing for greater array of Army Brigade operational scenarios capability in FY25
  - NTC, JRTC, and JMRC developing new Joint Operations Centers for the CTC-IS

CONTRACTORS
General Dynamics One Source (Orlando, FL)





Common Hardware Systems (CHS)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Common Hardware Systems (CHS) acquire and support sustainment of highly flexible, cost-effective, common, and simplified non-developmental, commercial information technology solutions that improve interoperability and connectivity on the battlefield while garnering efficient competition to enable the latest commercial technology solutions to meet tactical and/or operational requirements.

BENEFIT TO THE SOLDIER

The CHS program office enables the Operating Force by providing a holistic approach to acquire commercial Information Technology (IT), to include commercial-off-the-shelf (COTS) IT and non-developmental items, utilizing the most effective and efficient means to meet program offices' tactical and operational requirements. CHS coordinates across tactical programs to provide consolidated procurement and support the sustainment of modified commercial information technology and to ensure configuration and obsolescence management. CHS partners with industry to examine new and emerging technologies that meet the operational need.

SPECIFICATIONS

- Commercial IT Hardware: Executes hardware procurements for the Army to support tactical requirements for modified and ruggedized COTS IT configurations
- System Engineering and Design: Provides engineering support from defining the initial requirements through design reviews, testing, and into Sustainment
- Hardware Evaluations: Facilitate and simplify the selection of common hardware solutions across more than 120 U.S. Army programs and agencies
- Configuration Management: Enables programs to procure the exact same configuration down to the firmware and BIOS level over multiple buys to reduce the number of baselines fielded to Army units and avoid retesting of hardware
- Obsolescence Management: Provides advance notice and replacement of items going end-of-sale to allow seamless transition and to ensure uninterrupted fielding
- Total Life Cycle Systems Management Support: Provides customized warranty options and support services to meet Army requirements in the Continental United States or Outside the Continental United States
- Web-Based Customer Portal: Intuitive and customer-driven interface to initiate and track customer requirements, orders, and deliveries

PROGRAM STATUS

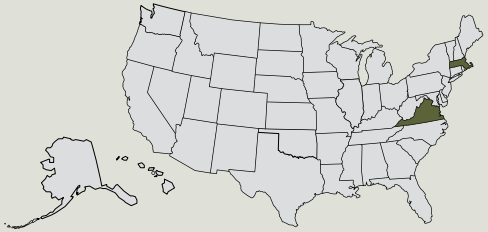
- **FY20:**
  - Continued management and delivery of CHS equipment in support of customer requirements
  - CHS-6 pre-award activities

PROJECTED ACTIVITIES

- **FY21–FY27:**
  - Continued management and delivery of CHS equipment in support of customer requirements
  - Continued CHS-6 pre-award activities, contract acquisition competition, and award

CHS

CONTRACTORS
CHS-5 Production Contract: General Dynamics Mission Systems (Taunton, MA)
Systems Engineering, Testing, and Analysis Support: Booz Allen Hamilton (McLean, VA) and Bowhead (Alexandria, VA)



Common Remotely Operated Weapon Station (CROWS)

PEO Soldier | Fort Belvoir, VA

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

M153: United Arab Emirates

M153A2E1 (Low Profile): Kuwait

DESCRIPTION

The Common Remotely Operated Weapon Station (CROWS) is a stabilized mount that contains a sensor suite and fire control software, allowing on-the-move target acquisition and first-burst target engagement. CROWS also features programmable target reference points for multiple locations, programmable sector surveillance scanning, automatic target ballistic lead, automatic target tracking, and programmable no-fire zones.

Future enhancements include integration of other weapons, escalation-of-force systems, sniper detection, integrated 360-degree situational awareness, increased weapon elevation, and commander's display.

BENEFIT TO THE SOLDIER

CROWS allows the Warfighter to remotely engage targets with precision fire while on the move or stationary to the maximum effective range of the weapon. Capable of target engagement under day and night conditions, the CROWS sensor suite includes a daytime video camera, thermal camera, and laser rangefinder. CROWS is designed to mount on any tactical vehicle and supports the MK19 Grenade Machine Gun, M2 .50 Caliber Machine Gun, M240B Machine Gun, and M249 Squad Automatic Weapon.

SPECIFICATIONS

- Interoperable with the MK19, M2, M240B, M249, and Javelin systems
- Camera: 27x zoom, 47-degree Field of View (FOV) (day)
- Thermal: 2x zoom, 3 degrees and 11 degrees dual FOV (night)

PROGRAM STATUS

- **4QFY18:** CROWS-Javelin Fielding to support 2nd Calvary Regiment Stryker enhanced lethality Operational Needs Statement
- **2QFY20:** CROWS Technology Refresh/Enhancement Engineering Change Proposal (ECP) approval

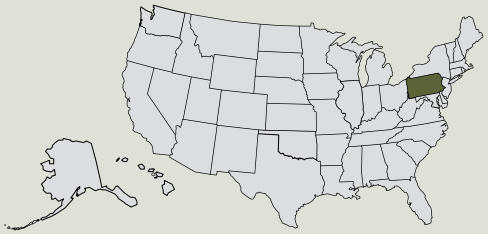
PROJECTED ACTIVITIES

- **2QFY21:** Stryker Technology Refresh/Enhancement CROWS Developmental Test
- **1QFY22:** CROWS Competitive Contract Award
- **2QFY22:** Stryker ECP CROWS M153A4 Fielding

CROWS



CONTRACTORS
Kongsberg Defense & Aerospace (Johnstown, PA)





Common Robotic System — Heavy (CRS-H)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Common Robotic System – Heavy (CRS-H) is the U.S. Army's large-sized, modernized vehicle transportable, common robotic platform capable of accepting various mission payloads. It enhances protection to the Explosive Ordnance Disposal (EOD) Soldier by providing increased standoff capability to identify, render safe, and dispose of explosive ordnance and improvised explosive devices (IEDs) in support of the range of military operations and homeland defense applications.

Important insights from Soldier interaction with the candidate CRS-H systems during a phased acquisition process made important contributions to shaping Tactics, Techniques, and Procedures, concept of operations, and source selection. The Army's Acquisition Objective is 248 CRS-Hs.

BENEFIT TO THE SOLDIER

CRS-H will enable EOD Soldiers to interrogate hazardous devices in the range of military operations and homeland defense operations. Its special features will provide enhanced capability to detect, identify, access, render safe, exploit, and achieve final disposition of heavy explosive ordnance to include IEDs, Vehicle Borne IEDs, and Weapons of Mass Destruction at safe standoff.

CRS-H will field with these native payloads:

- Cameras (including pan, tilt, and zoom)
- Secure radios
- One radio relay to extend operational range in urban and complex terrain
- Robust manipulator arm
- Cargo carrier rack
- Operator control unit

SPECIFICATIONS

CRS-H's basic operational capabilities include:

- Manipulator arm lift capacity:
  - Close to platform > 275 pounds
  - 72-inch extension > 100 pounds
- Platform speed > 6 mph
- Obstacle clearance > 32 inches (Jersey Barrier)
- Platform endurance > 7 hours
- Weight < 700 pounds curb weight, 1,000 pounds gross system weight (includes 300 pounds of non-native payloads)
- Interoperability profile compliant
- Cyber hardened

PROGRAM STATUS

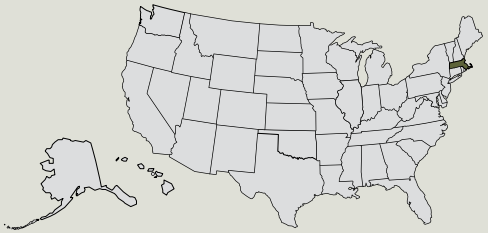
- **1QFY20:** Production Contract awarded

PROJECTED ACTIVITIES

- **3QFY20:** Obtain Safety Confirmation and Operational Test Agency Evaluation Report to allow for immediate Fielding to EOD Teams under a Conditional Materiel Release with commercial-off-the-shelf technical manuals
- **FY21:** Complete additional logistics requirements, including maintainer manuals and Field Level Maintainer New Equipment Training to achieve Full Materiel Release

CRS-H

CONTRACTORS
FLIR Systems (Chelmsford, MA)



Common Robotic System — Individual (CRS-I)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Common Robotic System – Individual (CRS-I) enables dismounted forces to provide a capability for lower-level Reconnaissance, Surveillance, and Target Acquisition to enhance maneuvers and force protection.

CRS-I establishes the U.S. Army's common small-based platform with a lightweight (less than 25 pounds), highly mobile, unmanned robotic system that includes standard payloads, advanced sensors, and mission modules for dismounted forces.

The system is designed for quick reconfiguration for various missions by adding or removing modules or payloads. The CRS-I system includes a Universal Controller (UC) that has the ability to achieve and maintain active or passive control of any current Army or Marine Corps Program of Record (battalion and below), as well as any unmanned (air or ground) system or its respective payload. The UC will have the ability to control the Puma, Raven, Man Transportable Robot System Increment 2, and Common Robotic System – Heavy.

BENEFIT TO THE SOLDIER

- CRS-I is ideal for clearing buildings, caves, and other restricted terrain where close-quarters combat is likely. CRS-I identifies enemy positions, explosive hazards, and civilians without exposing the Warfighter.

SPECIFICATIONS

- Common small-base lightweight (less than 25 pounds) platform
- Highly mobile unmanned robotic system includes standard payloads, advanced sensors, and mission modules for dismounted forces

PROGRAM STATUS

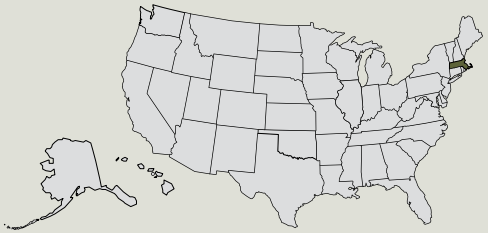
- **2QFY19:** First Low-Rate Initial Production Delivery Order
- **FY20:**
  - Full-Rate Production (FRP) Decision expected
  - Fielding

PROJECTED ACTIVITIES

- **FY21–FY25:**
  - Conditional Materiel Release
  - First Unit Equipped
  - Delta Production Qualification Test
  - FRP
  - Technical Manual Verification 2
  - Full Materiel Release

CRS-I

CONTRACTORS
QinetiQ North America (Waltham, MA)







Containerized Weapon System (CWS)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Containerized Weapon System (CWS) consists of a remotely operated weapon station mounted on a retractable mast, housed in a Tri-Con that provides quick reaction Force Protection, increases battle space management and awareness, and decreases Soldier workload. CWS combines the integration of multiple sensors, day or night, with the ability to engage threats with mountable weapons. CWS was initially deployed in response to Rapid Equipping Force 10-Liners and Operational Need Statements, but CWS continues to be supported.

BENEFIT TO THE SOLDIER

CWS removes Soldiers from towers and into the protective cover of the Tactical Operations Center thus reducing exposure during long hours of guard duty allowing more Soldiers to do their primary mission. It also provides the Battle Captain with an integrated persistent surveillance 24/7 with complete situational awareness while providing a tiered-weapons solution to match the threat. CWS reduces time from target acquisition to target engagement.

SPECIFICATIONS

- Modified standard Tri-Con
- Weight: 9,650 pounds
- Solar powered
- Transported using own trailer and can be sling loaded by helicopter
- Sensor/Seeker: Common Remotely Operated Weapon Station Forward Looking Infrared, direct-view optics, and laser rangefinder
- Weapons: M2, MK19, M134, M240, M249, and JAVELIN missile with proven capability to fire Advanced Precision Kill Weapon System and Lethal Miniature Aerial Missile System

PROGRAM STATUS

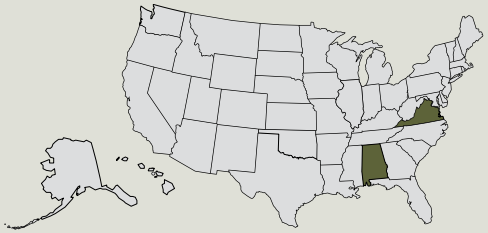
- **FY18–FY20:** Operations and Support

PROJECTED ACTIVITIES

- **FY21:** Continued Operations and Support
- **TBD:** Army Requirement Oversight Council

CWS

CONTRACTORS
HDT-Manufacture (Fredericksburg, VA, and Tanner, AL)
Invariant Corporation (Huntsville, AL)









Counterfire Radar — AN/TPQ-53

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

AN/TPQ-53(V): Singapore

DESCRIPTION

The AN/TPQ-53 replaces the previous legacy Firefinder Radars (AN/TPQ-36 and the divested AN/TPQ-37) and provides acquisition and identification of mortar, artillery, and rocket munitions in the 90-degree mode. It also introduces the capability to operate in the 360-degree mode at greater ranges than the AN/TPQ-50 system. The AN/TPQ-53 is a highly mobile counterfire target acquisition radar organic to Brigade Combat Teams, field artillery brigades, and division artilleries.

BENEFIT TO THE SOLDIER

Compared to current AN/TPQ-36 and previous AN/TPQ-37 Firefinder Radar systems, the AN/TPQ-53 offers enhanced performance, including greater mobility, increased reliability and supportability, lower life cycle cost, reduced crew size, and the ability to track targets in a full-spectrum environment. The AN/TPQ-53 supports Operational Needs via a multi-mission capability with air surveillance and counterfire target acquisition performance. The system is a vital capability on today's battlefield.

SPECIFICATIONS

- Both 90- and 360-degree search sector modes of operation
- Crew size: Five Soldiers; Military Occupational Specialty: 13R
- Emplacement: 10 minutes; Displacement: 5 minutes
- Air, rail, or ship transportable
- Max speed: ~100 kph
- Max cruising range: ~480 km
- Rapidly deployable to, and integrated into, the tactical battlefield with heavy, medium, and light forces
- Mobile, maneuverable, fully supportable, and easily maintained

PROGRAM STATUS

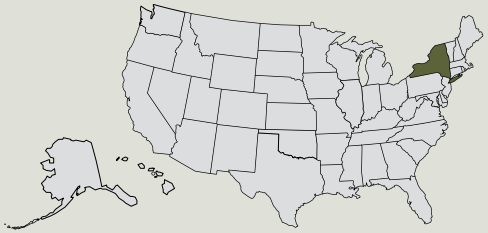
- **FY18:** Acquisition Category IC designation
- **FY19:**
  - Full-Rate Production (FRP) Lot 3 Contract Award; Army Acquisition Objective procurement complete
  - Full Materiel Release
- **FY20:**
  - Organic Depot capability established: Tobyhanna Army Depot, Pennsylvania

PROJECTED ACTIVITIES

- **FY21:** Production complete
- **FY22:**
  - Transition to Organic Support (FRP Configuration)
  - Distributed Digital Receiver Exciter (DDREX) development begins
- **FY23:**
  - Extended Range Capability Fielding (60 systems) complete
  - AN/TPQ-53 Full Operational Capability
- **FY24:** Operational Assessment of DDREX prototype systems
- **FY26:** DDREX Initial Operational Capability

Counterfire Radar — AN/TPQ-53

CONTRACTORS
Lockheed Martin Corporation, Rotary and Mission Systems (Liverpool, NY)



Cyber Environment Replication (CER)

PEO Simulation, Training and Instrumentation | Orlando, FL

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Cyber Environment Replication (CER) program supports the Maneuver Combat Training Centers (MCTCs) live training Operating Environment (OE), which must portray emerging, hybrid, and future threats within operational doctrine and organizational tactics, techniques, and procedures. MCTCs must reflect the 21st Century OE and be equipped to replicate the capabilities of a hybrid threat on future battlefields. The OE will be full-spectrum capable and enable training forces to employ asymmetrical tactics to attack or employ modern information systems so as to achieve Rotational Unit objectives.

BENEFIT TO THE SOLDIER

CER supports Warfighter training by providing a framework to support replicated red, blue, and grey space replicating real-world cyber environments.

SPECIFICATIONS

- Dependent on the Independent Commercially Compatible Cellular Network System (IC3NS) to expand CER services at the National Training Center (NTC) and the Joint Readiness Training Center (JRTC)
- Provides the backhaul connection between IC3NS cell sites and the Local Data Termination Equipment
- Provides connectivity and transport for programs such as Direct Injection Jammer, Direct Injection Jammer Common Operating Platform, and other Opposing Forces assets

PROGRAM STATUS

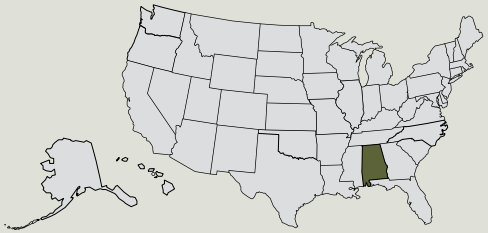
- **FY20:** Joint Multinational Readiness Center (JMRC) progress on hold due to COVID-19, potential implementation delays expected

PROJECTED ACTIVITIES

- **FY21:** With the exception of JMRC, the program is progressing according to all cost, schedule, and performance parameters.
- **1QFY21:**
  - CER Fiber Ring will be deployed at the NTC
  - CER Fiber Ring is estimated to be deployed at the JRTC
- **2QFY21:**
  - CER end-point devices are estimated to be deployed at the NTC and JRTC

CER

CONTRACTORS
Scientific Research Corporation (Huntsville, AL)



Cyber Situational Understanding (Cyber SU)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Cyber Situational Understanding (Cyber SU) is a software-only program hosted on the Tactical Server Infrastructure that integrates data/information from multiple sources and sensors to produce a Cyber Electromagnetic Activity (CEMA) overlay on the Commander's Common Operational Picture within the Command Post Computing Environment. Cyber SU provides a tactical Commander, at Brigade to U.S. Army Service Component Command, the capability to visualize and understand CEMA threats by informing the Commander to any cyber-related impacts to their physical domains, unified land operations, and the overall mission.

BENEFIT TO THE SOLDIER

Cyber SU provides three primary capabilities:

- **See Yourself:** Commander and CEMA Work Group user interface and data ingest focused on friendly operations, including network and computer health and status, configuration, topology, key physical network layer infrastructure, etc.
- **See Your Battlespace:** User interface and data ingest expands to include enemy operations in cyberspace and the Electromagnetic Spectrum, including enemy cyber forces and misinformation activity.
- **Understand Your Battlespace:** Advanced features comprehend and appreciate the meaning of previously unseen events in cyberspace allowing proactive support of Multi-Domain Operations.

PROGRAM STATUS

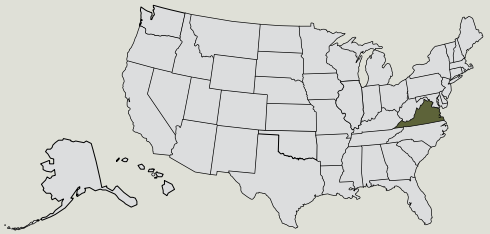
- **FY20:** Development/Prototyping/Testing of Initial Cyber SU Capability (minimum viable product)
- **3QFY20:** Milestone B Approved

PROJECTED ACTIVITIES

- **3QFY22:** Initial Operational Capability
- **3QFY23:** Limited Deployment

Cyber SU

CONTRACTORS
Research Innovations Inc. (Alexandria, VA)







Defense Enterprise Wideband SATCOM System (DEWSS)

PEO Enterprise Information Systems | Fort Belvoir, VA

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Defense Enterprise Wideband Satellite Communications (SATCOM) System (DEWSS) provides strategic SATCOM systems and satellite network control and planning systems for the Defense SATCOM and the Wideband Global SATCOM (WGS) system satellite constellations. DEWSS includes two major capabilities:

- **Wideband Satellite Operations and Management System (WSOMS)** enables the Army to efficiently plan and manage the global SATCOM network.
- **Enterprise Wideband Satellite Terminal System (EWSTS)** provides large aperture satellite communication terminals and associated satellite modems, multiplexers, routers, and supporting telecommunications equipment to strategic Army SATCOM gateway facilities worldwide.

The WSOMS and EWSTS systems are integrated into a system-of-systems architecture supporting strategic communications infrastructure, presidential communications, the Department of Defense (DoD) Information Network, Army LandWarNet, the Ballistic Missile Defense System Communications Network, and tactical reachback for deployed forces through SATCOM gateway facilities around the world.

BENEFIT TO THE SOLDIER

Highly available strategic military SATCOM systems enable Warfighters to execute worldwide command and control of deployed forces.

SPECIFICATIONS

- Network planning and satellite control systems enable joint use of the WGS system for DoD users
- Provides super high-frequency military X-Band and KuBand satellite communication terminals
- Blend of military standard and commercial-off-the-shelf communication equipment ensures highly available network with 99.9% operational availability

PROGRAM STATUS

- **FY19–FY20:**
  - Modernized first SATCOM terminal for Senior National Leadership Communications, providing dedicated critical communications between the United States and foreign countries
  - Established Wideband Integration Center at Tobyhanna Army Depot, Pennsylvania, providing organic capability for integration and independent verification and validation of WSOMS subsystems
  - Completed equipment installation at new SATCOM gateway facility at Camp Roberts, California
  - Completed Fielding of 14 additional AN/GSC-52B satellite terminals under the Modernization of Enterprise Terminals (MET) program
  - Completed precision timing system upgrades at all Army SATCOM gateway facilities

PROJECTED ACTIVITIES

- **FY21–FY25:**
  - Complete Fielding of all remaining AN/GSC-52B satellite terminals for Army SATCOM gateways
  - Field modernized equipment to new SATCOM gateway facilities at Fort Buckner, Japan, and Landstuhl, Germany
  - Implement MET tech refresh for solid state Ka amplifiers, MET computing environment, and Digital IF L-Band patch
  - Modernize Payload Control Architecture to counter existing cyber threats and enhance resilience of the WSOMS architecture
  - Complete the Development and Fielding of next generation Frequency Division Multiple Access Modem

DEWSS

CONTRACTORS
Boeing (Huntington Beach, CA)
IAP Inc. (McLean, VA)
Johns Hopkins University Applied Physics Laboratory (Laurel, MD)
L3Harris (Melbourne, FL)
Northrop Grumman Corporation (Manassas, VA)





Distributed Common Ground System-Army (DCGS-A)

PEO Intelligence, Electronic Warfare and Sensors | Aberdeen Proving Ground, MD

ACAT I AC

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Distributed Common Ground System-Army (DCGS-A) is a system-of-systems that supports the intelligence warfighting function to assist the commander's visualization and understanding of the threat and other relevant aspects of the operational environment. DCGS-A is the Army's cornerstone intelligence system for sensor tasking, Processing, Exploitation, and Dissemination at all echelons, and provides unprecedented, timely, relevant, and accurate data to Soldiers from Non-Secure Internet Protocol Router up to the Top Secret/Sensitive Compartmented Information level. It gives commanders the ability to task battlespace sensors and receive intelligence information from multiple sources on the battlefield.

DCGS-A consists of both software and hardware. Hardware includes user laptops and desktops, fixed, portable and vehicle-mounted servers, and ground stations to receive, share, and store collected intelligence. Software tools allow users to select and pull from 700-plus data sources, perform analysis, and share intelligence products generated from that analysis.

The Army produces and fields DCGS-A capability on various hardware platforms using consolidated software releases. DCGS-A's modular, open systems architecture allows rapid adaptation to changing mission circumstances. As an analyst toolset, the system enables the user to collaborate, synchronize, and integrate organic and nonorganic collection elements with operations. As the intelligence component supporting the operation, DCGS-A can discover and use all relevant threat, noncombatant, weather, geospatial and space data, and evaluate technical data and information.

Final technology upgrades of DCGS-A will be accomplished through the acquisition and delivery of Capability Drop 2, which addresses Army's Intelligence data needs, connects to Joint and Intelligence Community data sources, and provides access to intelligence data and analytics for Soldiers at all echelons.

BENEFIT TO THE SOLDIER

DCGS-A connects Soldiers to the Intelligence Community, other Services, multiple Army and joint intelligence, surveillance, and reconnaissance (ISR) platforms and sensors, and Mission Command systems. It gives commanders the ability to view ISR information in one place and integrates that information into tools that support intelligence production and dissemination.

SPECIFICATIONS

- **Intelligence Fusion Server:** Provides deployable, ruggedized commercial servers that host All Source and Single Source intelligence tools for Army units at Brigade Combat Team (BCT) and higher echelons, providing intelligence analysis, processing, and dissemination capabilities to supported units
- **Portable Multifunctional Workstation:** The commercial analyst laptop provided to Army units at Battalion and above echelons which provides access to Intelligence analyst tools and data.
- **Fixed Multifunctional Workstation:** The commercial analyst workstations that provides simultaneous access to analyst tools and data at multiple security levels.
- **Cross Domain Server Set:** Enables the transfer of data, combat information, and intelligence across multiple security levels between DCGS-A systems
- **Tactical Intelligence Ground Station:** An expeditionary system that receives and exploits Geospatial Intelligence (GEOINT) data, imagery, full motion video (FMV), moving target indicator, and Integrated Broadcast Service data to support intelligence analysis and dissemination at BCT through Corps echelons
- **GEOINT Workstation:** A deployable commercial ruggedized workstation designed to support large-scale processing, exploitation, dissemination, and storage of geospatial data and digital imagery

- **Intelligence Processing Center (IPC):** There are two IPC variants deployed as part of DCGS-A. Both leverage commercial servers and storage to provide DCGS-A capabilities at multiple levels of classification. IPC-V1 provides support to the intelligence processing, exploitation, and dissemination mission of Army units at Echelons Above Corps (EAC), hosting all DCGS-A tools in support of EAC to tactical Army users. IPC-V2 is the BCT and Division commander's primary expeditionary ISR processing, exploitation, dissemination, and analysis system.
- **Capability Drop 1 (CD1):** A commercial item that consists of laptops and software specifically configured to support All Source Intelligence operations at the Battalion echelon.
- **Capability Drop 2 (CD2):** Addresses the Army's need for a solution that incorporates current industry approaches to enable centralized data receipt, processing, refinement, management, storage, and access

PROGRAM STATUS

- **1QFY18:** Increment 1, Release 2, Service Pack 1 First Unit Equipped
- **3QFY19:** CD1 Fielding started
- **1QFY21:** DCGS-A CD1 Transition to Sustainment
- **2QFY21:** DCGS-A Ground Station Modernization, Other Transaction Authority Contract Award

PROJECTED ACTIVITIES

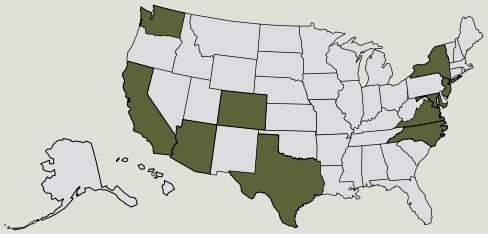
- **2QFY21–3QFY21:** DCGS-A CD2 Developmental Tests with Soldier touchpoints
- **1QFY22:** DCGS-A CD2 Operational Test



DCGS-A

CONTRACTORS

BAE Systems (Arlington, VA)
Booz Allen Hamilton (Eatontown, NJ)
CACI (Aberdeen Proving Ground, MD)
Dell (Austin, TX)
Esri (Redlands, CA)
General Dynamics (Scottsdale, AZ)
HP (Palo Alto, CA)
IBM (Armonk, NY)
L3 Communication Systems (Tempe, AZ)
Leidos (Reston, VA)
Lockheed Martin (Denver, CO)
ManTech (Fairfax, VA)
Microsoft (Redmond, WA)
MITRE (Eatontown, NJ)
NetApp (Sunnyvale, CA)
Oracle (Redwood Shores, CA)
Palantir (Palo Alto, CA)
QED (Aberdeen Proving Ground, MD)
Raytheon (Garland, TX)
Redhat (Raleigh, NC)
Sev1Tech (Fort Hood, TX)
VMware (Palo Alto, CA)



Early Entry Fluid Distribution System (E2FDS)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

During the early phases of operations, the Early Entry Fluid Distribution System (E2FDS) is employed to throughput large quantities of petroleum or water while reducing the requirement for line-haul semitrailers, relieving main supply route congestion.

E2FDS is a high-throughput flexible conduit system used for the transport of bulk petroleum or water on the modular battlefield. It is a rapidly emplaced conduit system capable of moving 850,000 gallons of fuel or 650,000 gallons of raw (nonpotable) water up to 50 miles in a 20-hour period. This new materiel system enhances the Inland Petroleum Distribution System (IPDS) by providing an early entry capability for petroleum throughput, and a means to rapidly extend existing pipeline traces or establish new traces during later phases of operations. The system is emplaced at a rate of 25 miles per day and retrieved at 10 miles per day.

The E2FDS is positioned and operated by Military Occupational Specialty 92F (petroleum supply specialist) and requires minimal engineering support to emplace the conduit or pump stations. Pump stations are centrally controlled to enable rapid and precise synchronization during pumping operations.

BENEFIT TO THE SOLDIER

E2FDS enables a more rapid setup of the conduit trace, and the automation and centralized control enables greater precision of pipeline operations. Once the IPDS pipeline is put in place, E2FDS can be used to extend the pipeline trace as a backup system or be moved to another location.

SPECIFICATIONS

- Comprised of flexible conduit, employment, and retrieval systems
- Includes conduit support equipment (valves, couplings, and joints), pump stations, and a centralized control module
- Components are packed in International Organization for Standardization configuration for deployment and are Heavy Expanded Mobility Tactical Truck-Load Handling System, Palletized Load System (PLS) and PLS Trailer transportable

PROGRAM STATUS

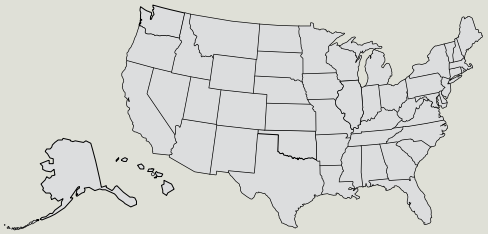
- **1QFY18:** Preliminary Design Review
- **3QFY18:** Critical Design Review
- **4QFY20:** Milestone C

PROJECTED ACTIVITIES

- **3QFY22:** First Unit Equipped
- **4QFY23:** Full Operational Capability

E2FDS

CONTRACTORS
TBD











Electronic Warfare Planning and Management Tool (EWPMT)

PEO Intelligence, Electronic Warfare and Sensors | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Electronic Warfare Planning and Management Tool (EWPMT) is the Commander's tool to control, manage, and dominate the Electromagnetic Spectrum (EMS). EWPMT will provide the ability to conduct remote control and management of Electronic Warfare (EW) assets to execute offensive and defensive Electronic Attack, EW targeting, and enable maneuver by synchronizing EW and Spectrum Management Operations across Intelligence, Operations, and Signals to successfully execute Multi-Domain Operations.

This program also supports the Assured-Position, Navigation, and Timing and Network Cross-Functional Team that has been established to support the Army's Modernization priorities.

BENEFIT TO THE SOLDIER

EWPMT allows the Soldier to sense the EMS and provide actionable information to the Commander. With a window to the sensors on the battlefield, EWPMT provides the Warfighter information for analysis and feeds real-time actionable intelligence to develop the Commander's common operating picture. It helps evaluate the enemy's most likely course of action as well as identify the friendly digital footprint for operations planning.

SPECIFICATIONS

Each successive Capability Drop (CD) builds out additional capability on top of the existing EWPMT software baseline.

- **CD1:** Foundational (EW Planning, EW Targeting)
- **CD2:** Foundational (Spectrum Management, Enhanced Modeling and Simulation)
- **Quick Reaction Capability (QRC):** EWPMT Raven Claw (Urgent Operational Need)
- **CD3:** Disconnected, Intermittent, and Latent, direct connect control of EW Assets, Converged QRC
- **CD4:** EW Effectiveness, Enhanced Targeting, Remote Control and Management of assets, Battle Damage Assessment, and Command Post
- Computing Environment (CPCE) Convergence

PROGRAM STATUS

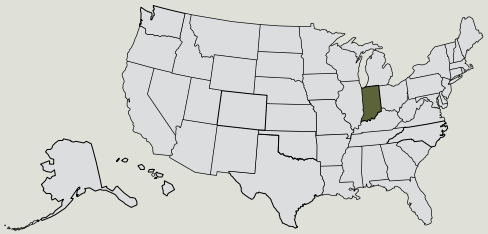
- **FY19:** EWPMT CD4 Task Order Award
- **FY19–Present:** Quarterly User Verification Events/Soldier Touchpoints
- **FY20:** EWPMT Increment 1 integration/convergence with CPCE

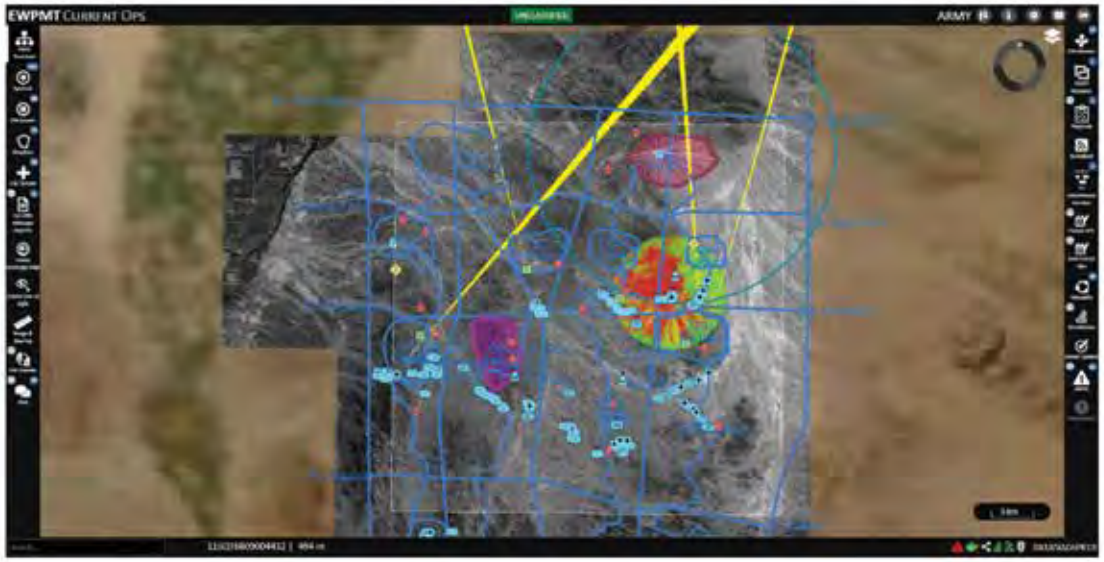
PROJECTED ACTIVITIES

- **FY21:** EWPMT Increment 1 Initial Operational Test and Evaluation
- **FY22:** EWPMT Increment 1 Full Deployment Decision
- **FY23:** EWPMT Fielding Active Component 1

EWPMT

CONTRACTORS
Raytheon (Fort Wayne, IN)







Endurance Unmanned Aircraft Systems (EUAS) — MQ-1C Gray Eagle/ER

PEO Aviation | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The MQ-1C Gray Eagle Unmanned Aircraft System (UAS) addresses the need for a long-endurance, armed, UAS that offers greater range, altitude, and payload flexibility over prior versions of U.S. Army UAS.

The Gray Eagle aircraft is powered by a heavy fuel engine, using a common fuel on the battlefield, providing high performance, fuel efficiency, and a longer lifetime.

The four Combat Aviation Brigade Gray Eagle Companies are fielded Gray Eagle Extended Range (ER) systems in sets consisting of 12 unmanned aircraft, 6 universal ground control stations, 9 ground data terminals, 3 mobile ground control stations, satellite ground data terminals, Light Medium Tactical Vehicles (LMTVs), and other ground-support equipment operated and maintained by a company of 128 Soldiers within the Combat Aviation Brigade.

Additionally, Echelon Above Division units are each fielded Gray Eagle ER systems that include 12 unmanned aircraft, 6 universal ground control stations, 9 ground data terminals, 3 mobile ground control stations, satellite ground data terminals, LMTVs, and other ground-support equipment operated and maintained by a company of 165 Soldiers.

BENEFIT TO THE SOLDIER

The MQ-1C Gray Eagle and Gray Eagle ER provides the Warfighter with dedicated, assured, multimission UAS capabilities across all 10 Army divisions to support commanders' combat operations as well as the Echelons Above Division units.

SPECIFICATIONS

- Length: 28 feet
- Wingspan: 58 feet
- Gross takeoff weight: 3,600 pounds (ER: 4,200 pounds)
- Maximum speed: 130 knots
- Ceiling: 25,000 feet
- Range: 2,500 nautical miles via satellite communications
- Endurance: 27-plus hours (ER: 42.5 hours)
- Payloads: Up to four HELLFIRE missiles, Electro Optical/ Infra-Red, Laser Designation, Satellite Communications

PROGRAM STATUS

- **FY18–FY20:**
  - Program is in Full-Rate Production (FRP 5) buying out the Army Acquisition Objective
  - Completed Operational Testing and Evaluation
  - Fielding of Gray Eagle ER variant ongoing

PROJECTED ACTIVITIES

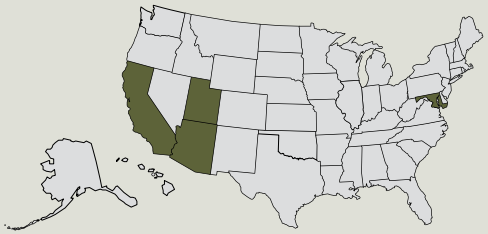
- **FY21–FY25:**
  - Award of FRP 6: Production for War Replacement Aircraft
  - Delivery and install of key Engineering Change Proposals (ECPs) (Digital Antenna Control 8 Channel and Multi-platform Anti-Jam Global Positioning System Navigation Antenna-Federated Kits)
  - Qualification and ECP for Heavy Fuel Engine 2.0
  - Non-recurring engineering efforts in support of MQ-1C Modernization (Avionics/Software, Datalinks)

EUAS — MQ-1C Gray Eagle/ER





CONTRACTORS
General Atomics, ASI (San Diego, CA)
Honeywell (Phoenix, AZ)
L3Harris Technologies (Salt Lake City, UT)
Textron (Hunt Valley, MD)



Enhanced Heavy Equipment Transporter System (EHETS)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Enhanced Heavy Equipment Transporter System (EHETS) will replace the Heavy Equipment Transporter System (HETS) and consists of an M1300 tractor (M1070A1 modified to reduce and relocate weight to achieve European road permits) and an eight-axle M1302 trailer capable of worldwide transport. The EHETS primary mission is to transport an M1 series Main Battle Tank (MBT) and other tracked vehicles weighing a minimum of 82 tons and up to 90 tons. It can self-load/unload disabled vehicular cargo for evacuation purposes. The system will provide line haul, local haul, and maintenance evacuation of heavy tracked vehicles during tactical operations on primary and secondary roads worldwide.

EHETS is in response to a U.S. Army Europe (USAREUR) Operational Needs Statement (ONS). It is used primarily to transport MBTs and other heavy equipment weighing a minimum of 82 tons and up to 90 tons and can attain highway permits (at a reduced payload) to allow transport within European countries. EHETS will carry the heaviest current and future versions of the M1 Abrams MBT.

BENEFIT TO THE SOLDIER

EHETS will conduct transport of heavy combat units from sea and airports of debarkation into corps and division areas. EHETS can also deliver equipment and cargo along Main Supply Routes as far forward as mission, enemy, terrain, and weather considerations allow.

SPECIFICATIONS

M1300 Tractor:

- Gross Combined Weight Rating: 269,000 pounds
- Caterpillar 700 HP C-18 engine
- Allison 4800SP transmission (7-speed automatic)
- Single-speed transfer case
- Electrical: 24 volts
- Alternator: 400 amps
- Antilock Brake System with traction control
- Standard air conditioning
- Modified M1070A1 to reduce and redistribute weight to meet European road permit requirements

M1302 Trailer:

- 8 Axle lines (7 steerable)
- 85-ton payload
- Adjustable gooseneck
- Hydraulic ramps
- 32 tires, plus one spare
- Diesel engine Auxiliary Power Unit to operate gooseneck, steering, and suspension hydraulic systems
- Stowage locations for M1300 Basic Issue Items

PROGRAM STATUS

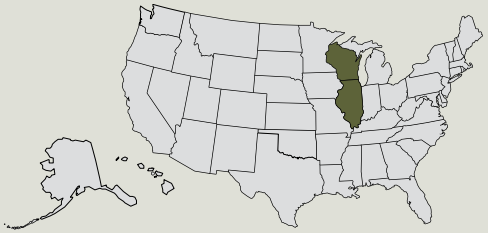
- **FY18–FY20**
  - Began Production and Fielding of USAREUR — HETS ONS M1300 and M1302 trailer is part of the enduring EHETS capability
  - Completed the HETS Urban Survivability Kit (HUSK) armored cab Technical Data Package
  - Began Low-Rate Initial Production builds of armored cabs at Rock Island Arsenal, Illinois

EHETS

PROJECTED ACTIVITIES

- **FY21–FY25**
  - Complete Production and Fielding of the USAREUR HETS ONS
  - Determine acquisition approach for EHETS trailer to fulfill the remainder of the Army Procurement Objective (APO) — procure and begin Fielding EHETS trailers
  - Continue modification of the M1070A1 tractor fleet into the M1300 variant to fulfill the APO
  - Execute Full-Rate Production and field HUSK armored cabs

CONTRACTORS
HUSK Armored Cab: Rock Island Arsenal Joint Manufacturing & Technology Center (Rock Island, IL)
M1300 Tractor: Oshkosh Defense (Oshkosh, WI)
M1302 Trailer: Oshkosh Defense (Prime) (Oshkosh, WI) partnered with Broshuis B.V. (Netherlands)



Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS)

PEO Intelligence, Electronic Warfare and Sensors | Aberdeen Proving Ground, MD

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) provides a persistent airborne intelligence, surveillance, and reconnaissance capability to detect, locate, classify, identify, and track surface targets with a high degree of timeliness and accuracy during day, night, and nearly all weather conditions. It enhances Brigade Combat Team effectiveness by defining and assessing the communications environment and providing surveillance, targeting support, and threat warning.

EMARSS contains a tailored set of Distributed Common Ground System – Army (DCGS-A) enabled software intelligence, surveillance, and reconnaissance functionalities to process, exploit, and rapidly disseminate the intelligence derived from the sensor capabilities. Selected EMARSS intelligence data is immediately processed on the aircraft and forwarded to DCGS-A for further processing, analysis, and reporting.

EMARSS complies with Department of Defense (DoD) Information Technology Standards Registry and Defense Information Systems Network. This architecture enables interoperability with any multiservice or joint system that complies with DoD standard formats for data transfer and dissemination.

BENEFIT TO THE SOLDIER

EMARSS enables the Aerial Exploitation Battalions within the Intelligence and Security Command to provide command and control, mission planning, sustainment support, and deployment packages to facilitate worldwide missions in accordance with standard Joint and Army tasking processes.

SPECIFICATIONS

- **EMARSS-G:** Geospatial intelligence with Wide Area Aerial Surveillance, Light Detection and Ranging, and High Definition Full-Motion Video (HD FMV)
- **EMARSS-M:** Multi-intelligence with Signals Intelligence and HD FMV
- **EMARSS-V:** Vehicle and Dismount Exploitation Radar (VADER) with Vehicle and Dismount Moving Target Indication, Signals Intelligence, and HD FMV
- **EMARSS-S:** Signals Intelligence with Broad Spectrum Signals Intelligence and HD FMV

PROGRAM STATUS

- **FY18:** Delivered 24 EMARSS G/M/V/S aircraft systems
- **FY18–20:**
  - Installed four Mission Enhancement Kits
  - Deployed nine Program of Record aircraft in support of worldwide operational requirements (3G/2M/2V/2S)
- **FY19:**
  - Completed integration and initial fielding of redesigned operator workstation computer
  - Completed integration, testing, and first article installation of Airborne Wide Area Persistent Surveillance System (AWAPSS) Obsolescence Improvement Program and associated common rack
  - Selected common Signals Intelligence (SIGINT) chassis to be used on S; placed initial procurement orders
  - Met all Fielding criteria and was declared as inactive for ACAT II annual reporting
  - Awarded Sensor Technology, Operations and Readiness Maintenance contract in June 2019
- **FY20:**
  - Approved EMARSS Mission Equipment Package Modernization Acquisition Program Baseline
  - Completed Preliminary Design Review for Advanced Light Detection and Ranging (LiDAR)

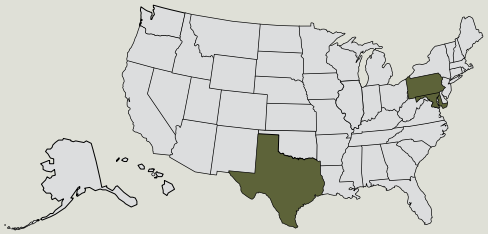
- Completed Pre-Planned Product Improvement (P3I) on first EMARSS aircraft (V2)
- Awarded Other Transactional Authority on EMARSS-V

PROJECTED ACTIVITIES

- **FY21–FY22:**
  - Address SIGINT sensor obsolescence for EMARSS-M
  - Integrate System Training Interface for EMARSS sensor capabilities into the EMARSS as Cockpit Procedural Trainer/Operator Procedural Trainer
- **FY21–FY25:**
  - Continue effort on high priority (Assured – Position, Navigation, and Timing near-peer threats) P3I
  - Integrate Global Positioning System M-Code, Magna-F anti-jam antenna, Aircraft Survivability Equipment, aircraft performance upgrades
  - Continue effort on high priority P3I modifications in service (FY22–FY26) to address gaps for near-peer threats (based on availability of funding)
  - Conduct SIGINT Sensor, Software, and Architecture upgrades for EMARSS-S (Development, Procurement, Integration, and Testing)
  - Address significant Tactical Operations LiDAR (FY24–FY25) and AWAPSS (FY21–FY22) obsolescence issues for EMARSS-G
  - Develop Synthetic Aperture Radar/Moving Target Indicator upgrade to address VADER obsolescence

EMARSS

CONTRACTORS
AASKI Technology (Aberdeen, MD)
Adams Communication and Engineering Technology, Inc. (Waldorf, MD)
Boeing (Ridley Park, PA)
L-3 Communications Aerospace Systems (Greenville, TX)
Sierra Nevada Corporation (Hagerstown, MD)





Enhanced Night Vision Goggle (ENVG)

PEO Soldier | Fort Belvoir, VA

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The AN/PSQ-20 Enhanced Night Vision Goggle (ENVG) provides dismounted Brigade Combat Team Warfighters the capability to observe and maneuver in all weather conditions, through obscurants, during limited visibility, and under all lighting conditions while enabling rapid detection and engagement with rifle-mounted aiming lasers. ENVG uses both image intensification and infrared (thermal) sensors.

BENEFIT TO THE SOLDIER

ENVG I/II/III allows the individual Soldier to see, understand, and act first during limited visibility conditions. The systems combine the visual detail in low-light conditions that is provided by image intensification with the thermal sensor's ability to see through fog, dust, and smoke. This thermal capability makes ENVG useful during the day as well as at night, unlike earlier night vision devices.

SPECIFICATIONS

- Man-sized target recognition:
  - 80% probability at 150 meters (threshold) and 300 meters (objective)
  - 50% probability at 300 meters (threshold) and 550 meters (objective)
- Total system weight:
  - Less than 2 pounds (threshold) and 1.5 pounds (objective)
- Operating hours (continuous fusion):
  - Greater than 7.5 hours (threshold) and 15 hours (objective)

PROGRAM STATUS

- **1QFY20:** ENVG III Production begins
- **4QFY20:**
  - Full Materiel Release (FMR)
  - First Unit Equipped

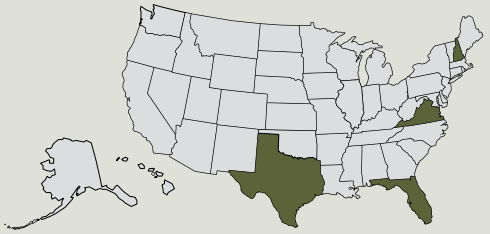
PROJECTED ACTIVITIES

- **1QFY21:** First Article Test
- **2QFY22:**
  - FMR
  - First Unit Equipped

ENVG



CONTRACTORS
Harris (Roanoke, VA)
L3 Warrior (Londonderry, NH)
Leonardo DRS (Melbourne, FL, and Dallas, TX)





Enhanced Night Vision Goggle — Binocular (ENVG-B)

PEO Soldier | Fort Belvoir, VA

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Enhanced Night Vision Goggle – Binocular (ENVG-B) provides dismounted Brigade Combat Team Warfighters the capability to observe and maneuver in all weather conditions, through obscurants, during limited visibility, and under all lighting conditions while enabling rapid detection and target engagement with rifle-mounted aiming lasers. ENVG-B uses image intensification, infrared (thermal) sensors, wireless connectivity through Intra Soldier Wireless, and augmented reality enhancements. The introduction of the high figure of merit white phosporus tubes allows the user to see images in a white field instead of the current green background.

BENEFIT TO THE SOLDIER

ENVG-B allows the individual Soldier to see, understand, and act first during all limited visibility conditions. The goggles combine the visual detail in low-light conditions that is provided by image intensification coupled with the thermal sensor's ability to see through fog, dust, and smoke. This thermal capability makes ENVG-B useful during the day as well as at night, unlike earlier night vision devices. Higher resolution stereoscopic displays allow for faster target acquisition by improving separation of targets from background.

Additionally, ENVG-B will receive wirelessly transmitted weapon sight crosshair and thermal imagery from the Family of Weapon Sights-Individual; thus, providing a Rapid Target Acquisition capability that enables Soldiers to detect, recognize, and engage targets accurately from any carry position and with significantly reduced exposure to enemy fire.

The ENVG-B is also interoperable with Nett Warrior through wireless transmission of Augmented Reality to improve the Soldier's situational awareness.

SPECIFICATIONS

- Man-sized target recognition:
  - 80% probability at 150 meters (threshold) and 300 meters (objective)
  - 50% probability at 300 meters (threshold) and 550 meters (objective)
- Total system weight:
  - Less than 2.5 pounds (threshold) and 1.5 pounds (objective)
- Operating hours (continuous fusion):
  - Greater than 7.5 hours (threshold) and 15 hours (objective)

PROGRAM STATUS

- **4QFY19:** Initial Fielding for ENVG-B Directed Requirement
- **4QFY20:** Milestone C Decision and Low-Rate Initial Production Award for Program of Record (POR)

PROJECTED ACTIVITIES

- **2QFY21:** Critical Design Review
- **3QFY21:** Operational Test
- **4QFY21:** First Article Test
- **2QFY22:** First Unit Equipped for ENVG-B POR

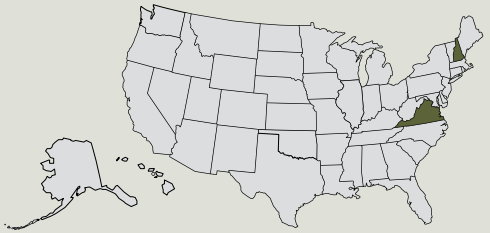
ENVG-B







CONTRACTORS
Elbit Systems of America (Roanoke, VA)
L3Harris (Londonderry, NH)



Excalibur Precision 155 mm Projectiles

JPEO Armaments and Ammunition | Picatinny Arsenal, NJ

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Four countries

DESCRIPTION

The Excalibur (XM982, M982, and M982A1) is a 155 mm, Global Positioning System (GPS)-guided, extended range artillery projectile in use as the U.S. Army's next-generation cannon artillery precision munition. It provides improved fire support to the maneuver force commander, increases lethality, and reduces collateral damage. The target, platform location, and GPS-specific data are entered into the projectile's mission computer through an Enhanced Portable Inductive Artillery Fuze Setter. The Excalibur projectile uses a jam-resistant internal GPS receiver to update the inertial navigation system, providing precision in-flight guidance and dramatically improving accuracy to less than two meters miss distance regardless of range. The Excalibur projectile has three fuze options (point-detonation, point-detonation delay, and height-of-burst) and is employable in all weather conditions and terrains. The Excalibur's capabilities allow for first-round effects-on-target while simultaneously minimizing collateral damage and the number of rounds required to engage targets.

The Excalibur program is using an incremental approach to provide a combat capability to the Soldier as quickly as possible and to deliver advanced capability while reducing unit cost and increasing reliability. The Excalibur program benefits from contributed resources toward development in accordance with established international cooperative development and production agreements.

The most recent upgrade enables the projectile to attack a target from any approach angle, to include defeating targets in a reverse slope. Future upgrades include compatibility with the Extended Range Cannon Artillery weapon system to defeat targets out to 70 kilometers (km) and leverage the design for the Cannon Delivered Area Effects Munition program to defeat moved and moving armored vehicles at extended ranges.

BENEFIT TO THE SOLDIER

The Excalibur projectile enables the Soldier to service a precisely located target with first-round effects, denying the enemy the ability to take protective measures or flee the area. Excalibur's achieved, and relatively limited, damage radius allows for target engagement within close proximity.

SPECIFICATIONS

- Maximum range from U.S. 39 caliber howitzers with Zone 5 Modular Artillery Charge System (MACS): 39.3 km
- Minimum range from U.S. 39 caliber howitzers with Zone 3 MACS: 8.7 km
- Precision achieved: Less than 2 meters miss distance
- Fuze modes: Point-detonation, point-detonation-delay, and height-of-burst

PROGRAM STATUS

- **FY19–FY21:**
  - M982A1 Ib continued Full-Rate Production; new FY19–FY24 Production contract; 5,053 projectiles awarded to date
  - Initial software update completed on 1,064 projectiles to allow user-defined projectile trajectories for target engagement
  - Software updates starting 2QFY21 implemented both user defined trajectories and improved performance in degraded GPS environments. All Ib projectiles will be updated to this configuration.

Excalibur

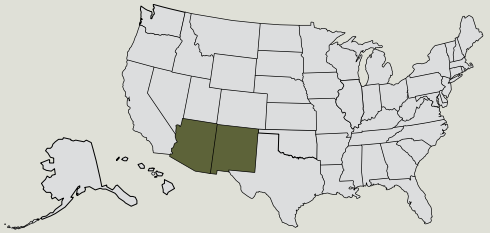
PROJECTED ACTIVITIES

- **FY21–FY24:**
  - Maintaining a sufficient inventory is an integral part of ensuring a highly lethal Army force
  - Excalibur projectiles provide Artillery units with the capability needed to continuously dominate the battlefield at extended ranges.
  - An enhanced projectile is a candidate for demonstrating Excalibur's potential capability to meet Army requirements, addressing poorly located and moving hard targets in GPS-degraded and -denied environments



CONTRACTORS

Raytheon Missiles & Defense (Tuscon, AZ, Farmingham, NM, and the United Kingdom)





Family of Medium Tactical Vehicles (FMTV)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Afghanistan, Argentina, Cameroon, Canada, Djibouti, Greece, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Macedonia, Poland, Romania, Saudi Arabia, Taiwan, Thailand, Tunisia, Uganda, and United Arab Emirates

DESCRIPTION

Family of Medium Tactical Vehicles (FMTV) is a complete series of trucks based on a common chassis that varies by payload and mission. FMTV is configured to support a variety of cargo hauling methods across rugged terrain. It consists of two chassis, 2.5- to 3-ton Light Tactical Vehicles (LTV) and the 5- to 8-ton Medium Tactical Vehicles (MTV). The FMTV chassis also supports a variety of innovative systems in Airborne (Low-Velocity Airdrop (LVAD)), Air Defense, Mission Command, and Fires. The FMTV fleet of vehicles is comprised of 4 chassis, 15 trucks (cargos, vans, wreckers, tractors, dumps, and LVAD), and 3 trailers.

BENEFIT TO THE SOLDIER

FMTV provides the performance, versatility, and protection military personnel need to fulfill their missions. From supporting combat missions and logistics operations to aiding in relief efforts, FMTV performs a wide range of duties. The FMTV A2 rebalances the "iron triangle" of protection, payload, and maneuverability. Enhancements to the suspension allow the A2 to keep pace with maneuver elements over rough terrain and increase the payload to 3 tons for LMTV and 8 tons for MTV.

SPECIFICATIONS

	A1P2	A2
Payload	2.5-ton and 5-ton capacity	3-ton and 8-ton capacity
Length	12–20 ft., Variant dependent	25–36 ft., Variant dependent
Towed Load (Pounds)	12,000–21,000 pounds, Variant dependent	12,000–65,000 pounds, Variant dependent

PROGRAM STATUS

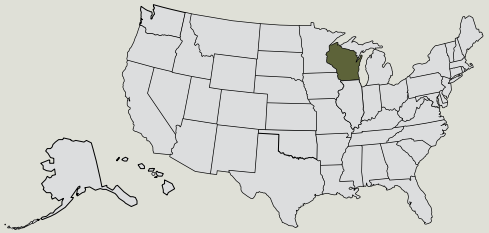
- **2QFY18:** A2 Contract Award
- **4QFY19:** A1P2 Contract expiration

PROJECTED ACTIVITIES

- **4QFY21:**
  - A1P2 Production completion
  - Production Verification Testing complete
- **1QFY22:** A2 Operational Test complete
- **FY23:** A2 First Unit Equipped

FMTV

CONTRACTORS
Oshkosh Defense (Oshkosh, WI)





Family of Weapon Sights — Crew Served (FWS-CS)

PEO Soldier | Fort Belvoir, VA

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Family of Weapon Sights – Crew Served (FWS-CS) will mount to the M240 Medium Machine Gun, the M2 .50-Caliber Machine Gun, and the MK19 Grenade Machine Gun and will provide the Soldier with High-Definition (HD) infrared (thermal) imagery in all weather conditions, under all lighting conditions, and through obscurants. The FWS-CS will also integrate an HD day camera, a laser rangefinder, a ballistic calculator, and a wireless Helmet Mounted Display (HMD).

BENEFIT TO THE SOLDIER

The FWS-CS HD thermal sensor and HD day camera will provide Soldiers with a long-range capability for crew-served weapons. The FWS-CS integrated laser rangefinder will support a ballistic crosshair that adjusts shifts based on the target range, enabling Soldiers to get first bursts on target. The FWS-CS wireless HMD allows the Soldier to receive weapon sight imagery while behind protective armor and when using a weapon system with the Objective Gunners Protection Kit.

SPECIFICATIONS

- Man-sized target recognition at night: 70% probability at 2,400 meters (threshold) and 2,600 meters (objective)
- Man-sized target recognition through smoke or other obscurants: 90% probability at 500 meters (threshold) and 600 meters (objective)
- Total system weight: Less than or equal to 3.25 pounds (threshold) and 2.5 pounds (objective)
- Field-of-view: Greater than or equal to 9 degrees (threshold) and 18 degrees (objective)

PROGRAM STATUS

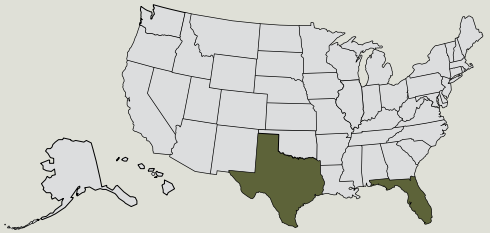
- **3QFY19:** Reliability Growth Test

PROJECTED ACTIVITIES

- **1QFY21:**
  - RGT-1D/Limited User Test-1D
  - Milestone C Decision

FWS-CS

CONTRACTORS
Leonardo DRS (Melbourne, FL, and Dallas, TX)



Family of Weapon Sights — Individual (FWS-I)

PEO Soldier | Fort Belvoir, VA

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Family of Weapon Sights – Individual (FWS-I) mounts to the M4 Carbine and M249 Squad Automatic Weapon and provides the Soldier with infrared (thermal) imagery in all weather conditions, under all lighting conditions, and through obscurants.

BENEFIT TO THE SOLDIER

FWS-I's thermal sensor gives Soldiers the ability to see through fog, dust, and smoke, giving an advantage both day and night. Additionally, FWS-I wirelessly transmits the weapon sight crosshair and thermal imagery to the Enhanced Night Vision Goggle (ENVG) III, ENVG-Binocular, and Integrated Visual Augmentation System providing a Rapid Target Acquisition (RTA) capability. RTA enables Soldiers to detect, recognize, and engage targets accurately from any carry position and with significantly reduced exposure to enemy fire.

SPECIFICATIONS

- Man-sized target recognition at night: 70% probability at 960 meters (threshold) and 1,200 meters (objective)
- Man-sized target recognition through smoke or other obscurants: 90% probability at 300 meters (threshold) and 480 meters (objective)
- Total system weight: 1.4 pounds
- Field-of-view: Greater than or equal to 18 degrees

PROGRAM STATUS

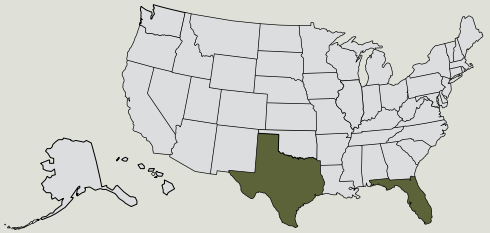
- **3QFY18:**
  - Completed Initial Operational Test and Evaluation
  - Airborne Limited User Test
- **2QFY19:** Type Classification-Standard
- **2QFY20:** First Unit Equipped
- **3QFY20:** Low-Rate Initial Production Delivery Order

PROJECTED ACTIVITIES

- **3QFY21:**
  - Full Materiel Release
  - Full-Rate Production

FWS-I

CONTRACTORS
Leonardo DRS (Melbourne, FL, and Dallas, TX)





Family of Weapon Sights — Sniper (FWS-S)

PEO Soldier | Fort Belvoir, VA

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Family of Weapon Sights – Sniper (FWS-S) will mount in-line with a sniper's day optic on the M110, M2010, M107, the Compact Semi-Automatic Sniper System, Squad Designated Marksman Rifle, and the Precision Sniper Rifle. The FWS-S will provide the sniper with infrared (thermal) imagery in all weather conditions, through obscurants, and under all lighting conditions. The FWS-S will also include a wired remote to adjust focus, a wired capability to the Small Tactical Optical Rifle Mounted (STORM) micro-Laser Rangefinder and a wireless capability to the STORM SLX (smaller, lighter, more cost-effective).

BENEFIT TO THE SOLDIER

FWS-S thermal sensor extends lethality for snipers to 1,800 meters, three times longer than the 600-meter capability provided by an image intensified system. The FWS-S will be the first clip-on thermal weapon sight specifically developed and fielded by the Army for the sniper community.

SPECIFICATIONS

- Man-sized target recognition at night: 70% probability at 1,800 meters (threshold) and 2,200 meters (objective)
- Man-sized target recognition through smoke or other obscurants: 90% probability at 600 meters (threshold) and 800 meters (objective)
- Total system weight: Less than or equal to 2 pounds (threshold) and 1.75 pounds (objective)
- Field-of-view: Greater than or equal to 4 degrees (threshold) and 9 degrees (objective)

PROGRAM STATUS

- **4QFY19:** Engineering, Manufacturing, and Development Other Transaction Authority Award

PROJECTED ACTIVITIES

- **2QFY21:** Reliability Growth Test

FWS-S

CONTRACTORS
Knights Armament Corporation (Titusville, FL)
N2 (Irvine, CA)









Fixed Wing

PEO Aviation | Redstone Arsenal, AL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Barbados, Brazil, Canada, Costa Rica, Egypt, Israel, and Panama

DESCRIPTION

Fixed Wing provides life cycle acquisition management of the U.S. Army's fixed-wing fleet of transport and manned aerial intelligence, surveillance, and reconnaissance aircraft.

Army fixed-wing aviation units serve as intelligence and electronic warfare assets, provide timely movement of key personnel to critical locations throughout the theater of operations, and support worldwide peacetime contingencies and humanitarian relief efforts. The fixed-wing fleet consists of 278 aircraft comprised of 4 missions, 11 designs, and 25 series deployed to 11 countries and all 50 states. All Army fixed-wing aircraft are commercial derivative aircraft and divided into Special Electronic Mission Aircraft (SEMA) and Transport Aircraft.

BENEFIT TO THE SOLDIER

Army fixed-wing aviation units serve as intelligence and electronic warfare assets and provide timely movement of key personnel to critical locations throughout the theater of operations.

SPECIFICATIONS

The SEMA Product Office manages aerial intelligence, surveillance, and reconnaissance programs such as the Enhanced Medium Altitude Reconnaissance and Surveillance System, Airborne Reconnaissance Low-Enhanced, and Guardrail/Common Sensors.

The Transport Aircraft Product Directorate manages two distinct fleets of aircraft. The Mission Support Aircraft fleet consists of aircraft such as the T-6 trainer used by the Army Test and Evaluation Command; the UV-18 and C-147 used by the U.S. Army "Golden Knights" Parachute Team; and a variety of aircraft supporting testing and training. One example is the C-12S supporting the Federal Aviation Administration (FAA) Instrument Approach Flight Check test activity. The Operational Support Aircraft fleet includes such aircraft as the C-12, C-26, UC-35, C-20, and C-37 that are used for worldwide personnel and executive transport.

The Transport and SEMA fleets are continuously modernized with the most current communication, navigation, surveillance, and survivability systems that enhance mobility and expeditionary capabilities to provide superior force projection in contested and non-contested environments.

PROGRAM STATUS

- **FY18–Current:**
  - C-12 fleet is nearing completion of the Automated Dependent Surveillance-Broadcast Out Modification to meet the FAA's Global Air Traffic Management (GATM) January 2020 mandate. All aircraft have received the required modification.
  - UC-35 fleet is undergoing extensive avionics upgrades to meet all GATM mandates, Mode 5 Identification Friend-or-Foe (IFF) requirements, and a cockpit refresh to address obsolesce issues.
  - Golden Knights Parachute Demonstration Team took delivery of the second and final C-147 aircraft and retired the Fokker C-31A Troopship. This action provides the Golden Knights with a newer, more supportable aircraft with enhanced communication, navigation, and surveillance capabilities that improve safety and reduce pilot workload.

PROJECTED ACTIVITIES

- **FY21–FY25:**
  - C-12, C-26E, UC-35, and C-37 fleets will be upgraded with the Military Navigation System Modification (M-Code Global Positioning System (GPS)) and Jam Resistant GPS Controlled Reception Pattern Antenna for Assured Position, Navigation, and Timing.

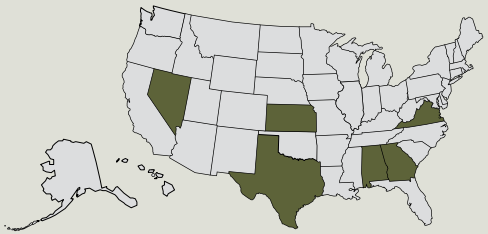
- C-12, C-26E, and UC-35 fleets will be upgraded with the Military Communication System Modification (Mobile User Objective System Satellite Communications (SATCOM)).
- C-37 fleet will be upgraded with the Military Survivability System Modification (Large Aircraft Infrared Countermeasure), the Military Communications Systems Modification (SATCOM), and Military Mobile User Objective System SATCOM.



Fixed Wing

CONTRACTORS

Adams Communications & Engineering Technology, Inc. (Reston, VA)
DynCorp International (McLean, VA)
Gulfstream (Savannah, GA)
King Aerospace (Addison, TX)
L-3 Harris MID (Greenville, TX)
Leidos (Reston, VA)
Northrop Grumman Technical Services (Dallas, TX)
Sierra Nevada Corporation (Sparks, NV)
Support Systems Associates, Inc. (Huntsville, AL)
Systems Engineering Solutions, Inc. (Huntsville, AL)
Textron Aviation (Wichita, KS)





Force Provider Expeditionary (FPE)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Force Provider Expeditionary (FPE) is a modular base camp life support capability that houses personnel with environmentally controlled billeting, food service, hygiene, power generation and distribution, petroleum and water storage and distribution, and shower water recycling.

BENEFIT TO THE SOLDIER

FPE can be deployed in theaters of operation to provide Warfighters state-of-the-art quality of life services in an expeditionary environment. Each FPE supports 150 personnel with environmentally controlled billeting, food service, hygiene facilities, power generation and distribution, and petroleum and water storage. FPE features environmentally controlled billeting; Triple Container (TRICON)-based kitchen and hygiene (laundry, shower, latrine); water and fuel storage; shower water reuse; power generation and distribution systems, and wastewater collection.

SPECIFICATIONS

- FPE provides force projection to any global location for near-peer, multidomain engagement within 24–48 hours with a scalable life support capability supporting five Combatant Commands from five Army Pre-Positioned Stock locations
- Highly mobile, rapidly deployable modular system that is easily sustainable
- Pre-packed for rapid transport via air (C-130, C-5, C-17), sea, road, or rail (24 TRICON containers (8’ x 8’ x 6.5’))
- Add-on kits include the Shower Water Reuse System to reduce shower water consumption by 75%; Cold Weather Kit allows operation to -15 degrees Fahrenheit
- Features energy efficient shelter liners and doors and solar shades
- Advanced Medium Mobile Power Source microgrid components capable of reducing power consumption by 40%

PROGRAM STATUS

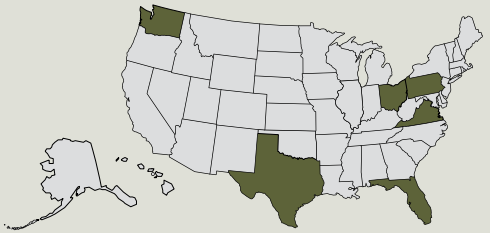
- **3QFY20:**
  - 24 Energy Efficient Rigid Wall Module (E2RWM) complete
  - Approved Acquisition Objective increase approved
- **4QFY20:**
  - 4 E2RWMs deployed to Kuwait
  - Technical Assistance Team Request for Proposal (RFP) contract release
  - New Expeditionary TRICON System contract draft RFP release
  - E2RWM and Expeditionary Platoon Life Support Module Technical Manual Validation

PROJECTED ACTIVITIES

- **1QFY21:**
  - Operational Needs Statement for 14 E2RWMs for U.S. Army Europe

FPE

CONTRACTORS
Berg (Spokane Valley, WA)
HDT Global (Solon, OH)
ICF (Fairfax, VA)
Letterkenny Army Depot (Chambersburg, PA)
Lex Products Corporation - LEX TM3 (Davie, FL)
Ready One Industries (El Paso, TX)



Forward Area Air Defense Command and Control (FAAD C2)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Australia, Egypt, and United Kingdom

DESCRIPTION

Forward Area Air Defense Command and Control (FAAD C2) software is a real-time safety critical command and control software application providing a single integrated air picture, airspace coordination and deconfliction, and fire control to support multiple missions, including:

- Counter-Rocket, Artillery, Mortar (C-RAM) Intercept Land-Phalanx Weapon System
- Joint Counter-Unmanned Aircraft System (C-UAS) of Systems
- Maneuver-Short Range Air Defense
- Avenger
- Army Air Defense Mission Command
- U.S. Marine Corps Mobile Aerial Defense Integrated System

FAAD C2 uses the following communication systems:

- Link 16
- Link 11/11B
- Joint Range Extension Application Protocol
- Advanced Tactical Data Link
- Dedicated Fire Control Networks

FAAD C2 provides an air picture to engagement and force operations via Government-owned interfaces and based on data gathered from various sensors. FAAD C2 is integrated with over 25 sensors, including:

- AN/MPG-64 Sentinel
- AN/TPQ-50 Lightweight Counter Mortar Radar
- AN/TPQ-53 Counterfire Target Acquisition Radar
- Ku-band Radio Frequency System Radar
- Lightweight Surveillance Tracking and Acquisition Radar
- Giraffe Agile Multi-Beam
- Various electro-optical/infrared cameras

FAAD C2 maintains Joint and Army Interoperability Certification and has been approved by the Joint Services Software Safety Authority. In May 2020, the Secretary of Defense named FAAD C2 as the interim C2 solution for Joint C-UAS.

FAAD C2 has conducted over 400 C-RAM intercepts in theater without fratricide and provided more than 7,000 rocket and mortar alerts with minimal false warnings. FAAD C2 has demonstrated interoperability with Integrated Air and Missile Defense Battle Command System (IBCS) via military standard data links and plans to converge with IBCS in Fiscal Year (FY) 2024.

BENEFIT TO THE SOLDIER

FAAD C2 supports air defense and C-RAM weapon systems engagement operations by tracking friendly and enemy aircraft, cruise missiles, unmanned aircraft systems, and mortar and rocket rounds as identified by radar systems. FAAD C2 is integrated with modern directed energy and electronic warfare weapon systems.

SPECIFICATIONS

- FAAD C2 is hosted on a SRNC-17 laptop computer and Dell 7212 tablet computer

PROGRAM STATUS

- **4QFY18:** Urgent Materiel Release FAAD C2 v5.6A-1.0
- **2QFY19:** Joint Interoperability Test Certification (JITC) FAAD v5.6B
- **3QFY19:**
  - Army Interoperability Certification (AIC) Testing – FAAD v5.6A-1.0p1.1
  - System Certification Testing – FAAD v5.6B
- **4QFY19:** Full Materiel Release – FAAD v5.6A-1.0p1.1 and v5.6A-1.0p3

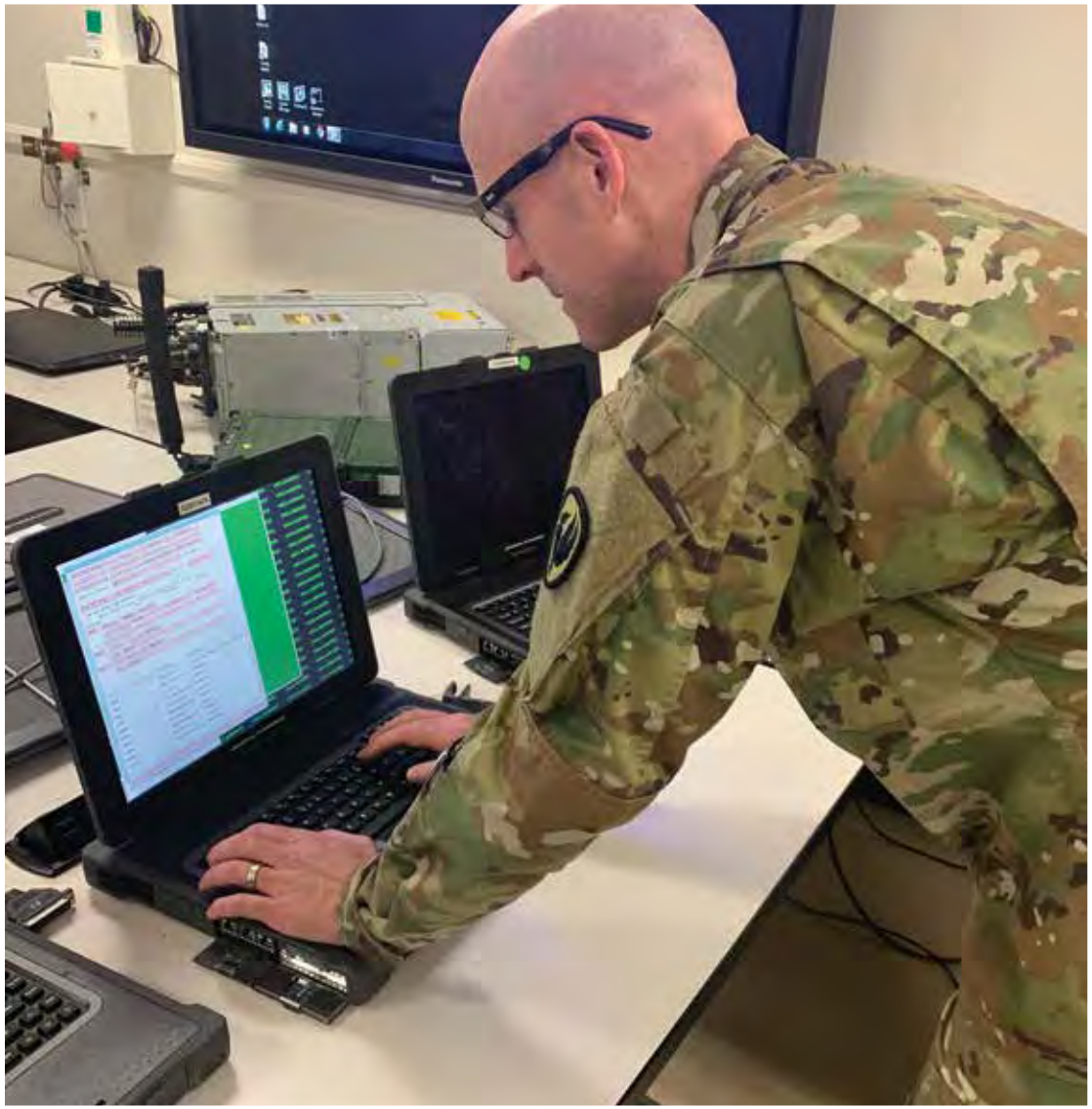
FAAD C2

PROJECTED ACTIVITIES

- **2QFY21:**
  - JITC/AIC FAAD v5.6C
  - Full Software Materiel Release (FSMR) – FAAD C2 v5.6B-1.0p1
- **4QFY21:** FSMR – FAAD v5.6C-1.0
- **2QFY23:** FSMR – FAAD v5.6D-1.0

CONTRACTORS
Northrop Grumman Corporation (Redondo Beach, CA, and Huntsville, AL)







Future Army System of Integrated Targets (FASIT)

PEO Simulation, Training and Instrumentation | Orlando, FL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Future Army System of Integrated Targets (FASIT) program was delegated to Program Executive Office Simulation, Training and Instrumentation in Fiscal Year (FY) 2020, and is the consolidation of the Army Targetry Systems (ATS), Target Modernization (Tgt Mod), Combat Training Center Live Fire (CTC LF), and Aerial Weapons Scoring System (AWSS) programs. The FASIT Capabilities Production Document (CPD) was approved in December 2019. The four smaller programs now make up the FASIT Program of Record as detailed in the FASIT CPD. The funding lines for ATS, CTC LF, and Tgt Mod will be merged into FASIT in Fiscal Year (FY) 2021, and the AWSS program funding line will be merged in FY22. This is not a new start program, but it is a consolidation of multiple programs under a single CPD.

The FASIT program will provide live-fire training systems capable of supporting all of the Army's automated ranges. The current Basis of Issue Plan supports 700 Live Fire Ranges. FASIT's live fire training systems include a single, Government-owned, universal target control software capability for all ranges identified in Army Training Circular 25-8. It provides users a common look and feel; downrange Presentation Devices (PDs) that interact with the control software and provide scoring feedback; Battlefield/Weapons Effects Devices that simulate combat situations, visuals, sounds; and targets/silhouettes that provide visual, image intensification and thermal representations of friendly/threat engagements, etc.

BENEFIT TO THE SOLDIER

Provides live-fire training systems and enablers that support the Army's requirements to prepare adaptive Army leaders for a complex world, while ensuring the force is prepared to be globally responsive and regionally engaged. FASIT will overcome the existing Army Warfighting Challenges by enhancing realistic training; improving Soldier, leader, and team performance; and by developing agile and adaptive leaders. It will solve the immediate and critical need to train Soldiers and leaders in the conduct of Army tactical ground-to-ground, air-to-ground, air-to-surface, and surface-to-surface engagements for Force-on-Target training. FASIT will support commanders at all levels with skills qualification, sustainment training, and collective exercises during live-fire exercises.

SPECIFICATIONS

- Battlefield Effects Simulator
- Doctrine Changes/Maneuver Center of Excellence
- Common Training Instrumentation Architecture
- Life Training Transformation Product Line Components
- Targetry Range Automated Control and Recording
- Next Generation Force on Target Software

PROGRAM STATUS

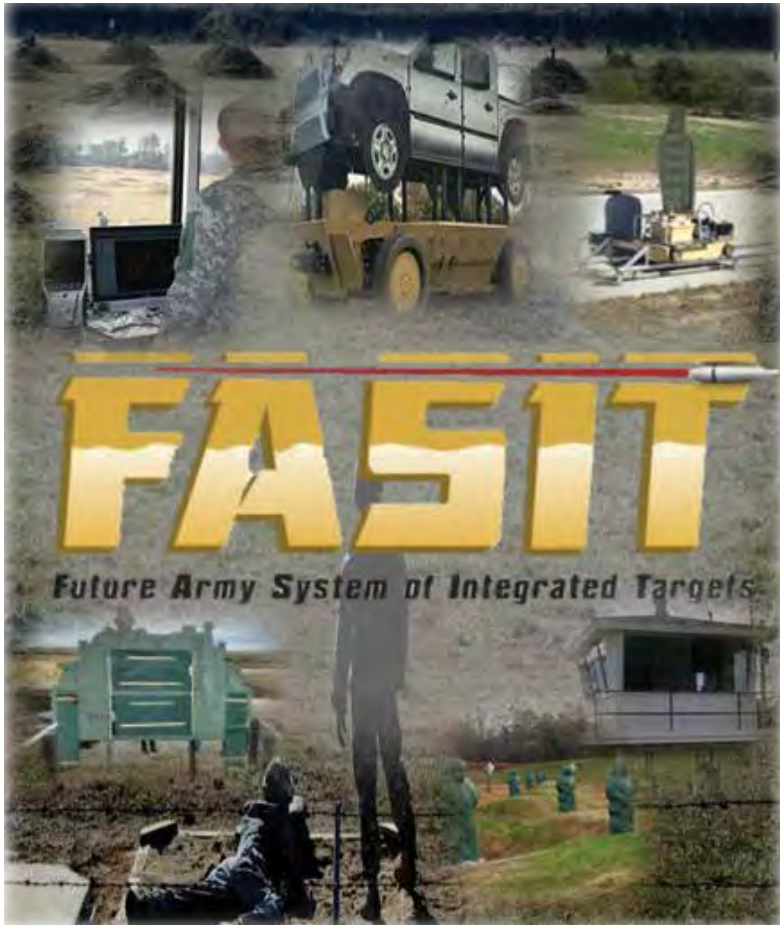
- **FY20:**
  - Completing Configuration Steering Board (CSB) to update FASIT's CPD prior to going through a Materiel Development Decision
  - CSB process is expected to be completed prior to the end of FY20

PROJECTED ACTIVITIES

- **FY21:**
  - The FASIT team, in cooperation with the Army Capability Manager Ranges, is preparing to complete a CSB to update FASIT's CPD.
  - The update to the FASIT CPD will account for changes in the program requirements, significantly reduce risk and ensure sufficient funding to execute.

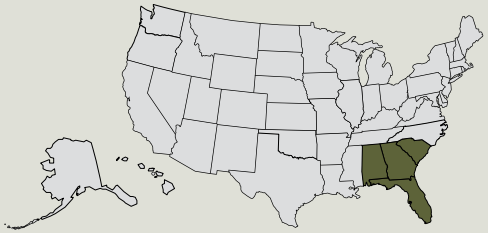
- The FASIT program will move from an ACAT III program to an ACAT II program as a result of the CSB due to the increase in Procurement dollar estimates and the decrease in Operation and Maintenance (O&M) dollars estimates for FASIT's requirements over the life of the program.

• **FY22:**
- The FASIT team is in the process of modernizing the program's four main PDs and its universal target control software baseline.
- FASIT just awarded a contract to develop a Product Level Technical Data Package (TDP) for the PDs and the associated development of the latest iteration of the universal target control software.
- The resulting Government-owned TDPs and updated software will allow the FASIT program to have more control over its Life Cycle Management efforts for the future and will improve the Government's ability to support the field.



FASIT

CONTRACTORS
Combat Training Center Target Systems: Riptide Software (Orlando, FL), Theissen Training System (Chiefland, FL), and Zel Tech (Orlando, FL)
Software Development and Support: General Dynamics Mission Systems (Orlando, FL) and Riptide Software (Orlando, FL)
Target Lifter Modernization: General Dynamics Mission Systems (Orlando, FL)
Target System Tech Refreshment and New Ranges: Meggitt Training Systems (Suwanee, GA), Saab Defense and Security (Orlando, FL), Sius Target Systems (Irmo, SC), Strategic Systems (Decatur, AL), and Theissen Training System (Chiefland, FL)



Future Attack Reconnaissance Aircraft (FARA)

PEO Aviation | Redstone Arsenal, AL

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Future Attack Reconnaissance Aircraft (FARA) is the Army's #3 Modernization priority overall and Army Aviation's #1 Modernization priority, and is a Pre-Major Defense Acquisition Program. FARA is a U.S. Army led initiative to design, develop, and deliver the preeminent attack reconnaissance aircraft for Army Combat Aviation Brigades and the Joint Force enabling U.S. dominance on the multidomain battlefield. FARA is the next generation aircraft capable of achieving and sustaining overmatch against potential competitors and enduring asymmetric threats by closing or mitigating gaps in Army Aviation attack reconnaissance operations.

BENEFIT TO THE SOLDIER

The FARA weapon system is designed to restore attack reconnaissance dominance with sweeping improvements in lethality, agility, reach, survivability, and sustainability to provide capability and flexibility to future commanders. FARA will mitigate enemy long-range capabilities through increased reach allowing the commander to fight and operate from relative sanctuary while delivering lethal effects outside enemy sensor/weapons range. FARA must operate in complex and dense urban, mountainous, desert, jungle, and maritime environments.

SPECIFICATIONS

- Powered by the Improved Turbine Engine (provided Government Furnished Equipment (GFE))
- Main rotor diameter, and overall aircraft width, not to exceed 40 feet
- Minimum mission configured cruise airspeed at maximum continuous power and mission takeoff gross weight of not less than 180 knots true air speed
- Integration of 20 mm turreted cannon (provided GFE) with 180 (Threshold) and 360 (Objective) degrees of coverage
- Integration of Munitions/Air Launch Effects Launcher (provided GFE)
- Digital backbone supporting a Modular Open Systems Approach
- Maneuverability and Agility: Level 1 handling qualities
- Maximum mission takeoff gross target weight of 14,000 pounds
- Affordability Goal: Fly-away cost of no greater than $30 million and cost per flight hour no greater than $4,200, both in Fiscal Year (FY) 2018

PROGRAM STATUS

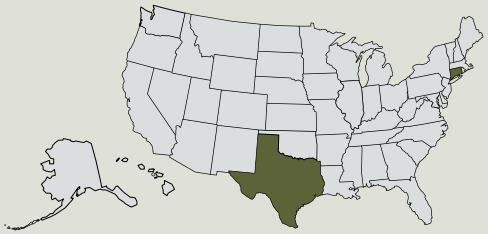
- **FY19:**
  - Competitive Prototype (CP) initial design contracts (Other Transactional Authority Prototypes (OTAP)) (10 U.S. Code 2371b) awarded by Army Futures Command to five industry performers in support of the Army's #1 Aviation Modernization priority
  - FARA Project Office chartered by the Army Acquisition Executive
- **FY20:**
  - CP Initial Design Review and Risk Review completed
  - Three of the original five OTAPs terminated
  - Bell Helicopters and Sikorsky Aircraft contracts continued
  - Project Manager FARA Weapon System Mission Analysis began

FARA

PROJECTED ACTIVITIES

- **FY21:**
  - CP Final Design and Risk Review
  - Air Vehicle Prototype Build and Assembly begins
- **FY22:**
  - Engineering and Manufacturing Development (EMD) Request for Proposal
- **FY23:**
  - Air Vehicle Prototype Flight Testing begins
  - Weapon System Preliminary Design Review
- **FY24:**
  - Milestone B
  - EMD Contract Award

CONTRACTORS
Bell (Dallas/Fort Worth, TX)
Sikorsky (Stratford, CT)







Future Long Range Assault Aircraft (FLRAA)

PEO Aviation | Redstone Arsenal, AL

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Future Long Range Assault Aircraft (FLRAA) is a pre-Major Defense Acquisition Program (Acquisition Category 1C) that will develop and field the next generation of affordable vertical lift tactical assault/utility aircraft for the U.S. Army. FLRAA is the Capability Set 3 of the Future Vertical Lift (FVL) Family of Systems (FoS).

Army Aviation's vision for Multi-Domain Operations (MDO) requires next generation vertical lift capabilities that can deter, fight, and win as part of the Joint Force in increasingly dangerous and complex environments. FVL has been a Department of Defense initiative since 2009 to develop strategic vertical lift capabilities for our Warfighters. FVL is a FoS comprised of five capability sets spanning light, medium, and heavy categories.

One of the Army's greatest strengths is the capability to project combat power across a battlespace and deliver lethal effects at a time and place where the enemy least expects it. However, our Nation's adversaries have modernized their capabilities to chip away at the Army's overmatch and hope to deny our forces access to key terrain or objectives in the next conflict.

On March 16, 2020, the Army awarded Other Transaction Authority contracts to Bell and Sikorsky for the Competitive Demonstration and Risk Reduction (CD&RR) phase of the FLRAA. The CD&RR will extend over two years, informing the final Army requirements and the Program of Record planned for competition in Fiscal Year (FY) 2022.

The risk reduction efforts are critical to the four-year acceleration of FLRAA and will give the Army informed engineering assessment of FLRAA's draft requirements. Ultimately, the CD&RR will tell the Army whether the draft capabilities are feasible, achievable, and most importantly, affordable.

BENEFIT TO THE SOLDIER

FLRAA will provide the Joint Force with an aircraft that possesses increased speed, range, survivability, and maneuverability to allow the Army to retain overmatch against enemy forces in ever-changing environments. It will provide power projection from relative sanctuary with significantly increased range, speed, mobility, and payload capabilities over current Army and U.S. Special Operations Command aircraft. This medium lift, tactical assault, and medical evacuation capability will augment the Army's H-60 Black Hawk utility helicopter fleet to provide Combat Aviation Brigades with long-range, high-speed options that are survivable in contested environments. FLRAA will provide the Army and Joint Force with an advanced vertical lift aircraft that possesses advanced technologies to support MDO from 2030 and beyond.

The Army seeks to continue the industry momentum from the successful Joint Multi Role Technology Demonstrator efforts. In FY20 to FY21, the Army plans to complete requirements derivation, trade-off analysis, and preliminary conceptual design work to help inform the Army on the requirements, acquisition strategy, and program processes for the FLRAA Program of Record.

The Army's Combat Aviation Brigades will field this capability in 2030.

SPECIFICATIONS

- Pre-decisional

PROGRAM STATUS

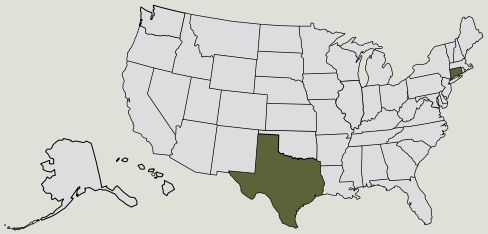
- **Current:** FLRAA is in the Technology Maturation and Risk Reduction phase with an anticipated Milestone B entry during the first quarter of FY24

PROJECTED ACTIVITIES

- **FY21:** Program of Record Request for Proposal
- **FY22:** Program of Record Contract Award
- **FY24:** Milestone (MS) B
- **FY28:** MS C
- **FY30:** First Unit Equipped

FLRAA

CONTRACTORS
Bell (Dallas and Fort Worth, TX)
Sikorsky (Stratford, CT)





Future Tactical Unmanned Aircraft System (FTUAS)

PEO Aviation | Redstone Arsenal, AL

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Future Tactical Unmanned Aircraft System (FTUAS) will be the replacement for the currently fielded RQ-7B Shadow in ground maneuver brigade combat teams.

FTUAS will be a low- to medium-altitude aircraft with modern datalinks, Electro-Optical/Infrared (EO/IR) sensors, infrared, laser pointer, designator, and range finder, data encryption, manned-unmanned teaming capabilities and the ability to operate autonomously. Designed with a Modular Open Systems Approach, FTUAS payloads will be easily interchangeable. FTUAS will be readily deployable using Chinook Helicopters and provide commanders more flexibility on the battlefield.

The FTUAS's reduced acoustic signature will improve survivability and reduce the chance of alerting adversaries. FTUAS will also be able to observe heavily protected areas where commanders are hesitant to commit manned aerial platforms. It gives commanders a dedicated, rapidly taskable asset to see critical elements of the battle space and to support the increased demand for immediate situational awareness on the battlefield.

The program is currently in the "technology demonstration" acquisition phase. Brigade Combat Teams are testing four different military purpose non-developmental UAS systems through Fiscal Year (FY) 2021 to inform requirements for the FTUAS.

BENEFIT TO THE SOLDIER

As the replacement for the RQ-7B Shadow, the FTUAS will be the brigade commanders' primary day/night, reconnaissance, surveillance, and target acquisition system. It will allow the commander to see and understand the battle space and gain situational awareness on the battlefield. With runway independence, the system will expand the maneuver commander's ability to conduct aerial reconnaissance where terrain would limit access for ground recon assets.

- Runway independence
- Improved transportability (CH-47 transportable)
- Reduced acoustic signature
- Modular Open Systems Approach for interchangeable payloads
- Modern datalinks, EO/IR sensor, encryption, teaming, and autonomy

SPECIFICATIONS

- TBD based on final system configuration

PROGRAM STATUS

- **FY21:**
  - BCTs are demonstrating four different military purpose non-developmental systems through FY21 to inform requirements ("buy, try, inform")
  - Capability Development Document Approval and Materiel Development Decision

PROJECTED ACTIVITIES

- **FY22:** Competitive prototyping and systems integration

FTUAS

CONTRACTORS
Program of Record: TBD
Demonstration: Arcturus UAV (Petaluma, CA), L3Harris (Ashburn, VA), Martin UAV (Plano, TX), and Textron Systems (Hunt Valley, MD)











Games for Training (GFT)

PEO Simulation, Training and Instrumentation | Orlando, FL

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Games for Training (GFT) program prepares Soldiers and leaders for executing Unified Land Operations by delivering robust training and mission rehearsal capabilities. The program satisfies educational requirements in the Operational, Institutional, and Self-Development Training Domains with a persistent training capability on geo-specific terrain that is relevant with all military platforms and weapon systems.

BENEFIT TO THE SOLDIER

Prepares Soldiers and leaders for military operations in support of Force 2025 and beyond with robust training and mission rehearsal capabilities. The GFT program satisfies Active, National Guard, and Army Reserve educational requirements in the Operational, Institutional, and Self-Development Training Domains. It is a low-overhead, flexible, persistent training capability on geo-specific and geo-typical terrain that is relevant with all military platforms and weapon systems. GFT comprehensively provides training for the individual Soldier through Company-size units. GFT trains higher echelon units and staffs with Tactical Exercises Without Troops.

SPECIFICATIONS

- Provides a scenario editor and robust after-action review capability
- Compatible with the Distributed Interactive Simulation and High Level Architecture to provide integration with live, virtual, and constructive architectures
- Hosts the MilGaming Web Portal that provides various game-based courses and simulations to all Soldiers and military

PROGRAM STATUS

- **FY20:** Technical upgrades of computer equipment

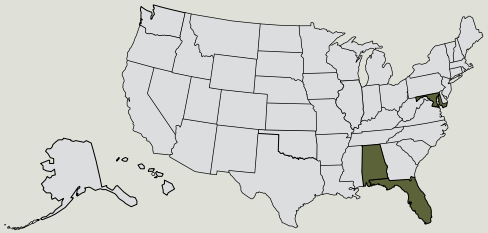
PROJECTED ACTIVITIES

- **FY21:** Continued Fielding

GFT



CONTRACTORS
Agile Defense (Orlando, FL)
Bohemia Interactive Simulations (Orlando, FL)
PC Connection Public Sector Solutions (Rockville, MD)
Pinnacle Solutions, Inc. (Huntsville, AL)







General Fund Enterprise Business System (GFEBS)

PEO Enterprise Information Systems | Fort Belvoir, VA

BSC I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The General Fund Enterprise Business System (GFEBS) is web-based software that manages the U.S. Army's General Fund and is critical in enabling Congressionally mandated auditability. It is the system of record for the U.S. Army for appropriated funds. More than $190 billion a year is committed and obligated through GFEBS to train and ready Soldiers to fight foreign and domestic enemies, modernize the Army's technologies and capabilities, as well as reform the Army culture through cost management and the efficient use of Army funds.

GFEBS employs a commercial-off-the-shelf, web-based Enterprise Resource Planning (ERP) solution to integrate financial, real property, and other asset, cost, and performance data. GFEBS is utilized by more than 35,000 users and standardizes business processes and transactions across the active Army, Army National Guard, and Army Reserve at more than 200 locations in 71 countries. GFEBS provides real-time visibility of transactions, as well as historical data, to provide an integrated, analytic foundation for decision-making. GFEBS also supports the Army's goals of achieving an unqualified opinion on financial statements and providing a cost accounting capability for better-informed decision-making.

The GFEBS implementation is designed to standardize financial management and accounting functions, as well as real property inventory and management. It meets the following objectives:

- Provides accurate, reliable, and timely financial information and integrated functional performance data to Army decision makers
- Integrates financial, cost, and performance data across the Army and beyond
- Improves Army accountability and enables full cost management
- Supports audit readiness and sustainability requirements for the Army and Department of Defense at large
- Integrates with other Army ERP solutions
- Automates integrated business practices and data exchange
- Allows tactical commanders to make informed decisions on a virtually real-time system
- Enables leadership to find cost savings across the Army by eliminating manual processes, retiring legacy systems, and providing the information necessary to compare organizational costs across the enterprise
- Establishes one Army-wide system

GFEBS-Sensitive Activities (SA) is the classified version of the system.

BENEFIT TO THE SOLDIER

GFEBS enables the Army to fully assess the results of its financial and property management performance and costs to facilitate timely decision-making through the use of accurate, transaction-based information across the Active Army, Army National Guard, and Army Reserve.

SPECIFICATIONS

- Improves the Army's business processes, allows for full-cost reporting of the Army's outputs (products and services), and provides an auditable trail
- Accommodates emerging requirements, improves funds balance with Department of the Treasury, streamlines the financial community by sunsetting legacy systems, and improves automated integration of financial data

PROGRAM STATUS

- **3QFY18:** Fielded GFEBS to Defense Health Agency
- **2QFY19:** Implemented Real Property Inventory Management

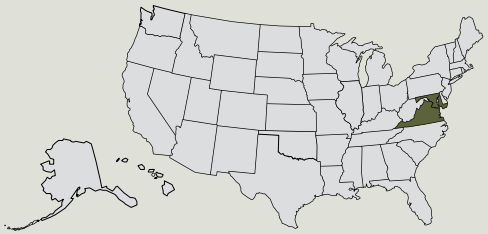
- **2QFY20:**
  - Fielded GFEBS to first wave of U.S. Navy's Bureau of Medicine and Surgery
  - Completed development and data extraction for GFEBS-SA

PROJECTED ACTIVITIES

- **FY20–FY24:**
  - Improve User Experience: Transition platform to speed user transactions and migrate to a Government cloud
  - Continue GFEBS financial management modernization efforts
  - Provide an auditable business environment that builds confidence in the Army's financial management capabilities and a robust financial analytics capability key to senior leader decision-making
  - Transition Sustainment activities to the Army Shared Services Center

GFEBS

CONTRACTORS
Carahsoft Technology Corporation (Reston, VA)
International Business Machines (Bethesda, MD)
Zantech IT Services, Inc. (Tysons Corner, VA)





Global Combat Support System-Army (GCSS-Army)

PEO Enterprise Information Systems | Fort Belvoir, VA

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Global Combat Support System-Army (GCSS-Army) is one program with two components. The first component, GCSS-Army Enterprise Resource Planning (ERP) Solution, is an automated information system that serves as the primary tactical logistics enabler supporting Army and joint transformation for Sustainment. The program re-engineers current business processes to achieve end-to-end logistics and integration with applicable command and control (C2) and joint systems. The second component, Army Enterprise Systems Integration Program (AESIP) Hub, integrates Army business functions by providing a single source for enterprise hub services, master data, and business intelligence. GCSS-Army uses commercial-off-the-shelf ERP software products to support rapid force projection in the battlefield functional areas of arming, fixing, fueling, sustaining, and tactical logistics financial processes.

The existing GCSS-Army Increment 1 baseline modernized functional services in the business enterprise warfighting mission area focused on property book, supply operations, tactical maintenance, logistics management, and associated tactical finance functionality. Increment 2 will provide the Army with modernized logistics and financial capabilities, master data management, Enterprise Aviation (EAVN) Maintenance and Logistics, and Army Pre-Positioned Stock functional capabilities in the Army Enterprise. GCSS-Army Increment 2 will increase the number of active users from approximately 67,500 to approximately 120,000. It will also provide the Army Warfighter with a seamless flow of timely, accurate, accessible, and secure management information that gives combat forces a decisive edge.

BENEFIT TO THE SOLDIER

GCSS-Army will meet the Soldier's need for responsive support at the right place and time, and improve the commander's situational awareness with accurate and responsive information. Now fully deployed, GCSS-Army Increment 1 improves every supply room, motor pool, direct-support repair shop, warehouse, and property book office in the Army, improving efficiency and visibility for users and enabling the Army to be financially auditable. GCSS-Army Increment 2 will give timely and accurate visibility and accountability of materiel across the Army Logistics enterprise.

SPECIFICATIONS

- Replaces five logistics Standard Army Management Information Systems in tactical units and will establish an interface/integration with applicable C2 and joint systems
- Serves as the primary enabler to satisfy the Army's vision of a technologically advanced ERP that manages the flow of logistics, resources, and information to meet the Army's Modernization requirements
- AESIP integrates Army business functions by providing a single source for enterprise hub services, business intelligence and analytics, and centralized master data management across the business domain
- GCSS-Army EAVN integrates the Aircraft Notebook (ACN) data with GCSS-Army via a middleware interface. This capability will populate completed Aviation transactional data in GCSS-Army from the ACN.
- GCSS-Army Business Intelligence/Business Warehouse provides critical reports to units in the areas of tactical warehouse management, property accountability, unit supply, ground and aviation maintenance, and tactical finance

PROGRAM STATUS

- **FY16–FY20:** Total number of users trained is more than 140,000
- **2QFY18:** Increment 1 transitioned into Sustainment

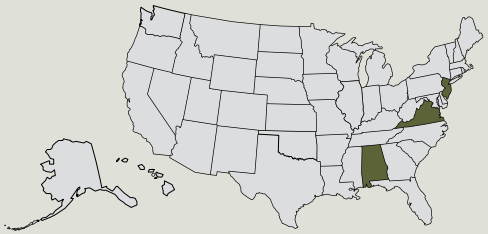
- **1QFY19–2QFY20:** Transitioned Sustainment of GCSS-Army baseline from the contractor lead system integrator to the Government
- **1QFY20:** GCSS-Army Aviation Logistics Wave 1 (EAVN) Release 1A and 1B placed into Production and transitioned Sustainment to Army Shared Services Center

PROJECTED ACTIVITIES

- **FY19–FY22:** Incorporate Enterprise Aviation, enhanced Business Intelligence/Business Warehouse, and Army Prepositioned Stock capabilities into baseline (Increment 2)
- **FY20–FY23:** Incorporate Aviation data from the ACN into GCSS-Army through five Capability Drops
- **FY21–FY22:** Incorporate disconnected operations capability with improved user experience
- **FY20–FY21, FY22–FY23:** GCSS-Army Increment 2 will train and field multiple releases to all Army Aviation units across all three components

GCSS-Army

CONTRACTORS
4M Research (Huntsville, AL)
InSAP (Marlton, NJ)
LMI (Tysons Corner, VA)





Guardrail Common Sensor (GRCS)

PEO Aviation | Redstone Arsenal, AL

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Guardrail Common Sensor (GRCS) is an enduring Special Electronic Mission Aircraft that has been providing critical Aerial Intelligence, Surveillance, and Reconnaissance (AISR) capability for more than 45 years. Guardrail was originally built as a Cold War system to provide indications and warnings against adversaries in both the European and Pacific Theaters of Operation. The Guardrail system has been modernized since inception to maintain relevancy and to enable continued prosecution of emerging threats within the changing battlespace.

GRCS is the Army's current integrated Signals Intelligence (SIGINT) platform that provides near real-time targeting information to tactical commanders and supports full spectrum operations. GRCS is hosted on a fixed-wing aircraft (King Air B200), designated RC-12X, and is the Army's premiere airborne SIGINT-collection and precision targeting location system. The GRCS fleet is comprised of 14 mission aircraft supporting multiple Combatant Commands and five training platforms. The GRCS mission aircraft's Economic Useful Life is 2034.

The GRCS capability produces high-accuracy Communications Intelligence (COMINT) and Electronics Intelligence (ELINT) of common and modern signals of interest for detection, identification, and geolocation of known threats. The Distributed Common Ground System – Army (DCGS-A) Operational Ground Station (OGS) Processing, Exploitation, and Dissemination (PED) capabilities allow for real-time signal exploitation and reporting, ensuring information dominance to commanders.

BENEFIT TO THE SOLDIER

The GRCS SIGINT capabilities enable the exploitation of common and modern signals with precision accuracy. Ground processing software and hardware are part of the Army Tactical SIGINT Baseline (TSB) and are interoperable with DCGS-A OGS and Service Center locations, which reduces the forward deployed footprint significantly. The Warfighter will benefit from planned improvements through Guardrail modernization efforts, including near-term technical refresh efforts for the ELINT and COMINT subsystems utilizing software defined open architecture as well as cockpit avionics upgrades. GRCS is the only AISR platform in the Army's inventory with an ELINT capability that is currently certified for precision long-range fires support.

SPECIFICATIONS

- Integrated COMINT capability to prosecute conventional and modern signals
- Integrated ELINT capability to prosecute non-communication signals
- Enhanced signal exploitation capacities, including detection, identification, classification, and emitter geolocation
- Capabilities for co-operative signal collection and processing via the Joint Interface Control Document (JICD) Theater Net-Centric Geolocation network
- Advanced integrated aircraft cockpit
- Line-of-Sight Tactical Common Data Link capability for communication with ground station

PROGRAM STATUS

- **FY18:**
  - Upgraded COMINT system software to meet urgent Operation Needs Statement (ONS)
  - Continued support to worldwide contingency operations
- **FY18–FY20:**
  - Continued Pilot Situational Awareness Monitor Modification
  - Continued aircraft avionics upgrade to meet military and civilian requirements for communication, navigation, and surveillance to meet Global Air Traffic Management requirements and enhanced Mode 5 Identify Friend-or-Foe capability

- Continued Service Life Extension Program converting all life limited airframe parts to on-condition inspection extending life of airframe
- Software porting on to open architecture chassis (Common SIGINT Chassis – Army (CSC-R))
- Development and procurement of long lead parts in support of Guardrail SIGINT Suite Modification (GSSM), including CSC-Rs, Guardian Eagle Chassis and Processors subsystems, and SS4000 ELINT subsystems

• **FY20:** Completed AN/ARC-220 High Frequency radio modification allowing for Beyond Line-of-Sight communications during ferry operations

Mission Equipment Payload (MEP) Updates:

• **FY17–FY20:** Design, develop, and deploy the Light Saber Electronic Warfare Quick Reaction Capability on two platforms
• **FY18:** Awarded contract for ELINT subsystem upgrades on two platforms to improve performance and address obsolescence issues
• **FY19–FY20:**
  - Awarded the Communications High-Accuracy Location Subsystem-Software Defined (CHALS-SD) software porting effort onto the CSC-R
  - Developed, tested, and deployed capabilities addressing various United States Forces Korea ONS
  - Awarded various hardware procurement contracts for long lead components including CSC-Rs, Guardian Eagle subsystems, and SS4000 ELINT subsystems
• **FY20:** Awarded the JICD ELINT effort for the SS4000 subsystem

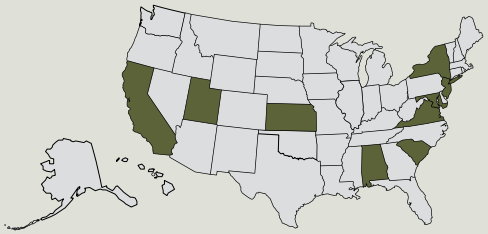
PROJECTED ACTIVITIES

• **FY20–FY23:**
  - GSSM on six platforms
  - Enhances Situational Awareness replaced with COMINT Core in the CSC-R
  - CHALS-C replaced with CHALS-SD in the CSC-R
  - Guardian Eagle/XMidas replaced with newer version of RF Chassis and Processor
  - HBC Data Processing Unit replaced with CSC-R
  - Advanced Quick Look ELINT subsystem replaced with SS4000
  - Installation of a Network Time Server to support MEP
  - Update the ground software in the TSB
  - GSSM Operations and Sustainment:
    • Technical and Operator Manuals updates/development
    • Training material (and simulator) updates/development
    • Spare parts Procurement

GRCS

CONTRACTORS

AASKI Technologies: A MAG Aerospace Company (Tinton Falls, NJ)
Adams Communication & Engineering Technology, Inc. (Waldorf, MD)
Argon ST: A Boeing Company (Mountain View, CA)
L3 Communications Systems West (Salt Lake City, UT)
Lockheed Martin (Owego, NY)
Northrop Grumman Information Technology, Inc. (Carson, CA)
Northrop Grumman Mission Systems (Sacramento, CA)
Northrop Grumman Corporation (Herndon, VA)
Sierra Nevada Corporation Electronic and Information Systems (Los Gatos, CA)
Sierra Nevada Corporation Integrated Mission Systems (Hagerstown, MD)
Steven Aerospace and Defense Systems (Greenville, SC)
Systems Engineering Solutions, Inc. (Huntsville, AL)
Textron Aviation (Wichita, KS)
Valley Tech Systems (Folsom, CA)
Zeta Associates Inc. (Fairfax, VA)







Guided Multiple Launch Rocket System (GMLRS) Dual-Purpose Improved Conventional Munition/Unitary/ Alternative Warhead

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

FMS procurement activities underway

DESCRIPTION

Guided Multiple Launch Rocket System (GMLRS) is a surface-to-surface system used to attack, neutralize, suppress, and destroy targets using indirect precision fires up to 70-plus kilometers (km). GMLRS munitions have greater accuracy than ballistic rockets with a higher probability of kill and a reduced logistics footprint. The current GMLRS family of munitions consists of three fielded variants: Dual-Purpose Improved Conventional Munition and the Alternative Warhead variants to service area targets; and the Unitary variant with a single 200-pound-class high-explosive charge to service point targets with low collateral damage. GMLRS is employed with the M270A1 Multiple Launch Rocket System and M142 High Mobility Artillery Rocket System launchers.

GMLRS rockets were utilized extensively in Operation IRAQI FREEDOM/Operation ENDURING FREEDOM and continue to provide field artillery support in Overseas Contingency Operations. Development efforts include modifying GMLRS to extend the maximum range and incorporating a side-mounted proximity sensor to improve area effects.

BENEFIT TO THE SOLDIER

GMLRS provides the Warfighter the ability to engage both point and area targets with precision.

SPECIFICATIONS

- Length: 3,937 mm
- Diameter: 227 mm
- Reliability: 92% (threshold) and 95% (objective)
- Range: 15 km to 70-plus km demonstrated
- Each launch pod/container holds six rockets

PROGRAM STATUS

- **2QFY18:** Full-Rate Production (FRP) 13 Contract Award
- **2QFY19:** FRP 14 Contract Award; Insensitive Munitions Propulsion System Production cut-in decision
- **2QFY20:** FRP 15 Contract Award

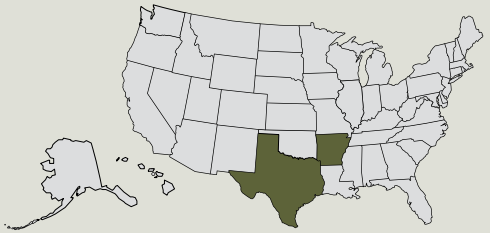
PROJECTED ACTIVITIES

- **2QFY22:** Extended Range GMLRS Modification Production Contract cut-in

GMLRS



CONTRACTORS
Lockheed Martin (Grand Prairie, TX, and Camden, AR)





Handheld, Manpack, and Small Form Fit (HMS)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None today; in process for both Manpack variants

DESCRIPTION

Handheld, Manpack, and Small Form Fit (HMS) acquires affordable, networking tactical radio systems that meet U.S. Army operational requirements while meeting the needs of the Marine Corps, Navy, Air Force, and Special Operations Command. HMS radio systems are interoperable within current forces and provide extended voice and data communications to the tactical edge. These products provide simultaneous voice, data, and video communications as well as increased throughput using networking waveforms such as Trellisware™ Waveform (TSM™). They are interoperable with legacy systems and end-user devices and provide tactical satellite communications through both legacy and Mobile User Objective Systems (MUOS). The HMS product family of networking tactical radio systems includes the one-channel Rifleman Radio, the two-channel Manpack Radio, two-channel Leader Radio, and recent addition of the Single Channel Data Radio (SCDR) in support of the Integrated Visual Augmentation System (IVAS).

BENEFIT TO THE SOLDIER

HMS products provide joint, interoperable connectivity to the tactical edge and to the most disadvantaged Warfighter with an on-the-move, at-the-halt, stationary line-of-sight, and beyond-line-of-sight capability for both dismounted personnel and platforms. The radios are scalable and compliant with modular software communications architecture, enable net-centric operations, operate multiband and multimode, and deliver reliable, secure tactical communications.

SPECIFICATIONS

- **Rifleman Radio:** One-channel – Soldier Radio Waveform (SRW)
- **Generation 1 Manpack Radio:** SRW, Single Channel Ground and Airborne (SINCGARS), Ultra High Frequency Satellite Communications, and legacy waveforms
- **Leader Radio:** Two channels – SINCGARS and TSM™
- **Generation 2 Manpack Radio:** TSM™, SINCGARS, MUOS, Satellite Communications, Integrated Waveform, Soldier Radio Waveform, Ultra High Frequency Satellite Communications, and legacy waveforms
- **Single Channel Data Radio:** Commercial single-channel data-only radio solution

PROGRAM STATUS

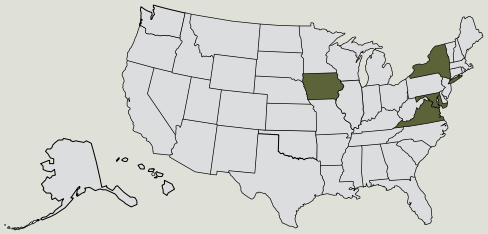
- **3QFY19:** Low-Rate Initial Production (LRIP) #2 for Leader Radio and Manpack Radio
- **4QFY19:** Configuration Steering Board addition of SCDR in support of IVAS
- **2QFY20:** LRIP #3 for Leader Radio and Manpack Radio

PROJECTED ACTIVITIES

- **2QFY21:** Manpack and Leader Radio Initial Operational Test and Evaluation
- **3QFY21 and beyond:**
  - Full-Rate Production (FRP) buys for Manpack and Leader Radios, yearly
  - Product Verification Test with additional, roadmap capability adds
- **4QFY21:** FRP for Manpack and Leader Radio

HMS

CONTRACTORS
Leader Radio: L3Harris (Rochester, NY) and Thales Defense & Security, Inc. (Clarksburg, MD)
Manpack Radios: Collins Aerospace (Cedar Rapids, IA), General Dynamics (Reston, VA), and L3Harris (Rochester, NY)
Single Channel Radios: General Dynamics (Reston, VA)

















Heavy Equipment Recovery Combat Utility Lift and Evacuation System (HERCULES) Improved Recovery Vehicle — M88A2

PEO Ground Combat Systems | Detroit Arsenal, MI



ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Australia, Egypt, Kuwait, Iraq, Lebanon, Morocco, Saudi Arabia, Taiwan, and Thailand

DESCRIPTION

The M88A2 Improved Recovery Vehicle Heavy Equipment Recovery Combat Utility Lift and Evacuation System (HERCULES) recovers tanks mired to different depths, removes and replaces tank turrets and power packs, and uprights overturned heavy combat vehicles. The main winch on the M88A2 is capable of a 70-ton, single-line recovery, allowing the HERCULES to provide recovery of the 70-ton M1A2 Abrams tank.

The A-frame boom and hoist winch of the M88A2 can lift 35 tons. The spade can be used to anchor the vehicle when using the main winch and for light earth moving to prepare a recovery area. The M88A2 employs an auxiliary power unit to provide auxiliary electrical and hydraulic power when the main engine is not in operation. It can also be used to slave start other vehicles and to refuel or defuel vehicles. The M88A2 can refuel Abrams tanks from its own fuel tanks.

The M88A2 HERCULES system is currently executing an Engineering Change Proposal (ECP) to modernize the M88A2 to execute single vehicle recovery for the 80-ton heavy combat vehicle. The M88A3 is targeted for production in Fiscal Year (FY) 2023.

BENEFIT TO THE SOLDIER

The HERCULES provides towing, winching, and hoisting to support battlefield recovery operations and evacuation of heavy tanks and other tracked combat vehicles. As such, HERCULES is the recovery workhorse of the Armored Brigade Combat Team.

SPECIFICATIONS

- Crew: Three, plus space for four passengers
- Weight: 70 tons
- Length: 338 inches
- Width: 144 inches
- Height: 127 inches
- Speed (no load): 30 mph
- Speed (with load): 26 mph with 70-ton load
- Cruising Range: 300 miles, 413 gallons
- Boom Lift Height: 25 feet
- Engine: 1,050 horsepower
- Armament: .50 Caliber M2

PROGRAM STATUS

- **4QFY19:**
  - Awarded the Other Transaction Authority for the ECP M88A2 to regain Single Vehicle Recovery (SVR) of the heaviest tracked vehicles
  - Executing prototype development activities to begin Assembly in FY21 supporting Testing in FY22
- **2QFY20:** M88A2 HERCULES completed Fielding and New Equipment Training for Army units in Germany
- **4QFY20:**
  - M88A2 Production (converted from M88A1) ramped up to three per month at the BAE facility in York, Pennsylvania
  - Awarded final M88A2 Production contract to achieve Army Acquisition Objective (AAO) of 933; as of November 2020, 862 M88A2 Produced and 849 Fielded

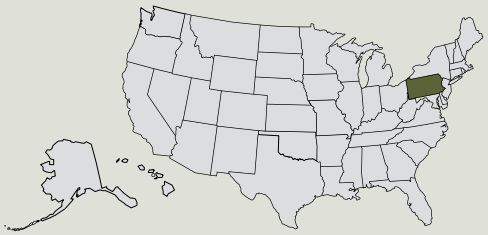
PROJECTED ACTIVITIES

- **FY19–FY23:** Research, Development, Test, and Evaluation SVR ECP development continues with prototype assembly in FY21 and M88A3 Single Vehicle Recovery Prototype testing initiating in FY22 through FY23
- **FY21–FY23:** Engine Reliability Improvement Modification Kit Development with system level testing projected in FY23
- **FY22:** Planning Field Modification execution for Automatic Fire Extinguishing System Update

HERCULES — M88A2

- **FY23:**
  - Expected completion of M88A2 Production at York, Pennsylvania, with AAO of 933
  - Follow-on Other Transaction Agreement M88A3 Production award expected

CONTRACTORS
BAE Systems (York, PA)







Heavy Expanded Mobility Tactical Truck (HEMTT)/ HEMTT Extended Service Program (ESP)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Worldwide sales

DESCRIPTION

The Heavy Expanded Mobility Tactical Truck (HEMTT) consists of a family of 4-axle, 8-wheel drive tactical vehicles, including multiple cargo, tanker, tractor, wrecker, and load handling variants. The Cargo variants carry up to 11-ton payloads, while the Load Handling System (LHS) variant can carry flat racks and International Organization for Standardization containers up to 13 tons. The Tanker has a 2,500-gallon bulk fuel capacity, and the Wrecker provides lift tow and flat tow capability for the Army's wheeled vehicle fleet. There are two tractor variants in the HEMTT family: one for towing engineer equipment, with a Gross Vehicle Weight Rating (GVWR) of 151,000 pounds and one for towing PATRIOT semitrailers with a Gross Combination Weight Rating (GCWR) of 109,000 pounds.

The latest generation of HEMTTs, the A4 vehicle model, has significant upgrades from the predecessor A2 and Basic HEMTTS, including a common cab with the Palletized Load System (PLS) A1, appliqué armor protection together with A-cab having integral under cab protection and provisions for mounting the armor B-kit, an improved powertrain (engine and transmission), an anti-lock braking system, traction control, updated electrical system, climate control, and air ride suspension.

Older Basic and A2 HEMTT models are being updated to the latest A4 configuration through the HEMTT Extended Service Program (ESP)/HEMTT Recapitalization (RECAP), a RECAP program that converts high-mileage, older-version HEMTT trucks into the current A4 production configuration with a zero mile new vehicle warranty. HEMTT RECAP is a critical element to balance configurations and modernize the fleet. The HEMTT A4 has improved survivability with add-on underbody armor, as well as top and side protection (both common to the PLS A1). This program produces a like-new vehicle with a full new vehicle warranty through converting the HEMTT A0/A2 into a HEMTT A4 armor-capable truck.

BENEFIT TO THE SOLDIER

The HEMTT's primary mission is to deliver high tonnages of supplies (all classes) to combat and combat support units across all tactical mobility levels as far forward as mission, enemy, troops, terrain, and time and civil considerations allow.

SPECIFICATIONS

- **HEMTT Family:**
  - Size: 8×8 chassis with up to 8-wheel drive capability
  - GVWR: Ranges from 64,000 to 105,000 pounds
  - Engine: Caterpillar C15 (15.2 L, 500 horsepower)
  - Transmission: Allison 4500 SP (5-speed automatic)
  - Long-Term Armor Strategy B-Kit Ready
  - Light-emitting diode headlights
  - Common cab with PLS A1
  - Max towing speed 62 mph with full payload on flat terrain
- **M985 Cargo:**
  - GVWR: 70,000 pounds (78,500 with armor)
  - Crane: Grove 5,400 pounds at 16.5 feet
- **M977 Cargo:**
  - GVWR: 64,000 pounds (72,500 with armor)
  - Crane: Grove 2,500 pounds at 19 feet
- **M985A4 GMT:**
  - GVWR: 64,000 pounds (72,500 with armor)
  - Crane: Hiab 4,500 pounds at 20.5 feet
- **M1120 LHS:**
  - GVWR: 68,000 pounds (76,500 with armor)
  - LHS: 26,000 pounds (including flat rack)
- **M978A4 Tanker:**
  - GVWR: 64,000 pounds (72,500 with armor)
  - Bulk fuel capacity: 2,500 gallons
- **M984A4 Wrecker:**
  - GVWR: 97,000 pounds (105,500 with armor)
  - GCWR: 114,500 pounds (161,000 pounds with armor)
  - Crane: Grove 14,000 pounds at 9 feet
  - Recovery Winch: 60,000 pounds

- Retrieval System: 25,000 pounds
- **M983A4 Patriot Tractor:**
  - GCWR: 109,000 pounds
  - Fifth wheel: 21,000 pounds; 3.5-inch kingpin
- **M983A4 Light Equipment Transporter:**
  - GCWR: 151,000 pounds
  - Fifth wheel: 40,000 pounds; 3.5-inch kingpin
  - Recovery Winch: 45,000 pounds

PROGRAM STATUS

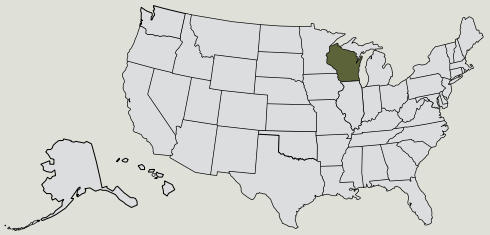
- **FY18–FY20:**
  - Continue to produce and field ESP HEMTTS to the Active Army, National Guard, Reserve, and Pre-Positioned Stocks

PROJECTED ACTIVITIES

- **FY21–FY25:**
  - Continue to produce ESP HEMTTs through FY23 and field recapitalized ESP HEMTTs through FY25
  - Continue to work with the requirements community and Army G-8 on a modernization strategy and next-generation replacement of the aging HEMTT fleet

HEMTT

CONTRACTORS
Oshkosh Defense (Oshkosh, WI)





HELLFIRE Family of Missiles

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Laser HELLFIRE: Australia, Bahrain, Czech Republic, Egypt, France, Greece, India, Indonesia, Iraq, Israel, Japan, Kuwait, Morocco, Netherlands, Pakistan, Qatar, Saudi Arabia, Singapore, Spain, Sweden, Taiwan, Tunisia, United Arab Emirates, and United Kingdom

Direct Commercial Sales: Netherlands, Norway, Saudi Arabia, Turkey, and United Kingdom

Longbow HELLFIRE: India, Israel, Japan, Kuwait, Morocco, Singapore, Taiwan, and United Arab Emirates

Direct Commercial Sales: United Kingdom

DESCRIPTION

The AGM-114 HELLFIRE Family of Missiles includes the HELLFIRE II and Longbow HELLFIRE Missiles. HELLFIRE II is a precision strike, Semi-Active Laser (SAL)-guided missile and is the principal air-to-ground weapon for the U.S. Army AH-64 Apache, MQ-1C Gray Eagle Unmanned Aircraft System (UAS), Special Operations aircraft, Marine Corps AH-1W Super Cobra, and Air Force Predator and Reaper UAS.

The SAL HELLFIRE II missile is guided by laser energy reflected off the target. It has three warhead variants: a dual-warhead, shaped-charge, high-explosive anti-tank capability for armored targets (AGM-114K); a blast fragmentation warhead for urban, patrol boat, and other "soft" targets (AGM-114M); and a metal-augmented charge warhead (AGM-114N) for urban structures, bunkers, radar sites, communications installations, and bridges.

Beginning in 2012, a HELLFIRE II multipurpose warhead variant (AGM-114R) became available to the Warfighter and allows for selection of warhead effects corresponding to a specific target type. The AMG-114R took the place of the K/M/N warhead capability and can be launched from Army rotary-wing and UAS platforms. It also provides the pilot with increased operational flexibility.

The Longbow HELLFIRE (AGM-114L) is a precision strike missile using Millimeter Wave (MMW) radar guidance instead of the HELLFIRE II's SAL. It is the principal anti-tank system for the AH-64D Apache Longbow helicopter and uses the same anti-armor warhead as the HELLFIRE II. The MMW seeker provides beyond line-of-sight, fire-and-forget capability, as well as the ability to operate in adverse weather and battlefield obscurants.

BENEFIT TO THE SOLDIER

HELLFIRE provides the Warfighter with an air-to-ground, point-target precision strike capability to defeat advanced armor and an array of traditional and nontraditional targets.

SPECIFICATIONS

- Diameter: 7 inches
- Weight: 99.8–107 pounds
- Length: 64–69 inches
- HELLFIRE II AGM-114R maximum range:
  - Direct fire: 7.1 km
  - Indirect fire: 8 km
- Minimum range: 0.5–1.5 km

PROGRAM STATUS

- **FY18–FY20:**
  - HELLFIRE II AGM-114R missiles procured annually to replace combat expenditures
  - K, M, and N Models are no longer in Production

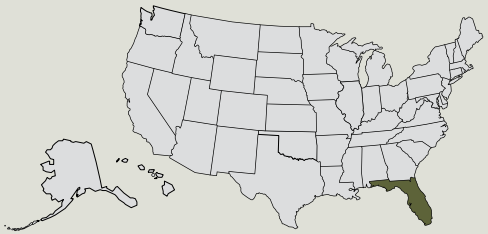
PROJECTED ACTIVITIES

- **FY21–FY25:**
  - Laser HELLFIRE to continue in Production
  - Longbow HELLFIRE to continue Sustainment activities

HELLFIRE



CONTRACTORS
Lockheed Martin (Orlando, FL)







High Mobility Artillery Rocket System (HIMARS) — M142

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Jordan, Poland, Romania, Singapore, and United Arab Emirates

DESCRIPTION

The M142 High Mobility Artillery Rocket System (HIMARS) is a full-spectrum, combat-proven, all-weather, 24/7, lethal and responsive, wheeled precision strike weapons system. HIMARS is a C-130 air transportable wheeled launcher mounted on 5-ton Family of Medium Tactical Vehicles XM1140A1 truck chassis organic/assigned to Field Artillery (FA) Brigades. The current HIMARS includes an increased crew protection armored cab. HIMARS supports an expeditionary, lethal, survivable, and tactically mobile force. It will launch all Multiple Launch Rocket System (MLRS) Family of Munitions rockets and missiles. The HIMARS carries one launch pod containing either six Guided MLRS (GMLRS)/MLRS rockets or one Army Tactical Missile System (ATACMS) missile.

HIMARS is designed to support joint early and forced entry expeditionary operations with high-volume destructive, suppressive, and counter-battery fires. When firing GMLRS-Unitary precision rockets, HIMARS can achieve ranges of 70-plus kilometers, attacking the target with low-collateral damage, enabling danger-close fires (within 200 meters) in support of friendly troops in contact, as well as engaging high-valued point targets in open, urban, and complex environments. Development efforts include establishing a Common Fire Control System (CFCS) between the HIMARS and MLRS launchers. The Army Fleet Expansion effort will increase the size of the HIMARS fleet.

BENEFIT TO THE SOLDIER

The HIMARS launcher provides 24-hour, all-weather, lethal, close- and long-range precision rocket, and missile fire support for joint forces, early-entry expeditionary forces, contingency forces, and FA brigades supporting Brigade Combat Teams. HIMARS is rapidly deployable by C-130, quickly enhancing combat effectiveness.

SPECIFICATIONS

- Empty weight: 29,800 pounds
- Combat loaded weight: 35,800 pounds
- Max speed: 94 km per hour
- Max cruising range: 483 km
- Ordnance options: All current and future MLRS rockets and current ATACMS missiles

PROGRAM STATUS

- **4QFY18:** Contract award for 24 HIMARS (Definitized 4QFY19)
- **4QFY19:** Contract award for 17 HIMARS

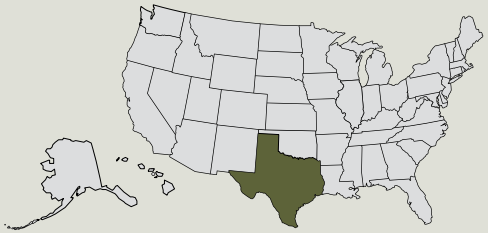
PROJECTED ACTIVITIES

- **3QFY21:** Contract award for 5 HIMARS
- **4QFY21:**
  - Field 3-27 FA
  - CFCS Production
- **1QFY22:** Field 3X9 configuration to 3-27 FA
- **3QFY22:** Contract award for 11 HIMARS (Universal Fire Control System)
- **3QFY23:** Contract award for 27 HIMARS (CFCS)

HIMARS — M142



CONTRACTORS
Lockheed Martin (Grand Prairie, TX)







High Mobility Engineer Excavator Type I and Type III (HMEE)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

HMEE-I: Israel and New Zealand

Original Equipment Manufacturer (OEM) Direct Sales: Australia, Germany, Sweden, United Arab Emirates, and United Kingdom

DESCRIPTION

The High Mobility Engineer Excavator Type I (HMEE-I) is a nondevelopmental military vehicle fielded to the Army's Brigade Combat Teams (BCT) and other selected engineering units. Tasks performed by the HMEE-I and -III include repair and improvement of roads, trails, bridges, and airfields.

The high mobility of the HMEE-I provides earth-moving machines capable of maintaining pace with the Army's current combat systems. All HMEE-I vehicles will be capable of accepting armor in the form of an armor cab (Crew Protection Kit), are C-130 transportable without armor, and diesel driven. HMEE-I replaces Small Emplacement Excavators in BCT and HMEE-I in Stryker BCT. The HMEE-I is employed in Infantry BCT, Armored BCT, Stryker BCT, Multi-Role Bridge Companies, and Engineering Support Companies.

The HMEE-III Backhoe Loader is a commercial-off-the-shelf backhoe loader with military modifications to include an armored cab designed for units that are relatively stationary and do not require speed and rapid deployability. The HMEE-III is used by Combat Support Brigades in general construction tasks. It is employed by Horizontal and Vertical Construction Units, and other non-engineering units such as Military Police and Quartermaster Units.

BENEFIT TO THE SOLDIER

HMEE clears rubble and debris from routes and airfields. It provides survivability positions for critical assets like communication, control, radar, and logistics, and improves ford sites.

SPECIFICATIONS

- **HMEE-I:**
  - Maximum Speed: 60 mph on improved roads; 25 mph on secondary roads
  - Lift and Load: 1.5 cubic yards
  - 13 total attachments
- **HMEE-III:**
  - Maximum Speed: 60 mph on improved roads; 7 mph off roads
  - Weight: Approximately 18,700 pounds

PROGRAM STATUS

- **FY18–FY20:** HMEE-I Production and Fielding
- **FY20:** HMEE-I Follow-on Production Contract Award incorporating Electric-over-Hydraulic technology

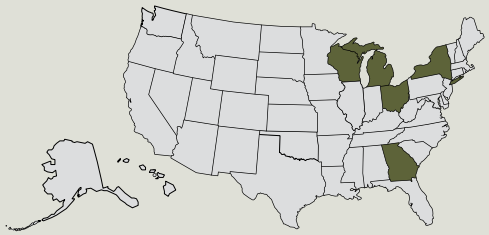
PROJECTED ACTIVITIES

- **FY20–FY24:** Continue HMEE-I Production and Fielding



HMEE

CONTRACTORS
HMEE-I OEM: JCB (Pooler, GA)
Armor: ADSI (Hicksville, NY) and JCB (Pooler, GA)
Logistics: XMCO Inc. (Warren, MI)
HMEE-III Backhoe Loader OEM: Case New Holland (Racine, WI)
Armor: BAE Systems (Columbus, OH)
Logistics: XMCO Inc. (Warren, MI)





High Mobility Multipurpose Wheeled Vehicle (HMMWV)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Afghanistan, Albania, Argentina, Bahrain, Bosnia, Bulgaria, Burundi, Chile, Colombia, Croatia, Czech Republic, Djibouti, Ecuador, Egypt, El Salvador, Ethiopia, Georgia, Hungary, Iraq, Israel, Jordan, Kenya, Kosovo, Latvia, Lebanon, Macedonia, Mauritania, Mexico, Nepal, Philippines, Poland, Romania, Saudi Arabia, Serbia, Slovenia, Syria, Taiwan, Tunisia, Uganda, Ukraine, United Arab Emirates, and Yemen

DESCRIPTION

The High Mobility Multipurpose Wheeled Vehicle (HMMWV) is a lightweight, highly mobile, high-performance, diesel-powered, four-wheel drive, air-transportable, and air-droppable family of tactical vehicles. The HMMWV supports combat and combat service support units with a versatile, mission-configurable, tactical wheeled vehicle.

The U.S. Army recognizes the tactical importance of the HMMWV fleet and the enduring requirement to maintain a relevant, capable fleet to support the Army enterprise in conjunction with the Joint Light Tactical Vehicle (JLTV). The Army will determine the best method to sustain the HMMWV fleet for the next 30 years to improve safety, increase operational readiness, and mitigate obsolescence while maintaining an average fleet age of 15 years or less.

The Army continues to execute Congressionally directed funding to recapitalize and replace various HMMWV variants in the Army Reserve and National Guard. In 2018, the Army began incorporating Anti-lock Brake System/Electronic Stability Control (ABS/ESC) in every HMMWV chassis. Using both Congressionally directed funding and Army base funds, the Army is modernizing the HMMWV Ambulance fleet (all components) through a Public/Private Partnership between AM General and Rock Island Arsenal (RIA). In Fiscal Year (FY) 2020, the Army will also move to recapitalize an initial quantity of nonarmored HMMWVs — extending their service life and adding performance and safety improvements like ABS/ESC through production, recapitalization, and field retrofits.

BENEFIT TO THE SOLDIER

With configurations to meet multiple mission types and roles, the HMMWV is well suited to meet the needs of Soldiers in several situations. Its high power-to-weight ratio, high ground clearance, and four-wheel drive are designed for agility and mobility in difficult terrain.

SPECIFICATIONS

- Gross vehicle weight: 11,500 pounds
- Wheelbase: 130 inches
- Engine: General Engine Products V8, 6.5-liter turbocharged diesel, 190 horsepower at 3,400 revolutions per minute
- Fuel Capacity: 25 gallons
- Payload: 3,350 pounds
- Maximum speed: 70 mph

PROGRAM STATUS

- **1QFY14–3QFY21:** M997A3 Ambulance Production at RIA and Public Private Partnership with AM General
- **4QFY18:** ABS/ESC integration on all new Production and Recap HMMWVs
- **4QFY20–FY23:** Nonarmored HMMWV Modernization

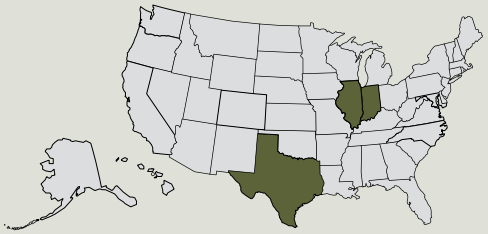
PROJECTED ACTIVITIES

- **FY21:** Begin ABS/ESC Modification Work Order retrofits on fielded HMMWVs

HMMWV



CONTRACTORS
AM General (Mishawaka, IN)
New Production Ambulances: Rock Island Arsenal Joint Manufacturing & Technology Center (Rock Island, IL)
Lead Government Integrator: Red River Army Depot (Red River, TX)







Hydra-70 2.75-Inch Rocket Systems

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

21 countries, including Egypt, India, Iraq, and Japan

DESCRIPTION

The Hydra-70 Rocket System of 2.75-inch air-launched rockets is employed by tri-service and special operating forces on both fixed- and rotary-wing aircraft and is inherently immune to countermeasures. This highly modular rocket family incorporates several different mission-oriented warheads for the Hydra-70 variant, including high-explosive, anti-personnel, multipurpose submunition, red phosphorus smoke, flechette, training, visible-light illumination flare, and infrared illumination flare.

BENEFIT TO THE SOLDIER

Hydra provides the Warfighter with an air-to-ground suppression, smoke screening, illumination, and direct and indirect fires capability to defeat area, materiel, and personnel targets at close and extended ranges. This Advanced Precision Kill Weapon System II guidance package incorporates precision into the current Hydra-70 weapon system by providing increased stowed kills and point target accuracy while providing capability for low-collateral damage engagements against lightly armored and soft point targets.

SPECIFICATIONS

- Diameter: 2.75 inches
- Weight: 23–27 pounds (warhead dependent)
- Length: 55–70 inches (warhead dependent)
- Range: 300–8,000 meters
- Velocity: 700-plus meters per second
- Area suppression: No precision

PROGRAM STATUS

- **FY16–FY20:** In Production

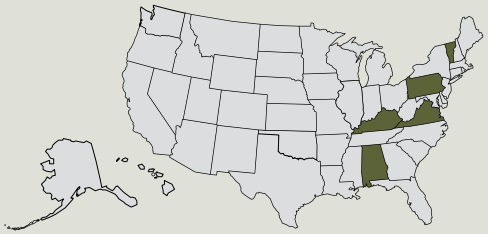
PROJECTED ACTIVITIES

- **FY21–FY24:** Continue Production

Hydra-70 2.75-Inch Rocket Systems



CONTRACTORS
Fin and Nozzle: General Dynamics Ordnance and Tactical Systems (Anniston, AL)
Grain: BAE Systems (Radford, VA)
Prime System: General Dynamics (Burlington, VT)
Shipping Container (Fastpack): CONCO (Louisville, KY)
Warhead Fuses: Action Manufacturing (Philadelphia, PA)





Improved Target Acquisition System (ITAS)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Sales to multiple foreign customers

DESCRIPTION

The Improved Target Acquisition System (ITAS) provides long-range sensor and anti-armor/precision assault fire capabilities, enabling the Soldier to shape the battlefield by detecting and engaging targets at long range with Tube-Launched, Optically Tracked, Wireless-Guided (TOW) Missiles; or directing the employment of other weapon systems to destroy those targets. ITAS is a multipurpose weapon system, used as a reconnaissance, surveillance, and target acquisition sensor.

ITAS's second-generation forward-looking infrared sensors double the long-range surveillance of its predecessor, the M220 TOW system. ITAS offers improved hit probability with aided target tracking, improved missile flight software algorithms, and an elevation brake to minimize launch transients. The system includes an integrated Far-Target Location (FTL) capability (day-and-night sight with laser rangefinder) via a position attitude determination subsystem, a fire-control subsystem, a lithium-ion battery power source, and a modified traversing unit. Soldiers can also detect and engage long-range targets with TOW Missiles or, using the ITAS FTL capability, direct other fires to destroy them. The FTL capability consists of a position attitude determination subsystem that provides the gunner with their own Global Positioning System (GPS) location and a 10-digit grid location to their target using differential GPS. The ITAS can fire all versions of the TOW Family of Missiles.

The ITAS Image Enhancement Modification Kit reduces operator workload by optimizing the image presented to the gunner through electronic processing. Electronic focus, image stabilization, and other processing techniques ensure that the image presented is optimized for the environment without manual manipulation of the various adjustment settings. ITAS operates from the High Mobility Multipurpose Wheeled Vehicle, the dismount tripod platform, and U.S. Army Stryker anti-tank guided missile vehicles. ITAS is one of the Infantry's precision weapons used in combat engagements.

BENEFIT TO THE SOLDIER

ITAS provides long-range anti-armor/precision assault fire capabilities to the Army's Infantry and Stryker Brigade Combat Teams as well as to the Marine Corps. ITAS is a major product upgrade that greatly reduces the number of components, minimizing logistics support and equipment requirements. Built-in diagnostics and improved interfaces enhance target engagement performance.

SPECIFICATIONS

- Long-range surveillance (second-generation forward-looking infrared)
- Long-range, lethal, heavy, close combat and precision assault fires
- Laser rangefinder (10 km)/Aided Target Tracker
- Fires all versions of TOW Missile
- Automatic boresight capability
- FTL capability
- Network Lethality capability
- Embedded training and Multiple Integrated Laser Engagement System
- 16-hour Silent Watch capability

PROGRAM STATUS

- **FY20:**
  - Modified ITAS (MITAS) prototype hardware integrated and component-level testing completed
  - Common Software Version 3.1 Formal Qualification and system-level testing completed
  - Awarded contract for Foreign Military Sales Production

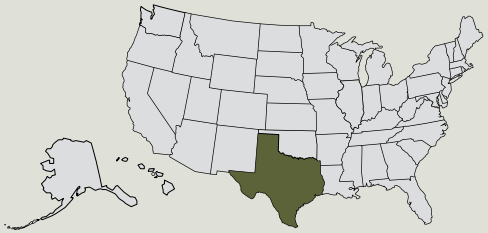
ITAS

PROJECTED ACTIVITIES

- **FY20–FY22:** MITAS Commonality Program funded to bring all Stryker Anti-Tank Guided Missile vehicles' MITAS to current M41A7 ITAS Configuration
- **FY21:** Begin Fielding of ITAS Common Software Version 3.1



CONTRACTORS
Raytheon (McKinney, TX)



Indirect Fire Protection Capability (IFPC) Increment 2

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Indirect Fire Protection Capability Increment 2 (IFPC Inc 2) System is a mobile, ground-based weapon system designed to defeat cruise missiles (CM), unmanned aircraft systems (UAS), and rocket, artillery, and mortars (RAM).

IFPC Inc 2 will consist of a launcher, an interceptor, and an all up round magazine to support the Cruise Missile Defense (CMD) Counter-UAS (C-UAS), and Counter-RAM (C-RAM) missions. The system will use the U.S. Army's Integrated Air and Missile Defense Battle Command System as its Mission Command and will integrate the Sentinel Radar as its sensor.

IFPC Inc 2 Product Office is also responsible for procuring and fielding two batteries of the Iron Dome Defense System – Army as an interim CMD capability.

BENEFIT TO THE SOLDIER

IFPC Inc 2 provides fixed and semi-fixed sites to defeat subsonic CMD, UAS, and RAM.

SPECIFICATIONS

- Provides 360-degree protection
- Provides ability to simultaneously engage threats arriving from different azimuths
- Uses an open architecture that enables future missile integration

PROGRAM STATUS

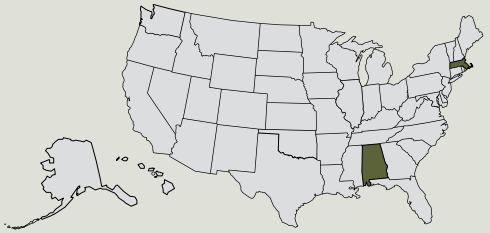
- **3QFY20:**
  - Virtual Industry Day
  - Bailment Agreements signed
- **4QFY20:** Virtual Kick-off Meeting

PROJECTED ACTIVITIES

- **1QFY21:** Middle Tier Acquisition Decision Memorandum
- **3QFY21:** IFPC Inc 2 Shoot-Off Demonstration
- **4QFY21:** Prototype Other Transaction Agreement Award
- **2QFY24:** Milestone C Decision

IFPC Inc 2

CONTRACTORS
Dynetics (Huntsville, AL)
Raytheon Technologies (Waltham, MA)



PRE-DECISIONAL

Infantry Squad Vehicle (ISV)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Infantry Squad Vehicle (ISV) is a new, lightweight, all-terrain troop carrier designed to modernize U.S. Army Infantry Brigade Combat Teams (BCTs). It is based on the Chevrolet Colorado ZR2 architecture, deriving 90% of its parts from commercial-off-the-shelf components.

The ISV program provides Army Infantry BCTs an additive lightweight vehicle to move Soldiers and their equipment quickly over complex and difficult cross-country terrain. ISV is the Program of Record intended to provide Ground Mobility Vehicle capabilities for the Army.

Based on the current funding profile and fielding schedule, the Army will field ISVs to 11 Infantry BCTs for a total of 649 ISVs by Fiscal Year (FY) 2025 (Army Procurement Objective).

BENEFIT TO THE SOLDIER

ISVs provide greater mobility to Infantry BCTs. They are designed to move across restrictive terrain, allowing Soldiers to close on an objective with less fatigue and greater readiness. The Army can deliver the vehicle to the field by airdrop or helicopter, increasing the flexibility of Soldiers on the move.

SPECIFICATIONS

ISV's basic operational capabilities include:

- Nine-man squad carrying capability
- Payload of 3,200 pounds
- External sling load by a UH-60 Black Hawk helicopter
- Internal load/external lift by CH-47 Chinook helicopter
- Low-velocity air drop by fixed-wing C-130 or C-17 transport aircraft
- Exceptional mobility over all terrains

PROGRAM STATUS

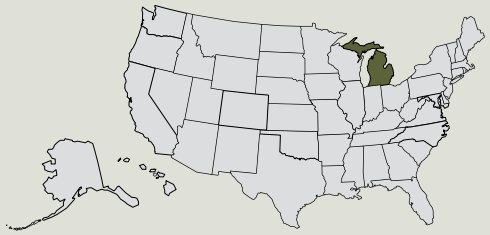
- **FY20:** Production Contract awarded

PROJECTED ACTIVITIES

- **FY21:**
  - Production Qualification Testing
  - Transportability Certification
  - Initial Operational Test and Evaluation
  - First Unit Equipped

ISV

CONTRACTORS
General Motors Defense, LLC (Detroit, MI)



Installation Information Infrastructure Modernization Program (I3MP)

PEO Enterprise Information Systems | Fort Belvoir, VA

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Installation Information Infrastructure Modernization Program (I3MP) provides core infrastructure for the U.S. Army, including system and technical facilities, protected distribution systems, and site preparation for other support equipment.

Critical capabilities provided by I3MP include:

- Modernized outside plant and fiber-optic infrastructure to support strategic network communications, enabling implementation of upgrades to the Army network, and facilitating information dominance to the Army Warfighter
- Upgraded Network Enterprise Center-managed Ethernet switches on all Army bases, posts, camps, and stations
- Modernized and optimized Army circuits and voice systems and decommissioned legacy voice systems
- Life cycle replacement of existing multimedia, transport, and network management systems; upgrades to existing operational transport systems; and support for expansion of existing transport systems, fiber-optic cable, and network management systems
- Enhanced capabilities for operational and wartime missions through standardization and sustainment of Army Theater, Corps, and Division home station operations center infrastructure
- Unified and secure transport connection across the Wide Area Network to the distant end technical controls; and interfacing with Installation Campus Area Network (ICAN) infrastructure for transport to the local area enterprise and production networks

BENEFIT TO THE SOLDIER

I3MP enables the Warfighter through information technology, infrastructure modernization, and life cycle management of the Army's worldwide ICANs (voice, video, and data). The program standardizes Army installation network architectures, increases network bandwidth/throughput, flattens the network, and increases network security.

Commanders have the flexibility to distribute their various warfighting functions between deployed and garrison locations, and among the different rooms within command centers. These distributed locations can maintain situational awareness and simultaneously view required information using mission command and intelligence systems.

SPECIFICATIONS

- Designs are applicable to the specific site, per the site's requirements.

PROGRAM STATUS

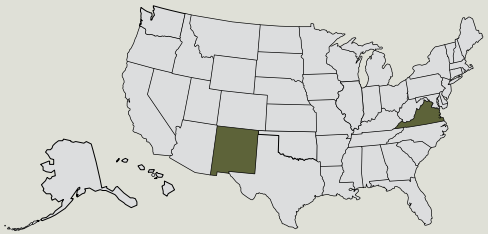
- **FY19:** Base Other Procurement, Army funding line for I3MP was in the $221 million range
- **Current:** I3MP has more than 70 current contracting actions affecting most Army bases, posts, camps, and stations, each with some form of ICAN for communications

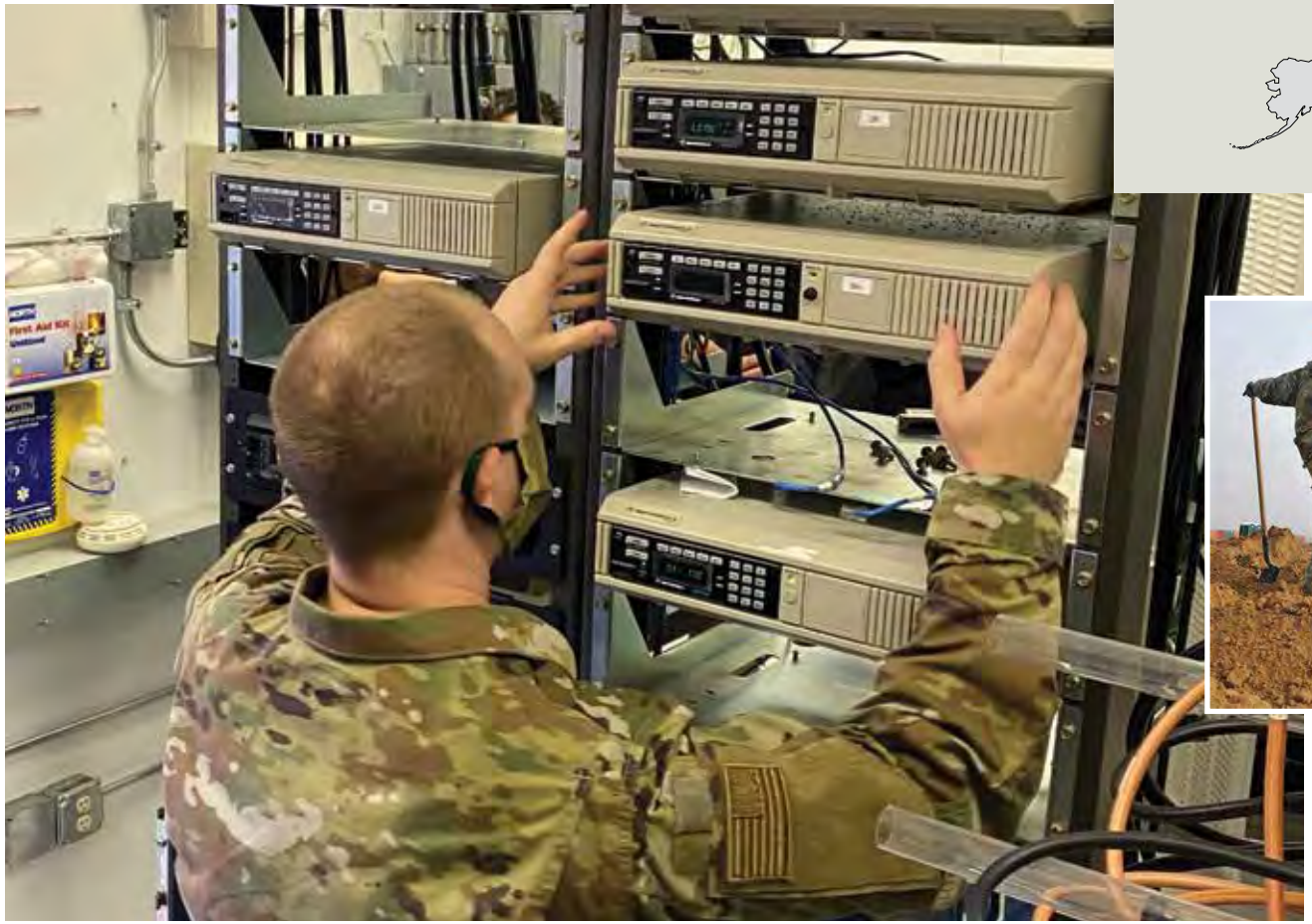
I3MP

PROJECTED ACTIVITIES

- **FY21–FY23:**
  - In FY21, Modernization will conclude at four Home Station Mission Command Centers; two Strategic Command Centers; and one Technical Control Facility
  - Complete/initiate installation infrastructure modernization, switch modernization, enhanced voice capability, and circuit optimization projects at selected Continental United States (CONUS) and Outside of the Continental United States (OCONUS) Army bases, posts, camps, and stations
  - Complete decommissioning of Time Division Multiplexing voice infrastructure and replace with modern Voice over Internet Protocol capabilities at select CONUS and OCONUS locations
  - Support relocation of United States Forces Korea and 8th Army to Camp Humphreys, South Korea
  - Upgrade and modernize ICAN throughout Southwest Asia, Europe, and Pacific

CONTRACTORS
AT&T Government Solutions (Oakton, VA)
Avaya Federal Solutions (Fairfax, VA)
General Dynamics Information Technology (Falls Church, VA)
NCI (Reston, VA)
Nisgaa Tek, LLC (Chantilly, VA)
Teksynap (Reston, VA)
VAE (Springfield, VA)
Wildflower International (Santa Fe, NM)







Instrumentable-Multiple Integrated Laser Engagement System (I-MILES)

PEO Simulation, Training and Instrumentation | Orlando, FL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) program is a suite of capabilities that enhances the Warfighter's ability to prepare for combat operations allowing training and assessment of individual and collective tasks during force-on-force operations. The devices use an eye-safe laser to replicate the engagement effects of their intended "line-of-sight" weapon systems.

I-MILES provides realistic, real-time casualty effects for force-on-force tactical engagement training scenarios. It can also integrate into training instrumentation systems to provide for high-fidelity combined arms combat exercises. Due to their modular design, I-MILES devices are approved for use at home station, Combat Training Centers, and in the theater of operations. The current "Instrumentable" Multiple Integrated Laser Engagement System (MILES) replaces the previously fielded "Basic" MILES, which cannot integrate into training instrumentation systems. I-MILES operates within a Live, Virtual, and Constructive – Integrated Architecture that supports Army and Joint exercises.

BENEFIT TO THE SOLDIER

I-MILES simulates both the vulnerability and the firing capabilities of vehicles/dismounts as well as serves to objectively assess weapon effects during training. It also provides unit commanders an integrated training system for use at home station local training areas and instrumented training areas.

SPECIFICATIONS

- Performance requirements for the I-MILES product lines are set forth in separate Government Performance Specifications.
- Incorporation of Government-owned Government-furnished Live Personal Area Network)/Live Tactical Engagement Composition are applicable for current Vehicle Tactical Engagement Simulation System (VTESS) product line.
- All systems are backward compatible with the existing I-MILES TESS equipment and compliant with the MILES Communication Code Standard, PMT 90-S002 current revision.
- Systems leverage the use of components associated with the Live Training Transformation-Family of Training Systems initiative.
- Systems are compatible with MILES legacy TESS, Army Range Common Training Instrumentation Architecture, and Home Station Instrumentation Training System Training Operations Center Command to the maximum extent possible.

PROGRAM STATUS

- **Current:** One active contract for the Vehicle Tactical Engagement Simulation System (VTESS) system that provides for a base ordering period of 5 years with two 1-year options
- **FY19–FY20:** 24-month Development and Test period

PROJECTED ACTIVITIES

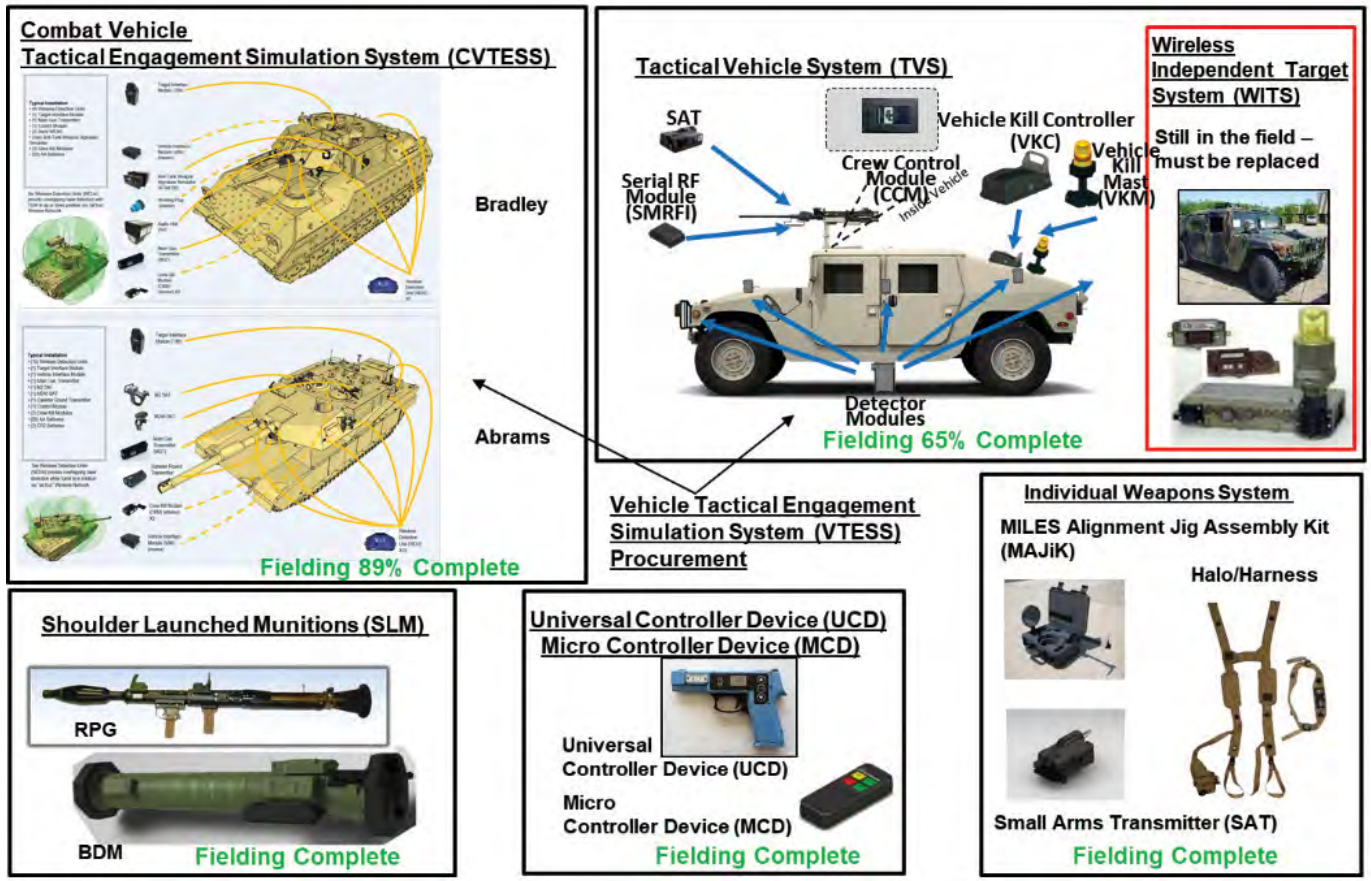
- **FY20–FY21:**
  - VTESS system verification and Government Acceptance Testing
  - Conduct VTESS system verification and Government Acceptance testing
- **FY21–FY23:** Fulfill Tactical Vehicle System (TVS) Basis of Issue of 9,004 Kits with VTESS
- **FY21:** VTESS First Unit Equipped
- **FY21–FY24:** VTESS Production and Fielding
- **FY21–FY25:**
  - TVS Technology Refreshment to maintain program relevancy and support force-on-force training as weapons platforms evolve
  - VTESS Production, Fielding, Support, and Sustainment

- **FY21–FY30:**
  - Individual Weapon Systems/Individual Weapon Systems 2 Technology Refreshment to maintain program relevancy and support force-on-force training as weapons platforms evolve
  - Weapon Integrated Target System complete system replacement of product line with VTESS
  - Shoulder Launched Munitions Technology Refreshment to maintain program relevancy and support force-on-force training as weapons platforms evolve

I-MILES

CONTRACTORS
Cubic Defense Applications (San Diego, CA)
General Dynamics (Orlando, FL)
Lockheed Martin (Orlando, FL)
Saab Training USA (Orlando, FL)





Integrated Personnel and Pay System-Army (IPPS-A)

PEO Enterprise Information Systems | Fort Belvoir, VA

BSC I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Integrated Personnel and Pay System-Army (IPPS-A), an online Human Resources (HR) PeopleSoft solution, is the vehicle that will allow the Army to transform from an industrial age personnel system to a 21st century talent management system. IPPS-A integrates personnel and pay, while providing Total Force Visibility, Talent Management, and Auditability.

IPPS-A has developed a refined path to modernization. Over the past year, the program has updated the acquisition strategy to re-baseline the program cost, schedule, and performance parameters to complete Release 3, deliver Release 4, and provide capability support for the deployed software system. The Army Cost Position has been finalized for Increment (INC) II, which provides Army-approved costs for Release 3, Release 4, and capability support for the deployed software system through the end of the IPPS-A life cycle. A total of 332,000 users have been added, allowing Army leaders improved visibility while providing key modern capabilities and a strategic framework for managing talent and data.

Once deployed, IPPS-A will enable the Army to better manage the talents of the Total Force based on their knowledge, skills, and behaviors to optimize Soldiers' contributions to Army Readiness. IPPS-A will also provide an audit capability for pay and benefits — ensuring the best use of Army dollars to employ human capital while bettering Soldiers' lives by reducing pay and personnel errors. An integrated HR and Pay system will be created, subsuming over 30 legacy systems while eliminating 300 interfaces. Finally, IPPS-A will execute HR Transformation, Military Pay Transition, and Business Process Reengineering, creating a 21st century talent management system and an HR data-rich environment.

BENEFIT TO THE SOLDIER

IPPS-A is easy to use; it automates numerous manual HR and pay processes, allows mobile access to personal pay and HR data, tracks personnel actions from start to finish (approved changes reflect in pay and personal profile immediately), captures talent within units, shows unit readiness, and captures all actions in one place. IPPS-A is auditable and reduces errors affecting Soldiers.

IPPS-A is improving the Army's data posture and informing the Army Data Plan to enable data-driven decisions through a resilient, secure hybrid cloud solution. IPPS-A is the first system in the Army to implement Soldier self-service on a mobile phone. It is the most viewed app on the U.S. Army Training and Doctrine Command App Gateway, with data secured over a commercial network.

SPECIFICATIONS

- Online comprehensive personnel and pay system
- Provides near real-time 24/7 self-service capabilities
- Accessible to Soldiers, commanders, and HR professionals
- Provides complete visibility of the Total Force in one HR system
- Enables the Army to manage the talents of the Total Force based on Soldiers' knowledge, skills, and behaviors
- Provides audit capability for pay and benefits to ensure the best use of Army dollars to employ human capital

PROGRAM STATUS

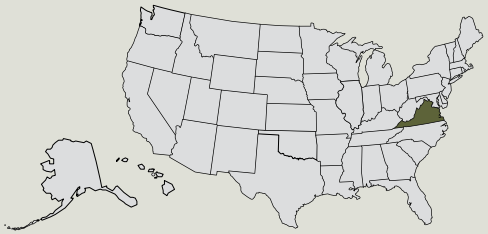
- **2QFY19:** INC II Release 2 Limited User Test
- **3QFY19:** INC II Release 2 Authority to Proceed
- **1QFY20:** INC II Release 3 Critical Design Review
- **2QFY20:** INC II Release 2 Completed Deployment to the 54 Army National Guard states and territories

IPPS-A

PROJECTED ACTIVITIES

- **1QFY21:** INC II Release 3 – begin Test phase
- **4QFY21:** INC II Release 3 Limited User Test
- **1QFY22:** INC II Release 3 Deployment
- **3QFY25:** INC II Release 4 Deployment
- **FY25–FY30:** Additional Release 3 and Release 4 Capabilities and Capability Support for the deployed software baseline

CONTRACTORS
CACI (Chantilly, VA)





Integrated Tactical Network (ITN)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

PEO C3T

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

For Capability Set (CS) 21, the Integrated Tactical Network (ITN) injects new commercial components and network transport capabilities to lower echelons within the U.S. Army's tactical network environment. The ITN Middle Tier Acquisition (MTA) designation focuses on specific commercial-off-the-shelf technologies used to bridge gaps and enhance the Army tactical network. These new components enable communications through Secret and a newly introduced Secure But Unclassified (SBU) enclave, which allows commanders the flexibility to balance security and connectivity based on mission need. Soldiers using the ITN will have additional options available for their primary, alternate, contingency, and emergency communications plan, and the ability to switch communications paths when faced with contested or congested communications environments.

BENEFIT TO THE SOLDIER

The ITN provides a battalion-wide terrestrial voice and data network for distribution of Position Location Information (PLI), situation awareness, and command and control messaging that operates over a SBU Dismounted Network Enclave. It provides global access to the Mission Command Support Center for PLI, Command and Control, and Situational Awareness message traffic. By emphasizing dismountable/man portable/handheld capabilities, the ITN supports expeditionary command post capabilities. Its application gateways are positioned to synchronize the Common Operating Picture between SBU and Secret Internet Protocol Router Network and cross-echelon. Using the ITN, Soldiers achieve augmented high-capacity line-of-sight connectivity below battalion and consistent ITN NetOps capability.

SPECIFICATIONS

- CS21 specifications include:
  - Single channel TSM capable radios
  - Dual channel headsets
  - Variable height antennas
  - Line-of-sight backhaul radios
  - Tactical radio gateways
  - Mobile broadband kits
  - Message translation software
  - Tactical cross domain solution

PROGRAM STATUS

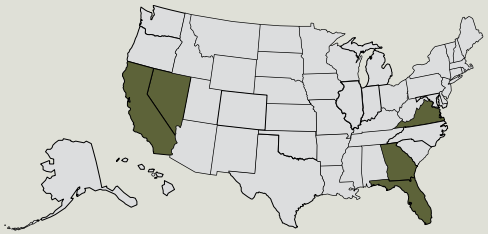
- **3QFY18:** Directed Requirement to experiment, demonstrate, and assess an ITN
- **3QFY19:**
  - Approved Army Capability Development Document
  - MTA authority for Rapid Prototyping
  - MTA authority for Rapid Fielding
  - CS21 Preliminary Design Review (PDR)
- **3QFY20:** CS21 Capability Design Review (CDR)
- **4QFY20:** Soldier touchpoint with 1/82 Airborne

PROJECTED ACTIVITIES

- **4QFY20–3QFY21:** Stryker Brigade Combat Team (BCT) Characterization
- **1QFY21:** Complete Fielding to the First Unit Equipped BCT
- **2QFY21:** BCT Fielding
- **3QFY21:**
  - Buy Decision for FY22 Fielding (5 BCTs)
  - CS23 PDR
  - BCT Fielding
- **4QFY21:** BCT Fielding
- **3QFY22:** CS23 CDR

ITN

CONTRACTORS
Line-of-Sight Backhaul Radios: Silvus Technologies (Los Angeles, CA)
Message Translation Software: Sierra Nevada Corporation (Sparks, NV)
Mobile Broadband Kit: 4K Solutions (Midland, GA)
Single Channel Radios: Trellisware (San Diego, CA)
Headsets: TBD
Tactical Cross Domain Solution: General Dynamics (Reston, VA)
Tactical Radio Integration Kit: KLAS Telecom (Herndon, VA)
Variable Height Antenna (VHA): Hoverfly (Orlando, FL)

















Integrated Visual Augmentation System (IVAS) Squad Immersive Virtual Trainer (SiVT)

PEO Simulation, Training and Instrumentation | Orlando, FL

PEO STRI

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Squad Immersive Virtual Trainer (SiVT) is a Soldier-enabled, mixed reality (virtual and live), collective training capability, which provides intelligent virtual opposing force (OPFOR) to enhance training realism, enable improved training outcomes through advanced After-Action Review (AAR) and real-time performance data. SiVT is integrated end-to-end into the Integrated Visual Augmentation System (IVAS), the operational equipment the Close Combat Force will use to "fight, rehearse and train" – the first time ever done for a Warfighting operational platform. SiVT will remove the traditional training barriers, which prevent Soldiers from training at the point of need, enabling them to get the "sets and reps" to master collective task prior to "the shock of first contact." Additionally, SiVT will enable collective training across common battle drills and provide a realistic simulation of the operational environment. It will also permit training scenarios to be quickly and easily developed and modified by Warfighters to suit specific training requirements, capture performance data, and provide an advanced AAR capability. SiVT will also augment the live environment by:

- Leveraging Synthetic Training Environment One World Terrain (OWT) for mission planning, rehearsals, and squad training
- Providing a Soldier-enabled scenario creation tool for customization and execution
- Integrating organic squad weapons virtual training for force-on-force and on virtual target
- Artificial Intelligence/Machine Learning for thinking and learning OPFOR and performance analytic tools
- Biometric and Advanced Human Performance data collection and analysis
- Synchronization with Squad Performance Metric for squad lethality analysis

SiVT is currently pre-Materiel Development Decision (MDD) status and anticipated to become an ACAT III Program of Record. SiVT will integrate to the other elements of the overall Synthetic Training Environment (STE) program including the Training Simulations Software (TSS), an organic squad with artificial intelligence semi-automated force and wrap at platoon level. It will also feature NETT Warrior interoperability and interactive voice commands with semi-automated forces avatars; OWT-scalable terrain with 1,000 meters observation of effects and enablers; and Training Management Tool (TMT), a scalable Scenario Editor/AAR with local repository and AAR analysis tool and Selected Individual Task Development Toolkit.

BENEFIT TO THE SOLDIER

Provides intelligent virtual OPFOR to enhance training realism, enables improved training outcomes through advanced AAR and real-time performance data. SiVT is integrated end-to-end into the IVAS, the operational equipment the Close Combat Force will use to "fight, rehearse and train." SiVT will remove the traditional training barriers, which prevent Soldiers from training at the point-of-need, enabling them to get the "sets and reps" to master collective task prior to "the shock of first contact."

SPECIFICATIONS

- IVAS
- OWT
- Synthetic Training Environment – Information Systems

PROGRAM STATUS

- **FY20:**
  - Completion of Capability Set 3
  - Continue to schedule and conduct integration, testing, and demonstration activities

IVAS SiVT

PROJECTED ACTIVITIES

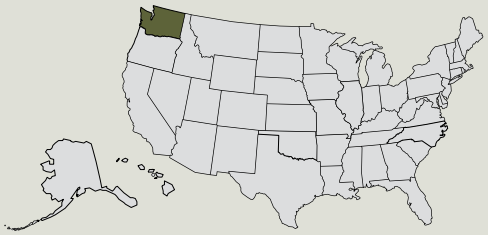
- **FY21:**
  - Continued rapid acquisition and prototyping of the overall SiVT capability
  - Complete Soldier Touchpoint 3
  - Begin and complete Capability Set 4 with Soldier Touchpoint 4
- **2QFY21:** Award Production and Fielding effort
  - **4QFY21:** First Unit Equipped scheduled





CONTRACTORS

Microsoft (Redmond, WA)





Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT)

PEO Simulation, Training and Instrumentation | Orlando, FL

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) provides a realistic target environment for training Military Intelligence (MI) analysts and system operators in multiple intelligence disciplines (All Source, Signals Intelligence, Human Intelligence, Counter Intelligence, Geospatial Intelligence, and Electronic Warfare (EW)) and tasks in a distributed, multidomain simulation environment. The system provides standalone and networked training for individual, crew, and collective, mission rehearsals/exercises. The system also enables single source and multidiscipline/intelligence training for MI and EW Soldier and system critical tasks. The system can directly stimulate both MI and Intelligence, Surveillance, and Reconnaissance systems with realistic simulated training data to support battle staff individual and collective training. It provides simulation/scenarios from unclassified up to the Top Secret/Sensitive Compartmented Information (TS/SCI) level for home station training support to Combat Training Centers, U.S. Army Intelligence and Security Command Foundries, Mission Training Complex facilities, and applicable institutional training bases.

BENEFIT TO THE SOLDIER

Provides mission-essential skills-based training to intelligence collectors and analysts. In addition to training individual measure-of-suitability skills, the IEWTPT facilitates collective training across the various intelligence disciplines.

SPECIFICATIONS

- Uses commercial-off-the-shelf hardware
- Meets MI Training Strategy configuration control board requirements (up to TS/SCI)
- Interfaces with the Joint Land Component Constructive Training Capability
- Interfaces with the Distributed Common Ground System – Army, Prophet, Terrestrial Layer System, and Enhanced Medium-Altitude Reconnaissance and Surveillance System, Guardrail, Airborne Reconnaissance Low
- Maintains connectivity with the Intelligence and Security Command Foundry
- Compatible with Mission Training Center and Combat Training Center facility infrastructure

PROGRAM STATUS

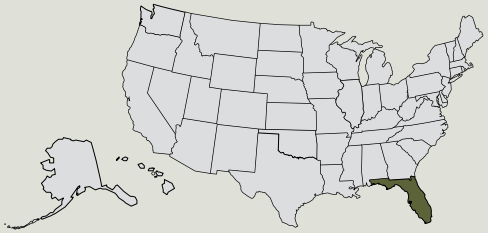
- **FY20:** Completed Fielding of IEWTPT Increment 1 capability
- **FY21:** Manage competitive source selection for IEWTPT Increment 2 capability

PROJECTED ACTIVITIES

- **2QFY21:** Begin competitive Acquisition to align with IEWTPT Increment 2 Information System – Capability Development Document and leveraging the Software Acquisition
- **3QFY21:** Release request for proposal pathway
- **4QFY21:** Proposal evaluation
- **2QFY22:** IEWTPT Increment 2 Contract Award
- **FY23:** Develop and Test migration to Cloud Service Provider

IEWTPT

CONTRACTORS
General Dynamics Mission Systems (Orlando, FL)



Javelin Close Combat Missile System — Medium (CCMS-M)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Australia, Czech Republic, Estonia, France, Georgia, Indonesia, Ireland, Jordan, Lithuania, New Zealand, Norway, Oman, Qatar, Taiwan, Turkey, Ukraine, United Arab Emirates, and United Kingdom

DESCRIPTION

The Javelin Close Combat Missile System – Medium (CCMS-M) is a man-portable, medium-range tactical missile system that provides the U.S. Army and Marine Corps with precision direct-fire effects to defeat main battle tanks and other armored vehicles as well as personnel and equipment in fortifications or in the open. Javelin is highly effective against a variety of targets at extended ranges during day or night operations, and under battlefield obscurants, adverse weather, and multiple countermeasure conditions. The system's soft-launch feature permits firing from enclosures commonly found in complex urban terrain, while its modular design allows the system to evolve to meet changing threats and requirements via both software and hardware upgrades. The system consists of a reusable command launch unit (CLU) and a modular missile encased in a disposable launch tube assembly. The CLU provides stand-alone surveillance capability ideally suited for infantry operations in multiple environments.

Javelin's fire-and-forget technology allows the gunner to fire and immediately take cover, move to another fighting position, or reload. Javelin provides enhanced lethality through the use of tandem warheads that defeat all known armor threats and can be used against stationary or moving targets. This system also provides defensive capability against attacking or hovering helicopters. In 2018, the Army began procuring the new F-model missile that incorporates a multipurpose warhead to improve lethality against soft targets while still meeting all anti-armor requirements. The next upgrade planned is the G-model missile, which will retain the multipurpose warhead and represent a complete modernization of the missile to address obsolescence and reduce unit cost. A lightweight CLU is in development with the goal of reducing the current CLU weight by at least 25% and size by at least 30%.

BENEFIT TO THE SOLDIER

Javelin provides the Army, Marine Corps, and our allies a man-portable, fire-and-forget missile system that is highly lethal against objects ranging from main battle tanks to fleeting targets of opportunity found in current threat environments.

SPECIFICATIONS

- Weight (Block 1 Missile and CLU combined): 48.8 pounds (Missile – 33.3 pounds; CLU – 15.5 pounds)
- Diameter: 127 mm
- Range: Qualified to 2,500 meters; demonstrated performance to 4,000 meters in most operational conditions
- System also includes training devices for tactical and classroom training

PROGRAM STATUS

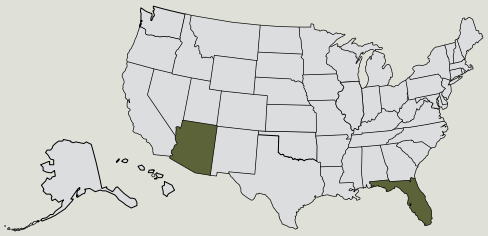
- **FY18:** Began initial procurement of F-model missiles with new multipurpose warhead
- **FY18–FY19:** Army funded retrofit of all remaining Block 0 CLUs to upgraded Block 1 capability (Fielding complete by FY23)
- **FY19–FY20:** Completed Lightweight CLU Design Verification Testing and began buildup of qualification units for test; continued modernization efforts for G-model missile

PROJECTED ACTIVITIES

- **4QFY20–4QFY21:** G-model missile Developmental and Operational Test
- **2QFY21–3QFY22:** Lightweight CLU Developmental and Operational Test
- **FY21:** Begin Low-Rate Initial Production (LRIP) of Lightweight CLU
- **FY22:** Begin LRIP of G-model missile

Javelin CCMS-M

CONTRACTORS
Lockheed Martin (Orlando, FL)
Raytheon (Tucson, AZ)



Joint Air-to-Ground Missile (JAGM)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

United Kingdom

DESCRIPTION

The Joint Air-to-Ground Missile (JAGM) System provides an improved air-to-ground missile capability for rotary-wing aircraft and unmanned aerial systems. The JAGM is an aviation-launched, precision-guided munition for use against high-value stationary, moving, and relocatable land and naval targets. JAGM utilizes a multimode seeker to provide precision point and fire-and-forget targeting day or night in adverse weather, battlefield obscured conditions, and against a variety of countermeasures. A multipurpose warhead provides lethal effects against a range of target types, from armored vehicles, thin-skinned vehicles, and maritime patrol craft to urban structures and field fortifications. JAGM delivers the joint services a single air-to-ground missile with improved lethality, operational flexibility, and a reduced logistics footprint.

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BENEFIT TO THE SOLDIER

JAGM provides the Warfighter the ability to destroy high-value stationary, moving, and relocatable land and naval targets from standoff range day or night, in adverse weather, and in battlefield-obscured conditions.

SPECIFICATIONS

- Diameter: 7 inches
- Weight: 115 pounds
- Length: 69 inches
- Range: 500–8,000 meters

PROGRAM STATUS

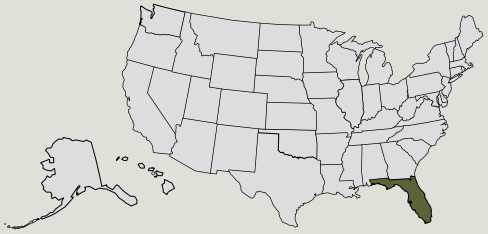
- **2QFY18:** Limited User Testing
- **3QFY18:** Milestone C Low-Rate Initial Production Decision
- **2QFY19:** Initial Operational Capability

PROJECTED ACTIVITIES

- **TBD:** Full-Rate Production Decision

JAGM

CONTRACTORS
Lockheed Martin (Orlando, FL)





Joint Battle Command-Platform (JBC-P)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Joint Battle Command-Platform (JBC-P), fielded since 2015, is the cornerstone of Joint Force's Command and Control (C2) Situational Awareness (SA) and communications. JBC-P provides the essential Blue Force Tracking (BFT) capability as part of the holistic user experience that integrates system-of-system, complementary capabilities across the gamut of platform-based maneuver, protection, and lethality capabilities as well as enabling essential information exchanges as part of the command post environment. JBC-P is the critical foundational force-multiplier for maintaining comprehensive SA, executing C2, and mitigating fratricide through its integrated-system solution of intuitive software deployed on common hardware that leverages hybrid networks to provide the movement of secured data between the tactical Dismounts and Command Post systems.

JBC-P incorporates the Mounted Family of Computer Systems (MFoCS) common hardware that provides scalable, tailorable computers for multiple employment scenarios to support all Warfighting Functional Areas. MFoCS enables size, weight, and power (SWaP) improvements by providing the hosting environment for other software and sensors within the computing hardware to reduce the need for separately fielded platform components. JBC-P builds on the SA capability known as Force XXI Battle Command Brigade and Below/Blue Force Tracking, is integrated on more than 100,000 platforms, and is fielded or authorized to every Brigade Combat Team in the U.S. Army.

The next-generation friendly force tracking system, Mounted Mission Command (MMC), will continue the JBC-P evolutionary advancement strategies through Common Operating Environment (COE) objectives and the Mounted Computing Environment convergence efforts for software. It will also use rapid acquisition strategies for the MMC compute, transport hardware, and network modernization initiatives. The MMC Family of Systems (FoS) coalesce their respective technological enablers through the evolutionary process to put integrated capabilities across the MMC FoS into the hands of Soldiers more rapidly as part of the continued JBC-P modernization concept employing vital Army development operations processes to inform/validate resultant products.

The MMC lines of effort are:

- Software
- Network
- Transport hardware
- Compute and store

MMC will be based on open standards that promote competition and enable the ability to inject new technology every two years. Rather than a one-size-fits-all solution, variants of hardware will deliver the tailored, comprehensive MMC capability that can keep pace with the technology advancements of the industrial base.

BENEFIT TO THE SOLDIER

JBC-P builds on proven successes integrating warfighting capabilities providing a robust, secure, simple, and sustainable Mission Command system. This system provides real-time, relevant C2 information allowing leaders to gain tactical situational awareness and understanding to operate and win in a complex world.

SPECIFICATIONS

- Cornerstone of Joint Forces' C2, SA, and Communications
- Provides secure BFT capability at the Platform and Command Post levels, and continuous near-real-time identification of friendly locations to populate the tactical Common Operating Picture

JBC-P

- Enables Joint, Net-Centric C2/Battle Command by seamlessly passing/sharing relevant information vertically and horizontally, within all tactical levels of C2
- Serves as the foundation of the Mounted Computing Environment, part of the COE directive
- Components include a core software module that provides common functionality and tailored software modules for vehicle, logistics, aviation, and command post elements.
- Other key enhancements include:
  - Increased accuracy and density of SA
  - Manages orders, graphical overlays, friendly, hostile, neutral, unknown, non-combatant SA
  - Integration of transportation and logistics requirements
  - New intuitive user interface

PROGRAM STATUS

- **FY20:**
  - JBC-P has a Full Materiel Release authority and is an operationally proven capability. The Army has funded the program to pure fleet (i.e., complete Fielding) by FY25.
  - Milestone Decision Authority/Program Executive Office approved a revised Acquisition Program Baseline in April 2020.

PROJECTED ACTIVITIES

- **FY22:** JBC-P Software v1.6.0.7 will transition to Sustainment in 1QFY22

CONTRACTORS
ACE Electronics Defense Systems (Aberdeen, MD)
Bowhead (Springfield, VA)
Harris (Melbourne, FL)
Leonardo DRS (Melbourne, FL)
Software, Simulation, Systems Engineering (Huntsville, AL)
ViaSat (Carlsbad, CA)







Joint Biological Tactical Detection System (JBTDS)

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Joint Biological Tactical Detection System (JBTDS) is the first tactical lightweight, low-cost biological surveillance system to detect, collect, and identify Biological Warfare Agent (BWA) aerosols. JBTDS components are man-portable, battery-operable, and easy to employ by any military user. JBTDS provides notification of a hazard and enhances battlespace awareness to protect and preserve the forces. It is also capable of archiving a sample for follow up analysis. JBTDS will integrate TacBio II as the detector and Joint Handheld Biological Identifier as the identification capability.

BENEFIT TO THE SOLDIER

JBTDS provides detection, collection, and identification of BWA at very low concentrations.

SPECIFICATIONS

- Augments existing biological detection systems
- Provides surface sampling capability
- Provides a theater-wide array capable of biological detection, identification, and warning to support time sensitive force protection decisions

PROGRAM STATUS

- **1QFY17–1QFY19:** Biological Point System Assessment
- **1QFY19–3QFY21:**
  - Developmental Testing
  - Conduct Engineering and Manufacturing Development effort

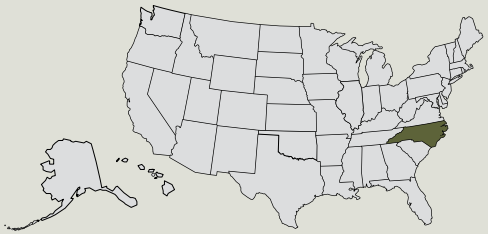
PROJECTED ACTIVITIES

- **FY20–FY22:** Assay shelf life testing, military standard Test, and False Alarm Test
- **3QFY21:** Log Demo
- **4QFY21:** Operational Assessment (OA)
- **2QFY22:** Milestone C Decision
- **3QFY22:** Low-Rate Initial Production
- **4QFY22:** Milestone Post OA
- **4QFY23:** Initial Operational Capability

JBTDS



CONTRACTORS
Chemring Sensors & Electronic Systems (Charlotte, NC)







Joint Chemical Agent Detector (JCAD) — M4A1

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Joint Chemical Agent Detector (JCAD) is a pocket-size, rugged handheld detector that automatically detects, identifies, and alarms to chemical warfare agents and toxic industrial chemical vapors.

The services can use the system on mobile platforms, at fixed sites, and on individuals designated to operate in a chemical threat area. Additionally, the system can operate in a general chemical warfare environment as well as undergo conventional decontamination procedures by the Warfighter.

JCAD M4A1, which commenced production in Fiscal Year (FY) 2011, will reduce operation and sustainment costs, has an improved user interface, and is net ready.

JCAD replaces the Automatic Chemical Agent Detector and Alarm, or M22, M90, and M8A1 systems. It may also replace the Chemical Agent Monitor and Improved Chemical Agent Monitor.

BENEFIT TO THE SOLDIER

JCAD M4A1 protects U.S. forces by detecting, identifying, alerting, and reporting the presence of chemical warfare agents and toxic industrial chemical vapor.

SPECIFICATIONS

- Instant feedback of hazard (mask only or full Mission-Oriented Protective Posture)
- Real-time detection of nerve, blister, and blood agents
- Stores up to 72 hours of detection data
- The M4A1 will be net-ready through implementation of the common chemical, biological, radiological, and nuclear standard interface

PROGRAM STATUS

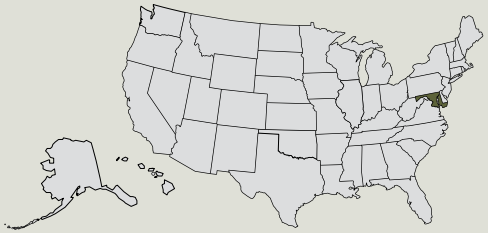
- **FY16–FY19:** Production and Deployment

PROJECTED ACTIVITIES

- **FY20–FY21:** Production and Deployment

JCAD — M4A1

CONTRACTORS
Smiths Detection (Edgewood, MD)





Joint Effects Targeting System (JETS) Target Location Designation System (TLDS)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Joint Effects Targeting System (JETS) Target Location Designation System (TLDS) is a U.S. Army-led, joint-information program with the Air Force and Marine Corps to develop and field a one-man-portable, handheld capability to rapidly acquire, precisely locate, and accurately engage targets with precision-guided munitions, and improve the effectiveness of engagement with unguided munitions.

BENEFIT TO THE SOLDIER

JETS TLDS addresses a high-priority capability gap for a lightweight, highly accurate targeting system that allows a single Soldier to engage targets with precision munitions (e.g., Joint Direct Attack Munition, Excalibur, and laser-guided weapons). It also provides the Warfighter with crucial digital connectivity to request and control indirect fires and close air support from all joint assets. JETS allows small units supported by Army forward observers or Joint Tactical Area Communications Systems to have access to precision targeting in all operational environments.

SPECIFICATIONS

- System weight: Handheld target locator module weighs less than 5.5 pounds (threshold) and 3 pounds (objective); system weight less than or equal to 17 pounds
- Target Location Error: Less than or equal to 10 meters at 2.5 km (threshold) and 5 meters at 5 km (objective)

PROGRAM STATUS

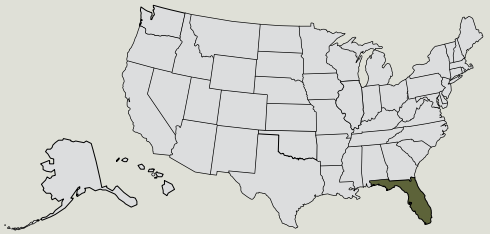
- **4QFY20:**
  - First Unit Equipped
  - Materiel Release

PROJECTED ACTIVITIES

- **4QFY21:** Full-Rate Production Decision

JETS TLDS

CONTRACTORS
Leonardo DRS (Melbourne, FL)





Joint Land Component Constructive Training Capability (JLCCTC)

PEO Simulation, Training and Instrumentation | Orlando, FL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Japan

DESCRIPTION

Joint Land Component Constructive Training Capability (JLCCTC) is the premier Army Constructive Simulation that supports Army Title X training worldwide for commanders and their staffs at Mission Training Complexes (MTCs), U.S. Army Training and Doctrine Command (TRADOC) facilities, and other customer locations. JLCCTC trains commanders and their staffs in offensive, defensive, stability, and civil support operations.

The single Federation System capabilities include:

- Stimulation of Mission Command (MC)/Go-to-War systems
- Intelligence modeling capabilities
- Sustainment/logistics training (maintenance, supply, transportation, ammunition, and personnel)
- Irregular warfare (insurgents, terrorists, car bombs/ improvised explosive devices, civilians/refugees, etc.)
- Non-kinetic effects modeling
- After action review/exercise control tools and capabilities
- Unmanned aerial vehicle/unmanned aerial system visualization
- Interface with the Air Force Simulation, the Air and Space Cyber Constructive Environment, and other Joint/Coalition Constructive simulations

BENEFIT TO THE SOLDIER

Provides Army commanders and their battle staff the capability to train in an operationally relevant, constructive simulation environment that simulates Army Decisive Action operations employed for simulation/stimulation of collective digital Mission Command training, from Brigade through Theater-level echelons. JLCCTC supports institutional and operational unit training for Active Component, Reserve Component, and National Guard units providing capabilities across the range of warfighting functions. JLCCTC fielding's include the Army Combat Training Centers, Mission Command Training Program, Global Simulation Capability/Regional Simulation Centers, and all the Army MTCs worldwide.

SPECIFICATIONS

- Enables the training of Army commanders and battle staffs from Brigade through Echelon Above Corps/Theater-level by utilizing select models, tools, and interfaces based on the needs of the training audience
- Provides appropriate levels of model and simulation resolution along with fidelity to support unit collective and combined arms training
- Provides accurate representations of tactically and operationally relevant land warfare operations executed in a contemporary Joint Operating Environment context
- Interfaces with the training audience via MC equipment
- Interoperates with other Department of Defense Service simulations
- Interfaces with coalition simulations to remain flexible to an evolving training environment

PROGRAM STATUS

- **2QFY20:**
  - New 10-year JLCCTC contract (4-year base with two 3-year options) was awarded to Phoenix Defense Inc. The contract is for continued analysis, design, development, integration, testing, Fielding, post-deployment software support activities, and the required pre-planned product improvements to the existing JLCCTC single federation solution as well as new and emerging requirements, including/addressing Multi-Domain Operations requirements. Two Task Orders (TO) (TO#1 for Program Management and Sensitive Compartmented Information Facility activities and TO#2 for all other program activities) were also awarded.

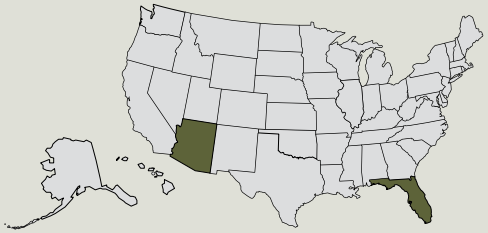
- **3QFY20–4QFY20:** Continue new Development activities, Fielding activities, and onsite Support to critical Warfighter exercises and other key Brigade through Theater-level exercises worldwide

PROJECTED ACTIVITIES

- **1QFY21–3QFY21:** Continue supporting activities related to the WFX 21-4 Exercise with the MC Training Program
- **1QFY21–4QFY21:** Complete Fielding of JLCCTC v8.1 to any remaining sites
- **4QFY21:** JLCCTC v9.0 Validation Events by TRADOC Program Office – Constructive at Fort Leavenworth, Kansas
- **3QFY22–4QFY24:**
  - Field JLCCTC v9.0 to approximately 48 Army sites worldwide
  - Conduct v10.0 Requirements Analysis/System Engineering/Software Development and Integration, Test, and Validation activities

JLCCTC

CONTRACTORS
Phoenix Defense (Prime) (Gilbert, AZ, and Orlando, FL)





Joint Light Tactical Vehicles (JLTV)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

United Kingdom

DESCRIPTION

The Joint Light Tactical Vehicles Family of Vehicles (JLTV FoV) is a U.S. Army-led, joint-service program designed to replace a portion of each service's light tactical wheeled vehicle fleets while closing an existing capability gap. Intended to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations, the JLTV FoV will restore the fleet's balance of payload, performance, and protection.

The JLTV FoV consists of two variants: the four-seat Combat Tactical Vehicle (CTV) and the two-seat Combat Support Vehicle (CSV). The CTV will support the General Purpose, Heavy Gun Carrier, and Close Combat Weapon Carrier missions. The CSV will support the Utility/Shelter Carrier mission. The JLTV is transportable by a range of lift assets, including rotary-wing aircraft, to support operations across the range of military operations. Its maneuverability enables activities across the spectrum of terrain, including urban areas, while providing inherent and supplemental armor against direct fire and improvised explosive device threats.

BENEFIT TO THE SOLDIER

JLTV provides the Warfighter significantly more protection against multiple threats while increasing mobility and payload compared to the current armored High Mobility Multipurpose Wheeled Vehicle platforms. JLTV provides improved off-road mobility, fuel efficiency, and reliability over Mine Resistant Ambush Protected All-Terrain Vehicles.

SPECIFICATIONS

- Transportability: Internal – C-130; External – CH-47 at curb weight plus 2,000 pounds and CH-53; Sea – including height-restricted decks
- Payloads: CTV – 3,500 pounds; CSV – 5,100 pounds
- Protection: Scalable armor to provide mission flexibility while protecting the force
- Mobility: Maneuverability to enable operations across the spectrum of terrain, including urban areas
- Networking: Provides joint forces network connectivity that improves situational awareness of the operational environment while enabling a responsive and well-integrated command and control

PROGRAM STATUS

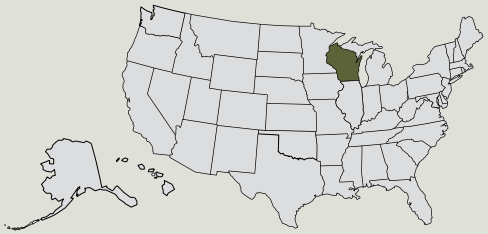
- **3QFY19:**
  - Full-Rate Production decision achieved
  - Completed First Unit Equipped, 320 JLTVs to the 1st Armored Brigade Combat Team, 3rd Infantry Division, Fort Stewart, GA

PROJECTED ACTIVITIES

- **2QFY22:** Follow-on Production contract Request for Proposal final release
- **1QFY23:** Follow-on Production award

JLTV

CONTRACTORS
Oshkosh (Oshkosh, WI)



Joint Service Aircrew Mask Rotary Wing (JSAM RW)

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Joint Service Aircrew Mask Rotary Wing (JSAM RW) is one of five variants in the JSAM Family of Systems that provides individual respiratory, eye, and head protection against Chemical and Biological (CB) warfare agents and radiological particulates for aircrews of all rotary-wing aircraft except Apache. JSAM RW decreases thermal burden as compared to legacy systems. It also provides CB protection during the full spectrum of rotary-wing operations including flight, immediate maintenance operations, extended flight-related ground duties, and ground escape, as well as evasion operations.

BENEFIT TO THE SOLDIER

JSAM RW provides the Warfighter with an above-the-neck CB protective respirator for general purpose rotary-wing aircrews. The mask can be donned and doffed while in flight, provides greater comfort, less physiological burden, and greater flexibility of use with man-mounted systems.

SPECIFICATIONS

- Protection against CB warfare agents and radiological particulate
- Compatible with appropriate life-support equipment across various aircraft platforms
- No aircraft modifications required

PROGRAM STATUS

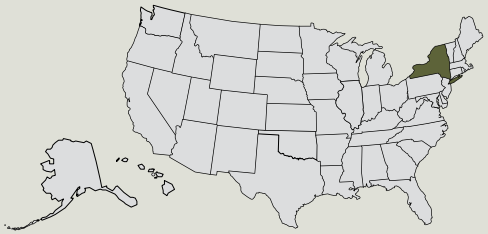
- **FY18:** Fielded 852 masks
- **FY19:**
  - Achieved Initial Operational Capability for U.S. Navy/U.S. Marine Corps/U.S. Army
  - Achieved Full Operational Capability (FOC) U.S. Air Force
  - Fielded 1,340 masks
- **FY20:** Fielded 680 masks

PROJECTED ACTIVITIES

- **FY22:** Anticipate achievement of FOC for Navy and Marine Corps
- **FY23:** Anticipate achievement of FOC for Army

JSAM RW

CONTRACTORS
Avox Systems (Lancaster, NY)









Joint Tactical Ground Stations (JTAGS)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Joint Tactical Ground Stations (JTAGS) are forward-deployed, echelon-above-corps, space-ground systems that receive, process, and disseminate direct down-linked infrared data from overhead sensors. They provide commanders with real-time warning, alerting, and cueing information on ballistic missile launches. Ongoing product improvements integrate JTAGS with next-generation Space Based Infrared Systems (SBIRS) satellites. Four JTAGS are deployed worldwide as part of the U.S. Strategic Command's Theater Event System. U.S. Army Space and Missile Defense Command Soldiers operate JTAGS, providing 24/7 support to theater operations.

BENEFIT TO THE SOLDIER

JTAGS process satellite data and disseminate ballistic missile warning or special event messages to Warfighters in support of regional combatant commanders over multiple theater communication systems. It also serves an integral role in the Army Fires mission by providing precision missile warning to protect the force and enable freedom of movement.

SPECIFICATIONS

- JTAGS Pre-planned Product Improvements enable future Army Multi-Domain Task Force operations in an anti-access/ area-denial environment
- Expected improvements:
  - Assured and resilient data receipt (currently via Direct Downlink) and in-theater communications when satellite and terrestrial reach-back communications suffer disruption or denial
  - Improved detection and tracking of all ranges of missiles in an increasingly electronic warfare and cyber contested environment
  - Ensured cueing of Army active missile defense systems for threat intercept and protection of land forces
  - Enables integration of ground-based fires
- SBIRS sensors will significantly improve theater missile warning parameters
- Higher quality cueing of active defense systems
- Decreased missile launch search areas
- Faster initial report times
- Improved impact ellipse prediction

PROGRAM STATUS

- **FY19:**
  - Completed a formal Developmental Test on JTAGS Block II, Phase 2
  - Successful demonstration Geosynchronous Stereo Starer capability
  - Continued preparations for JTAGS Block II, Phase 2 limited Operational Test
- **FY20:**
  - Fielded JTAGS Block II, Phase 1 system in European Command
  - Completed JTAGS Block II, Phase 2 limited Operational Test
  - Achieved Authority to Operate in Combatant Commands Areas of Responsibility

PROJECTED ACTIVITIES

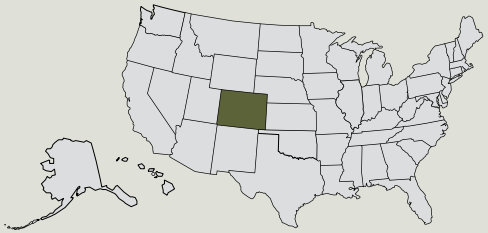
- **FY21:**
  - Complete Fielding of JTAGS Block II, Phase 1 systems
  - Retire last JTAGS Block I system
  - Achieve JTAGS Block II, Phase 2 Joint Interoperability Certification

JTAGS

- Begin Fielding JTAGS Block II, Phase 2, Spiral 2 to Outside of the Continental U.S. units
- Relocate JTAGS Central Command

• **FY22:**
- Complete JTAGS Block II, Phase 2, Spiral 2 Fielding
- Conduct Operational Test of JTAGS Block II, Phase 2, Spiral 3
- Begin Fielding JTAGS Block II, Phase 2, Spiral 3

CONTRACTORS
Northrop Grumman Corporation (Colorado Springs, CO)











Joint Warning and Reporting Network (JWARN) 2

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Joint Warning and Reporting Network 2 (JWARN 2) is a computer-based application that integrates Chemical, Biological, Radiological, and Nuclear (CBRN) data and facilitates sensor information into Joint and Service Command and Control systems for battlespace situational awareness. JWARN 2 incorporates sensor alert information and CBRN observation reports from the field for display on the Common Operational Picture (COP) and generates a warning message to units. JWARN 2 replaces the manual processes of incident reporting, hazard plot generation, and warning of affected forces. JWARN 2 reduces the time from incident observation to warning, enhances situational awareness throughout the area of operations, and supports Warfighter battle management tasks.

BENEFIT TO THE SOLDIER

JWARN 2 reduces the time from incident observation to warning to less than two minutes, enhances situational awareness throughout the area of operations, and supports Warfighter battle management tasks.

SPECIFICATIONS

- Incorporates sensor alert information and CBRN observation reports from the field
- Makes a plot of the hazard area
- Provides overlays for display on the COP
- Generates CBRN warning message to units

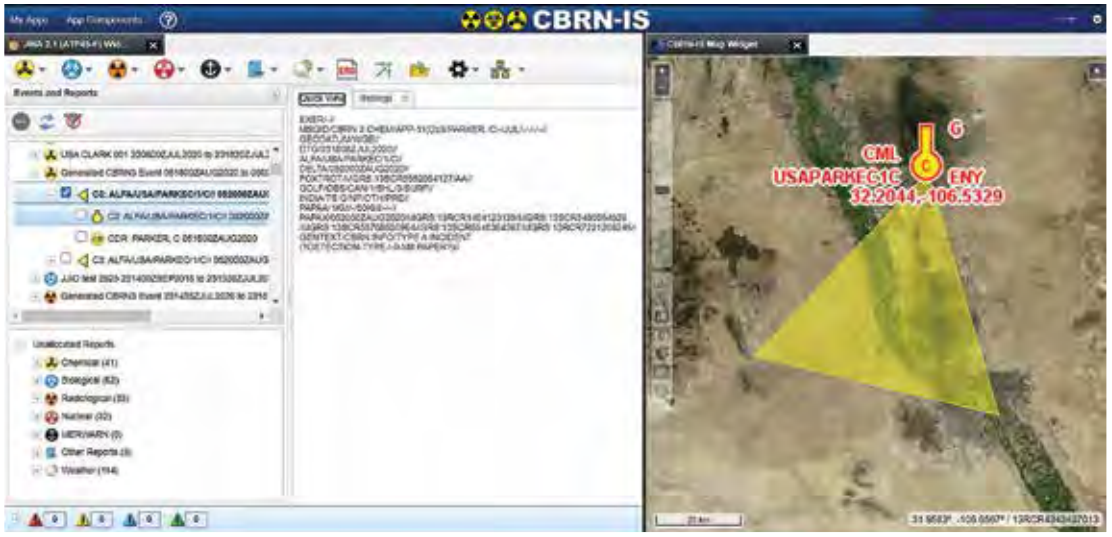
PROGRAM STATUS

- **3QFY20:** JWARN 2 U.S. Marine Corps Fielding Decision for Joint Tactical COP Workstation (JTCW) capabilities
- **4QFY20:** U.S. Air Force New Equipment Training (NET)

PROJECTED ACTIVITIES

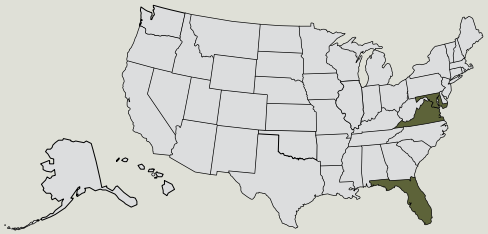
- **FY21:**
  - Program transition to Sustainment and Operations and Support activities
  - Marine Corps NET JTCW capabilities

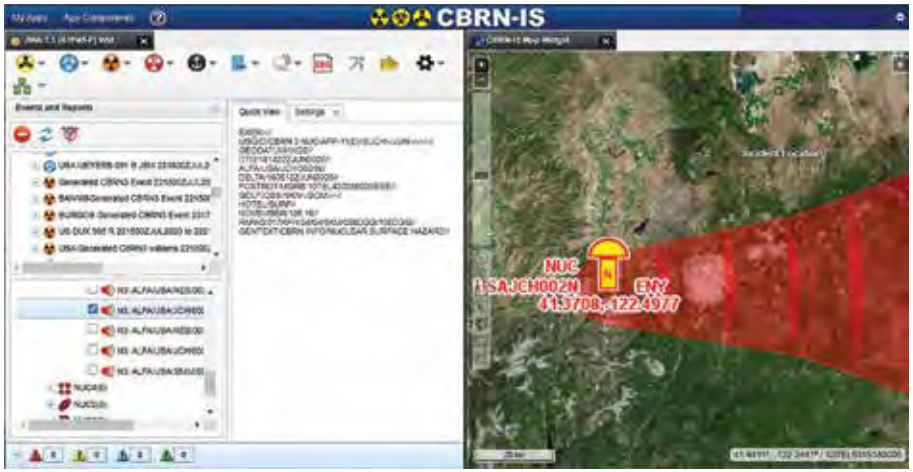
JWARN 2

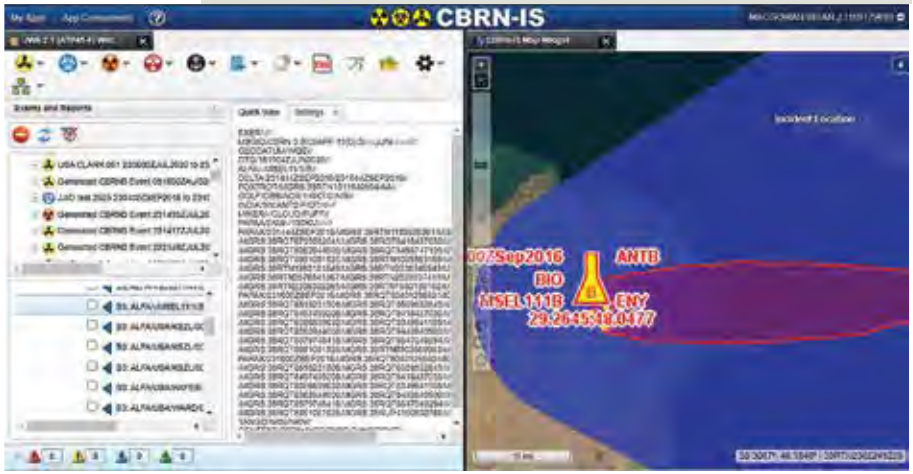


CONTRACTORS

DCS Corporation (Alexandria, VA, Aberdeen, MD, and Orlando, FL)







Lakota — UH-72A/B Light Utility Helicopter (LUH)

PEO Aviation | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Thailand

DESCRIPTION

The Lakota – UH-72A/B Light Utility Helicopter (LUH) is a commercial/non-developmental item, twin-engine helicopter with seating for two pilots that is capable of transporting up to six passengers. The medical evacuation (MEDEVAC) configuration is equipped with two North Atlantic Treaty Organization standard litters and seating for a medical attendant and crew chief. Visual and instrument flight certified, the UH-72A/B is equipped with a night-vision-compatible glass cockpit and modern communications and navigation avionics, including autopilot and dual Global Positioning Systems with Wide Area Augmentation System. Aircraft configurations include Combat Training Center Opposing Forces and Observer/Controller, Security, Support, and VIP. Since 2016, the UH-72A/B has been used at Fort Rucker, Alabama, for the Initial Entry Rotary Wing/ Basic Warfighting Skills Trainer.

BENEFIT TO THE SOLDIER

The UH-72A/B Lakota is a light helicopter that operates worldwide in permissive environments to accomplish a myriad of missions to include general support, reconnaissance, command and control operations, search and rescue, and training requirements. While within the Continental United States and executing the Homeland Defense and Security missions, this aircraft is utilized for assistance with border patrol operations, terrorist incident response, counterdrug operations, disaster relief missions, and Generating Force MEDEVAC capability for the U.S. Army National Guard.

SPECIFICATIONS

- Maximum speed: 145 knots
- Range: 370 nautical miles
- Endurance: 3.5 hours
- Maximum takeoff weight: 7,903 pounds

PROGRAM STATUS

- **1QFY18:** Army Acquisition Objective increase to 478 aircraft
- **2QFY18:** Awarded undefinitized contract actions for production of 18 aircraft
- **3QFY18:** Sources Sought for Production of 11 aircraft
- **4QFY18–1QFY19:** Definitize follow-on Production Contract for 18 aircraft

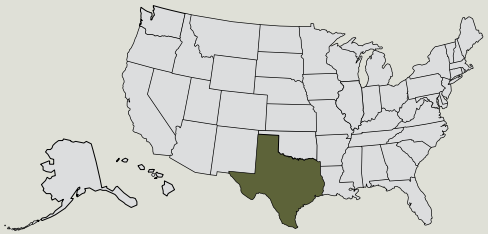
PROJECTED ACTIVITIES

- **1QFY22:** Transition to Sustainment

Lakota — UH-72A/B LUH



CONTRACTORS
Airbus Helicopter, Inc. (Grand Prairie, TX)









Land-based Phalanx Weapon System (LPWS)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Land-based Phalanx Weapon System (LPWS) program evolved from the operational success of the Counter-Rocket Artillery Mortar (C-RAM) system-of-systems effort in theater. It transitioned to an acquisition program to provide C-RAM protection to the Indirect Protection Capability (IFPC)/Avenger 5th Battalions, 5th Air Defense Artillery (ADA) Regiment, and 2nd Battalion, 44th ADA Regiment. C-RAM Intercept LPWS provides IFPC/Avenger Battalions with the ability to defend against and defeat enduring Indirect Fire (IDF) threats. Countering IDF threats requires a holistic design approach. LPWS works with the C-RAM system-of-systems architecture and with other Program of Record systems to provide the complete suite of C-RAM capabilities.

The major components interoperating with LPWS at the IFPC/Avenger battalions include Air and Missile Defense Planning and Control System shelters; RAM Warn hardware; C-RAM Communications Network; Forward Area Air Defense Command and Control workstations; and multiple counter-fire target acquisition radars, including AN/TPQ-50 Lightweight Counter Mortar Radars, AN/TPQ-53 radars, Sentinel radars, and Ku-band Radio Frequency System radar. In 2013, the Army Acquisition Executive designated C-RAM intercept an Army acquisition program and authorized fielding of LPWS guns and support equipment to the IFPC/Avenger battalions. Fielding is ongoing. Currently, LPWS is managed by the Short Intermediate and Effectors for Layered Defense Project Office.

BENEFIT TO THE SOLDIER

LPWS provides protection to warfighting personnel and high-value assets by detecting RAM launches and intercepting rounds in flight. To date, the Intercept LPWS capability is credited with more than 565 successful intercepts of rockets and mortar rounds fired at high-value theater assets, with no fratricides or collateral damage.

SPECIFICATIONS

- Primary component is the LPWS, a modified U.S. Navy Phalanx Close-In Weapon System mounted on a commercial 35-ton semitrailer for land-based operations
  - Weight: 58,000 pounds
  - Dimensions with Prime Mover: 65 feet long x 12 feet wide x 14 feet high
  - Prime Mover: M916A3
  - Crew Size: Four
- M61A1 20 mm Gatling gun capable of onboard target acquisition and fire control
  - Max/Sustained Rate of Fire: 4,500 rounds per minute
  - ~300 rounds per typical engagement
- LPWS barrels optimized for use with M940 ammunition
  - M940 designed to self-destruct beyond 2,000 meters to minimize collateral damage
  - Integrated search-and-track radars detect and engage wide range of IDF threats
  - Air and Missile Defense command and control system integrates sensors, weapons, and warning systems

PROGRAM STATUS

- **2QFY19:** LPWS Spiral 6.4.3.1 software Urgent Materiel Release
- **4QFY19:** Army Acquisition Objective increased to 53
- **4QFY19–1QFY20:** Logistics Demonstration
- **2QFY20:** Spiral 6.4.1/6.4.3.1 Operational Assessment

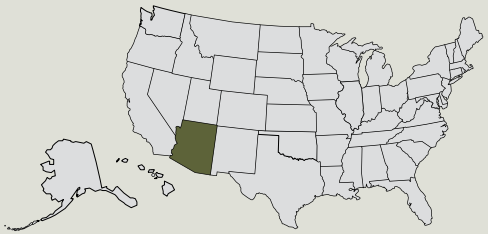
PROJECTED ACTIVITIES

- **1QFY21–2QFY21:** Technical Manual Department of Army Authentication
- **1QFY21–3QFY21:** Combined Arms Support Command New Equipment Training and Instructor and Key Personnel Training
- **3QFY21:** Transition to Sustainment (organic, Army)

LPWS



CONTRACTORS
Raytheon Missiles & Defense (Tuscon, AZ)







Laser Target Locator Module II (LTLM II)

PEO Soldier | Fort Belvoir, VA

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Laser Target Locator Module II (LTLM II) is a handheld, passive sensor that provides all-weather and battlefield conditions target acquisition. The LTLM II has integrated an eye safe laser range finder, an infrared camera, a low-light camera, a digital magnetic compass, a Selective Availability Anti-Spoof Module compliant Global Positioning System, and direct view optics with an etched reticle that is similar in size to the standard M22 binoculars.

BENEFIT TO THE SOLDIER

The LTLM II addresses a high-priority capability gap for a lightweight target locator that allows the dismounted Soldier to conduct urban operations requiring quick movement and obtaining points of advantage. Once the position of advantage is achieved, the Soldier must, in the stealthiest mode possible, under all battlefield and climatic conditions, quickly and accurately ascertain exact positions of interest and provide as accurate of a location description as possible for organic and supporting forces to respond as required.

SPECIFICATIONS

- Handheld weight: LTLM II handheld weight is 3.25 pounds (6 pounds threshold and 3.5 pounds objective)
- System weight: 8 pounds (10 pounds threshold and 7 pounds objective)
- Target location error: Less than or equal to 45 meters at 5 km (threshold) and less than or equal to 20 meters at 5 km (objective)

PROGRAM STATUS

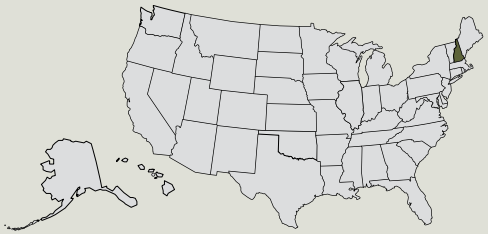
- **3QFY19:** Full Materiel Release

PROJECTED ACTIVITIES

- **FY21:** Continue Fielding

LTLM II

CONTRACTORS
Optics 1 (Bedford, NH)





Lightweight Counter Mortar Radar (LCMR) — AN/TPQ-50

PEO Missiles and Space | Redstone Arsenal, AL

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Bahrain

DESCRIPTION

The AN/TPQ-50 Lightweight Counter Mortar Radar (LCMR) is a highly mobile counterfire target acquisition radar organic to Brigade Combat Teams, field artillery brigades, and division artilleries. The system provides 360 azimuth coverage while automatically detecting, classifying, tracking, and locating points of origin of projectiles fired from mortar, artillery, and rocket systems. The system is fielded in the vehicle-mounted configuration but can be operated in the tripod-mounted configuration.

BENEFIT TO THE SOLDIER

The Q-50 can quickly detect, track, classify, and accurately determine the point of origin of enemy indirect fires and provide impact locations with sufficient accuracy to warn Soldiers and provide point of origin information for engagement. The Q-50 is networked with existing counterfire systems to provide the maneuver commander increased counterfire radar flexibility. Two Soldiers can quickly assemble and disassemble the Q-50.

SPECIFICATIONS

- 360-degree battlefield surveillance coverage
- Can be operated in a stand-alone (six two-person lift transit cases) or vehicle-mounted configuration (M1152A1 High Mobility Multipurpose Wheeled Vehicle with Armor Kit)
- Crew Size: Two Soldiers; Military Occupational Specialty: 13R
- Emplacement: 20 minutes
- Displacement: 10 minutes

PROGRAM STATUS

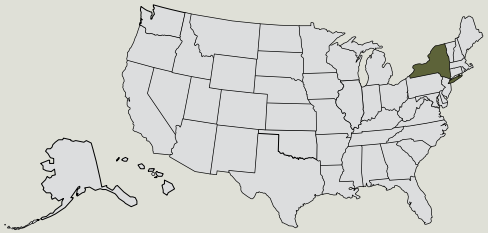
- **FY18:**
  - Army Procurement Objective complete
  - Organic Depot Capability established at Tobyhanna Army Depot, Pennsylvania
- **FY20:**
  - Transition to Sustainment: U.S. Army Communications-Electronics Command, Maryland
  - Software Version 2.1.1 Fielding complete
  - Fielding complete/Full Operational Capability achieved

PROJECTED ACTIVITIES

- **FY21:** Completion of Engineering Change 2

LCMR — AN/TPQ-50

CONTRACTORS
SRCTec (Syracuse, NY)



Lightweight Laser Designator Rangefinder (LLDR) AN/PED-1, AN/PED-1A, and AN/PED-1B

PEO Soldier | Fort Belvoir, VA

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Lightweight Laser Designator Rangefinder (LLDR) is a crew-served, long-range modular system designed for man-portable, day-and-night, and all-weather use. Warfighters use the LLDR to acquire, precisely locate, engage targets with precisions using Global Position System (GPS)-guided and laser-guided munitions, and improve the effectiveness of engagement with unguided munitions.

BENEFIT TO THE SOLDIER

LLDR 2H (AN/PED-1B) integrates a celestial navigation system with a digital magnetic compass, providing highly accurate target coordinates to allow the Soldier to call for fire with precision GPS-guided munitions. A modification of in-service Army program is ongoing that retrofits fielded LLDR 1 and 2 systems with the LLDR 2H precision-targeting capability.

SPECIFICATIONS

- Target designation:
  - Moving, day: Greater than or equal to 3 km (threshold) and 5 km (objective)
  - Moving, night: Greater than or equal to 3 km (threshold) and 5 km (objective)
  - Stationary, day: Greater than or equal to 5 km (threshold) and 10 km (objective)
  - Stationary, night: Greater than or equal to 4 km (threshold) and 5 km (objective)
- Target location error: Less than or equal to 10 m at 4 km (threshold) and 10 km (objective)
- Total system weight: Less than 35 pounds

PROGRAM STATUS

- **4QFY18:**
  - Award of LLDR 3 Indefinite Delivery, Indefinite Quantity 10-year contract
- **3QFY19:** LLDR 3 program terminated

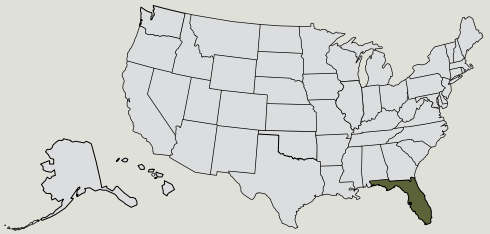
PROJECTED ACTIVITIES

- **3QFY21:** Complete modification of in-service equipment retrofit deliveries
- **FY21–FY25:** Continue LLDR Sustainment

LLDR



CONTRACTORS
LLDR 1, 2, 2H: Northrop Grumman Corporation (Apopka, FL)



Lightweight Towed Howitzer — M777A2

JPEO Armaments and Ammunition | Picatinny Arsenal, NJ

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Australia, Canada, and India

DESCRIPTION

The M777A2 Lightweight Howitzer provides direct, reinforcing, and general artillery fire support to maneuver forces. The M777A2 is a towed 155 mm Howitzer jointly developed by the U.S. Army and Marine Corps to replace the M198 Howitzer. The extensive use of titanium in all its major structures makes it 7,000 pounds lighter than the M198 with no sacrifice in range, stability, accuracy, or durability. The M777A2's independent suspension, smaller footprint, and lower profile increase strategic deployability and tactical mobility.

The M777A2 Lightweight Howitzer uses numerous improvements to enhance reliability and accuracy and significantly increase system survivability. The system has a Digital Fire Control System (DFCS) that includes an inertial navigation unit with Global Positioning System backup to allow it to self-locate. The DFCS also includes a mission computer, displays, and digital communications. Software upgrades incorporating the Enhanced Portable Inductive Artillery Fuse Setter give the M777A2 the capability to program and fire Excalibur and Precision Guided Kit 155 mm precision munitions.

BENEFIT TO THE SOLDIER

The M777A2 offers the Warfighter improved survivability, lethality, deployability, and mobility to counter threat forces.

SPECIFICATIONS

- Weight: Less than 10,000 pounds
- Emplace: Less than 3 minutes
- Displace: Less than 3 minutes
- Maximum range: 30 km (rocket-assisted round)
- Rate-of-fire: Maximum – 4 rounds per minute; Sustained – 2 rounds per minute
- Ground mobility: Family of Medium Tactical Vehicles, Medium Tactical Vehicle Replacement, 5-ton trucks
- Air mobility: CH-53D/E, CH-47D, MV-22, C-130, C-17, and C-5
- Ammunition: Fires all fielded and developmental North Atlantic Treaty Organization munitions
- Digital and optical fire control: Self-locating and pointing; digital and voice communications; and self-contained power supply

PROGRAM STATUS

- **FY18:**
  - Awarded contract for 18 U.S. Army M777A2 Lightweight Howitzers with BAE Systems
  - Completed Fielding to Infantry Brigade Combat Teams
  - Delivered first four M777A2 Lightweight Howitzers to the Government of India
  - Demonstrated maximum range of 56 km out of the M777 Extended Range Howitzer
  - Awarded contract option for Long Term Performance Based Life Cycle Sustainment (PBLCS) contract
- **FY19**
  - Commenced DFCS-Refresh initiative for Army
  - Tactical Software version 4.1.4 released
  - Memorandum of Understanding Meeting held with Australia and Canada
  - Awarded contract option for Long Term PBLCS contract
- **FY20:**
  - Released Software version 4.1.5 via Engineering Change Proposal
  - Released Software version 5.0.0 via Conditional Software Materiel Release
  - Commenced Sustainment Business Case Analysis
  - Began retrofit of software version 5.0.0 with Advanced Field Artillery Tactical Data System version 6.8.1.1P2 to Army
  - Awarded contract option for Long Term PBLCS contract

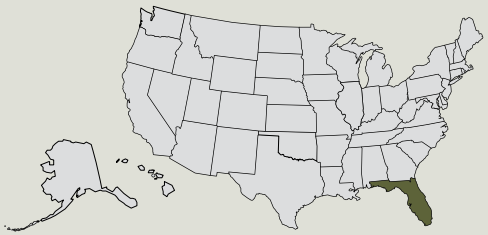
Lightweight Towed Howitzer — M777A2

PROJECTED ACTIVITIES

- **FY21:**
  - Add Canada to the Tri-Lateral agreement for Sustainment
  - Complete Operational Sustainment Review
  - Validate Interactive Electronic Technical Manual (Maintainer)
  - India Foreign Military Sales Production and Acceptance
- **FY21–FY23:** Retrofit DFCS refresh and modernization
- **FY22:**
  - Acceptance of 18 M777A2 Lightweight Howitzers at Yuma Proving Ground, Arizona
  - Production and retrofit of Chrome Cannon Tube
- **FY23–FY25:** Procurement (mods) funding zeroed

CONTRACTORS

BAE Systems (Barrow-in-Furness, United Kingdom)
DRS (Melbourne, FL)
Honeywell (Clearwater, FL)





Line Haul Tractor

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Afghanistan

DESCRIPTION

The M915A3 and M915A5 Line Haul Tractor Trucks serve as the prime movers for semi-trailers with a Gross Combined Vehicle Weight up to 105,000 pounds and 120,000 pounds respectively, with semi-trailers weighing up to 86,000 pounds. They are used to transport bulk cargo, containers, and bulk liquids (petroleum/water) from ports to forward areas. The predecessor Line Haul system is the M915A3, which was fielded in unarmored and armored (Generation III Add-on Armor) configurations. Block upgrades, to include up armor, were made to the M915A3 through Engineering Change Proposals to meet the requirement for the Long Term Armor Strategy A-cab and B-kit armor protection, without reducing mission capability, and which became the M915A5.

The M915A3 and M915A5 are a critical part of the theater distribution system. The M915A3 and M915A5 support missions through the full spectrum of military operations from peacetime to major combat operations. The Line Haul tractors operate primarily in the theater area, but they can deliver cargo as far forward as the road network allows. They can operate worldwide principally on primary and secondary roads and off-road when necessary or feasible. Vehicle operations include around-the-clock, all-weather use in hot, basic, and cold climates. The M915A3 and M915A5 can be transported on C-5 and C-17 aircraft and meet all applicable North Atlantic Treaty Organization interoperability criteria.

BENEFIT TO THE SOLDIER

Through employment of truck transportation organizations, including organic, host nation, and contracted assets, the U.S. Army Transportation Corps is the single largest provider of land surface movement capability to the joint force. Line Haul Operations can support Full Spectrum Operations, from Major Combat Operations, Stability Operations, and Civil Support and therefore must have high reliability and be capable of protecting operators and crews from various threats. As the M915A3 and M915A5 serve as the prime movers for semi-trailers and are used to transport bulk cargo, containers, and bulk liquids (petroleum/water) from ports to forward areas, they are the backbone to the Army Transportation Corps.

The M915A3 and M915A5 Line Haul Tractor Trucks fulfill the Army requirement for heavy haulers. The M915A5 offers the latest vehicle safety and crew comfort, increased crew protection, and improved range and fuel efficiency. It also has better reliability due to onboard diagnostics.

SPECIFICATIONS

- **Line Haul Tractor Truck (M915A5):**
  - Size: 6×4 semi-tractor with sliding non-lubricated fifth wheel (2-inch kingpin)
  - Gross Combination Weight Rating (GCWR) (maximum allowable weight of the loaded semi-tractor and its attached loaded trailer determined by the tractor manufacturer): 120,000 pounds
  - Engine: Detroit Diesel S60 (500 horsepower, 1,650 foot-pounds torque, Detroit Diesel Electronic Control (DDEC) IV engine controller)
  - Transmission: Allison HD4500SP (6-speed automatic)
  - 100% more Electrical Power Reserve (power headroom)
  - Improved Anti-lock Brake System (ABS)
  - Rollover Stability Control System
  - Tilt/Telescoping Steering
  - Collision Warning System Eaton vehicle on-board radar (VORAD)
  - Light-emitting diode headlights
  - High-efficiency air conditioning
  - Maximum towing speed: 65 mph with full payload on flat terrain

Line Haul Tractor

- **Line Haul Tractor Truck (M915A3):**
  - Size: 6×4 semi-tractor with semi-lubricated fifth wheel (2-inch kingpin)
  - GCWR: 105,000 pounds
  - Engine: Detroit Diesel S60 (430 horsepower, 1,450 foot-pounds torque, DDEC IV engine controller)
  - Transmission: Allison HD5460P (6-speed automatic) with power take-off
  - ABS
  - Collision Warning System Eaton VORAD
  - Air conditioning
  - Maximum towing speed: 65 mph with full payload on flat terrain

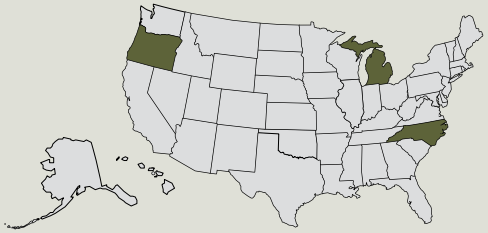
PROGRAM STATUS

- **FY18–FY20:**
  - M915A5 truck Production completed and transitioned to Sustainment
  - M915A5 Armor contract continues to produce armor through 3QFY19 to meet the Tactical Wheeled Vehicle (TWV) strategy to procure and maintain armor kits for greater than or equal to 30% of the TWV fleet size
  - Next armor solicitation for contract award is currently under development
  - Continued divestment of older M915 variants (A0, A1, A2, and A4). The M915A3 and M915A5 will continue to augment or replace assets in the current aging line haul fleet of legacy M915, M915A1, M915A2, and M915A4 series tractors and will allow insertion of improved technologies within the Active Army, Reserve, and National Guard components.

PROJECTED ACTIVITIES

- **FY21–FY25:**
  - Current PdM-HTV Armor Strategy is to execute two-phase approach for future Armor Kit efforts per PEO
  - Phase 1: Rock Island Arsenal (RIA) to produce M915A5 B-Kits (Quantity = 250) with Production targeted to begin December 2020, through October 2021
  - Phase 2: Procure Protection Kits per a small business set-aside basis via Source Selection utilizing FY20–FY25 funds
  - TBD for M915A5 B-Kits
  - Current RIA and future M915A5 B-Kit Production efforts are to close the gap in meeting the TWV strategy to procure and maintain armor kits for greater than or equal to 30% of the TWV fleet size and meet Headquarters, Department of the Army G-8 needs
  - B-Kits will be placed in long-term storage at designated Army Prepositioned Stock locations and will ultimately be under U.S. Army Materiel Command Operations Projects control

CONTRACTORS
ABS Brakes: Meritor (Troy, MI)
Engine: Detroit Diesel (Detroit, MI)
Prime: Daimler Trucks North America LLC/Freightliner (Portland, OR, and Cleveland, NC)







Lower Tier Air and Missile Defense Sensor (LTAMDS)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Lower Tier Air and Missile Defense Sensor (LTAMDS) is an expeditionary, networked radar intended to operate within an Army Integrated Air and Missile Defense (IAMD) Task Force under the control of the IAMD Battle Command System (IBCS). It provides three major tactical functions to IBCS: network sensing, network interrogation, and network up-linking to interceptors. LTAMDS supports Phased Array Tracking Radar to Intercept on Target (PATRIOT) Advanced Capability (PAC)-2 and PAC-3 missile families with growth to support future U.S. Army and Joint interceptors. LTAMDS supports battlespace expansion for the PAC-3 Missile Segment Enhancement Interceptor.

LTAMDS provides simultaneous full sector defense while dynamically adapting performance to the evolving threat environment. It incorporates advanced electronic protection and provides risk mitigation against advanced threat types and capabilities, including lower radar cross-section targets and high speed/maneuvering threats.

BENEFIT TO THE SOLDIER

LTAMDS provides increased battlespace to protect a larger defended area and will result in reduced Operations and Sustainment and spare parts costs. LTAMDS improves capability to counter complex integrated attack and advanced electronic attack threats and provides enhanced classification, discrimination, and identification.

SPECIFICATIONS

- 360-degree multifunction, multimission, C-Band, Active Electronically Scanned Array, digital beamforming
- Interrogation against a wide variety of threats
- Non-Cooperative Target Recognition
- Identify Friend-or-Foe
- Fire control quality data
- Day/night/all-weather
- Tactical/land-based

PROGRAM STATUS

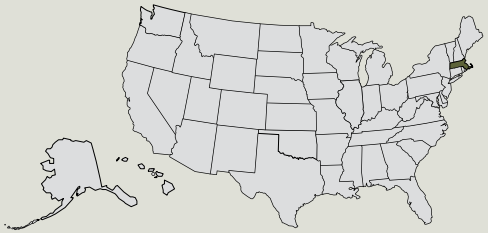
- **1QFY20:** Contract award for six prototypes to support Urgent Materiel Release (UMR) Fielding

PROJECTED ACTIVITIES

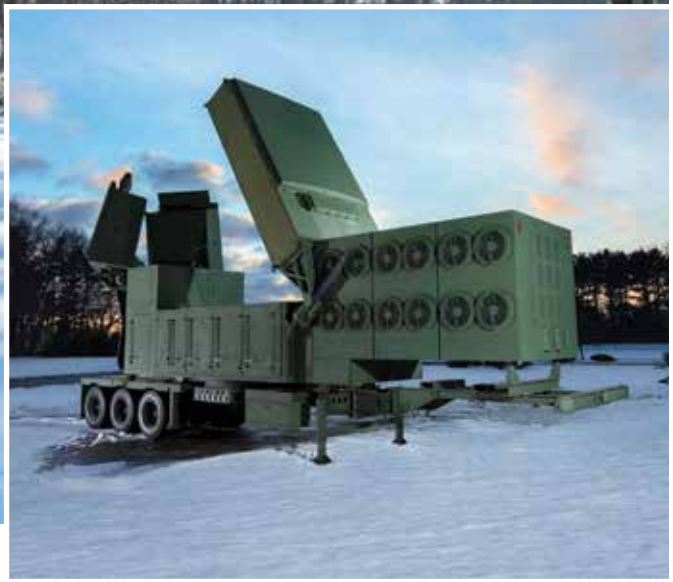
- **3QFY21–1QFY22:** Prototype deliveries
- **4QFY21–3QFY22:** Developmental Testing
- **3QFY22:** Early User Test
- **4QFY22:** UMR Decision
- **FY23:** UMR Fielding

LTAMDS

CONTRACTORS
Raytheon (Andover, MA)







Man Transportable Robotic System Increment II (MTRS Inc II)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Man Transportable Robotic System Increment II (MTRS Inc II) is a remotely operated, medium-sized robotic system that provides a standoff capability to detect, confirm, identify, and dispose of hazards. MTRS Inc II has a standard chassis and modular mission payloads in support of current and future missions. MTRS Inc II supports Engineers, Chemical, Biological, Radiological, and Nuclear (CBRN) Soldiers and Special Operations Forces. It is part of the U.S. Army's common modernized unmanned ground vehicles fleet and is a Program of Record to replace multiple capabilities quickly procured to support Operations IRAQI FREEDOM and ENDURING FREEDOM. Through full and open competition, the Army realized an approximate 50% reduction in MTRS Inc II unit price as compared to the unit price contained in the Life Cycle Cost Estimate.

BENEFIT TO THE SOLDIER

The MTRS Inc II provides the Warfighter with a remote standoff ability to locate, identify, and clear landmines, unexploded ordnance, and improvised explosive devices in the path of maneuvering Army or Joint forces. It also provides CBRN Soldiers with the capability to employ CBRN sensors from a distance. It replaces the aging non-standard fleet of robots with enhanced capabilities to clear obstacles and threats, improving the ability to maneuver, and enhancing survivability. Recognizing the benefits of this enhanced capability, sister services are joining the program on their own accord to procure MTRS.

SPECIFICATIONS

- Handheld controller allows operator a standoff capability to operate MTRS Inc II from a mounted or dismounted location and receive video and vehicle control data
- Employs the Army's Robotics and Autonomous Systems Interoperability Profile, which defines both hardware and software interfaces to enable a plug-and-play payload concept
- Allows multiple payload platforms to improve support to Soldiers in current and future operating environments
- Improved optics within high-definition camera with pan/tilt/zoom features to better identify hazards
- Increased robotic arm performance: MTRS Inc II features a 5-degree-of-freedom manipulator arm that pivots 360-degrees and a "wrist" joint allowing the gripper and camera to look over and down onto elevated surfaces, providing greater fidelity
- Multimedia (interactive) operator and maintenance technical manuals for ease of training and sustainment

PROGRAM STATUS

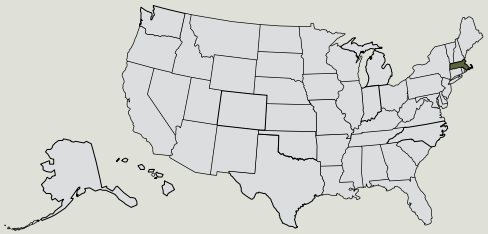
- **2QFY19:** Limited User Test
- **FY20:** MTRS Inc II Fielding was originally slated for FY21, however, the program office successfully accelerated Fielding by more than a year at Army leadership's request
- **2QFY20:** First Unit Equipped, 55th Explosive Ordnance Disposal Company, Fort Belvoir, Virginia

PROJECTED ACTIVITIES

- **FY21:** Verification of Fixes Cyber Test; Full Materiel Release

MTRS Inc II

CONTRACTORS
FLIR Systems (Chelmsford, MA)





Man-portable Radiological Detection System (MRDS)

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Man-portable Radiological Detection System (MRDS) Capability will provide increased Radiological and Nuclear (RN) detection, localization, presumptive identification, and field-confirmatory identification capabilities that are networked to provide situational awareness at the tactical level. The MRDS will support Countering Weapons of Mass Destruction (CWMD) Interdiction and Elimination operations, specifically RN Sensitive Site Assessments, and Sensitive Site Exploitation. Future capability may also support Reconnaissance and Surveillance across the full range of CWMD operations. This capability supports Radiological and Nuclear Interdiction and WMD-elimination operations to systematically locate, secure, characterize, and disable WMD programs and related signed capabilities.

BENEFIT TO THE SOLDIER

The MRDS replaces low-density legacy equipment. The data sent from the MRDS to a unit's Command Post will be collected across the objective, in map or overhead imagery form, to allow Chemical, Biological, Radiological, and Nuclear (CBRN) Technical Forces commanders to build their intelligence overview of the site and focus entry and survey efforts on high-payoff areas.

SPECIFICATIONS

- **Handheld Sensor:**
  - Overall dimensions: Including handle and Ge detector endcap 15.5 in L x 6.25 in W x 8.25 in H (39.5 cm L x 16 cm W x 21 cm H)
  - Weight: 15.4 pounds (6.98 kg) gamma only; 16.8 pounds (7.62 kg) gamma/neutron
  - Internal battery: Two rechargeable Lithium-Ion; 98 Wh each, nominal; over eight hours of battery life at 25°C when High Purity Germanium detectors are cold; less than 4 hours to charge; internal battery is easily swapped
  - External battery: Battery lifetime may be extended indefinitely by using optional external battery packs. An external military battery (Model 2590) weighs less than 3.25 pounds and extends lifetime to more than 16 hours
  - Input power: 12 V to 17 V DC from battery or DC power supply (universal mains supply included)
  - Power usage: Highest during cool down and charging battery: <100 W; cold with fully charged battery <35 W
  - Operation range temperature: -20°C to 50°C
  - Relative humidity: 95% non-condensing
  - Instrument enclosure: IP65 sealed against ingress of dust and water. All perforations are sealed by rubber plugs (connectors, memory cards, etc.)
  - Wireless connectivity: Institute of Electrical and Electronics Engineers 802.11a/b/g/e/i/h/j standards and IEEE 802.11n wireless and Bluetooth

PROGRAM STATUS

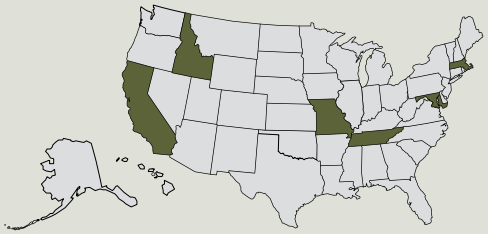
- **3QFY18:** Milestone C granted by Milestone Decision Authority
- **4QFY18:** Awarded Handheld Sensor Contract
- **2QFY19:** Test Article Delivery

PROJECTED ACTIVITIES

- **4QFY20:**
  - Full-Rate Production Decision
  - Initial Operational Test and Evaluation
- **2QFY21:** Full Materiel Release

MRDS

CONTRACTORS
Handheld Sensor: AMETEK-ORTEC (Oak Ridge, TN)
Hands-Free Sensor: Bruker Detection Corporation (Billerica, MA)
Hardware Integration and Kitting: Veterans Corps of America (Abingdon, MD)
Mobile Field Kit CBRN Software Integration: Asynchrony Labs (St. Louis, MO)
Radios: Thales (Cholet, France) and TrellisWare (San Diego, CA, and Boise, ID)







Maneuver-Short Range Air Defense (M-SHORAD)

PEO Missiles and Space | Redstone Arsenal, AL

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Maneuver Short-Range Air Defense (M-SHORAD) (Inc. 1), a Directed Requirement, adds commensurate mobility or survivability to maneuvering forces and joint maneuvering forces through protection against enemy air threats. The M-SHORAD (Inc. 1) capability defeats, destroys, or neutralizes threat Rotary Wing (RW), Fixed Wing (FW), and Unmanned Aircraft Systems (UAS), while supporting Multi-Domain Operations and conducting self-protection against dismounted and light vehicle ground targets.

The M-SHORAD (Inc. 1) system consists of existing capabilities integrated onto a Stryker A1 Double-V Hull Infantry Carrier Vehicle, which includes the Reconfigurable Integrated-weapons Platform and Mission Equipment Package (MEP) powered by a 450-Horse Power C9 Engine. The MEP weapons integration include Modified M299 HELLFIRE Longbow Missile (HF LB) Launcher with 2x HF LB Missiles, Stinger Vehicle Universal Launcher (SVUL) with 4x Stinger Missiles, XM914 30MM Canon, M240 7.62MM Machine Gun. The M-SHORAD (Inc. 1) uses the Forward Area Air Defense Command and Control (FAAD C2) system, Handheld, Manpack, and Small Form Fit tactical radio communication systems, Single Channel Ground and Airborne Radio System Radios for internal and external communications, electro-optical/infrared (EOIR) system, and onboard Multi-mission Hemispheric Radar (MHR) system to detect and track aerial threats.

BENEFIT TO THE SOLDIER

The M-SHORAD (Inc. 1) system provides air protection to the maneuvering formation to counter a wide range of air threats: UAS, RW, and FW aircraft, which threaten the Brigade Combat Team's freedom of maneuver throughout the range of military operations. Avenger is highly mobile with shoot-on-the-move capability and can be operated from a remoted position. Slew-to-Cue variant enables the gunner a time to launch on target of 17 seconds. More importantly, the Modification-Service Life Extension Plan will ensure the Soldier has the most current Identification Friend-or-Foe (IFF) system, internal communication system, and is sustainable through the end of its useful life.

SPECIFICATIONS

- Three-man crew (crew commander/driver/gunner)
- One SVUL with 4 stinger missiles, 4 reload missiles, 1x grip-stock, and 4x Battery Coolant Units
- One Modified M299 HF LB Launcher with 2 x HF LB Missiles
- XM914 (30MM) Canon with 474 rounds (no tracer): 114 loaded, 5x cans of 72 rounds in back
- M240 (7.62MM) Machine Gun with 1,000 rounds: 200 loaded, 4x cans of 200 rounds in back
- EOIR system; surveillance sensors and targeting sights
- IFF to reduce fratricide
- FAAD C2 Capability Air Battle Situation Display and Messages
- MHR radar system; aerial threat detection/tracking

PROGRAM STATUS

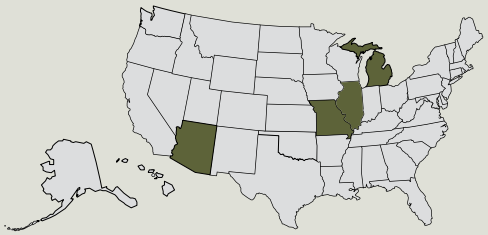
- **2QFY18:** Approved Directed Requirement
- **4QFY18:** Prototype Other Transaction Authority Award
- **3QFY20:** New Equipment Training
- **4QFY20:**
  - Collective Training
  - Production Contract Award

M-SHORAD

PROJECTED ACTIVITIES

- **1QFY21:** Operational Assessment
- **2QFY21:**
  - First Unit Equipped; 4 x Systems/Platoon
- **4QFY22:** M-SHORAD Inc 2 (Directed Energy): Prototype Deliveries
- **FY23:** M-SHORAD Inc 2 (Directed Energy): Soldier Evaluations

CONTRACTORS
Boeing (Chicago, IL)
DRS Sustainment Systems, Inc. (Bridgeton, MO)
General Dynamics Land Systems (Sterling Heights, MI)
Raytheon Missiles & Defense (Tuscon, AZ)





Medical Communications for Combat Casualty Care (MC4)

PEO Enterprise Information Systems | Fort Belvoir, VA

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Medical Communications for Combat Casualty Care (MC4) is a (semi-) ruggedized system-of-systems containing medical software packages fielded to operational medical forces worldwide. The system is comprised of joint software, commercial-, and Government-off-the-shelf products, including Theater Medical Information Program-Joint (TMIP-J) applications provided by the Program Executive Office Defense Healthcare Management System. The TMIP-J applications include software for electronic health record (EHR) documentation, a web-based application that serves as a deployed EHR repository and a web-based application for conducting battlefield surveillance. Although the MC4 program does not create the software, it provides the tools needed to digitally record and transfer critical medical data from the foxhole to medical treatment facilities around the world. MC4 is the most widely used, comprehensive information management medical system on the battlefield.

The program has deployed a new cloud-based operational health Information Technology (IT) software called Health Assessment Lite Operations (HALO), which is used to capture health data from sick, injured, or wounded service members. The software is a fit-for-purpose joint solution used by medics and providers and is available on MC4 systems.

SPECIFICATIONS

- In- and out-patient
- Point of injury
- Medical logistics and supplies (Class VIII)
- Blood inventory management
- Patient movement and tracking
- Medical surveillance and situational awareness

PROGRAM STATUS

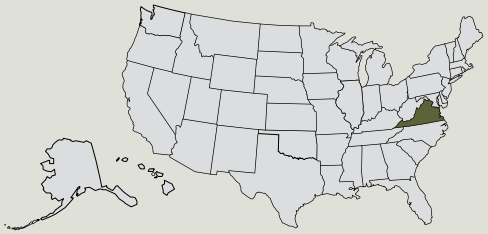
- **1QFY20:** Completed launch and deployment of HALO software app to Afghanistan
- **2QFY20:**
  - MC4 support for COVID-19 missions accounted for 1,700 patient encounters using MC4 systems
  - Training was provided to 431 medical personnel from 72 U.S. Army and Navy units for a total of 248 MC4 systems
  - Completed a Memorandum of Agreement with the Joint Operational Management Information Systems
  - Army Surgeon General's #1 priority on his Commander's Program Assessment is Army operational health information systems like MC4
  - Nominated for Under Secretary of Defense for Acquisition and Sustainment 2020 Excellence in Acquisition Award
- **2QFY20–4QFY20:**
  - EMR 2.3.1.4 and HALO 1.6 Fielding to Services Roadshow and training for the new Logistical Operational Health IT system
- **2QFY20–3QFY20:** Fielding hands-free devices to medics and providers
- **3QFY20:** Continue Fielding MC4 dental application

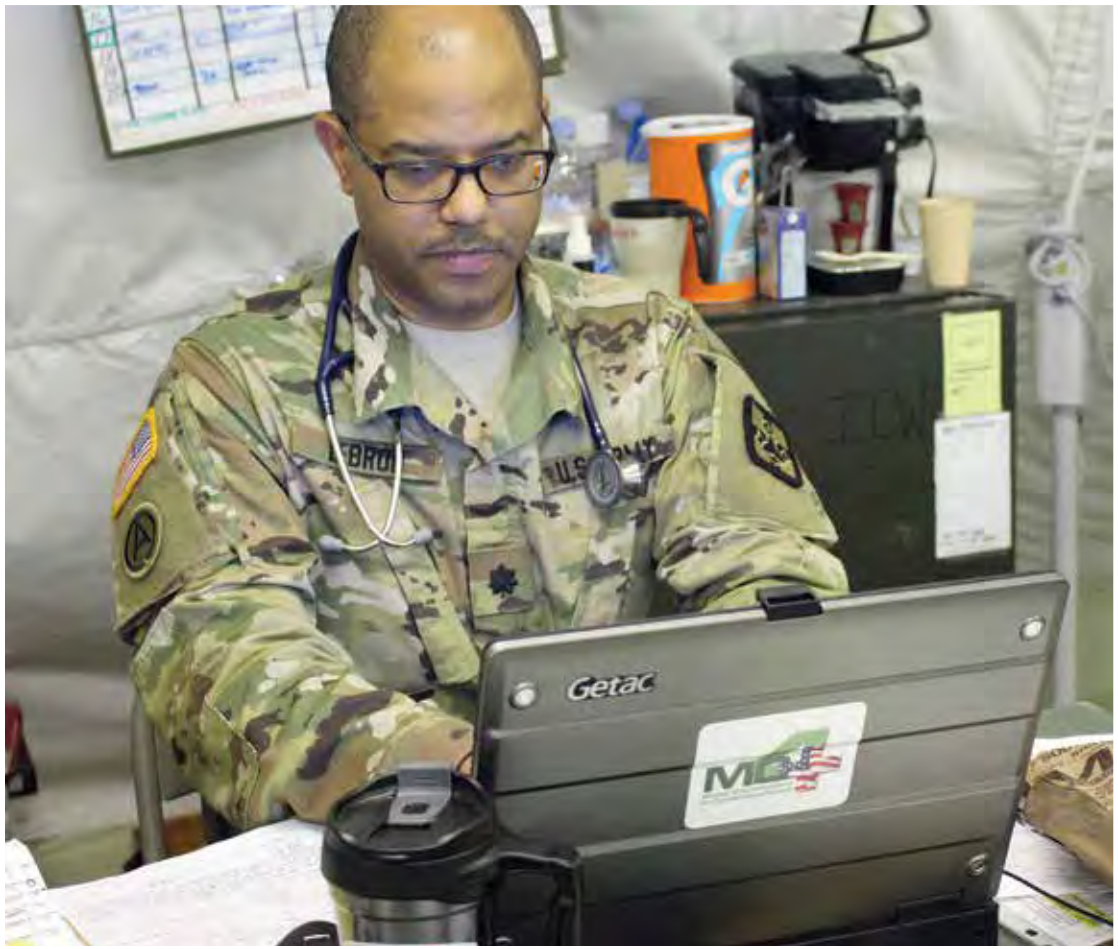
PROJECTED ACTIVITIES

- **FY21:** Continue rapid Development and Fielding of Operational Health IT capabilities to medical forces
- **1QFY21:** Deployment of HALO v. 1.7
- **2QFY21–3QFY21:** Deployment of future capabilities in virtual health and telemedicine

MC4

CONTRACTORS
CACI (Arlington, VA)









Medium Dozer — T-9

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Uganda

DESCRIPTION

The T-9/D7R dozer model is a medium drawbar, air-transportable by C-5 and C-17, diesel-engine-driven crawler tractor with a dozer blade and optional winch (Type I) or ripper (Type II). The medium dozer is a commercial vehicle with military modifications to include North Atlantic Treaty Organization start, arctic kit, rifle rack, and armor C-Kit capability. The vehicle provides cutting, moving, and finish-grading capabilities to support various construction tasks such as building and maintaining roads, airfields, and shelters.

BENEFIT TO THE SOLDIER

The T-9/D7R-II medium dozer is used to build and maintain air and ground lines of communication such as airfields and main supply routes, which enhances infrastructure and force protection for the Warfighter.

SPECIFICATIONS

- Maximum speed: 6.6 mph forward, 8.4 mph reverse
- 105,820 pounds drawbar pull
- Three forward and three reverse gears
- Dimensions:
  - With winch: 273 inches long, 139 inches high, and 145 inches wide
  - Weight: 62,000 pounds without armor; 66,000 pounds with armor
  - With ripper: 289 inches long, 139 inches high, and 145 inches wide
  - Weight: 65,000 pounds without armor; 69,000 pounds with armor

PROGRAM STATUS

- **FY18–FY20:** Completed Fielding
- **FY20:** Contract Award for Construction Equipment Virtual Trainer (CEVT)

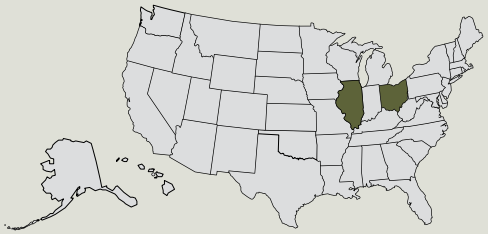
PROJECTED ACTIVITIES

- **FY21:**
  - Award new Production Contract to incorporate Electric-over-Hydraulic technology
  - Field CEVT to Engineer School
- **FY21–FY22:** Production and Fielding of Electric-over-Hydraulic Dozers

Medium Dozer — T-9



CONTRACTORS
BAE Systems (Cincinnati, OH)
Caterpillar, Inc. (Peoria, IL)





Military Bridging Systems

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT II/III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Joint Assault Bridge (JAB) (ACAT II) provides Army Mobility Augmentation Companies and Brigade Engineer Battalions supporting Armored Brigade Combat Teams a survivable, deployable, and sustainable heavy-assault-bridging capability.

The M1977 Common Bridge Transporter (CBT) (ACAT III) is a modified M977 Heavy Expanded Mobility Tactical Truck equipped with a Load Handling System. The M1977 CBT is designed to support the Engineer Corps in transporting all bridging assets.

The Line of Communication Bridge (LOCB) (ACAT III) restores and maintains line of communication routes in theater to support large-scale ground combat operations.

The Assault Breacher Vehicle (ABV) (ACAT III) is a highly mobile and heavily armored minefield and complex obstacle breaching system.

The Improved Ribbon Bridge (IRB) (ACAT III) is used to transport weapon systems, troops, and supplies over water when permanent bridges are not available, and thereby supports the Joint force commander's ability to employ and sustain forces worldwide.

The M30 Bridge Erection Boat (BEB) (ACAT III) replaces the legacy MK III BEB. It has a crew of two Soldiers (operator and crewman) and is launched and retrieved from the CBT.

BENEFIT TO THE SOLDIER

JAB improves survivability, mobility, and supportability for the Warfighter. The JAB provides survivability equal to the M1A1 chassis. It is the sustainable system designated to replace the Armored Vehicle Launch Bridge system (chassis and launcher).

CBT is an essential component of the Multi-Role Bridge Company (MRBC). The MRBC combines the roles of previous float- and fixed-bridge companies to perform their missions with less manpower and greater flexibility.

LOCB supports the focused logistics concept by facilitating sustainment of widely dispersed forces over a large area of operation. The LOCB facilitates the uninterrupted flow of forces, equipment, personnel, and supplies for sustained ground operations.

The ABV provides crew protection and vehicle survivability while having the speed and mobility to keep pace with the maneuver force.

IRB allows for crossings of faster water with higher banks in contingency operations abroad and disaster relief and recovery efforts at home. The IRB provides commanders an important option to rapidly close distances and move critical capabilities and supplies.

BEB features a crew protection kit and provides improved maintainability and reliability. The boat will support rafting operations in fast water and operates in high-particulate matter environments.

SPECIFICATIONS

JAB: Military Load Class of 115 Normal, 124 Caution; Span: 18.3 meters; Maneuverability: comparable to the M1A1 Abrams and the ABV
CBT: Payload: 24,000 pounds; Configuration: 8 feet by 8 feet; Fording capability: 48 inches; Grade: 60%
LOCB: Maximum load capacity: 150 wheeled or 120 tracked vehicles; Roadway width: 5 meters; Assembled length: spans gaps up to 300 meters
ABV: Chassis is very similar to the Abrams in terms of size, weight, speed, and range

IRB: Military Load Capacity 105 wheeled or 85 tracked (normal); 110 wheeled or 90 tracked (caution crossing)
BEB: Twin-engine, water jet propelled, aluminum hull, 24-feet long

PROGRAM STATUS

JAB:
- **2QFY18:** Live Fire Test and Evaluation
- **FY19:**
  - Production Qualification Testing
  - Initial Operational Test #1
- **FY20:**
  - Original Equipment Manufacturer Confidence Testing
  - Received 3-year Authorization to Operate
- **2QFY20:** Government Demonstration, Yuma Proving Ground, AZ

CBT:
- **Current:** Produced and Fielded more than 600 M1977A4s (latest variant)

LOCB:
- **FY20:** Pre-Milestone C, currently fulfilling Operational Needs Statement requirements

ABV:
- **FY16–FY20:** Production and Fielding, 111 ABVs Fielded through FY20

IRB:
- **Current:** Program in Sustainment

BEB:
- **Current:** 198 BEBs Fielded to date

PROJECTED ACTIVITIES

JAB:
- **FY21:** Initial Operational Test #2, Conditional Materiel Release
- **FY22:** Full Materiel Release
- **FY22–FY27:** Full-Rate Production (FRP) and Delivery

CBT:
- **Expected:** Ongoing contract for Recapitalization

LOCB:
- **3QFY21:** Milestone C
- **3QFY22:** FRP Decision
- **3QFY23:** Conditional Materiel Release

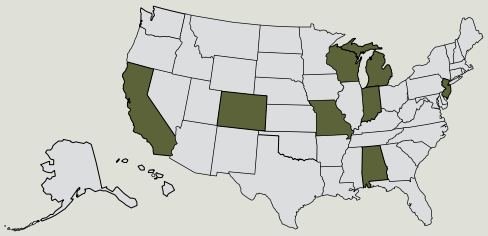
ABV:
- **FY21–FY23:** ABV Fielding
- **FY21–FY25:** ABV A2 Suspension Upgrade Field Installs

IRB:
- **Expected:** Will undergo testing to establish maximum Military Load Class (MLC) ratings and to establish a path forward to achieve MLC 120 tracked and 150 wheeled

BEB:
- **FY21–FY25:** Fielding

Military Bridging Systems

CONTRACTORS
ABV: AECOM Management Services (Indianapolis, IN), Anniston Army Depot (Anniston, AL), DRS Network & Imaging Systems (Huntsville, AL, and Cypress, CA), General Dynamics Land Systems (Sterling Heights, MI), and Pearson Engineering Limited (Newcastle, United Kingdom)
BEB: Birdon America Inc. (Denver, CO)
CBT: Oshkosh Defense (Oshkosh, WI)
IRB: General Dynamics European Land Systems (Germany)
JAB: Leonardo DRS (West Plains, MO)
LOCB: Acrow (Parsippany, NJ) and Acrow Global Limited (United Kingdom)







Mine Protection Vehicle Family (MPVF)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT II/III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

MCV: Austria
MPCV: United Kingdom
VMMD: Australia, Canada, and Kenya

DESCRIPTION

The Mine Protection Vehicle Family (MPVF) consists of the Medium Mine Protected Vehicle (MMPV) Type I and Type II (RG-31), the Vehicle Mounted Mine Detection (VMMD) Husky System, and the Mine-Protected Clearance Vehicle (MPCV) Buffalo A2. All are blast-protected with a V-shaped hull.

MMPV Type I (Panther) supports explosive ordnance disposal companies, combat engineer units, and chemical/biological response teams.

The VMMD Husky, MPCV Buffalo A2, and MMPV Type II (RG-31) support engineer units in Brigade Engineer Battalions and route and area clearance operations. The VMMD is a vehicle-mounted mine-detection and lane-proofing system capable of finding and marking metallic explosive hazards. The MPCV is capable of interrogating and classifying suspected explosive hazards, including improvised explosive devices (IEDs) with its articulating arm and camera, which can remotely interrogate a suspected explosive hazard and allow the crew to confirm, deny, and classify the hazard. The MMPV Type II is a command and control vehicle with various attachments used to detect and neutralize potential explosive hazards.

The Mine Clearing Vehicle (MCV) is a vehicle designed to clear large areas of anti-tank and anti-personnel mines by means of a rotating flail.

Explosive Hazard Pre-detonation (EHP) capabilities will counter the full spectrum of conventional and asymmetric explosive hazards, including surface-laid, buried, and concealed landmines, IEDs, explosively formed penetrators, unexploded ordnance, battlefield munitions, and booby traps, including associated trigger mechanisms.

BENEFIT TO THE SOLDIER

These systems provide the Warfighter effective, reliable, and affordable blast protection by interrogating and classifying suspected explosive hazards while providing force protection to defeat the full spectrum of worldwide explosive hazards.

SPECIFICATIONS

- **MCV:** 2-person capacity, Gross Vehicle Weight (GVW) 42,628 pounds
- **MMPV Type I:** 5-person capacity, GVW 74,000 pounds
- **MMPV Type II:** 4-person capacity, GVW 35,000 pounds
- **MPCV Buffalo A2:** 6-person capacity, GVW 48,500 pounds
- **VMMD Husky:** 1-person capacity, GVW 15,240 pounds

PROGRAM STATUS

- **FY18–FY20:**
  - Supported 13 separate Operational Needs Statements for MPVF, totaling approximately 335 vehicles/systems
  - Completed RECAP/RESET production at Letterkenny Army Depot (LEAD), Pennsylvania, for the Husky, Buffalo, MMPV Type I, and MMPV Type II
- **1QFY19:** MMPV Type I Conversion: Completed RECAP/RESET
- **2QFY19:**
  - MMPV Type II: Full Materiel Release
  - MMPV Type II Multi-functional Video Display: Type Classification Standard
- **4QFY19:**
  - EHP Blower obtained Full Materiel Release and began Fielding
  - MMPV Type I: Basis of Issue Plan added Engineer Platoon Sergeant Requirement
- **2QFY20:** Buffalo/Husky: Complete RECAP/RESET
- **3QFY20:** MMPV Type I Conversion: Conditional Materiel Release

- **4QFY20:** MMPV Type II: Complete RECAP/RESET

PROJECTED ACTIVITIES

- **1QFY21:**
  - Buffalo/Husky: Complete Fielding
  - MMPV Type I Conversion: Full Materiel Release
  - MMPV Type II: Complete Interrogation Arm Upgrade Activities
  - Buffalo/Husky: Transition to Sustainment
  - MMPV Type II: Transition to Sustainment
- **2QFY21:**
  - EHP Roller: Obtain Full Materiel Release and begin Fielding
  - EHP Blower: Complete Fielding
- **3QFY21:**
  - MMPV Type I: Complete Fielding
  - MMPV Type II: Complete Fielding









MPVF

CONTRACTORS
EHP Debris Blower: Buffalo Turbine (Springville, NY)
EHP Mine Roller: Globe Tech (Plymouth, MI)
M1271 MCV: Hydrema (Denmark)
MMPV Type I (Panther): BAE Systems (York, PA); RECAP/RESET performed at LEAD, PA
MMPV Type II (RG-31): General Dynamics Land Systems-Canada (Canada) and RECAP/RESET performed at LEAD, PA
MPCV: General Dynamics Land Systems (Sterling Heights, MI) and RECAP/RESET performed at LEAD, PA
VMMD: Critical Solutions International, Inc. (Charleston, SC); RECAP/RESET performed at LEAD, PA





Mobile Maintenance Equipment Systems (MMES)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Mobile Maintenance Equipment Systems (MMES) provide a two-level maintenance capability to the Warfighter. Eight interconnected maintenance systems are distributed throughout the U.S. Army at multiple levels and provide a holistic repair capability in all environments. This approach meets the Army's two-level maintenance philosophy and supports the current force while also providing modular configurations to meet the specific needs of the Army in today's transforming environment.

BENEFIT TO THE SOLDIER

MMES provides technological advancements and professional-grade tools with lifetime warranties that will save the Army money for years to come. This integrated maintenance system serves to consolidate Line Item Numbers to one and equips our forces with the most current and accurate tools to complete the mission while performing maintenance on the latest technologically advanced equipment and weaponry.

SPECIFICATIONS

MMES family of systems includes:

- Metal Working and Machining Shop Set (MWMSS): The Army's only expeditionary Advanced Manufacturing Capability, which includes additive polymer printing and future metal printing systems.
- Fire Suppression Refill System (FSRS): The Army's only system that can produce nitrogen on the battlefield to support multiple combat platforms and refill fire suppression bottles at the point of need.
- Armament Repair Shop Set (ARSS)
- Hydraulic Systems Test and Repair Unit (HSTRU)
- Next Generation Shop Equipment, Welding (NG SEW)
- Next Generation Shop Equipment Contact Maintenance
- Forward Repair System
- Standard Automotive Tool Set

PROGRAM STATUS

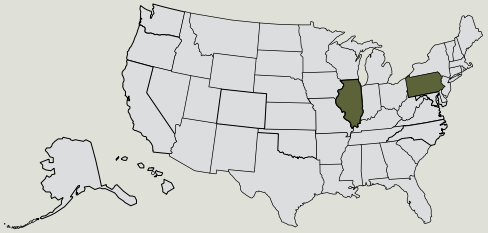
- **2QFY20:** FSRS: Milestone C Full-Rate Production (FRP)/Full Materiel Release (FMR)
- **3QFY20:** NG SEW FRP
- **4QFY20:** FSRS First Unit Equipped

PROJECTED ACTIVITIES

- **3QFY21:** NG SEW FMR

MMES

CONTRACTORS
ARSS: Tobyhanna Army Depot (Tobyhanna, PA)
HSTRU: Mandus Group (Rock Island, IL)
MWMSS and FSRS: Rock Island Arsenal Joint Manufacturing & Technology Center (Rock Island, IL)
SEW Trailer: Capability Production Document still in staffing











Mortar Weapon Systems

JPEO Armaments and Ammunition | Picatinny Arsenal, NJ

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Fielded with multiple countries

DESCRIPTION

The family of Mortar Weapon Systems provides organic, indirect fire support to the maneuver unit commander and is employed in all combat formations. The U.S. Army uses three variants of 120 mm Mortar Weapon Systems. The two mounted variants are the M121 120 mm mortar, used on the M1064A3 and XM1287 Armored Multi-Purpose Vehicle (AMPV) Mortar Carriers and the 120 mm Recoiling Mortar System, used on the M1129 and M1252 Stryker Mortar Carriers. The M120A1 120 mm Towed Mortar System is the dismounted variant. The Mortar Fire Control System (MFCS) provides the Warfighter improvements in command and control of mortar fires and the speed of employment, accuracy, and survivability of mortars. The M95/M96 MFCS-Mounted (MFCS-M), used on the M1064A3, AMPV, and Stryker, and the M150/M151 MFCS-Dismounted (MFCS-D), used with the M120A1, combine a fire control computer with an inertial navigation and pointing system, allowing crews to fire in less than a minute, greatly improving mortar lethality, accuracy, and crew survivability.

The Lightweight M252A1 81 mm Mortar Systems and Lightweight M224A1 60 mm Mortar Systems have been qualified and are in production and fielding. The M252A1 weighs 20% less and the M224A1 weighs 13% less than their legacy counterparts, yet they maintain the same capability. All Mortar Weapon Systems fire a full family of ammunition, including high explosive (HE), infrared, visible light, smoke, and training.

The M32 and M32A1 Lightweight Handheld Mortar Ballistic Computers (LHMBC) have a tactical modem and embedded Global Positioning System, allowing mortar crews to send and receive digital call-for-fire messages, calculate ballistic solutions, and navigate. The next-generation Android-based M32A2 is under development.

The XM395 Accelerated Precision Mortar Initiative (APMI) achieved an Urgent Materiel Release in March 2011. APMI has been deployed and used in combat since June 2011. In June 2014, APMI was approved for Conditional Materiel Release to the Global Reaction Force.

BENEFIT TO THE SOLDIER

Mortar Weapon Systems provide the maneuver commander rapid, responsive, hip-pocket indirect fires in support of combat operations.

PROGRAM STATUS

Mortar Weapon Systems

- **FY18:**
  - M32A1 Software version 6.0 Materiel Release
  - Milestone (MS) C/Type Classification (TC)/Limited Production
  - Fielding of the 81 mm Lightweight Mortar (M252A1)
  - Continue Production and Fielding of mortar weapon systems and fire control systems
- **FY19**
  - Initiated LHMBC M32A1 Acquisition Program Baseline
  - Continue Production and Fielding of mortar weapon systems and fire control systems
- **FY20:**
  - Fielding of the M32A1
  - Continue Production and Fielding of mortar weapon systems and fire control systems

Mortar Cartridges

- **FY19:**
  - Continue Production of 60/81/120 mm HE, Full-Range Practice (FRP), and Smoke and Illumination Mortars
  - Obtained TC-Standard (STD)/MS C for M821A4 program

- Completed 60 mm M1061 Enhanced Fragmentation Mortar First Article Test
- Completed 120 mm mortar Hexachloroethane Smoke Demonstration

• **FY20:**
- Continue Production of 60/81/120 mm HE, FRP, and Smoke and Illumination mortars
- Commence 60 mm M1061 Enhanced Fragmentation Mortar Production
- Commence 81 mm M821A4 Product Qualification Testing and Initial Production

PROJECTED ACTIVITIES

Mortar Cartridges

• **FY21:**
- Continue Production of 60/81/120 mm HE, FRP, and Smoke and Illumination Mortars
- Start 60 mm M1061 Enhanced Fragmentation Mortar deliveries
- 81 mm M821A4 Achieve Full Materiel Release and Full-Rate Production decision

Mortar Systems

• **4QFY22:** M32A2 Software version 3.0 Materiel Release

SPECIFICATIONS

Mortar	Range (meters)	Ammunition
M120/M121 120 mm Mortar	7,240	War reserve HE (M934A1, white-phosphorus (WP) smoke (M929), visible light illumination (M930), infrared illumination (M983), war reserve and training (M933A1), and FRP (M931). High Explosive Guided Mortar is in development.
M252 81 mm Mortar	5,935	War reserve HE (M821A3), red phosphorus smoke (M819), visible light illumination (M853A1), infrared illumination (M816), war reserve and training HE (M889A4), and FRP (M879A1).
M224 60 mm Mortar	3,489	War reserve HE (M720A2/M1061), WP smoke (M722A1), visible light illumination (M721), infrared illumination (M767), war reserve and training HE (M768A1), and FRP (M769).



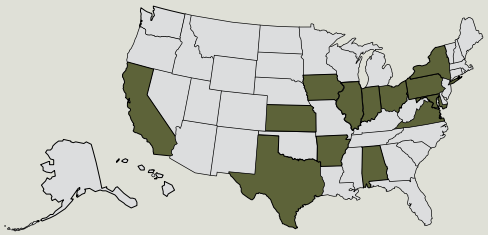




Mortar Weapon Systems

CONTRACTORS

60 mm, 81 mm, and 120 mm Baseplate Production, 120 mm Bipod Production, 81 mm, and 120 mm Cannon Production: Elbit Systems of America (Fort Worth, TX)
60 mm, 81 mm, and 120 mm Cannons: Watervliet Arsenal (Watervliet, NY)
60 mm and 81 mm Mortar Bipod Production: Connectec (Irvine, CA)
M32A1 LHMBC (RTHD-2): VT Miltope (Hope Hull, AL)
M32A2 (Nett Warrior): PM Ground Soldier (Fort Belvoir, VA)
MFCS-D and MFCS-M Production, Fielding, and Installation: Elbit Systems of America (Fort Worth, TX)
Mortar Cartridge Load, Assemble, Package: Day & Zimmerman (Parsons, KS), General Dynamics (QE, Canada), and Pine Bluff Arsenal (Pine Bluff, AR)
Mortar Fins: Matech Industries (Salisbury, MD), Flexible Concepts (Elkhart, IN), and Gayston Corporation (Springboro, OH)
Mortar Fuzes: L3 Fuzing and Ordnance Systems (Cincinnati, OH) and Nammo Pocal (Scranton, PA)
Mortar Ignition Cartridge: Nammo Pocal (Scranton, PA)
Mortar Propellant Charges: American Ordnance (Middletown, IA) and General Dynamics (Marion, IL)
Mortar Shell Bodies: General Dynamics (Wilkes Barre, PA) and Lewis Engineering Corporation (Sherman, TX)



Motor Grader — 120M

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Afghanistan and Iraq

DESCRIPTION

The 120M Motor Grader is a heavy-duty, pneumatic-tired commercial construction grader. It performs rough and fine grading, ditching, high-bank cutting, and sloping. The grader will serve the needs of Brigade Engineer Battalion, Infantry Brigade Combat Team, and Equipment Support Company Airborne units employed and/or positioned throughout the entire range of military operations.

The 120M Motor Grader will be used along with other construction equipment to conduct general construction missions in support of repair, maintenance, and construction of air and ground lines of communication. It will be used to repair and restore infrastructure and to enhance force and infrastructure protection. The Grader Type IA is air-droppable, commercial-off-the-shelf construction equipment that is fully adaptable to military operations.

BENEFIT TO THE SOLDIER

The 120M Motor Grader improves and repairs air and ground lines of communication, such as airfields and main supply routes, which enhances infrastructure and force protection.

SPECIFICATIONS

- Six-wheeled, commercial, construction grader with all-wheel drive, articulated frame steer, and pneumatic tires
- Electro-hydraulic joystick control operation
- Automatic power shift transmission with eight forward and six reverse speeds

PROGRAM STATUS

- **FY20:**
  - Completed Fielding
  - Contract Award for Construction Equipment Virtual Trainer (CEVT)

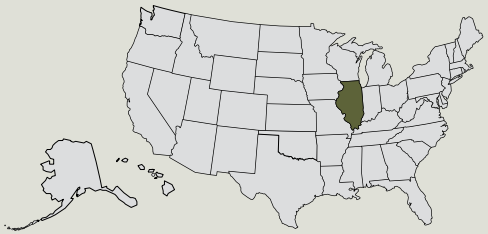
PROJECTED ACTIVITIES

- **FY21:** Begin CEVT deliveries to Engineer School
- **FY23:** CEVT deliveries to Engineer School complete
- **FY24:** CEVTs fully fielded and operational to train Students

Motor Grader — 120M



CONTRACTORS
Caterpillar, Inc. (Peoria, IL)





Multifunction Electronic Warfare — Air Large (MFEW-AL)

PEO Intelligence, Electronic Warfare and Sensors | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Multifunction Electronic Warfare – Air Large (MFEW-AL) is a single, self-contained, airborne electronic warfare pod which will be mounted onto Gray Eagle Unmanned Aircraft Systems. MFEW-AL is based on Software-Defined Radio/Digital Radio Frequency Memory architecture, which will utilize both pre-programmed signal characteristic information and real-time battlefield information to complete the intended mission. MFEW-AL will be interoperable with Electronic Warfare Planning and Management Tool to support command and control, remote operations, and dynamic tasking.

BENEFIT TO THE SOLDIER

MFEW-AL is a capability set that will provide Brigade Combat Team Commanders with an organic airborne offensive Electronic Warfare capability.

SPECIFICATIONS

- Classified

PROGRAM STATUS

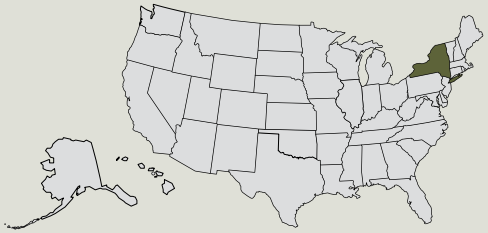
- **FY18:**
  - Joint Requirements Oversight Council Capabilities Development Document Approved
  - MFEW-AL tailored Milestone B approved
- **FY19:** Phase I Other Transaction Authority (OTA) Contract Award for prototype system development
- **FY20:** Phase II OTA Contract Award for Engineering, Manufacturing, and Development

PROJECTED ACTIVITIES

- **FY21:** Milestone C
- **FY22:**
  - Operational Test on Gray Eagle
  - Full-Rate Production
  - First Unit Equipped

MFEW-AL

CONTRACTORS
Lockheed Martin (Owego, NY)





Multiple Launch Rocket System (MLRS) – M270A1

PEO Missiles and Space | Redstone Arsenal, AL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Bahrain, Egypt, Finland, Greece, Israel, and South Korea

International Memorandum of Understanding Partners: France, Germany, Italy, Japan, and United Kingdom

DESCRIPTION

The Multiple Launch Rocket System (MLRS) – M270A1 is a full-spectrum, combat-proven, all-weather, 24/7 lethal and responsive, tracked precision strike weapon system organic or assigned to Field Artillery Brigades. The M270A1 program consists of a modified M993A1 Bradley Carrier mounted with the M269 Launcher Loader Module. It will launch all MLRS Family of Munitions (MFOM) rockets and missiles.

The MLRS carries two launch pods, each containing either six Guided MLRS (GMLRS)/MLRS rockets or one Army Tactical Missile System missile. When firing GMLRS-Unitary precision rockets, MLRS can achieve ranges of 70-plus kilometers, attacking the target with low-collateral damage, enabling danger-close fires (within 200 meters) in support of friendly troops in contact, as well as engaging high-valued point targets in open, urban, and complex environments.

The Army Fleet Expansion effort will increase the size of the MLRS fleet by modernizing M270A0 hulls and upgrading M270A1 to the M270A2. The M270A2 will feature the Common Fire Control System, the Improved Armored Cab, and improvements to the M933A2 chassis and suspension to be more common with Bradley. A production contract has been awarded and production begins in November 2020. The first fielding of the M270A2 is scheduled for the first quarter of Fiscal Year (FY) 2023.

BENEFIT TO THE SOLDIER

The MLRS Launcher provides 24-hour, all-weather, lethal, close- and long-range precision rocket, and missile fire support for joint forces, early-entry expeditionary forces, contingency forces, and Field Artillery Brigades supporting Brigade Combat Teams.

SPECIFICATIONS

- Empty weight: 45,086 pounds
- Combat weight: 57,544 pounds
- Maximum speed: 65 kph
- Maximum cruising range: 640 km
- Ordnance options: All current and future MFOM rockets and missiles

PROGRAM STATUS

- **1QFY18:** 16 MLRS launchers – European Deterrence Initiative
- **3QFY18:** Approved Fleet Expansion Acquisition Plan
- **4QFY18:**
  - Released Fleet Expansion Request for Proposal (Sole Source)
  - Improved Armored Cab Production Contract Award
- **3QFY19:** Fleet Expansion Base Contract Award for 50 M270A2s
- **3QFY20:** Fleet Expansion Contract Option 1 Award for 44 M270A2s

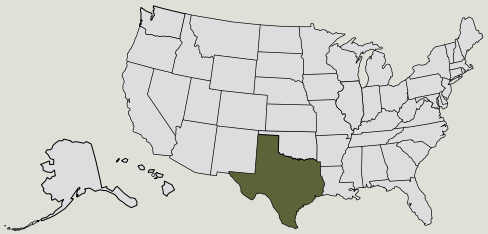
PROJECTED ACTIVITIES

- **3QFY21:** Fleet Expansion Contract Award for 40 M270A2s
- **4QFY21:** Production start – Common Fire Control System
- **1QFY22:** M270A2 First Unit Equipped
- **1QFY23:** First 3x9 Battalion Fielded
- **3QFY23:** Fleet Expansion Contract Award for 30 M270A2s

MLRS — M270A1



CONTRACTORS
Lockheed Martin (Grand Prairie, TX)







Multi-purpose Anti-armor Anti-personnel Weapon System (MAAWS) — M3E1

PEO Soldier | Fort Belvoir, VA

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The M3E1 Multi-purpose Anti-armor Anti-personnel Weapon System (MAAWS) is an 84 mm reloadable, recoilless rifle designed to engage lightly armored targets at ranges out to 500 meters and soft targets out to 800 meters. The M3E1 MAAWS is salt-water submersible, jumpable, and day/night operable. The M3E1 MAAWS requires a crew of two – one to carry and fire the weapon, and the other to carry the ammunition and load the weapon.

The M3E1 rifle is 14.8 pounds (28% lighter) than the M3, contains ergonomic improvements and an automatic rounds counter. The M3E1 rifle is provided with a lightweight (4.2 pounds) electronic fire control system that automatically provides ballistics solutions for static and moving targets.

BENEFIT TO THE SOLDIER

M3E1 MAAWS is 28% lighter than the M3 and contains more ergonomic adjustments. The M3E1 MAAWS contains an integrated Fire Control System with metrology corrected ballistic solutions for engaging moving targets and greater probability of hitting of static targets. The M3E1 MAAWS electronics allow integration with future MAAWS smart ammunition.

SPECIFICATIONS

- Length: 1 meter
- Bore: 84 mm
- Weight with Fire Control System: 19 pounds
- Ammunition: Current high-explosive, high-explosive dual purpose, training, future illumination, anti-structure
- Maximum Range: 1,300 meters
- Fire Control System: Gen3, 1X Reflex, 15-degree field of vision

PROGRAM STATUS

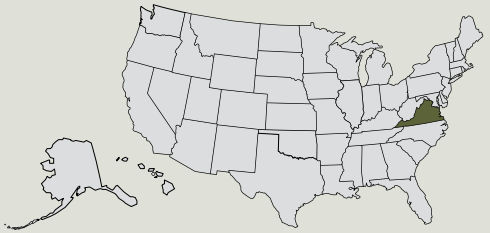
- **3QFY18:** M3 Full Materiel Release (FMR) completed
- **1QFY19:**
  - M3E1 Urgent Materiel Release
  - M3E1 First Unit Equipped (FUE) Army
- **4QFY19:**
  - M3E1 FUE Marine Corps
  - M3E1 Developmental Test begins

PROJECTED ACTIVITIES

- **2QFY21:** M3E1 Type Classification-Standard
- **4QFY21:** M3E1 FMR completed

MAAWS — M3E1

CONTRACTORS
FCS13RE Fire Control: Aimpoint Inc. (Manassas, VA)
M3/M3E1: Saab Dynamics AB (Sweden)



Nett Warrior (NW)

PEO Soldier | Fort Belvoir, VA

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Nett Warrior (NW) is an integrated dismounted leader Situational Awareness (SA) system used during combat operations. The system provides unparalleled SA to the dismounted leader, allowing for faster and more accurate decision-making in the tactical fight. With advanced navigation, SA, and information-sharing capabilities, leaders can avoid fratricide and are more effective and lethal in the execution of their combat missions.

The NW system is connected through secure, tactical radios, and other transports that share information from one NW to another. Additionally, the NW smart device displays leader locations, tactical imagery, and tactical graphics.

Tactical radios and other transports connect NW-equipped Soldiers to higher-echelon data and information products to assist in decision-making and situational understanding. All of this allows the leader to easily see, understand, and interact in the method best suited to the user and the particular mission.

BENEFIT TO THE SOLDIER

NW, at the tactical level of operation, provides leaders situational awareness that enables rapid decision-making, reduces deliberate communications, and increases leaders' confidence in mission execution. NW provides overmatch operational capabilities to ground combat leaders and small-unit operations.

SPECIFICATIONS

- Allows leaders real-time access to the unit's common operating picture. The system overlays the user's location, the location of other users in the network, and various graphic control measures and icons on geo-referenced maps and high-resolution imagery. It also transmits and displays various messages and reports that can be communicated without deliberate verbal communication.
- Commercial-off-the-shelf smartphone end-user device with cable (less than 2 pounds) for connection to multiple transports, such as Wi-Fi, 4G/LTE, tactical radios (running different waveforms like Tactical Scalable Mobile ad-hoc network waveform, ANW2 network, and Soldier Radio waveform). The system can operate from 8 to 24 hours depending on power-source connection configuration.
- U.S. Government-owned open software architecture, source code (core is Assault Android Tactical Assault Kit) and published a Software Development Kit that permits rapid application development and integration. The software also enables the expansion of this platform to other warfighting functions and/or handheld requirements.
- Intra Network Communication: NW not only provides leaders an alternative to voice communication, especially useful for reports that are detailed or need to be shared beyond the original recipient, it greatly reduces the need for distracting deliberate communication. By providing information directly to leaders, they no longer have to pull as many reports from their subordinate units or push them to their higher command.

PROGRAM STATUS

- **2QFY20–3QFY20:** Created and provided the Crisis Response Situational Awareness/Situational Understanding Tactical Application Leader Kit in support of the National COVID-19 Response
- **3QFY20:** 5th Security Force Assistance Brigade (SFAB) New Equipment Fielding and Training complete
- **4QFY20:** 54th SFAB New Equipment Fielding and Training complete

PROJECTED ACTIVITIES

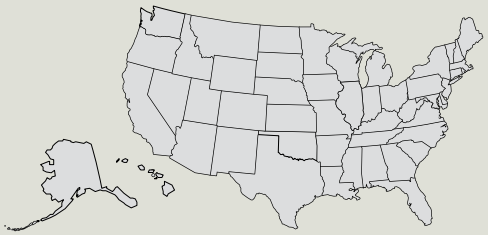
- **FY21:** Fielding four Capability Set 21 Integrated Tactical Network (ITN) equipped Infantry Brigade Combat Teams

- **3QFY21–4QFY21:** Supporting Stryker Brigade Combat Team (BCT) ITN experimentation
- **FY22:** Fielding five ITN equipped BCTs
- **FY23:** Fielding six ITN equipped BCTs
- **FY24:** Fielding six ITN equipped BCTs
- **FY25:** Fielding six ITN equipped BCTs and Special Forces Group (National Guard)



NW

CONTRACTORS
Government is the system integrator with various vendors providing components.



Next Generation Biometric Collection Capability (NXGBCC)

PEO Intelligence, Electronic Warfare and Sensors | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Next Generation Biometric Collection Capability (NXGBCC) will replace the Biometrics Automated Toolset-Army as the U.S. Army's Program of Record as it reaches end of useful life in Fiscal Year 2022. NXGBCC will be the U.S. Army's forward biometric data management system in a peer-to-peer environment. NXGBCC ensures access control, identifies persons of interest, and provides biometric identities to U.S. Army intelligence and detainee management systems. NXGBCC collects, matches, and stores biometric, contextual, and biographical data, and is comprised of three components: a mobile collection kit, a static collection kit with palm and credential badge capability, and the Local Trusted Source (LTS). The LTS provides an analysis capability to assist in decide/act activities. It will also be provided in the Cloud for connected operations and in a tactical form to support disconnected, intermittent, and limited (DIL) operations. The complete capability will be used for both mobile and static operations in connected and DIL network environments to inform the Warfighter in near real-time.

BENEFIT TO THE SOLDIER

NXGBCC offers the Commander the Biometric Enabled Watchlist (BEWL), aids in targeting individuals, ensures access control to Forward Operating Bases, and provides analysis capability to determine individual relationships based on biometric, contextual, and biographical data. NXGBCC also provides accurate, relevant identity information for decisive action in support of Joint All-Domain Operations. NXGBCC will deliver significant improvement over the current Program of Record with face matching capability and adding voice and palm modalities with a response in less than three minutes. NXGBCC regionalizes data so each Commander can tailor information to the Area of Responsibility. NXGBCC will be used by Military Intelligence, Military Police, Infantry, Armor, and Calvary.

SPECIFICATIONS

- Weight:
  - Mobile: Less than or equal to 4 pounds
  - Static without palm scanner and badge printer: Less than or equal to 8 pounds
  - Palm scanner: Less than or equal to 10 pounds
  - Badge printer: Less than or equal to 40 pounds
- Storage capacity:
  - Mobile: 500,000 identities
  - Static: 10,000,000 identities
- Match response time: 3 minutes or less
- Synchronization time: Every 12 hours or less
- BEWL distribution time: Every 12 hours or less

PROGRAM STATUS

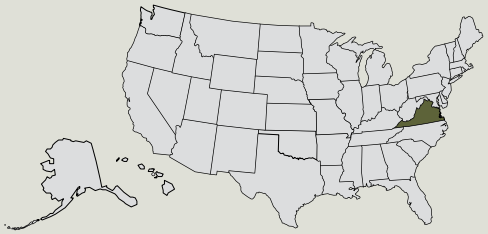
- **4QFY18:** NXGBCC Other Transaction Authority (OTA) Award

PROJECTED ACTIVITIES

- **3QFY21:** NXGBCC Production OTA
- **3QFY23:** NXGBCC Federal Acquisition Regulation-Based Sustainment Contract

NXGBCC

CONTRACTORS
Data Machines Corporation (Ashburn, VA)

















Next Generation Chemical Detector (NGCD)

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Army Materiel Systems Analysis Activity Technical Report No. TR-2013032, June 2013, determined there was a need for multiple systems to achieve the required capabilities for the Next Generation Chemical Detector (NGCD) system. NGCD was separated into four distinct programs providing different capabilities of systems. The programs are: Aerosol Vapor Chemical Agent Detector (AVCAD) for aerosol and vapor detection; Proximate Chemical Agent Detector (PCAD) for survey detection; Multi Phase Chemical Agent Detector (MPCAD) for sample collection and analysis; and Compact Vapor Chemical Agent Detector (CVCAD) for man-worn and unmanned/unattended detection.

NGCD programs collectively will detect and identify nontraditional agents (NTA), chemical warfare agents (CWA), toxic industrial chemicals (TIC), and confined space hazards in the air and on surfaces. These programs will improve CWA/TIC selectivity and sensitivity in multiple environments. The NGCD programs will sample, detect, identify, and quantify traditional and nontraditional chemical and TIC vapor, liquid, solid, and aerosol hazards. The Warfighter will be able to characterize chemical, biological, radiological, and nuclear (CBRN) environment in air and water as well as on land, personnel, equipment, and facilities.

NGCD programs will support manned and unmanned (aerial and ground) platform integration and the following combat weapons of mass destruction (WMD) military mission areas: CBRN passive defense, WMD interdiction, WMD elimination, and WMD consequence management.

BENEFIT TO THE SOLDIER

The four separate NGCD programs will provide capabilities and sensors to the Warfighter with improved detection, consequence manager and reconnaissance, and WMD interdiction.

SPECIFICATIONS

- **AVCAD:** Man-portable, battery-operated, and aerosol and vapor detection
- **PCAD:** Handheld man-portable, battery-operated, and non-contact liquid/solid surface detection
- **MPCAD:** Two-man-portable, shore-and-battery-powered, collector and analyzer with very low detection levels
- **CVCAD:** Man-worn, battery-operated with integration on manned and unmanned ground system and unmanned aerial system platforms
- All detect NTA, CWA, and TIC

PROGRAM STATUS

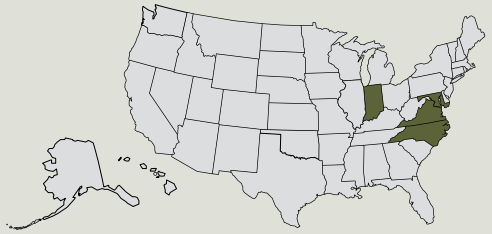
- **FY16–FY18:**
  - **AVCAD:** Engineering Manufacturing and Development (EMD) Phase
  - **PCAD:** Technology Maturation and Risk Reduction Phase
  - **MPCAD:** Pre-EMD Phase
  - **CVCAD:** Materiel Solution Analysis Phase
- **1QFY18:** AVCAD Milestone (MS) B awarded: Initial Operational Capability (IOC) FY23
- **4QFY18:** MPCAD MS B Award: IOC FY23

PROJECTED ACTIVITIES

- **FY21:** CVCAD MS A: IOC FY26
- **FY22:** MPCAD MS C
- **FY25:** PCAD MS B: IOC FY28

NGCD

CONTRACTORS
AVCAD: Smiths Detection (Edgewood, MD) and Chemring Sensors and Electronic Systems (Charlotte, NC)
CVCAD: Pending contract awards
MPCAD: FLIR Detection Inc. (West Lafayette, IN) and Signature Science LLC (Charlottesville, VA)
PCAD: TBD







Next Generation Squad Weapons (NGSW)

PEO Soldier | Fort Belvoir, VA

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Next Generation Squad Weapons (NGSW) Program is an iterative, prototyping effort, using Middle Tier Acquisition Authority, to develop operationally relevant, squad-level lethality to combat proliferating threats, informed by Soldiers' feedback.

The NGSW prototyping effort consists of the Rifle (NGSW-R) and Automatic Rifle (NGSW-AR) with a common 6.8 mm cartridge and Fire Control (NGSW-FC) between the two systems. The effort aims to field to the Close Combat Force with the NGSW-R as the planned replacement for the M4A1 and the NGSW-AR as the planned replacement for the M249 Squad Automatic Weapon.

The program is in a competitive prototyping iteration with three vendors for weapons and ammunition (SIG Sauer, General Dynamics – OTS, and Textron Systems) and two vendors for fire control (Vortex Optics and L3Harris). The first prototype test, beginning in the third quarter of Fiscal Year (FY) 2020, will serve as a "diagnostic test" to inform the weapon and ammunition vendors on their current performance and feed another design iteration. The second prototype test, beginning in the second quarter of FY21, will be a "for record test" and will inform the weapon systems selection.

BENEFIT TO THE SOLDIER

The NGSW program significantly increases lethality and probability of hit at the squad level. Due to the nature of the General-Purpose ammunition, the 6.8 mm projectile will outperform even the most modern 5.56 mm and 7.62 mm ammunition. These weapon systems will give Soldiers significant capability improvements in accuracy, range, signature management, and lethality.

SPECIFICATIONS

- Though the specifics are competition sensitive, the NGSW-R, NGSW-AR, NGSW-FC, and the 6.8 mm ammunition will be compatible with all the currently fielded enablers, while providing an open Adaptive Soldier Architecture to integrate with developing enabler programs.

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PROGRAM STATUS

- **FY18:** Squad Designated Marksman Rifle/Advanced Armor Piercing Ammunition selected as near-term solution
- **FY20**
  - Prototype Test #1 (Diagnostic)
  - Awarded two Other Transaction Authorities to prototype squad fire control

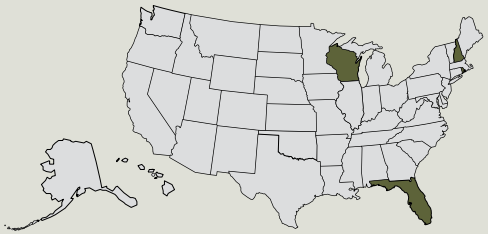
PROJECTED ACTIVITIES

- **FY21:**
  - Prototype Test #2 (Record) onward selection of weapon, ammo, FC, and Production decision
  - Selection of squad fire control system and Production award
- **FY22:**
  - Selection of rifle, automatic rifle and ammunition, and Production award
  - First Unit Equipped (rifle, automatic rifle, 6.8 mm General Purpose ammunition, and fire control)
- **FY23:** Reduced Range Ammunition Fielded

NGSW



CONTRACTORS
General Dynamics Ordnance and Tactical Systems (St. Petersburg, FL)
L3Harris (Melbourne, FL)
Sig Sauer (Newington, NH)
Textron (Providence, RI)
Vortex Optics (Barneveld, WI)





Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) — Stryker Sensor Suites

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) – Stryker Sensor Suites is the Chemical, Biological, Radiological, and Nuclear (CBRN) reconnaissance configuration of the Infantry Carrier Vehicle in the Stryker Brigade Combat Teams, Armored Brigade Combat Teams, and Hazard Response Companies.

The NBCRV–Stryker Sensor Suite consists of a dedicated system of CBRN detection, warning, and biological-sampling equipment on a Stryker vehicle (high-speed, high-mobility, armored carrier). The NBCRV detects chemical, radiological, and biological contamination in its immediate environment through the Chemical Biological Mass Spectrometer, Automatic Chemical Agent Detector Alarm, AN/VDR-2 Radiac Detector, AN/UDR-13 Radiac Detector, and Joint Biological Point Detection Service Lightweight Standoff Chemical Agent Detector. It automatically integrates contamination information from detectors with input from onboard navigation and meteorological systems, and transmits digital Nuclear, Biological, and Chemical (NBC) warning messages through the vehicle's command and control equipment to warn follow-on forces. The NBCRV can also collect samples for analysis. The Stryker NBCRV Sensor Suite Upgrade (SSU) Program provides the next generation CBRN sensors for the Stryker Platform.

BENEFIT TO THE SOLDIER

The NBCRV – Stryker Sensor Suites supports the Warfighter by performing NBC reconnaissance. It also locates, identifies, marks, samples, and reports NBC contamination on the battlefield.

SPECIFICATIONS

- Stryker variant with multiple unique sensors

PROGRAM STATUS

- **1QFY18:** Full Operational Capability and initiate SSU Program

PROJECTED ACTIVITIES

- **FY21:** Conduct Developmental and Operational Test
- **FY22:** Materiel Release of Stryker NBCRV SSU

NBCRV — Stryker Sensor Suites



CONTRACTORS
Prime Vehicle: General Dynamics Land Systems (Sterling Heights, MI)
Sensor Software Integrator: CACI (Lorton, VA)

Optionally Manned Fighting Vehicle (OMFV)

PEO Ground Combat Systems | Detroit Arsenal, MI



OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Optionally Manned Fighting Vehicle (OMFV) will serve as the U.S. Army's infantry fighting vehicle tasked to maneuver and operate as part of a joint combined arms team for the purpose of creating an advantageous position, relative to the enemy, to deliver a decisive strike while also controlling maneuver robotics and semi-autonomous systems. In the close fight, the OMFV enables the ability of squads to maneuver by detecting and destroying targets at a range beyond the enemy's capability.

The OMFV must complement and enhance the capabilities of the Armored Brigade Combat Team (ABCT). The OMFV will replace the Bradley Fighting Vehicle, providing the Army decisive vehicle capability now while possessing sufficient room for growth and modularity to take advantage of transformational technologies. The OMFV will not fight alone, but rather as part of a section, platoon, and company of mechanized infantry. These companies will execute cross-domain maneuver and defeat pacing threats in the close area while maneuvering Soldiers to tactical objectives. Once the unit transitions to the combined mounted/dismounted fight, the OMFV will support the dismounted element with advanced sensors, lethality, protection, and integrated mission command. This synergy is crucial to the ABCT's ability to defeat a near-peer competitor.

BENEFIT TO THE SOLDIER

Sized to meet the Army's needs, the OMFV can deploy and will be transportable by standard air, rail, and sea modes of transportation. It will be survivable against current and emerging threats to deliver Soldiers into the fight and maneuver them to a point of positional advantage on the battlefield. It will provide mobility to maintain pace with the ABCT and be able to react to threats at tactically relevant speeds in both complex and open terrain.

SPECIFICATIONS

- **Mobility:** The OMFV must have mobility that can keep pace with the Abrams in a combined arms fight through rural and urban terrains.
- **Lethality:** OMFV-equipped platoons must defeat future near-peer soldiers, infantry fighting vehicles, helicopters, small unmanned aerial systems, and tanks as part of a combined arms team in rural and urban terrains.

PROGRAM STATUS

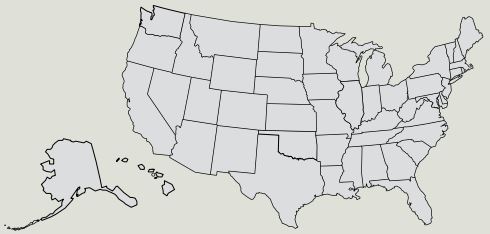
- **2QFY20:** Held OMFV industry one-on-one meetings
- **3QFY20:** OMFV desired characteristics released to industry

PROJECTED ACTIVITIES

- **1QFY21:** OMFV Request for Proposal release to industry
- **3QFY21:** Award up to five vendors for preliminary digital design
- **2QFY23:** Award up to three vendors for detailed digital design and prototype build and test

OMFV

CONTRACTORS
TBD





Paladin Family of Vehicles (FOV) — M109A6 Paladin/ M992A2 FAASV/M109A7 SPH/M992A3 CAT and ERCA

PEO Ground Combat Systems | Detroit Arsenal, MI



ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Austria, Bahrain, Brazil, Chile, Denmark, Egypt, Ethiopia, Germany, Iran, Iraq, Israel, Jordan, Lebanon, Malaysia, Morocco, Netherlands, Norway, Pakistan, Portugal, Saudi Arabia, Spain, Switzerland, Taiwan, Thailand, and United Kingdom

DESCRIPTION

The M109A6 Paladin 155 mm Self Propelled Howitzer (SPH) and the M992A2 Field Artillery Ammunition Supply Vehicle (FAASV) are tracked combat vehicles that provide the primary indirect-fire support to Armored Brigade Combat Teams (ABCT). The M109A6 Paladin modernized the earlier M109 fleet with a new cab, fire control, and armament system.

The M109A7 SPH and M992A3 Carrier Ammunition Tracked (CAT), also known as the Paladin Integrated Management (PIM) are today's modernization of the systems. PIM is in fielding, replacing the M109A6 Paladin and the M992A2 FAASV. PIM improves the mobility, survivability, power, and reliability of both the SPH and FAASV through an entirely new hull and chassis and modernization of the SPH cab. PIM utilizes Bradley drive-train components supporting commonality across the ABCT formations. PIM's 600-volt onboard electrical system allows the replacement of hydraulics with safer and more reliable electric motors to power the cab and armament system. PIM platforms are fitted with Joint Battle Command Platform to ensure situational awareness with other friendly forces.

Extended Range Cannon Artillery (ERCA) is the next phase of the SPH's modernization plan. In coordination with ammunition modernization, ERCA builds upon the PIM to improve lethality by increasing the range and rate of fire. Project Manager Combat Ammunition Systems 155 mm ammo programs are critical to achieving range and lethality goals.

BENEFIT TO THE SOLDIER

The PIM, M109A7 SPH, and M992A3 CAT provide commanders a more capable and sustainable combat vehicle increasing confidence in the artillery fleet while reducing the logistics footprint across the ABCT. Modernization of the communication technology also significantly improves the Warfighter's battlespace awareness. ERCA modernization will increase the lethality, range, rate of fire, and reliability of the armament system. Benefits include lethality overmatch; a demonstrated range of 70-plus kilometers (km); improvement in area coverage for 155 mm; increased range of legacy ammo; and improved armament reliability.

PROGRAM STATUS

Paladin Family of Vehicles (FOV)

- **FY20:**
  - Full-Rate Production Decision
  - Production Award
  - Fielding to Armored Brigade Combat Teams

ERCA:

- **FY20:** Prototype Development and Testing
- **4QFY20:** Critical Design Review

PROJECTED ACTIVITIES

M109 FOV:

- **1QFY21:** Fielding to Fourth Unit Equipped
- **3QFY21:**
  - Fielding to Army Pre-Positioned Stock 2.2
  - Fielding to Fifth Unit Equipped

ERCA:

- **1QFY21:** Characterization test begins
- **2QFY21:**
  - Prototype integration begins
  - Science and Technology Transition
  - Developmental Testing
- **4QFY23:** First Unit Issue

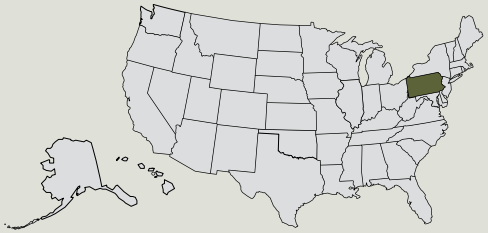
SPECIFICATIONS

	M109A6	M109A7	M992A2	M992A3
Crew	4	4	4	4
Combat Loaded Weight (Tons)	34.25	39	29.26	36
On-board Ammunition (Rounds)	39	42	95	95
Rate of Fire	4 rounds/ minute for first 3 minutes; 1 round/ minute sustained	4 rounds/ minute for first 3 minutes; 1 round/ minute sustained	4 rounds/ minute for first 3 minutes; 1 round/ minute sustained	4 rounds/ minute for first 3 minutes; 1 round/ minute sustained
Maximum Range	High-Explosive/ Rocket Assisted Projectile, 22 km/30 km	High-Explosive/ Rocket Assisted Projectile, 22 km/30 km	High-Explosive/ Rocket Assisted Projectile, 22 km/30 km	High-Explosive/ Rocket Assisted Projectile, 22 km/30 km
Cruising Range (Miles)	180	226	180	226
Fire Support Network	Paladin Digital Fire Control System software supports Fire Support Network	Paladin Digital Fire Control System software supports Fire Support Network	Paladin Digital Fire Control System software supports Fire Support Network	Paladin Digital Fire Control System software supports Fire Support Network



Paladin FOV

CONTRACTORS
ERCA: TBD
M109 FOV: BAE Systems (York, PA)





Palletized Load System (PLS) and PLS Extended Service Program (ESP)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Worldwide sales

DESCRIPTION

The Palletized Load System (PLS) A1 is a 5-axle, 10-wheel drive tactical truck with a companion trailer (M1076A0/A1), each with a demountable cargo bed (flat rack). Both the truck and the trailer can carry up to 36,250 pounds of payload (which includes the weight of the flat rack) on one of several different types of flat racks, containers, or modules.

The PLS A1 has an engine with greater capacity than the A0, independent front suspension, and an A-cab/B-kit common with the Heavy Expanded Mobility Tactical Truck (HEMTT) A4. Additionally, by North Atlantic Treaty Organization (NATO) agreement, the PLS A1 shall be able to transport other NATO flat racks up to a payload of 36,250 pounds.

A hydraulic Load Handling System (LHS) is mounted on the PLS A1 truck chassis. The PLS A1 truck has two mission-oriented configurations: the M1074A1 and M1075A1. The M1074A1 is equipped with a variable reach Material Handling Crane (MHC) to support forward deployed artillery units. The M1075A1 does not have the MHC. It is used in support of transportation line haul missions. Both the M1074A1 and M1075A1 can be used in conjunction with M1076A0/A1 trailers.

The PLS A1 truck is used to load and unload M1076A0/A1 trailers. The two principal flat racks are the M1077A1 series flat rack and the M3/M3A1 series flat rack, more commonly known as the Container Roll-in/Out Platform (CROP). Although these have the same cargo payload capability, the M1077A1's dimensions are longer and wider than the M3/M3A1, making it ideal to carry 20-foot International Organization for Standardization (ISO) containers or modules. The M3/M3A1 is designed to fit inside of a 20-foot ISO container. The Enhanced Container Handling Unit (E-CHU) enables the M1075A1 to load 20-foot ISO containers directly onto the vehicle without the use of a M1077A1 flat rack. The PLS Trailer A1 (M1076A1) complements E-CHU equipped PLS A1s with the ability to receive and secure the 20-foot ISO container from the vehicle without the use of a M1077A1 flat rack.

BENEFIT TO THE SOLDIER

The PLS A1 assists commanders by enabling more agile, flexible, and full-spectrum movement of loaded flat rack/CROP/ISO and other similar-sized equipment across the range of military operations throughout the battlefield. The capability to transport, at highway speeds, critical supplies between ports and forward staging areas will provide ground commanders flexibility to respond to rapidly shifting operations.

SPECIFICATIONS

Palletized Load System A1 (M1074A1 with MHC, M1075A1 without MHC):

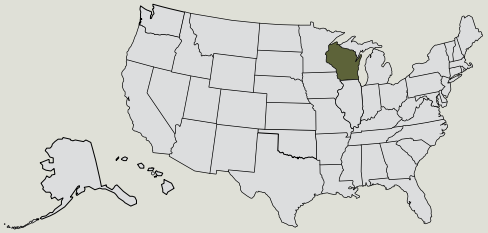
- Size: 10x10 (10-wheeled vehicle with 10-wheel drive) truck with integrated LHS
- Gross Vehicle Weight Rating (A-Kit/B-Kit):
  - M1074A1 91,380 pounds/96,865 pounds
  - M1075A1 86,400 pounds/92,870 pounds
- Gross Combination Weight Rating (A-Kit + trailer, B-Kit + trailer):
  - M1074A1 + M1076A1 trailer 140,880 pounds/146,365 pounds
  - M1075A1 + M1076A1 trailer 135,900 pounds/142,370 pounds
- Engine: Caterpillar C-15 ACERT Diesel Engine, 600 horsepower

PLS ESP

- Transmission: Allison 4500SP (6-speed automatic)
- Light-emitting diode headlights
- Maintenance and serviceability improvements
- Add-on cab armor protection for top, sides, and underbody for increased survivability (common with the HEMTT A4 cab)
- Improved heater and air conditioning system
- TAK-4 independent front suspension with coil springs, which provides improved ride and steering over the base PLS
- New Antilock Braking System with larger brake chambers work in conjunction with a revised central tire inflation system, traction control, and driveline lockup systems for improved braking (safety) and off-road performance
- Maximum speed: 60 mph at gross combined vehicle weight on flat terrain

CONTRACTORS

Oshkosh Defense (Oshkosh, WI)



PROGRAM STATUS

- **FY18–FY20:**
  - Continue to produce and field ESP PLSs to Active Army, National Guard, Reserve, and Pre-Positioned Stocks

PROJECTED ACTIVITIES

- **FY21–FY25:**
  - Continue to produce and field ESP PLSs
  - Continue to work with the requirements community and Army G-8 on a modernization strategy and next generation replacement of the PLS fleet





PATRIOT Advanced Capability-3 (PAC-3)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Bahrain, Germany, Japan, Korea, Kuwait, Netherlands, Poland, Qatar, Romania, Saudi Arabia, Sweden, Taiwan, and United Arab Emirates

PAC-2 only:
Greece, Israel, and Spain

DESCRIPTION

The Phased Array Tracking Radar to Intercept of Target (PATRIOT) Missile protects ground forces and critical assets at all echelons from advanced aircraft, cruise missiles, and tactical ballistic missiles (TBM). The PATRIOT Advanced Capability – 3 (PAC-3) is the U.S. Army's premier guided air and missile defense (AMD) system providing highly reactive hit-to-kill capability in both range and altitude while operating in all environments.

The combat element of the PATRIOT system is the fire unit, primarily consisting of a radar set (RS), engagement control station (ECS), and launching stations (LS). The RS provides airspace surveillance, target detection, discrimination, identification, classification, simultaneous tracking of targets, missile guidance, and engagement support. The LS performs transport and missile launch functions and is remotely operated from the ECS, which provides command and control. The LS has a load-out capacity of four legacy PAC-2 interceptors, 16 PAC-3 Cost Reduction Initiative (CRI) interceptors, or 12 PAC-3 Missile Segment Enhancement (MSE) interceptors depending on configuration. The PAC-3 missile, initially fielded in 2001, introduced hit-to-kill technology for greater lethality against TBM, cruise missiles, and aircraft. The combination of a highly responsive airframe and attitude control motors generates an angle-of-attack that would not be achievable with actuator-driven aerodynamic control surfaces alone.

The PAC-3 MSE, fielded in 2015, provides expanded battlespace performance against evolving threats. The PAC-3 MSE improves upon the original PAC-3 capability with a higher performance dual-pulse solid rocket motor, modified lethality enhancer, more responsive control surfaces, upgraded guidance software, and insensitive munitions improvements.

PAC-3 milestone authority was assigned to the Army in 2004. The Army Acquisition Executive is the Milestone Decision Authority for the PAC-3 and PAC-3 MSE programs. The Army continues to modernize PATRIOT through phased efforts to maintain and improve system capabilities in the complex threat environment. This modernization provides greater resilience against advanced threats and leverages the enlarged engagement area afforded by the PAC-3 MSE interceptor. PATRIOT is transitioning to the Integrated Air and Missile Defense Battle Command System networked architecture.

BENEFIT TO THE SOLDIER

PATRIOT is a combat-proven ground-based AMD system that is providing critical AMD protection to the Warfighter in 17 countries. A total of 16 partner nations have acquired or deployed the PATRIOT System in support of their AMD requirements.

SPECIFICATIONS

- Advanced multifunction radar
- Engagement control operations
- Launcher capable of remote operations
- Deployed by fire units organized within a battalion
- Supported by ancillary communications and maintenance ground support equipment
- Designed to defend against current and emerging threats

PROGRAM STATUS

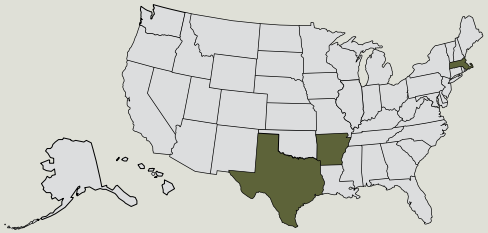
- **1QFY18:** PAC-3 MSE Initial Operational Test and Evaluation
- **FY18:** Post-Deployment Build-8 Fielding and Hardware Upgrades (Radar Digital Processor)
- **3QFY18:** PAC-3 MSE Full-Rate Production (FRP) Army System Acquisition Review Council

PAC-3

PROJECTED ACTIVITIES

- **FY21–FY25:**
  - PAC-3 MSE capability integration within the Integrated Air and Missile Defense Battle Command System network architecture
  - Execute PAC-3 MSE transition to increased FRP
  - PAC-3 MSE Production to meet increased United States/ Foreign Military Sales (U.S./FMS) demand
  - FMS Production/Sustainment of PAC-3 CRI
  - FMS Production/Sustainment of PAC-2 interceptors
  - U.S./FMS Production/Sustainment of M901/2/3 LS

CONTRACTORS
Lockheed Martin (Dallas, TX)
Missile Assembly: Lockheed Martin (Camden, AR)
System Integration/Ground Equipment: Raytheon (Andover, MA)







Persistent Cyber Training Environment (PCTE)

PEO Simulation, Training and Instrumentation | Orlando, FL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Persistent Cyber Training Environment (PCTE) is a training platform supporting standardized Joint Cyberspace Operations Forces individual sustainment training, team certification, and mission rehearsal. It provides the foundation for collective training exercises and leverages existing connectivity to facilitate the sharing of resources.

PCTE delivers additional cyber "maneuver space." It also enables realistic training with variable conditions to increase readiness and lethality of Cyberspace Operations Forces, while standardizing, simplifying, and automating the training management process.

BENEFIT TO THE SOLDIER

PCTE supports the United States Cyber Command (USCYBERCOM) by enabling a critical need for the Department of Defense and Joint Cyberspace Operations Forces to train at the individual, team, and force level.

SPECIFICATIONS

- PCTE is one of the five elements of the Joint Cyber Warfighting Architecture (JCWA). JCWA provides a comprehensive, integrated cyberspace architecture to achieve and sustain the insight, agility, and lethality necessary for maintaining a competitive advantage against near-peer adversaries.
- PCTE will integrate and be interoperable with the other JCWA elements to enable teams to train and rehearse using the available JCWA operational tools and capabilities.

PROGRAM STATUS

- **FY20:**
  - Achieved Milestone B, and the program is operating within the current Information Technology (IT) Box progressing according to all cost, schedule, and performance parameters.
  - Cyber Flag is an annual event that tests PCTE's ability to scale to support USCYBERCOM's largest tactical-level exercise in a wholly distributed environment.

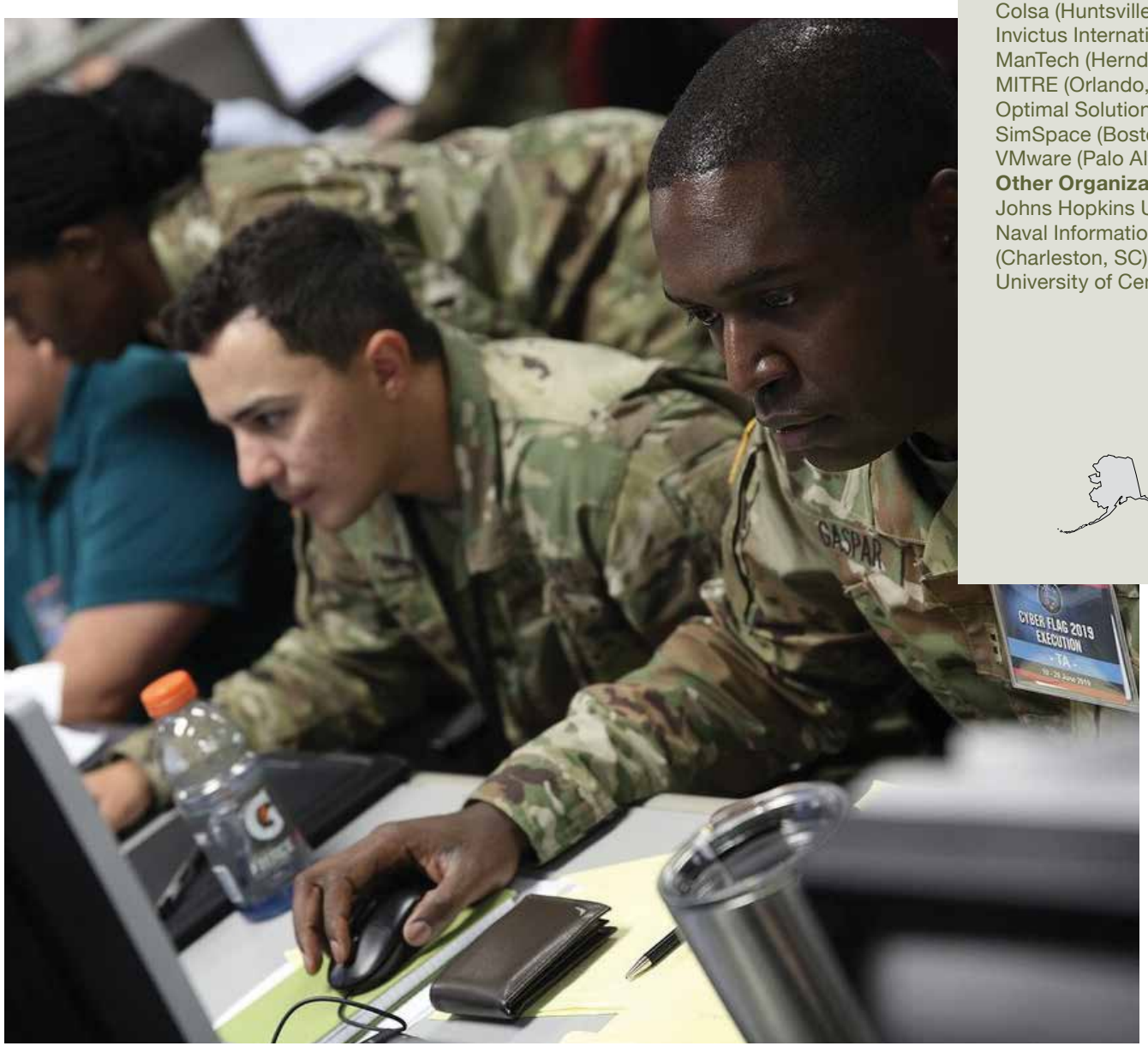
PROJECTED ACTIVITIES

- **FY21:** PCTE first supported Cyber Flag in June 2020 and will continue to be conducted on the PCTE platform each year.

PCTE

CONTRACTORS
Vendors:
ByLight/Metova (Chantilly, VA)
Cole Engineering (Orlando, FL)
Colsa (Huntsville, AL)
Invictus International Consulting (Alexandria, VA)
ManTech (Herndon, VA)
MITRE (Orlando, FL)
Optimal Solutions and Technology (Orlando, FL)
SimSpace (Boston, MA)
VMware (Palo Alto, CA)
Other Organizations:
Johns Hopkins University (Laurel, MD)
Naval Information Warfare Center Atlantic (Charleston, SC)
University of Central Florida (Orlando, FL)





Phoenix E-Model Ground Satellite Terminal

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Phoenix E-Model Ground Satellite Terminals enable Expeditionary Signal Battalions (ESBs) to provide large division and corps headquarters with agile high-bandwidth network communications. Phoenix terminals provide high capacity, inter- and intra-theater range extension for networked battle command and control information, including logistical, operational, intelligence, and administrative data. They are used for high-throughput missions, which include Unmanned Aerial System feeds, video teleconferencing, and large numbers of subscribers and computers on the network.

The versatile Phoenix terminal is a transportable, quad-band, tactical satellite terminal that is mounted on an expanded capacity vehicle (legacy version). It provides assured access to satellite communications and enables operational flexibility and multipath diversity, by providing a rapidly deployable capability that can operate over military X/Ka and commercial C/Ku satellite bands. It also supports point-to-point, mesh, and hub-spoke networks.

The U.S. Army is currently experimenting with upgraded Phoenix E-Model prototypes, which will provide the large package high-throughput transport capability for new Expeditionary Signal Battalion-Enhanced (ESB-E) formations. Like the legacy version, the flexible Phoenix E-Model prototype operates on four different satellite bands (military X/Ka and commercial C/Ku-bands), however, its dual-head capability enables the use of two antennas on two different frequency bands, or two different satellites, simultaneously. This reduces manning requirements for equivalent capability, doubles bandwidth throughput, and enhances multipath diversity and resiliency within the tactical network.

In addition to operating on traditional Geosynchronous Earth Orbit satellites, the systems also have the potential for growth to Medium Earth Orbit constellations. The legacy Phoenix is completely vehicle based, with a permanent vehicle-mounted antenna. Contrarily, if needed, the new E-Model will enable Soldiers to remove the equipment from the vehicle in transit cases so they can easily deploy and operate the system without the vehicle, increasing the unit's expeditionary nature, mobility and operational flexibility in support of a variety of missions around the world.

BENEFIT TO THE SOLDIER

The expeditionary Phoenix E-Model ground satellite terminals will enable ESBs to provide large division and corps headquarters with agile high-bandwidth network communications to enable the mission command and situational awareness needed to win wars. The quad-band Phoenix E-Model provides multipath signal diversity, as well as unit agility and operational flexibility to better support missions against peer adversaries.

SPECIFICATIONS

E-Model:

- Operates in military X and Ka band and commercial C and Ku bands
- Qualified for the military environment: temperature, shock, and vibration
- Interfaces with other strategic networks via standardized tactical entry points, Regional Hub Nodes, or strategic assets
- Transmits up to three Frequency Division Multiple Access (FDMA) links and one Time-Division Multi Access (TMDA) Multi-Frequency TMDA link simultaneously
- Multicarrier capable (transmit two FDMA carriers) in C, X, Ku, and Ka band
- Supports point-to-point, mesh, and hub-spoke networks

PROGRAM STATUS

- **FY19–FY20:** Engineering Change Proposal upgrade to E-Model prototypes procured

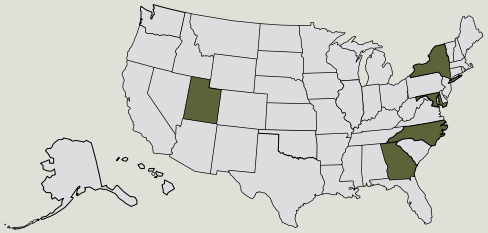
Phoenix E-Model Ground Satellite Terminal

PROJECTED ACTIVITIES

- **2QFY22:**
  - Phoenix E-Model Production begins
  - Fielding to ESB-Es and the training base (Sustainment training at Fort Gordon, Georgia, and the High Tech Training Centers at Tobyhanna Army Depot, Pennsylvania, and Sacramento, California)

CONTRACTORS

Envistacom (Atlanta, GA)
JANUS Research Group (Evans, GA, and Belcamp, MD)
L3Harris (Salt Lake City, UT)
Lite Coms/AVL (Rochester, NY, and Asheville, NC)











Precision Strike Missile (PrSM)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Expected

DESCRIPTION

The Precision Strike Missile (PrSM) is a surface-to-surface, all-weather, precision-strike guided missile fired from the M270A2 Multiple Launch Rocket System (MLRS) and the M142 High Mobility Artillery Rocket System (HIMARS). The baseline missile (Increment 1) will be developed and fielded to engage a wide variety of point and imprecisely located targets at ranges greater than 400 kilometers (km). Primary emphasis for follow-on spirals is increased range, lethality, and engagement of time-sensitive, moving, hardened, and fleeting targets.

BENEFIT TO THE SOLDIER

The PrSM provides field artillery units with a long-range and deep strike capability while supporting brigade, division, corps, Army, theater, joint/coalition forces, and Marine Corps Air-Ground Task Forces in full, limited, or expeditionary operations. PrSM will replace the existing aged inventory of Army Tactical Missile Systems (ATACMS) and provide a new compliance for Insensitive Munitions and Cluster Munition policy.

SPECIFICATIONS

- Replaces ATACMS and doubles volume-of-fire with two missiles per launch pod
- 400-plus km ballistic missile with a cluster munition compliant payload
- Attacks critical time-sensitive area and point targets
- Maintains or improves accuracy in partial Global Positioning System (GPS)-degraded environments, planned for M-Code GPS integration
- Insensitive Munition compliant system
- Launcher compatibility with M270A2 MLRS and M142 HIMARS
- Technology upgrades via Modular Open Systems Architecture
- Growth capabilities for follow-on spirals
- Includes Cyber Security requirements

PROGRAM STATUS

- **2QFY19:** Completed System Level Preliminary Design Reviews
- **3QFY20:**
  - Lockheed Martin successfully completed three Prototype Flight Tests
  - Enhanced-Technology Maturation and Risk Reduction Contract awarded to Lockheed Martin

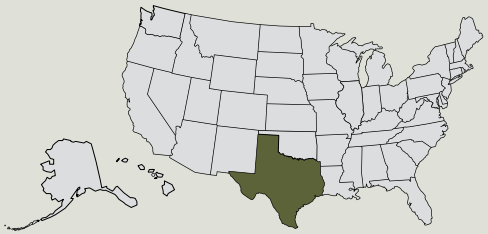
PROJECTED ACTIVITIES

- **3QFY21:**
  - Milestone B Decision Review
  - Award Engineering and Manufacturing Development Contract
- **3QFY21–4QFY21:** Engineering Design Test flight tests and Max-Range demonstration
- **4QFY21:** Urgent Materiel Release (UMR) Contract Award
- **4QFY23:** Field UMR for early operational capability

PrSM



CONTRACTORS
Lockheed Martin (Grand Prairie, TX)



Precision Weapons — Individual Weapons (IW)

PEO Soldier | Fort Belvoir, VA

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

M107: Bahrain, Bangladesh, Barbados, Belgium, Benin, Chad, Hungary, Kenya, Lebanon, Pakistan, Peru, Philippines, Romania, Slovakia, Thailand, Tunisia, and Yemen

M110: Afghanistan, Albania, Bahamas, Belize, Benin, Bhutan, Brazil, Cameroon, Chad, Colombia, Czech Republic, Egypt, Georgia, Hungary, Iraq, Kenya, Latvia, Lebanon, Malaysia, Mexico, Morocco, Peru, Romania, Senegal, Slovakia, Thailand, Tunisia, and Turkey

M2010: None

PSR: None

DESCRIPTION

The Precision Sniper Rifle (PSR) is a multi-caliber (7.62 mm, .300, and .338), bolt-action sniper rifle. The PSR includes a field replaceable modular, multi-barrel design tailored to different missions, enemies, terrain, weather, troops and support available, time available, and civil considerations. The system comes with a sound/flash suppressor, enhanced rifle scope (Leupold Mk5® 5-25x56 mm, Mil-Grid® Reticle), detachable box magazines, and ergonomic stock (foldable with adjustable cheek and butt plate). The rifle also provides greater operational availability and overall reduced sustainment costs.

The M2010 Enhanced Sniper Rifle is a bolt-action, magazine-fed weapon system that utilizes .300 WinMag ammunition. The rifle is built around a rechambered M24 Sniper Weapon System receiver. The M2010 is equipped with a fully adjustable, right-folding chassis system featuring accessory cable routing channels and Military-Standard 1913 Picatinny rails that mount a Leupold 6.5-20 x 50 mm variable power Day Optic Scope with advanced scalable H-58 ranging and targeting reticle. The M2010 is also equipped with a sound suppressor and adjustable bipod. The shooter interface can be tailored to accommodate a wide range of shooter preferences and its folding stock provides Soldiers flexibility in transporting the weapon during operations.

The M110 Semi-Automatic Sniper System (SASS) is an anti-personnel and light materiel weapon that fires 7.62 mm ammunition out to a maximum effective range of 800 meters. The M110's Leupold Mark IV 3.5-10x scope provides both a wide field of view at low magnification for close-in engagements and a narrow field of view for precision long shots at high magnification. The SASS leverages a rapid fire and rapid reload design, variable-power day optic sight, and 10- or 20-round detachable magazines.

The M107 Semi-Automatic Long-Range Sniper Rifle (LRSR) fires .50 caliber ammunition and can deliver precise, rapid fire on targets out to 2,000 meters, greatly exceeding the terminal effect capability of other sniper rifles in use by U.S. forces. Its primary mission is to engage and defeat materiel targets at extended ranges. The M107 uses a Leupold 4.5x-14x variable power sniper scope.

BENEFIT TO THE SOLDIER

The PSR will replace the Army's existing M2010 and M107 Sniper Rifles with a bolt action sniper rifle that is effective against personnel and materiel targets at extreme ranges (1,500 meters). Ranges to increase standoff and overmatch against a worldwide proliferation of extreme distance sniper weapons. The PSR rifle is the same rifle as the Special Operations Command (SOCOM) Advanced Sniper Rifle (ASR), however the SOCOM program only procures a rifle, whereas the U.S. Army PSR program procures a system, which includes the rifle, scope, scope rings, optical augmentation device, and fire-control enablers.

The M2010 exceeds the rate of fire and lethality of the M24, the previous medium-caliber sniper rifle with a 50% increase in range. It bridges the capability gap between the M110 and the M107, allowing precision engagements in daylight and limited visibility, using a clip-on sniper night sight, out to 1,200 meters.

The M110 SASS provides the capability for rapid and focused engagements on several targets with multiple follow-on shots. It is the first Army weapon system that integrates a quick attach and detach suppressor to reduce the weapon's firing signature. The M110 provides the Warfighter with increased lethality, situational awareness from an enhanced scope, and survivability from the flash and sound suppressor.

The M107 LRSR provides Soldiers a tremendous tactical advantage with the ability to engage both personnel and light-skinned vehicles at long range. It is especially valuable during military operations in urban terrain where greater firepower and standoff ranges provide counter-sniper capability while enhancing sniper survivability.

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PROGRAM STATUS

- **3QFY18:** SOCOM ASR Solicitation released
- **2QFY19:** SOCOM ASR Weapon Contract Award
- **3QFY19:** SOCOM ASR Production Qualification Testing begins
- **3QFY20:** Combined Army and SOCOM Operational Testing
- **4QFY20:** PSR Materiel Development Decision

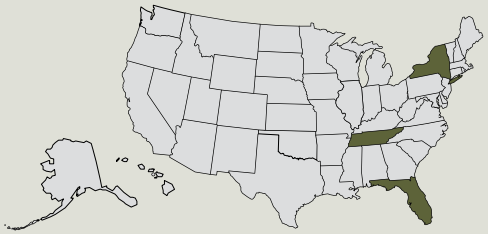
PROJECTED ACTIVITIES

- **1QFY21:**
  - PSR Capabilities Production Document Revision approved
  - PSR Type Classification-Standard
- **2QFY21:** PSR Army Production Contract Award
- **4QFY21:** PSR Full Materiel Release

SPECIFICATIONS

	PSR	M2010	M110	M107
Caliber	.338, .300, and 7.62 mm NATO (modular)	.300 WinMag	.308 Win (7.62 x 51 mm NATO)	.50 BMG (12.7 x 99 mm NATO)
Weight (loaded, with suppressor)	~19 pounds. in .300 or .338 caliber configuration	18.7 pounds	17.3 pounds	35.0 pounds
Length (with suppressor)	50 inches	52.2 inches	46.5 inches	57 inches
Range	1,500 meters	1,200 meters	800 meters	2,000 meters (anti-materiel); 1,500 meters (personnel)

CONTRACTORS
M107: Barrett Firearms Manufacturing, Inc. (Murfreesboro, TN)
M110: Knights Armament Company (Titusville, FL)
M2010: Remington Arms Company, LLC (Illion, NY)
PSR: Barrett Firearms Manufacturing, Inc. (Murfreesboro, TN)







Radiological Detection System (RDS)

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Radiological Detection System (RDS) is intended to replace the Department of Defense's legacy Radiation Detection, Indication, and Computation (RADIAC) survey meters (Army Navy/Portable Detector Radiation-77 (AN/PDR-77), Multi-Function RADIAC Suite, and ADM-300).

RDS will provide Warfighters with the capability to measure alpha, beta, gamma, neutron, and low-energy X-rays. It is the first joint radiological/nuclear detector solution. It increases capability, reduces life cycle costs, and addresses Operation Tomodachi Lessons Learned for common, interoperable equipment with adequate sensitivity and common units of measure.

Additional capabilities beyond that of legacy RADIAC include Net-Readiness, incorporation of Global Positioning System (GPS) Data, and use of both conventional and international system measurement units.

BENEFIT TO THE SOLDIER

The RDS will provide Warfighters with the capability to measure alpha, beta, gamma, neutron, and low-energy X-rays. RDS is much more capable than the PDR-77 because it has a beta pancake probe, sensitive gamma probe, and neutron probe that the PDR-77 lacks. The RDS also has temperature compensation the PDR-77 does not, so it is much more accurate than the PDR-77. Finally, the RDS can network with radio and military GPS, so users can transmit data directly, rather than having to write everything down and then transmit by voice.

SPECIFICATIONS

- Requirements Basis: Capability Development Document, January 2015
- Performance Specification: Amendment 4, dated July 31, 2019
- Contract Type: Cost Plus Fixed Fee (Development)/Fixed Price Incentive (Successive Targets) (Production)

PROGRAM STATUS

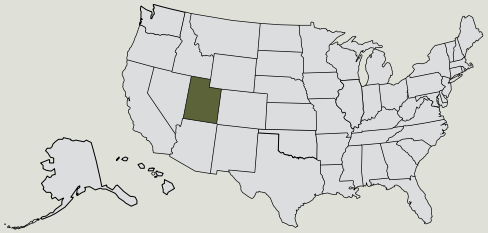
- **1QFY19:** Inclusion in Operational Needs Statement
- **2QFY19:** Critical Design Review
- **4QFY19:** Low-Rate Initial Production Contract Award

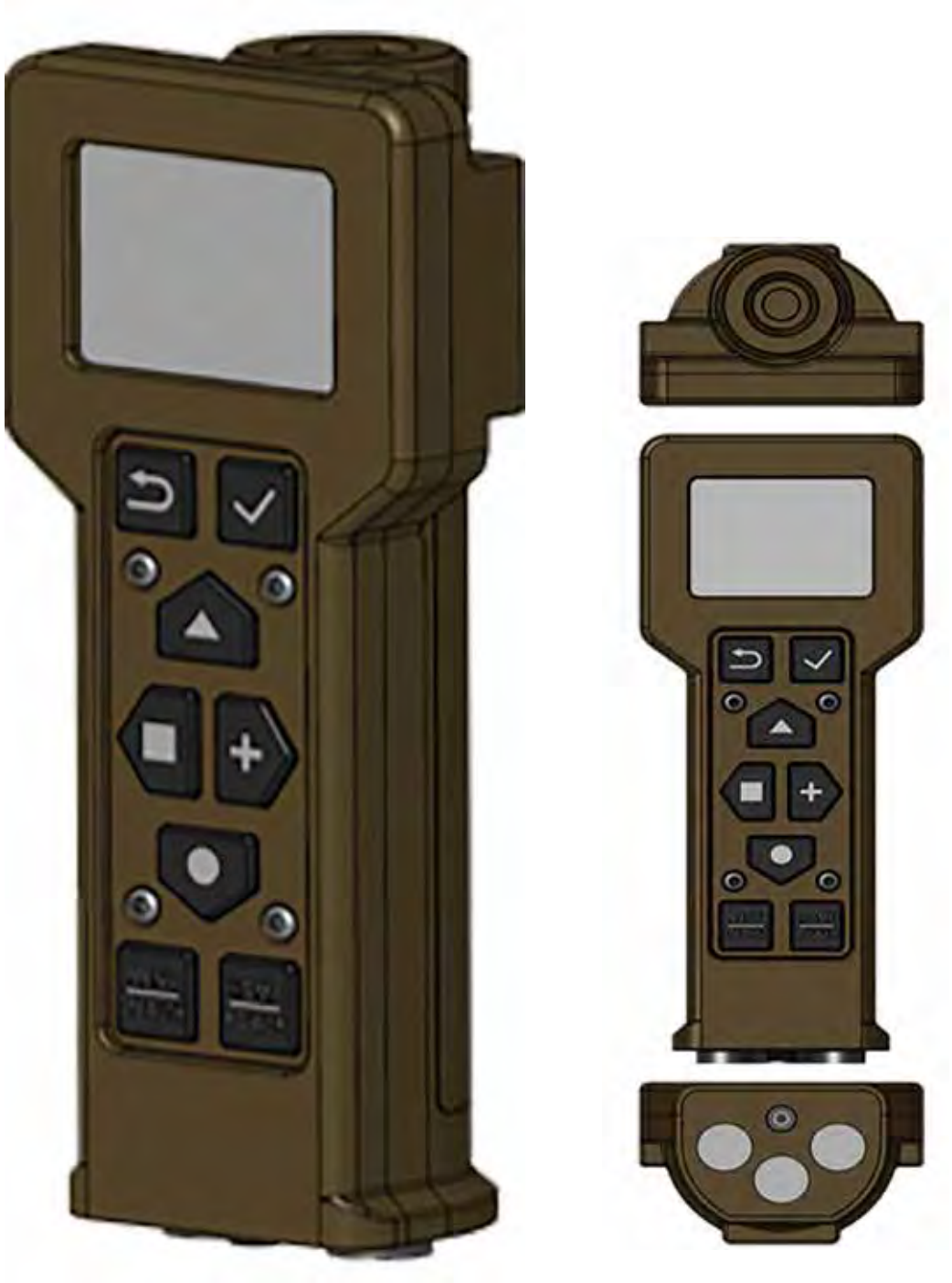
PROJECTED ACTIVITIES

- **1QFY21:** Urgent Materiel Release Milestone C

RDS

CONTRACTORS
Visionary Products, Inc. (Draper, UT)





Range Radar Replacement Program (RRRP)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Range Radar Replacement Program (RRRP) replaces outdated instrumentation radar systems at Aberdeen Test Center, Maryland; Yuma Test Center, Arizona; and White Sands Test Center, New Mexico. This effort responds to a need defined by the Army Test and Evaluation Command to improve range tracking instrumentation while eliminating obsolescence, stabilizing operation and sustainment costs, and improving mobility and remote operations.

RRRP Block I will satisfy the Test Capability Requirements Document (TCRD) Addendum and bridge capability gaps to Block II. Block I includes a service life extension for FPS-16 (long-range, single-object tracking radars) and MPS-39 Multiple Object Tracking Radars (MOTR), as well as Modified Commercial-off-the-Shelf (MCOTS) short-, medium-, and long-range radars. Block II provides long-range MCOTS radars, which satisfy the TCRD requirements.

BENEFIT TO THE SOLDIER

RRRP will provide the capability to test current and future Army weapon systems, providing critical test data to inform system development decisions and reducing the risk to operational forces prior to fielding.

SPECIFICATIONS

- **Short-Range Radar:** 0–20 miles
- **Medium-Range Radar (MRR):** 0–30 miles
- **Long-Range Radar (LRR):** 30–80 miles

PROGRAM STATUS

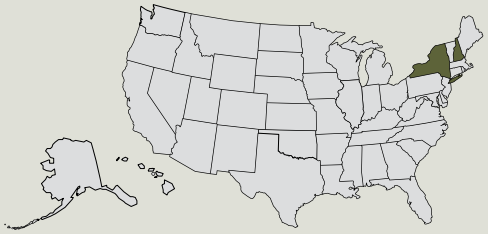
- **4QFY19:** AN/FPS-16 deliveries to White Sands Missile Range and Yuma Proving Ground (YPG) complete
- **4QFY20:** Delivery of three MRRs to YPG

PROJECTED ACTIVITIES

- **FY21:**
  - Delivery of five MRRs, two LRRs, and one AN/MPS-39 MOTR
  - Block II LRR decision

RRRP

CONTRACTORS
AN/FPS-16 Recapitalization: BAE Systems (Nashua, NH)
Medium Range Radars: Lockheed Martin (Owego, NY)





Reconfigurable Virtual Collective Trainer (RVCT)

PEO Simulation, Training and Instrumentation | Orlando, FL

PEO STRI

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Reconfigurable Virtual Collective Trainer (RVCT), a Pre-Materiel Development Decision program, includes aviation platforms (RVCT-A), ground platforms (RVCT-G), dismounted infantry collective maneuver training, collective gunnery training, and mission rehearsal capability. The RVCT is a mobile, transportable, modular, and scalable training capability with the minimum hardware necessary to represent form, fit, and function for the user to execute collective tasks. The RVCT will use the Synthetic Training Environment-Information System (STE-IS) platform enabler. The STE-IS is comprised of three foundational capabilities: One World Terrain, Training Management Tool, and Training Simulation Software. The STE-IS delivers software, application(s), and services that will enable the RVCT.

BENEFIT TO THE SOLDIER

RVCT enables unit collective and combined arms air-ground training for aviation and ground units within the Synthetic Training Environment. It also provides the sets and repetitions to accelerate and sustain Soldiers through unit collective training task readiness.

SPECIFICATIONS

- Dependent on STE-IS software

PROGRAM STATUS

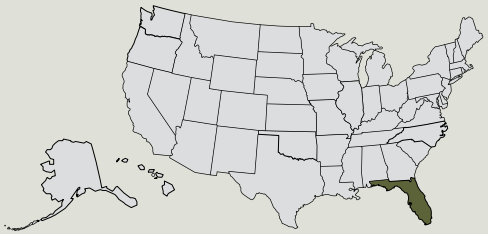
- **FY20:** Program on schedule to meet Critical Design Review (CDR)

PROJECTED ACTIVITIES

- **FY21–FY25:**
  - Subject Matter Expert reviews on all contract platforms
  - Final Design Reviews on all platforms
  - CDR

RVCT

CONTRACTORS
Cole Engineering Services Incorporated (Orlando, FL)
Raydon Corporation (Port Orange, FL)





Render Safe Sets, Kits, and Outfits (RS SKO)

JPEO Armaments and Ammunition | Picatinny Arsenal, NJ

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Render Safe Sets, Kits, and Outfits (RS SKO) consist of both commercial-off-the-shelf and Government-off-the-shelf solutions. RS SKO is intended to mitigate gaps associated with Counter Explosive Hazard (CEH) and Weapons of Mass Destruction (WMD) mission sets with enduring, sustainable, and lightweight capabilities providing and supporting Explosive Ordnance Disposal (EOD) reconnaissance, threat detection, identification, diagnostics and render safe/neutralization, and incident evaluation and control.

Enhanced mission support capabilities provide extended/enhanced endurance and force protection for EOD personnel in dismounted operations in both complex and austere environments. RS SKO consists of non-developmental items to reduce fielding time and research and development costs, allowing Technical Refresh or rapid materiel updating through Technology Insertion.

BENEFIT TO THE SOLDIER

RS SKO will provide enduring, sustainable, lightweight, CEH and WMD reconnaissance, detection, identification, diagnostics, render safe/neutralization, incident evaluation and control, and enhanced mission support capabilities to increase an EOD team's endurance, force protection, and mission success, while primarily supporting dismounted operations in complex and austere environments.

SPECIFICATIONS

- Detection of buried low- and high-metallic targets, carbon rod based improvised explosive devices, non-metallic conducted devices, and short and long wires
- Detect and localize radiation sources generated by manmade devices such as nuclear weapons, improvised nuclear devices, or radiological dispersal devices using gamma and neutron radiation technology
- Diagnostics and identification of trace amounts of explosives, chemicals, and drugs using field confirmatory mass spectroscopy
- Diagnose internal components of explosive hazards with digital X-ray processer/imager
- Incident evaluation and control using low-light visual augmentation system, Unmanned Aerial System for intelligence, surveillance, and reconnaissance and payload delivery (3 pounds threshold), and electronic countermeasures
- Final disposition and render safe is a multipurpose explosives/tools initiation device
- Power management controller/device uses automated power generation, distribution, and scavenging

PROGRAM STATUS

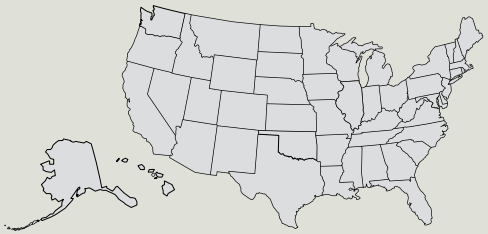
- **FY20:** Materiel Development Decision

PROJECTED ACTIVITIES

- **FY21:**
  - Milestone C
  - Contract Awards
- **FY22:** Initial Operational Capability

RS SKO

CONTRACTORS
TBD





Light Weight Demolition Device (LWDD)



Team Support Power Management



Lightweight ECM Capabilities



Lightweight Hand Held Detector Capability



Binocular Night Vision Device



Gamma/Neutron Detection/ID Capability



Handheld Mass Spectrometry Trace Detection



Lightweight Imager



Unmanned Aerial Vehicle – ISR/Payload Capability



Lightweight X-Ray Source

Robotic Combat Vehicles (RCVs)

PEO Ground Combat Systems | Detroit Arsenal, MI



OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Robotic Combat Vehicles (RCVs) are a revolutionary capability that will forever change the conduct of warfare. The RVC family of unmanned and configurable platforms (light, medium, and heavy) will deliver decisive lethality by rapidly developing Situational Awareness (SA) and enabling commanders to employ external or onboard weapon systems while reducing the aggregate tactical risk to the formation. Moreover, growth requirements will enable RCVs to rapidly evolve with the ever-increasing dynamic nature of software and hardware innovations by spiraling new technology onto the platform to protect its relevancy throughout its product life cycle.

BENEFIT TO THE SOLDIER

RCVs will expand the geometry of the battlefield and enable friendly forces to dictate the terms of the first human engagement by leveraging robotic and autonomous systems to shape and attrite a threat. The Modular Mission Payloads (MMPs) RCVs offer will allow access to capabilities such as electronic warfare and counter-unmanned aerial systems at the platoon level. RCVs are relevant to all phases of Multi-Domain Operations: Compete, Penetrate, Disintegrate, Exploit, and Recompete.

This revolutionary enhancement of ground forces will provide a dynamic variable to force the threat to account for a wide spectrum of potential employment strategies, thus demonstrating a credible deterrence during the Compete Phase. During the Penetration Phase, RCVs will enable commanders to contest enemy maneuver forces by leveraging robust sensor packages to develop SA and facilitate multiple options to conduct simultaneous multidomain strikes with either the RCVs' onboard or external capabilities. When supporting the Disintegration Phase, RCVs will employ their autonomous maneuver capability to offer the threat multiple dilemmas with respect to conducting independent maneuver without exposing the human force to direct and/or indirect fire.

Additionally, the RCVs' MMPs will offer multiple options to deceive the threat and inhibit the threat's ability to make effective and informed decisions. RCVs will add further value during the Exploit Phase by aggressively maneuvering to positions of advantage, developing SA, and enabling commanders to isolate threat forces attempting to retrograde or provide friendly forces with early warning of pending counterattacks. After friendly forces defeat the enemy ground element, RCVs will transition to an expanded reconnaissance and security role to secure both terrain and populations; ultimately setting the conditions to either transition to stability operations or recompete in the event of renewed aggression.

SPECIFICATIONS

- Autonomy: RCVs will offer the options of mission-dictated control and handoff between equipped mounted and dismounted control stations.
- Lethality: Depending on configuration, RCVs will provide the capability to be equipped with a range of autonomous and remote weapons ranging from small arms to large caliber cannons.
- Mobility: RCVs will be designed to maintain mobility with the organic formation.

PROGRAM STATUS

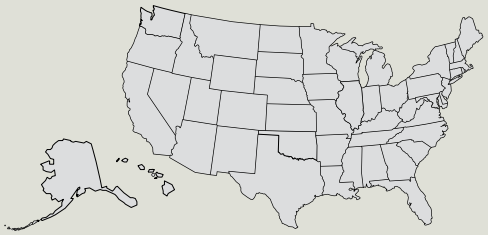
- **4QFY20:** Key Soldier operational experiment to demonstrate value of manned-unmanned teaming in U.S. Army units using RCV surrogate platforms

RCVs

PROJECTED ACTIVITIES

- **3QFY22:** Key Soldier operational experiment: Demonstrate technology readiness of RCV Light and RCV Medium
- **3QFY23:** Milestone (MS) B: RCV Light
- **3QFY24:** MS B: RCV Medium
- **FY25:**
  - RCV Light enters Milestone MS C: RCV Light
  - First Unit Equipped with RCV Light: First Unit Equipped

CONTRACTORS
TBD



PRE-DECISIONAL

Robotic Mine Flail — M160

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The M160 Robotic Mine Flail clears areas infested with land mines and counters the effects of mines that could impede the mobility of friendly forces, destroy systems, or cause personnel casualties. It protects Soldiers against mine fragments and clears mines with the flailing motion of high-speed, rotating chained hammers. The machine digs and pounds the soil, which results in the detonation or shattering of anti-personnel mines while protecting the system's engine and vital components with steel armor plates.

M160 is an improved version of the commercial-off-the-shelf DOK-ING MV-4 Mechanical Anti-Personnel Mine Clearing System. Real-time control of the mine clearing enables Soldiers to control the system from either a mounted or a standoff dismounted position using an Operator Control Unit (OCU). The M160 communication system transfers operating status and video feedback to the Soldier, allowing the Soldier to safely remain outside the range of exploding mines during the clearing process.

BENEFIT TO THE SOLDIER

The M160 provides standoff protection to Soldiers while they clear areas of mines.

SPECIFICATIONS

- Engine
- Hydraulic system
- Flail head assembly
- Drive train
- OCU

PROGRAM STATUS

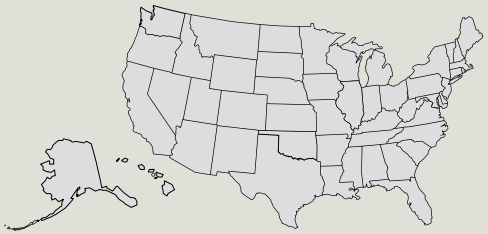
- **FY17–FY20:** M160 Fielding and Soldier training
- **2QFY21:** Complete Fielding and transition to full organic support

PROJECTED ACTIVITIES

- **3QFY21:** Continue training remaining units impacted by COVID-19 travel restrictions
- **FY22:** Develop and implement software updates through Combat Capabilities Development Command - Ground Vehicle Systems Center

Robotic Mine Flail — M160

CONTRACTORS
DOK-ING (Croatia)



Rocket, Artillery, Mortar (RAM) Warn

PEO Missiles and Space | Redstone Arsenal, AL

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Rocket, Artillery, Mortar (RAM) Warn is a horizontal technology insertion, using current Counter-Rocket, Artillery, Mortar warning capability, to provide early, localized warning of incoming indirect fire (IDF) attacks to all Army Maneuver Brigade Combat Teams (BCT). Integration of RAM Warn equipment provides a warn capability to the BCT for detection of threat RAM rounds and transmission of the detection data to the command and control (C2) element for correlation and determination of a predicted point of impact (POI). Based on the POI, the C2 then determines which warning nodes should send "incoming" warning alarms and transmits this information to the appropriate warning nodes. The Huntsman Secure Network Radio (HSNR) LX4-Secret and Below Modification Work Order (MWO) will address end-of-life/obsolescence of the current Rajant Breadcrumb® LX4-4442 radio.

BENEFIT TO THE SOLDIER

Timely warning enables those BCT personnel in the hazard area of an inbound IDF threat to seek cover or a prone position prior to impact, thus reducing Warfighter casualties. The HSNR modification will provide the Warfighter with additional operational benefits including the embedded encryption feature to eliminate the KG-175D, and automated radio programming to simplify training and reduce set-up time from hours to minutes.

SPECIFICATIONS

- Interfaces with the Air Defense Airspace Management (ADAM) Cell already resident in the BCT Headquarters as the C2 element
- Networks existing radars in the Target Acquisition Platoon of the Fires Battalion as the sense element
- Adds enhanced C2 warning devices, controllers, and dedicated communications between the existing radars, the ADAM Cell, and warning systems

PROGRAM STATUS

- **FY16–FY18:** Fielded/trained 14 Active Component and 27 National Guard BCTs
- **2QFY18:** HSNR environmental and environmental and electromagnetic effects testing
- **3QFY18:**
  - HSNR Spectrum Certification/DD Form 1494 approval – J/F 12/11242
  - HSNR Engineering Change Proposal approval by National Security Agency
- **4QFY18:**
  - HSNR Log Demo and Technical Manual verification
  - RAM Warn equipment delivered to support European Deterrence Initiative
- **2QFY19:** RAM Warn Full Operational Capability
- **3QFY19:** HSNR Demonstration (Fort Bliss, Texas)
- **3QFY20:** HSNR MWO Kit Production Start
- **4QFY20:**
  - RAM Warn with HSNR Full Materiel Release
  - HSNR MWO First Unit Equipped

PROJECTED ACTIVITIES

- **1QFY22:** Transition to Sustainment
- **4QFY22:** HSNR MWO Complete

RAM Warn

CONTRACTORS
Northrop Grumman Corporation (Huntsville, AL)





Scraper — 621G

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Afghanistan and Iraq

DESCRIPTION

The 621G Scraper is a self-propelled, open-bowl, two-axle, single-diesel-engine-driven vehicle with pneumatic tires. It is capable of being push loaded with a T-9 Medium Dozer, reducing bowl loading times to less than one minute, and accepting the armor Crew Protection Kit. The 621G Scraper is used for cutting, scraping, self-loading, hauling, dumping, and spreading of earth during earth-moving operations.

BENEFIT TO THE SOLDIER

The 621G Scraper provides cutting, dumping, and spreading of soil in worldwide earth-moving and construction projects by U.S. Army Forces in engineer troop support.

SPECIFICATIONS

- Payload capacity: 52,800 pounds and 22 loose cubic yards
- Cutting width: 119 inches
- Speed: 32 mph fully loaded

PROGRAM STATUS

- **FY20:**
  - Completed Production under U.S. Marine Corps Production Contract
  - Contract Award for Construction Equipment Virtual Trainer (CEVT)

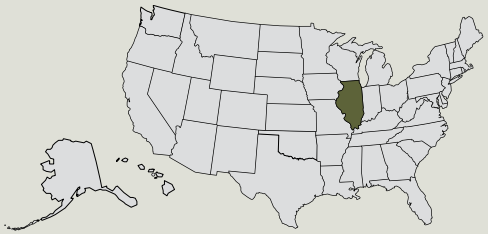
PROJECTED ACTIVITIES

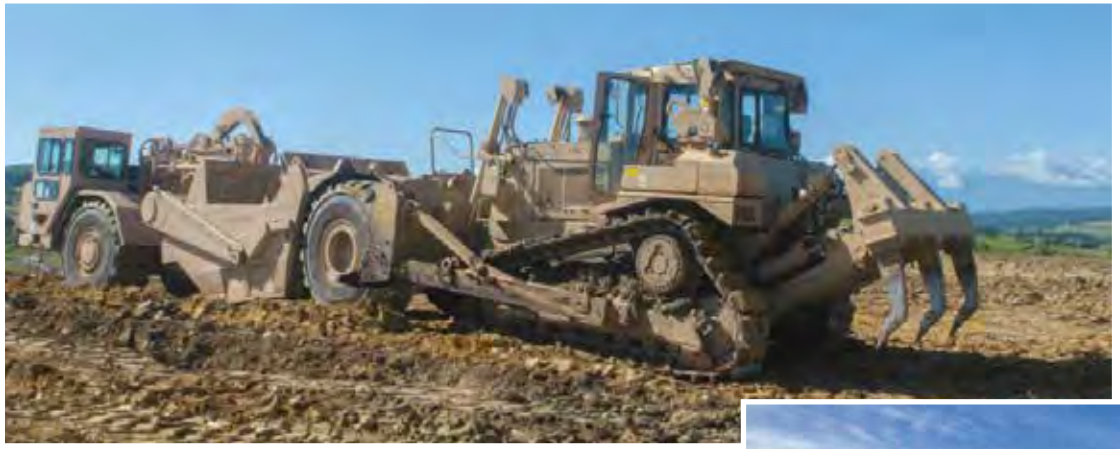
- **FY21:**
  - Continue Fielding and Training of 621G Scrapers
  - Award delivery order under Defense Logistics Agency's Heavy Equipment Procurement Program
  - Field CEVT to the Engineer School

Scraper — 621G



CONTRACTORS
Caterpillar, Inc. (Peoria, IL)







Screening Obscuration Module (SOM)

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Screening Obscuration Module (SOM) will provide a man-portable mountable and dismountable medium-area visual screening obscuration capability for the Warfighter. The SOM will increase platform survivability and Soldier protection levels of maneuver forces by degrading enemy forces ability to detect U.S. targets in the visual and near infrared (IR) region of the electromagnetic spectrum. The SOM will utilize miniaturized obscuration generator technology to produce an effective visual to near IR obscuration cloud to screen against enemy forces. The individual Soldier or team will employ SOM devices on open and complex terrain.

BENEFIT TO THE SOLDIER

SOM provides a modernized medium-area, medium-duration mountable and dismountable visual to near IR screening capability for maneuver forces.

SPECIFICATIONS

- Produces an effective screening cloud size of 204 x 12 meters for up to 12 minutes without refueling

PROGRAM STATUS

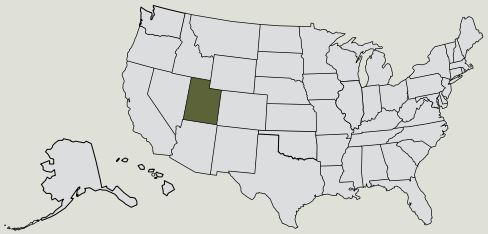
- **4QFY18:** Critical Design Review
- **1QFY19:** Limited User Test (Operational Test)

PROJECTED ACTIVITIES

- **1QFY21:** Milestone C, Production and Deployment

SOM

CONTRACTORS
L3Harris (Salt Lake City, UT)









Sentinel Radar — AN/MPQ-64 A3/A4

PEO Missiles and Space | Redstone Arsenal, AL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Chile, Egypt, Finland, Indonesia, Latvia, Lithuania, Netherlands, Norway, Oman, and Qatar

DESCRIPTION

The Sentinel – AN/MPQ-64 A3/A4 provides persistent air surveillance and fire control quality data through command and control systems to defeat Unmanned Aerial Systems (UAS), cruise missiles, and fixed- and rotary-wing aircraft threats. The Sentinel A4 modification, currently in development, will be a simultaneous multimission radar that will also meet sensor requirements for the Indirect Fire Protection Capability Increment 2 (IFPC-Inc 2).

The Sentinel A3 system features an X-Band, 360-degree phased array air defense radar with a 75 kilometer (km) instrumented range. It is equipped with electronic counter-countermeasure capabilities, a Mode 5 Identification Friend or Foe subsystem for positive identification of friendly aircraft, and Non-Cooperative Target Recognition (NCTR) capabilities to identify threat aircraft. Sentinel A3 is trailer-mounted, pulled by either a High Mobility Multipurpose Wheeled Vehicle or an M1082 Family of Medium Tactical Vehicles (FMTV) truck. The system generator with a command and control interface is mounted on the vehicle.

The Sentinel A4 modification will integrate Active Electronically Scanned Array technology to extend the radar range, increase NCTR accuracy, and improve track accuracy. The Sentinel A4 will utilize a M1082 FMTV and corresponding 5-ton trailer.

Sentinel A3 interfaces with a networked capability within the Integrated Air and Missile Defense Battle Command System architecture, the Forward Area Air Defense Command and Control System, and the National Capital Region Integrated Air Defense Command and Control System. Sentinel also interfaces with the Counter-Rocket, Artillery, and Mortar (C-RAM) system to protect friendly aircraft during engagement of incoming indirect fire.

BENEFIT TO THE SOLDIER

Sentinel provides persistent air surveillance and fire control quality data to the Warfighter through command and control systems to defeat UAS, cruise missiles, and fixed- and rotary-wing aircraft threats. The A4 modification will convert the Sentinel into a multimission radar and add capability against rockets, artillery, and mortars.

SPECIFICATIONS

- All-weather, 360-degree capability
- Instrumented Range:
  - Sentinel A3: 75 km
  - Sentinel A4: Greater than 75% increase from A3
- Three-dimensional X-Band radar
- Supports current Air and Missile Defense systems, C-RAM, and the IFPC Inc 2 System

PROGRAM STATUS

- **3QFY18:** Software v5.8.6 Urgent Materiel Release to National Capital Region
- **1QFY19:** Production Contract awarded for the Sentinel A3 Signal Data Processor Kit and Sentinel A3 Radars Production
- **4QFY19:**
  - Sentinel A4 Milestone B
  - Sentinel A4 Engineering Manufacturing Development (EMD) Contract Award

Sentinel Radar — AN/MPQ-64 A3/A4

PROJECTED ACTIVITIES

- **1QFY21:** Sentinel A3 Software v5.8.6.1 and Signal Data Processor Hardware Materiel Release
- **2QFY22:** Sentinel A4 EMD Assets Delivery (Quantity 5)
- **3QFY23:** Sentinel A4 User Operational Evaluation System Delivery (Quantity 5)
- **4QFY23:** Sentinel A4 First Unit Equipped

CONTRACTORS

Sentinel A3: Raytheon (Fullerton, CA)
Sentinel A4: Lockheed Martin (Syracuse, NY)







Signal Modernization

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Signal Modernization capabilities deliver innovative expeditionary line-of-sight and beyond-line-of-sight communications and tactical network transport capabilities that enable commanders to best support the fight at every phase of operations – from inflight to an objective, to early entry missions, to the build-up of forces across the battlefield. These agile capabilities augment and expand the Army's Tactical Network Transport tool kit to best suit mission requirements. Operational requirements have pushed the need for communication capabilities lower in Army formations. These products extend the network to lower echelons via modular, scalable, and interoperable nodes. Systems include:

- **Enroute Mission Command (EMC)** (Non-Acquisition Category (ACAT)) provides units with the critical in-flight mission command and plane-to-plane/plane-to-ground network communications they need to be successful in joint forcible entry operations.
- **Terrestrial Line-of-Sight (TRILOS) Radio** (ACAT III) improves the expeditionary nature of U.S. Army units, significantly increases network throughput and range, operational flexibility, and multipath diversity in congested and contested environments.
- **Next Generation Tropospheric Scatter Transmission (Tropo)** (ACAT III) will provide expeditionary robust beyond line-of-sight capability and greatly reduce size, weight, and power (SWaP) requirements, compared to the legacy Tropo system. When fielded, it will also provide range extension and a significant increase in throughput compared to legacy capability.
- **Secure Wireless** (ACAT III) uses the National Security Agency-approved Commercial Solutions for Classified solution to provide secure Wi-Fi to the Command Post, with prototype capability enabling vehicle-to-vehicle wireless communication. Secure Wireless provides agility and operational flexibility, enabling commanders and staff to stay securely connected with full situational awareness and mission command capability for the maximum amount of time during command post relocation.
- **Commercial Coalition Equipment (CCE)** (ACAT III) provides expeditionary coalition or commercial network connectivity to enable mission command, network communications (voice, video, and data), and situational awareness between Army, joint, and coalition forces, in support of both military and civil operations.
- **Modular Communications Node-Advanced Enclave (MCN-AE)** (ACAT III) augments the existing intelligence network, enabling users to connect to the same resources as the traditional standalone TROJAN Intelligence Network, but using the Army's unified Network. Each MCN-AE fits into a suitcase-sized transit case and uses a unit's organic network transport equipment to relay intelligence data.

BENEFIT TO THE SOLDIER

These interoperable commercial-off-the-shelf products increase the expeditionary nature of today's force and its ability to rapidly deploy right-sized units to the right place at the right time. Compared to legacy capability, these network systems provide significant increases in bandwidth, range, and situational awareness, while reducing the physical footprint and enabling a more effective and rapidly deployable force.

SPECIFICATIONS

- Adds multipath diversity and operational flexibility
- Operates in satellite-denied environments
- Significant SWaP reduction over legacy capability for improved agility
- Significant increase in bandwidth and range versus legacy capability
- Easy to operate and deploy
- Fully interoperable with the Army's tactical network and architecture

Signal Modernization

- Enables commercial- and coalition-network communication and mission command

PROGRAM STATUS

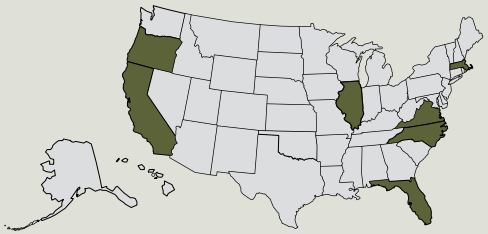
- **FY18:** TRILOS Full-Rate Production (FRP) decision
- **1QFY19:** Tropo Milestone C and Low-Rate Initial Production decision
- **2QFY20:** Secure Wireless Mesh Remote Endpoint (SWMRE): Materiel Development Decision approval
- **FY20:**
  - Secure Wireless Small Form Factor: In Production and Fielding
  - CCE: In Production and Fielding; continued support to Army training exercises and real-world operations
  - MCN-AE: In Production and Fielding; supporting training exercises and real-world operations

PROJECTED ACTIVITIES

- **1QFY21–2QFY22:** EMC Ka-band Fuselage Mount Antenna Fielding to 35 C-17 aircraft
- **4QFY21:**
  - Tropo Initial Operational Test and Evaluation
  - SWMRE Milestone C Decision
- **2QFY22:**
  - EMC Post Deployment Assessment
  - EMC Disposition Decision
- **3QFY22:** Tropo FRP Decision
- **FY22:** MCN-AE continue Production and Fielding
- **FY23:**
  - Continued CCE(v2) Production and Fielding
  - Secure Wireless Small Form Factor continued Production and Fielding
- **FY24:** Tropo Production

CONTRACTORS

Aruba (Santa Clara, CA)
Blue Sky Mast (Largo, FL)
Boeing (Chicago, IL)
Cisco Systems (San Jose, CA)
Cubic/DTECH (Fairfax, VA)
General Dynamics (Fairfax and Reston, VA, and Taunton, MA)
Honeywell (Charlotte, NC)
INMARSAT Government (Reston, VA)
L3Harris (Melbourne, FL)
Pacific Star (PacStar) Communications (Portland, OR)
Raytheon (Contract Administration: Dulles, VA; Production Integration: Chicago, IL)
Silvus Technologies (Los Angeles, CA)
STS (Arlington, VA)
Ultra Electronics (Montreal, Canada)
ViaSat (Carlsbad, CA)









Small Arms — Crew Served Weapons (CSW)

PEO Soldier | Fort Belvoir, VA

ACAT III/IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

M249: Afghanistan, Albania, Bangladesh, Columbia, Iraq, Lebanon, Moldova, North Macedonia, and Tunisia

M240B: Afghanistan, Barbados, Belize, Brazil, Columbia, Iraq, Jordan, Kenya, Morocco, Philippines, Tunisia, and Yemen

M240L (Contracts through FN Herstal and Belgium M2/ M2A1): Afghanistan, Egypt, Georgia, Iraq, Jordan, Kenya, Kuwait, Lebanon, Morocco, Pakistan, Tunisia, and Uganda

MK19: Afghanistan, Croatia, Georgia, Iraq, Jordan, Lebanon, Moldova, Slovenia, and Taiwan

DESCRIPTION

The Small Arms – Crew Served Weapons portfolio contains the M249 Squad Automatic Weapon, multiple variants of the M240 7.62 mm Medium Machine Gun, the M2 and M2A1 .50 Caliber Machine Gun, and the MK19 Grenade Machine Gun. The M249 Squad Automatic Weapon is designed as the fire team automatic weapon providing suppressive fire at extended ranges, allowing fire and movement to make contact with and destroy the enemy.

The M240B and M240L 7.62 mm Medium Machine Guns are designed to provide the platoon with accurate, continuous fires to suppress the enemy and allow maneuver to close with and destroy the enemy.

The M2A1 with Quick Change Barrel is an enhancement to the M2 .50 Caliber Machine Gun offering Soldiers increased performance, new features, and design improvements that make it easier and safer to use. The M2A1 provides a fixed headspace and timing configuration, flash hider, and removable carrying handle, which increase the performance of the battle proven M2. It mounts on the M205 tripod and on most vehicles while also serving as an anti-personnel and anti-aircraft weapon. It is capable of single-shot and automatic fire, can defeat lightly armored vehicles, and provides indirect fires from defilade position.

The MK19 Grenade Machine Gun supports the Soldier by delivering heavy, accurate, and continuous firepower against enemy personnel and lightly armored vehicles. The MK19 can be mounted on a tripod or on multiple vehicle platforms and is the primary suppression weapon for combat support and combat service support units.

BENEFIT TO THE SOLDIER

The M249 allows the Warfighter improved weapon control, egress, and maneuver in close-quarter combat due to a collapsible buttstock and a new, short barrel. An improved bipod provides Soldiers with increased reliability and weapon accuracy. The M240L is a lightweight variant of the M240B Machine Gun and reduces the Soldier's combat load while allowing easier handling and movement. The M2A1 speeds target engagement and improves survivability and safety by reducing the time required to change the barrel and eliminating the timely procedure of setting headspace and timing. The MK19 supports the Warfighter in both the offense and defense by providing the unit the capability of laying down a heavy volume of close, accurate, and continuous 40 mm grenade fire.

PROGRAM STATUS

- **4QFY20:**
  - Issued 9,682 M240Ls
  - Issued 35,323 M2A1s
  - Completed FY19 M2 to M2A1 conversion program at Anniston Army Depot, Anniston, Alabama (1,986 weapons)

PROJECTED ACTIVITIES

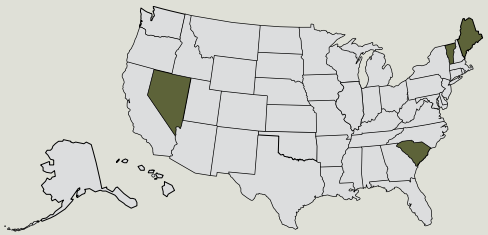
- **FY21–FY23:**
  - **M249:** In Sustainment
  - **M240B/M240L:** Continue Fielding to National Guard and Reserve units
  - **M2/M2A1:** Introducing a modernization kit that improves reliability, rate of fire, range, and accuracy and will introduce Mounted Machine Gun Optic once funds become available

SPECIFICATIONS

	M249	M240	M2/M2A1	MK19
Length	30.75 inches to 36.25 inches	44.5 inches	67.75 inches	43.1 inches
Weight	17.95 pounds	27.3 pounds (B), 21.8 pounds (L), 5.5 pounds (barrel)	86 pounds (barrel, 26 pounds)	77.6 pounds
Caliber	5.56, maximum effective range 800 meters (area), 600 meters (point)	7.62, maximum effective range 800 meters (bipod), 1,800 meters (tripod)	12.7 mm (North Atlantic Treaty Organization), maximum effective range, 1,829 meters; maximum range, 6,764 meters	40 mm, maximum effective range 2,212 meters (area), 1,500 meters (point)
Rate of Fire (Shots Per Minute)	700-850	550-650	450-600	325-375

CONTRACTORS

M249: FN America, LLC (Columbia, SC)
M240B: Fabrique National Manufacturing, LLC (Columbia, SC)
M240L: Fabrique National Manufacturing, LLC (Columbia, SC)
M2/M2A1: General Dynamics Ordnance and Tactical Systems (Williston, VT, and Saco, ME) and U.S. Ordnance (McCarran, NV)
MK19: Fabrique National Manufacturing, LLC (Columbia, SC)











Small Multipurpose Equipment Transport (S-MET)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Small Multipurpose Equipment Transport (S-MET) is designed to offload weight from the dismounted Soldier, Squad, and Small Unit. The S-MET will carry additional supplies and mission essential equipment as well as Modular Mission Payloads (MMP) increasing combat effectiveness.

S-MET is designed with Interoperability Profile, Robotic Operating System-Military, and Joint Architecture for Unmanned Systems compliance to allow for integration of future MMPs to enhance capability. This architecture allows integration of MMPs from the prime as well as any other contractor building to these standards.

BENEFIT TO THE SOLDIER

S-MET provides the small unit with the ability to support squad and platoon operations for 72-hour missions and unmanned internal resupply capability to the small unit.

SPECIFICATIONS

- Carries 2,500 pounds, reducing the dismounted Soldier's weight burden by 100-plus pounds each
- Operates 60-plus miles in 72 hours
- Generates 3 kilowatts of power (stationary) and 1 kilowatt (moving) keeping equipment and batteries charged on the move

PROGRAM STATUS

- **FY19:** Completion of technical demonstration
- **4QFY19:** Army approval of Abbreviated Capabilities Development Document
- **4QFY20:** Production Contract Award

PROJECTED ACTIVITIES

- **FY21:**
  - Test and Log Systems Delivered
  - Pre-Production Qualification Testing
  - First Unit Equipped

S-MET

CONTRACTORS
General Dynamics Land Systems (Sterling Heights, MI)





Small Tactical Optical Rifle Mounted (STORM) — Laser Range Finder

PEO Soldier | Fort Belvoir, VA

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Small Tactical Optical Rifle Mounted (STORM) AN/PSQ-23 is a lightweight multifunction laser system designed to operate on individual and crew served weapons. STORM combines the functionality of a laser range finder, Multiple Integrated Laser Engagement System (MILES), a digital magnetic compass for direction finding, an infrared illuminator, and a visible pointer into an integrated battery-operated single system. STORM is intended to be used with weapons equipped with Military Standard 1913 accessory mounting rails, Stryker vehicles with Remote Weapons System, and Common Remotely Operated Weapon Station (CROWS). When combined with existing fielded weapons sights, STORM provides an all-weather day/night capability.

There are currently three STORM variants. The AN/PSQ-23A (STORM PI), resulted from an Engineering Change Proposal to the original STORM design that largely focused on producibility and reliability. STORM SLX provides the same functionality as the AN/PSQ-23A STORM PI, while significantly reducing the overall size, weight, power consumption, and cost. To eliminate redundancy with other Army training systems, the STORM PI incorporates a MILES transmitter, however the STORM SLX and STORM II do not. STORM II adds additional capabilities to include Short Wave Infrared (SWIR) Marking, SWIR Illumination, and a Ballistics Calculator (BC). STORM systems can be connected to a military Global Positioning System to provide self-location and target location.

BENEFIT TO THE SOLDIER

STORM enhances the Soldier's ability to see, acquire, and target adversaries in all battlefields. During direct fire engagements, leaders need to be capable of marking targets and controlling fires. They also need to be able to illuminate targets for easy target acquisition. Due to the lack of depth perception at night, a range finder coupled with an illumination capability will allow leaders to determine if targets are within firing limits and correct aiming points on the target to achieve first shot kills.

STORM II provides spot reports on enemy locations, and target marking using the SWIR Marking transmitter. Sniper teams will use STORM II to determine range and first round on target using the BC. It is also installed on CROWS for both Abrams and Stryker vehicle platforms. STORM II will leverage the development of a small, highly efficient, multiple repetition rate laser range finder resonator that has excess energy to penetrate through degraded atmospheric conditions.

PROGRAM STATUS

- **STORM II**
  - **4QFY20:** First Production Order

PROJECTED ACTIVITIES

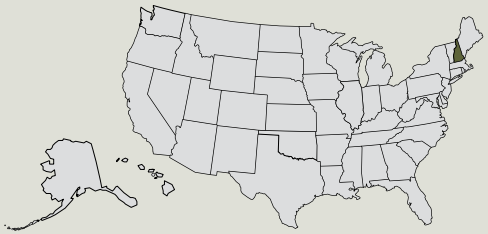
- **STORM Product Improvement (PI)**
  - **FY20–FY24:** System in Operation and Sustainment
- **STORM Smaller Lighter eXtended (SLX)**
  - **FY20–FY24:** System in Operation and Sustainment
- **STORM II**
  - **2QFY21:** Type Classification-Standard

STORM — Laser Range Finder

SPECIFICATIONS

	P1	SLX	STORM II
Laser	Mono-black Laser	Passive Q Switch Laser	Active Q Switch Laser
Weight	1.2 pounds	14 ounces	14 ounces
Range	Max Range 9 km	Max Range 9 km	Max Range 9 m

CONTRACTORS
PI and SLX: L3Harris (Londonderry, NH)
STORM II: L3Harris and Optics 1 (Londonderry, NH)

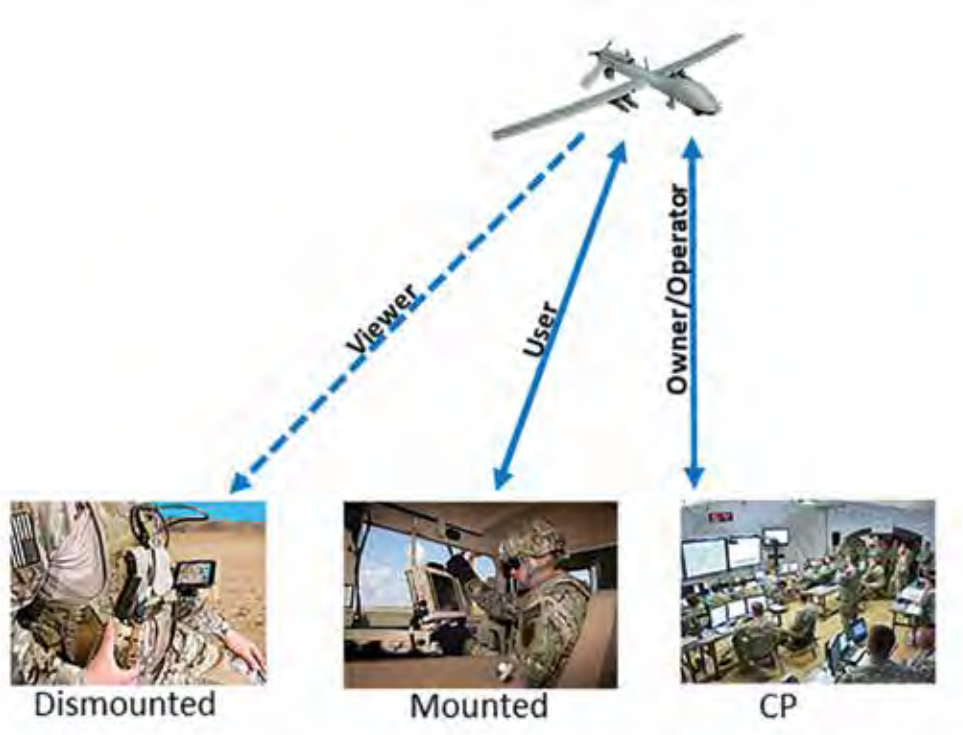












Soldier Borne Sensor (SBS) Immersive System

PEO Soldier | Fort Belvoir, VA

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Soldier Borne Sensor (SBS) is a small, unmanned aerial system that provides the squad with an organic quick look capability for near real-time video feeds of larger, complex, and restrictive environments. SBS reduces exposure to potential threats and enhances freedom of maneuver by providing actionable information to support decisions at the lowest echelon.

BENEFIT TO THE SOLDIER

The SBS enables squads to surveil target areas to develop a scheme of maneuver to enhance survivability in and out of enemy contact during day/night and through obscurants.

SPECIFICATIONS

- System weight: 3 pounds
- Aerial vehicle weight: .33 pounds
- Line of sight range: 900 meters
- Single flight battery life: 15 minutes

PROGRAM STATUS

- **2QFY19:** Production and Deployment
- **3QFY20:** First Unit Equipped
- **4QFY20:** Other Transaction Authority (OTA) Prototype Agreement

PROJECTED ACTIVITIES

- **4QFY21:** Initial Operational Capability
- **1QFY22:** Prototype OTA Developmental Testing

SBS

CONTRACTORS
FLIR Systems (Arlington, VA, Somerset, KY, and Honefoss, Norway)
Vantage Robotics (San Leandro, CA)



Soldier Protection System (SPS)

PEO Soldier | Fort Belvoir, VA

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Soldier Protection System (SPS) is the U.S. Army's next-generation Personal Protective Equipment (PPE) system. SPS is a modular, scalable, tailorable system designed to defeat current threats at a reduced weight in comparison to the Army's existing PPE. SPS is based on the parallel development of four subsystems.

The Vital Torso Protection (VTP) variants include lighter weight Enhanced Small Arm Protective Inserts/Enhanced Side Ballistic Inserts (ESAPI/ESBI), as well as the X Threat Small Arms Protective Inserts (XSAPI) and X Threat Side Ballistic Inserts (XSBI) for deployers.

The Torso and Extremity Protection (TEP) is further comprised of multiple components, including the Modular Scalable Vest (MSV), the Ballistic Combat Shirt (BCS), and the Blast Pelvic Protector (BPP).

The Integrated Head Protection System (IHPS) will include a 5% lighter weight helmet system composed of a helmet with increased blunt impact performance, maxillofacial protection, and passive hearing protection.

The Rapid Light Adaptive Eyewear (RLAE) will include ballistic protective eyewear capable of transitioning from light to dark and dark to light in less than one second and will also provide a 10% increase in fragmentation protection. RLAE enables Soldiers in a combat environment to move rapidly in varying light conditions.

BENEFIT TO THE SOLDIER

The SPS program increases the Warfighter's lethality, mobility, and modularity by optimizing Soldier protection, while effectively reducing weight by incorporating the latest technologies and managing all life cycle aspects of PPE. SPS replaces the capability of multiple current systems to provide the Soldier with an overall 10% weight reduction. SPS provides the Soldier with scalable levels of ballistic protection tailorable to a broad range of missions. This modular, scalable approach increases Soldier survivability and mobility, and contributes to increased force protection.

SPECIFICATIONS

- VTP achieves up to 20% weight reduction over the current ESAPI and XSAPI plates. Additional sizes are being introduced to accommodate small-statured and female Soldiers and in a shooter's cut design that provides greater range of motion for the Soldier.
- TEP achieves up to 19% weight reduction over the current soft armor vest/plate carrier. Additional sizes are included to accommodate small-statured and female Soldiers.
- IHPS provides Soldiers ballistic protection and the Next Generation IHPS (NG IHPS) provides Soldiers greater ballistic protection, at the same weight as IHPS. IHPS components include Modular Helmet, Visor, Mandible, Helmet Cover, and Retention System.

PROGRAM STATUS

- **2QFY18:** IHPS Low-Rate Initial Production (LRIP) first lot delivery
- **4QFY18:**
  - TEP MSV Justification and Approval (J&A)
  - TEP BPP J&A
- **1QFY19:** NG IHPS Full-Rate Production (FRP) Decision
- **3QFY20:** NG IHPS J&A Request for Proposal
- **4QFY20:**
  - NG IHPS J&A Contract Award
  - TEP improved outer tactical vest repurposing

- **1QFY20:**
  - ESBI Delivery Order Award
  - NG IHPS FRP Contract Award
  - NG IHPS FRP Production Readiness Review
- **2QFY20:**
  - ESBI Delivery Order Award
  - XSBI Production Award
- **3QFY20:**
  - NG IHPS FRP First Article Test complete
  - ESBI Production Award
  - ESAPI First Article Testing
  - XSAPI First Article Testing
- **4QFY20:**
  - TEP MSV Follow-on Production Award
  - NG IHPS

PROJECTED ACTIVITIES

- **1QFY21:** Award VTP Plate Delivery Orders
- **2QFY21:**
  - NG IHPS FRP lot deliveries start
  - Award VTP Plate Delivery Orders
  - TEP BCS Follow-on Production Award
  - NG IHPS FRP Solicitation
  - NG IHPS J&A First Article Test Approval
- **3QFY21:**
  - Award VTP Plate Delivery Orders
  - TEP BPP Follow-on Production Award
- **4QFY21:** NG IHPS Production
- **1QFY22:** NG IHPS FRP Contract Award
- **3QFY22:** NG IHPS FRP First Article Test complete
- **4QFY22:** NG IHPS FRP lot deliveries start



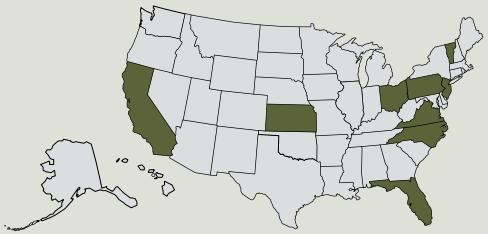
SPS

CONTRACTORS
Engineering and Manufacturing Development:
IHPS: Ceradyne, Inc. (Costa Mesa, CA)
NG IHPS: Ceradyne, Inc. (Costa Mesa, CA), Gentex Corporation (Carbondale, PA), and Galvion (Newport, VT)
RLAE: AlphaMicron (Kent, OH)

Low-Rate Initial Production:
VTP: Leading Technology Composites Inc. (Wichita, KS), TenCate Advanced Armor USA Inc. (Hebron, OH), Ceradyne, Inc. (Irvine, CA), Florida Armor LLC, (Miami Lakes, FL), and Engense (Camarillo, CA)

Full-Rate Production:

- **TEP:**
  - **MSV**: Bethel Industries (Jersey City, NJ), and KDH Defense Systems (Eden, NC)
  - **BCS:** Point Blank Protective Apparel and Uniforms (Pompano Beach, FL) and Eagle Industries (Virginia Beach, VA)
  - **BPP:** Bethel Industries (Jersey City, NJ), and KDH Defense Systems (Eden, NC)



Stinger Block I with Proximity Fuze (PROX)

PEO Missiles and Space | Redstone Arsenal, AL

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Stinger Block I with Proximity Fuze (PROX) Missile is an advanced, fire-and-forget, short-range, man-portable, air defense missile that provides the force with low-altitude air defense where maneuvering forces and their supporting units operate. Stinger's mission is to provide the force with low-altitude air defense against fixed- and rotary-wing aircraft, Unmanned Aircraft Systems (UAS), and Cruise Missiles. The addition of a Target Detection Device to the current fuze provides proximity capability and improved effectiveness against UAS threats. A Service Life Extension Program (SLEP) is ongoing at McAlester Army Ammunition Plant in Oklahoma to replace aging key components (flight motor, warhead section, and gas generator cartridge) in existing Block I missiles.

BENEFIT TO THE SOLDIER

Legacy Stinger has a Hit-to-Kill detonation. In a missile near-miss scenario, the PROX modification will allow the Warfighter to detonate the warhead as the missile passes within the lethal distance to the target.

SPECIFICATIONS

- Guidance: Advanced Proportional Navigation
- Seeker: Passive Infrared/Ultraviolet Tracking Fire and Forget
- Speed: Supersonic
- Weight: Launch Tube – 28 pounds
- Diameter:
  - Missile – 2.75 inch
  - In Launch Tube – 2.87 inch
- Length:
  - Missile – 58 inch
  - In Launch Tube – 60 inch
- Platforms: Vehicles, helicopters, UAS, and Man Portable Air Defense System
- Delivered as a certified round that requires no field testing or maintenance (wooden round)

PROGRAM STATUS

- **FY17–FY18:** Funded entire Stinger Block I inventory to SLEP
- **4QFY18:**
  - Completed Urgent Materiel Release (UMR) Safety Testing
  - Completed successful PROX Development Test/Flight Tests against aerial targets
- **3QFY19:**
  - Approved PROX UMR
  - Started U.S. Army PROX Production/SLEP
- **4QFY19–1QFY20:** Initiated and completed PROX Fuze Failure Review Board
- **2QFY20:** Received Stockpile Reliability Program shelf life extension for Block I (to 24 years) and Reprogrammable Microprocessor (to 29 years)
- **3QFY20:** Received Army Test and Evaluation Command Operational Evaluation Report
- **4QFY20:** Fielded under UMR

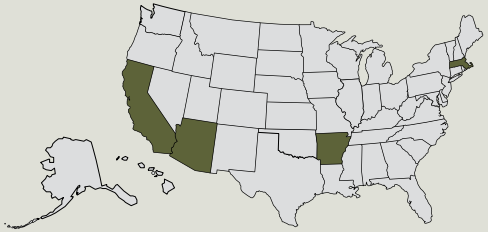
PROJECTED ACTIVITIES

- **2QFY21:** Conditional Materiel Release
- **1QFY22:** Full Materiel Release

Stinger Block I with PROX



CONTRACTORS
Aerojet Rocketdyne (Camden, AR)
Lockheed Martin-Sippican (Marion, MA)
Networks Electronic Company (Chatsworth, CA)
Raytheon Missiles & Defense (Tucson, AZ)







Stryker Brigade Combat Team (SBCT)

PEO Ground Combat Systems | Detroit Arsenal, MI

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

Thailand

DESCRIPTION

The National Military Strategy requires an Army that is rapidly deployable and strategically responsive across the spectrum of operations. The Stryker Brigade Combat Team (SBCT) encompasses capabilities and characteristics that are needed but were not available until the first SBCT was declared operationally capable. As the primary combat and combat-support platform of the SBCT, the Stryker Family of Vehicles fulfills an immediate requirement for a strategically deployable (C-17/C-5) brigade capable of rapid movement worldwide in a combat-ready configuration.

The Stryker Family of Vehicles is built on a common chassis, with some variants having different Mission Equipment Packages. There are currently 25 variants: 11 flat-bottom variants that include the Infantry Carrier Vehicle (ICV), Mobile Gun System (MGS), Reconnaissance Vehicle (RV), Mortar Carrier (MC), Commander's Vehicle (CV), Fire Support Vehicle (FSV), Engineer Squad Vehicle (ESV), Medical Evacuation Vehicle (MEV), Anti-tank Guided Missile (ATGM), Vehicle, Nuclear Chemical Reconnaissance Vehicle (NBCRV), and ICV-Dragoon (ICVD); seven Double-V-Hull (DVH) variants for ICV DVH (ICVV), CV, MEV, MC, ATGM, FSV, and ESV; and seven DVHA1 variants of the same mission type that provide greater horsepower and electrical output, along with a more robust suspension and full in-vehicle network.

The Stryker program leverages non-developmental items with common subsystems and components to allow rapid acquisition and fielding. Stryker integrates Government-furnished materiel subsystems as required and stresses performance and commonality to reduce the logistics footprint and minimize costs. The 30 mm cannon was integrated on the Stryker platform to meet emerging operational requirements and to improve lethality survivability. The DVHA1 vehicles completed operational testing in 2018 and initiated fielding in the second quarter of Fiscal Year (FY) 2020.

BENEFIT TO THE SOLDIER

Stryker vehicles provide the Warfighter with a reliable, combat-tested platform that includes significant survivability and capability enhancements continuing to provide an even more capable platform since the original fielding in 2002.

SPECIFICATIONS

- Built on a common chassis, except for MGS and NBCRV, for each subsequent iteration: ICV for Flat Bottom Hull, ICVV for DVH, and ICVVA1 for DVHA1; to reduce the logistical footprint
- Certain variants, excluding the MEV, ATGM, FSV, RV, MC, and MGS, armed with Remote Weapon Station supporting M2 .50 caliber machine gun or a MK19 grenade launcher
- Also integrated is a 30 mm cannon (30 x 173 mm) in an unmanned turret
- Top speed: 60 mph
- Range: 330 miles
- Either 4x8 or 8x8 capability with run-flat tires, central tire inflation system, and vehicle height management system

PROGRAM STATUS

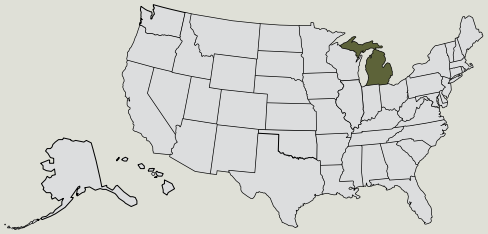
- **1QFY18:** First delivery of Stryker DVHA1 Engineering Change Proposal (ECP)
- **2QFY18:** Army decision to replace remaining flat bottom Stryker SBCTs with DVHA1 ECPs
- **3QFY18:** Army begins Fielding Stryker ICVs modified with 30 mm cannon
- **4QFY18:** Army begins Common Remotely Operated Weapon Station-Javelin retrofits
- **1QFY19:** Army completes Fielding of modified Stryker ICVs with 30 mm cannon
- **2QFY19:** Army decision on Stryker fleet 30 mm Lethality Upgrade
- **3QFY20:** Fielding of 4th DVH SBCT (1st DVHA1 Brigade)

SBCT

PROJECTED ACTIVITIES

- **3QFY21:** Production Award for Medium Caliber Weapons System (MCWS)
- **3QFY22:** Scheduled Fielding for 2nd DVHA1 SBCT
- **4QFY22:** Initial Fielding of MCWS

CONTRACTORS
General Dynamics Land Systems (Sterling Heights, MI)











Sustainment Tactical Network (STN)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The evolving Sustainment Tactical Network (STN) program provides expeditionary tactical network transport solutions to the combat service support community. Developed for the general purpose user, these rapidly deployable line-of-sight and beyond-line-of-sight network transport systems provide the connectivity needed to enable the exchange of logistics information (logistics, personnel, medical, and force protection) on the battlefield and worldwide.

The management of the "legacy" logistics network program, known as the Combat Service Support network, has been in operation since 2004, and transferred from Program Executive Office (PEO) Enterprise Information Systems to PEO Command, Control, Communications–Tactical (C3T) in October 2020. The legacy logistics network runs over a commercial network, completely separate from the Army's tactical network design. The Army is working to converge the legacy logistics network onto the tactical network, an effort known as Transport Convergence. The eventual modernized and converged logistics network capability will be known as STN.

The modernized STN portfolio will include a suite of local transport solutions that enable current and emerging battlefield logistics automation devices to electronically exchange information via tactical networks. It employs a deployable wireless local area network (LAN) infrastructure, linking Army logistics information system computers in an area several square miles wide. STN Very Small Aperture Terminal (VSAT) ground satellite systems provide tactical network transport for logistics, personnel, medical, and force protection data that supports logistics information systems. Current STN VSATs provide a wide area network (WAN) solution that leverages commercial-off-the-shelf, Ku-band, and auto-acquire capability. They are easy-to-use and transit case-based for rapid deployability and mobility.

The STN network provides end-to-end service for Army logistics communications, with worldwide continuity of service from Soldier to server. It supports data exchange for Army Enterprise Resource Planning solutions and applications, including Global Combat Support System-Army, Integrated Personnel and Pay System-Army, Medical Communication for Combat Casualty Care, and General Fund Enterprise Business Systems.

BENEFIT TO THE SOLDIER

STN supports secure data transfer for the logistics community, including logistics, personnel, medical, and force protection data, to enable the rapid delivery of the right supplies and personnel to the right locations on the battlefield.

SPECIFICATIONS

- Wireless LAN infrastructure
- Global tactical network transport
- Ku-band
- Auto-acquire satellite terminals
- Easy-to-use for general purpose user
- Easy to transport for rapid deployment and battlefield mobility
- Fully integrated into the U.S. Army's unclassified network
- Supports Army Enterprise Resource Planning solutions

PROGRAM STATUS

- **1QFY20:** Program transitioned from PEO Enterprise Information Systems to PEO C3T

PROJECTED ACTIVITIES

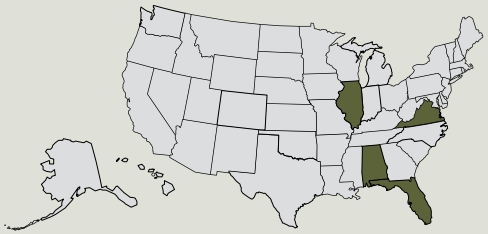
- **FY20–FY23:**
  - Field U.S. Army Europe (USAEUR) Operational Needs Statement (ONS)

- Utilize buy-try-decide acquisition strategy to down-select products for the enduring requirement
- Conduct lab-based experimentation and leverage Soldier feedback from touchpoints and operational exercises to assess how Soldiers use the systems to refine requirements and inform concept of operations and basis of issue
- Support to USAEUR ONS; define requirements for acquisition program

- **FY20–FY25:** Sustain existing legacy Combat Service Systems WAN and LAN Combat Service Systems network capability while delivering the modernized STN systems
- **FY23:** Transition to Acquisition Category Program of Record as an enduring requirement to replace the legacy system facing equipment obsolescence
- **FY23–FY24:** Transition to Program of Record
- **FY23–FY25:** Procure and field STN capabilities

STN

CONTRACTORS
Cubic/GATR (Huntsville, AL)
DRS (Melbourne, FL)
Sosi (Lorton, VA, Reston, VA, Rock Island, IL, and South West Asia)







Synthetic Training Environment — Information Systems (STE-IS)

PEO Simulation, Training and Instrumentation | Orlando, FL

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Synthetic Training Environment – Information Systems (STE-IS), a Pre-Materiel Development Decision program, is a Non-Systems Training Device. The training capability provides a single, interconnected training environment that units from Soldier/Squad through Army Service Component Command (ASCC) train in the most appropriate live, virtual, constructive, or gaming environment — or in all four simultaneously.

The Training Simulation and Training Management tools will provide two of the three training enabler capabilities to facilitate a unified collective training system for Soldier/Squad through ASCC, across Warfighting Functions.

- **The Training Simulation Software** is the foundational software simulation framework that enables/facilitates conditions for the attainment of training objectives.
- **The Training Management Tool** is a set of intuitive and easy-to-use tools that will provide commanders, staffs, trainers, leaders, and Soldiers with the capability to plan, prepare, execute, monitor, and assess multi-echelon collective training in operational, self-development, and institutional training domains.
- **The One World Terrain (OWT)** will provide a 3D Global Terrain capability that virtually represents the physical Earth and complexities of the operational environment for collective training. OWT is dynamically rendered at the point-of-need for all training domains, training systems, and mission rehearsal needs. The vision is for OWT to be provided from the cloud. If the network and cloud resources prevent delivery from the cloud, the system provides the capability to use a local copy of 3D terrain data.

BENEFIT TO THE SOLDIER

STE-IS will provide the capability to conduct multi-echelon Combined Arms Maneuver Training in support of Multi-Domain Operations in a Complex Operational Environment at the point-of-need from Squad through ASCC providing the repetitions necessary to achieve and maintain training readiness.

SPECIFICATIONS

STE-IS is expected to be integrated and interoperate with the associated platforms below. STE-IS will be the sole training simulation software for:

- Soldier Virtual Trainer
- Live Synthetic Training
- Next Generation Constructive Simulation
- Integrated Visual Augmentation System
- Reconfigurable Virtual Collective Trainer

PROGRAM STATUS

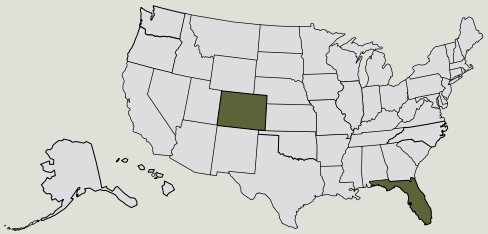
- **FY20:**
  - Utilizing Other Transaction Authority to enable the rapid creation of prototypes
  - Continue to schedule and conduct integration, testing, and demonstration activities

PROJECTED ACTIVITIES

- **FY21:**
  - Continue rapid acquisition and prototyping of the overall STE-IS capability
  - Continue integration, testing, and demonstration activities

STE-IS

CONTRACTORS
OWT: Maxar Technologies, Inc. (Westminster, CO, and Orlando, FL)
TSS/TMT: TBD





Tactical Electric Power (TEP)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Tactical Electric Power (TEP) provides a standardized family of tactical electric power sources to Department of Defense (DoD) in accordance with DoD Instruction 4120.11, Mobile Electric Power Systems.

The TEP program consists of a variety of generator set sizes: Small Generators: 2 kilowatt (kW) Military Tactical Generators (MTG), 3 kW Tactical Quiet Generators (TQG), Small Tactical Electric Power (STEP); Medium Generators: 5 kW, 10 kW, 15 kW, 30 kW, and 60 kW TQGs; Advanced Medium Mobile Power Sources (AMMPS), trailer-mounted Power Units and Power Plants, Microgrid; Large Generators: 100–200 kW TQGs, Large Tactical Power (LTP); Prime Generators: 800 kW Deployable Power Generation and Distribution System (DPGDS); and Power Distribution: Power Distribution Illumination Systems Electrical (PDISE).

The STEP, AMMPS, and LTP are the third generation of TEP and will replace the TQG over time. The DPGDS Power Unit is undergoing a recapitalization back to zero hours.

BENEFIT TO THE SOLDIER

The next generation of TEP will benefit the Warfighter by offering increased system efficiency, reliability, mobility, and maintainability. Units will see a significant reduction in fuel consumption, thereby reducing refueling operations, which decreases the overall risk to the Warfighter.

SPECIFICATIONS

- Maximized fuel efficiency, diesel/JP8-based, eliminates gasoline on battlefield
- AMMPS offers a fleet-weighted average of 21% improved fuel efficiency over the medium TQGs
- Increased reliability (AMMPS, 750 hours mean time between failures), maintainability, and transportability via skid or trailer mount
- Improved sustainability; operates at rated loads in all military environments
- Minimized weight and size while meeting all user requirements with military ruggedized commercial components
- Reduced infrared signature and noise (AMMPS, less than 70 decibels at 7 meters)
- Survivability in chemical, biological, and nuclear environments
- Advanced technology, including digital controls
- Standard DoD military tactical generator fleet meets power generation and conditioning standards in accordance with Military Standard 1332B, Definitions of Tactical, Prime, Precise, and Utility Terminologies for Classification of the DoD Mobile Electric Power Engine Generator Set Family
- Man-portability with 2 kW MTG and 3 kW TQG generators

PROGRAM STATUS

- **1QFY18–4QFY20:** Continued Production and/or Fielding of 2 kW MTG, 3 kW TQG, 5, 10, 15, 30, and 60 kW AMMPS, and PDISE

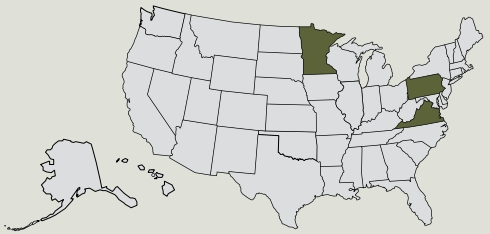
PROJECTED ACTIVITIES

- **2QFY21:** DPGDS Prime Power Unit Recapitalization Full-Rate Production decision
- **4QFY21:** STEP Milestone B, entering Engineering and Manufacturing Development
- **2QFY22:** LTP Development Contract Award
- **3QFY22:** AMMPS Production Rebuy Contract Award

TEP



CONTRACTORS
3kW TQG: Fidelity Technologies Corporation (Reading, PA)
AMMPS 5–60kW: Cummins Power Generation (Minneapolis, MN)
DPGDS: PD Systems (Springfield, VA)
LTP: TBD
PDISE: TBD







Tactical Network Transport — At the Halt (TNT-ATH) and On the Move (TNT-OTM)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Tactical Network Transport (TNT) delivers a robust network for assured mission command, advanced communications and a comprehensive common operating picture in support of U.S. Army, joint, coalition, and civil missions worldwide – both At the Halt (ATH) and On the Move (OTM). As part of the Army's unified tactical network, TNT establishes a network backbone for robust data, voice, and video exchange, using both high-capacity line-of-sight (radio) and beyond-line-of-sight (satellite/tropospheric) communications nodes to enable operational flexibility, multipath diversity, and resiliency in contested and congested environments. Under a unified network transport design and network management, both TNT-ATH and TNT-OTM keep highly mobile and dispersed forces connected to one another and to the Army's global information network. Additionally, integrated on a variety of tactical vehicles to best suit unit requirements, TNT-OTM enables Soldiers operating in remote and challenging terrain to maintain network communications on patrol, with connectivity like that of a stationary command post. These configurations deliver a global, mobile, resilient, and redundant tactical communications network.

The Army continues to improve its tactical network, enhancing the way the network is operated, managed, and defended across all echelons and domains. Ongoing rapid acquisition efforts that leverage experimentation, system pilots, prototyping, and Soldier feedback; coupled with new system fieldings and legacy upgrades, are making the Army's network more unified, capable, secure, and resilient, while making it easier to operate, train Soldiers to use, and maintain. The program office continues to deliver network modernization improvements now, while positioning and seeking out innovative network enhancements to support future capability sets. Pilot efforts include:

- The TNT-ATH Network Integration Technology Enhancement (NITE), which will refresh the Army's widely fielded TNT-ATH baseband that is nearing end of life. This modular solution provides a more than 200% increase in computing power, while reducing size, weight, and power (SWaP), as well as equipment setup time for increased mobility.
- As part of the Army's Capability Set 21 network modernization efforts, the Expeditionary Signal Battalion-Enhanced (ESB-E) Pilot provided valuable feedback to shape equipment solutions and force structure to enhance the service's ESBs. The ESB-E effort is a floor-to-ceiling rethinking of the equipment set and capabilities the Army provides to ESB formations. This innovative mix of smaller, lighter more mobile and expeditionary network tool suite eliminated the need for traditional TNT-ATH equipment.
- Supporting the Army's Capability Set 23 efforts to provide OTM network connectivity to Armored Brigade Combat Teams (ABCTs), Program Executive Office Command, Control, Communications–Tactical will pilot ABCT OTM prototypes to enable ABCTs in more effective and less predictable offensive and defensive operations.

BENEFIT TO THE SOLDIER

TNT-ATH and TNT-OTM high-capacity network communications systems deliver a real-time common operating picture to commanders – enabling them to make rapid, informed decisions. TNT-OTM configurations enable mobile mission command; robust, secure reliable voice, video, and data communications; and a real-time common operating picture from anywhere on the battlefield. Combat vehicles integrated with TNT-OTM enable commanders to lead from anywhere on the battlefield. Soldiers operating in remote and challenging terrain can maintain voice, video, and data communications, with connectivity rivaling that found in a stationary command post.

SPECIFICATIONS

- Different types of robust TNT-ATH network nodes provide high-speed wide area network capability for secure voice, video, and data exchange at the quick halt

- Tactical Hub Node (THN) supports division-size elements
- Joint Network Node typically supports brigade-level elements
- Command Post Node typically supports battalion-and-below level elements
- ESB-E Scalable Network Node supports small command posts and can scale up to joint task force and corps-sized elements

- Different types of robust TNT-OTM network nodes provide high-speed wide area network capability for secure voice, video, and data exchange on the move.
  - Tactical Communications Node (TCN) and TCN-Lite provide satellite and line-of-sight network connectivity, both OTM in a convoy, at the quick halt, and to the stationary command post, enabling mission command and advanced communications.
  - Network Operations and Security Center (NOSC) and NOSC-Lite provide network management and enhanced tactical network planning, administration, monitoring, and response capabilities.
  - Point of Prescence (PoP) and NextGen PoP are installed on select combat platforms at corps, division, brigade, and battalion echelons, enabling mobile mission command by providing OTM network connectivity, both line-of-sight and beyond-line-of-sight.
  - Soldier Network Extension (SNE) and NextGen SNE are installed on select vehicles to provide OTM network communications to extend the network from the battalion down to the company level. Using its OTM satellite communication systems, the SNE can also be used to heal and extend lower echelon tactical radio networks for geographically separated elements blocked by terrain features.
- The Regional Hub Node (RHN) is a fixed installation equivalent to three THNs and is used to support global network transport for theater-level operations.
  - Global Agile Integrated Transport network design interconnects the RHNs — and can also interconnect Department of Defense Teleport Sites — to create a global network mesh that enables high-capacity data exchange from anywhere on the planet.
- Satellite Transportable Terminal (STT), a highly mobile satellite system, operates in conjunction with some of the TNT network nodes.

PROGRAM STATUS

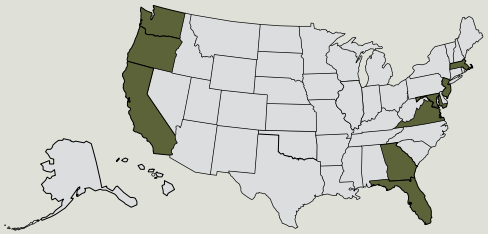
- **FY20:** TNT-ATH NITE pilot as part of the Army's TNT Modernization in Service efforts

PROJECTED ACTIVITIES

- **FY20–FY21:**
  - Modernized TNT-ATH THN and STT Modified Work Order (MWO) prototype pilots
  - Complete TNT-OTM Fieldings to Infantry Brigade Combat Teams and Stryker Brigade Combat Teams
- **FY20–FY22:** ABCT OTM Pilot
- **FY21–FY27:**
  - Fielding ESB-E, Nite, and modernized THN and STT MWO

TNT-ATH and TNT-OTM

CONTRACTORS
AASKI Technology (Tinton Falls, NJ)
CodeMettle (Atlanta, GA)
DTECH Labs (Ashburn, VA)
Evistacom (Atlanta, GA)
General Dynamics (Taunton, MA)
JANUS Research Group (Belcamp, MD)
KLAS Telecom (Herndon, VA)
L3 (San Diego, CA)
L3Harris (Melbourne, FL)
Lockheed Martin (Bethesda, MD)
Microsoft (Redmond, WA)
Pacific Star (PacStar) Communications (Portland, OR)
Riverbed Technology (San Francisco, CA)
Tampa Microwave (Tampa, FL)
Telecommunications Systems, Inc (Annapolis, MD)





Tactical Unmanned Aircraft System (TUAS) — RQ-7Bv2 Shadow

PEO Aviation | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

One case for Shadow

DESCRIPTION

The RQ-7Bv2 Shadow Unmanned Aircraft System is a small light-weight aircraft with a high-winged constant chord pusher configuration with a twin-tail boom empennage and an inverted v-tail elerudder. The Shadow aircraft is a low- to medium-altitude aircraft capable of carrying up to a 60-pound payload with an endurance of up to 9 hours, and an operational range of 125 kilometers (km). Shadow incorporates a Tactical Common Data Link capability. The primary mission equipment payload is an Electro-Optical/Infra-Red/Laser Pointer/Laser Designator/Laser Range Finder sensor package that enables immediate responsive Reconnaissance, Surveillance, and Target Acquisition (RSTA) and Battle Damage Assessment under control of the Universal Ground Control Station, the Portable Ground Control Stations, or from other manned platforms equipped with compatible data links for manned/unmanned teaming operations involving the RQ-7Bv2 Shadow.

BENEFIT TO THE SOLDIER

The RQ-7B Shadow is the Ground Maneuver Brigade Commanders' primary day/night, RSTA System. Shadow allows the commander to see and understand the battle space and gain situational awareness on the battlefield. The system gives maneuver commanders the ability to conduct aerial reconnaissance where terrain would limit access for ground recon assets. The Shadow can also observe heavily protected areas where commanders are hesitant to commit manned aerial platforms. Lastly, it gives commanders a dedicated, rapidly taskable asset to see critical elements of the battle space and support the increased demand for immediate situational awareness on the battlefield.

SPECIFICATIONS

- Hydraulic launcher on standard High Mobility Multipurpose Wheeled Vehicle trailer
- Early entry capability with three C-130 aircraft
- Tactical Automatic Landing System
- Compatible with Army's Battle Command System
- Wingspan: 20.4 feet
- Max Gross Weight: 467 pounds
- Range: 125 kilometer
- Endurance: 9 hours at 50 kilometer
- Launch/Recovery: 171 meter x 50 meter Area
- Altitude: 15,000 feet Mean Sea Level
- Airspeed: 70 knots cruise, 110 knots dash

PROGRAM STATUS

- **FY18:** Department of Army G-8 memo increased Army Acquisition Objective from 104 to 115 to fully equip all Army Aviation Brigades to their full Modified Table of Organization and Equipment
- **FY20:**
  - Awarded Contractor Logistics Support 7-month contract extension for Shadow
  - Follow-on Test and Evaluation for Shadow Block III

PROJECTED ACTIVITIES

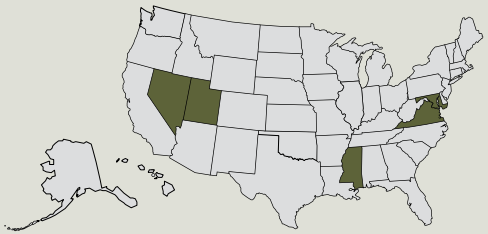
- **FY21:** Award Contractor Logistics Support multiyear contract

TUAS — RQ-7Bv2 Shadow





CONTRACTORS
Collins Aerospace (Sterling, VA)
L3 Technologies (Salt Lake City, UT)
Sierra Nevada Corporation (Sparks, NV)
Stark (Columbus, MS)
Textron Systems (Hunt Valley, MD)
UAV Engines Limited (Lichfield, United Kingdom)





Test Equipment Modernization (TEMOD)

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

IFF Radar Test Set Mode S (Enhanced) Mode 5: Australia, Croatia, Greece, Jordan, Korea, Netherlands, Qatar, Saudi Arabia, Slovakia, Taiwan, and United Kingdom

DESCRIPTION

The Test Equipment Modernization (TEMOD) program replaces obsolete General Purpose Electronic Test Equipment with new state-of-the-art equipment. This new equipment reduces the proliferation of test equipment, modernizes the U.S. Army's current existing inventory, and strongly supports other weapon systems. Acquisitions are commercial items that have significant impact on readiness, power projection, safety, and training operations of the U.S. Army, U.S. Army Reserve, and National Guard. The TEMOD program has procured 38 products that replace more than 334 models.

BENEFIT TO THE SOLDIER

TEMOD improves the readiness of U.S. Army weapon systems, minimizes test, measurement, and diagnostic equipment proliferation and obsolescence, and reduces operations and support costs.

SPECIFICATIONS

- Oscilloscope, Bench Top (OS-305/U): High sampling rate bench top digital oscilloscope with a frequency range of DC to 1 GHz
- Radar Test Set Identification Friend-or-Foe (IFF) Upgrade Kit and Radar Test Set with Mode S Enhanced and Mode 5: provides portable interrogator/transponder Go/No-Go operational indications for U.S. Army Aviation aircraft, Air Defense systems, and watercraft IFF equipment
- Cryptography (TS-4530A/UPM): Personnel use this equipment to perform pre-flight checks on aviation and missile transponders and interrogators to alleviate potential fratricide concerns
- Multimeter (AN/GSM-437): Enables quick, reliable troubleshooting that positively affects operational availability
- Oscilloscope (OS-307/U): Handheld portable oscilloscope with a frequency range of DC to 200 MHz
- Telecommunication System Test Set (TS-4544/U): Measures and displays information related to digital transmissions
- Radio Frequency Power Test Set (TS-4548/P): Power meter for troubleshooting and repair of electronics that emit radio frequency radiation
- Optical Time Domain Reflectometer (TS-4558/U): Identifies, locates, measures, and displays faults, splices, components, and terminations in optical fibers
- Spectrum Analyzer (CM-523/U): Measures the magnitude of an input signal versus frequency, primarily to measure power of the spectrum of known and unknown signals, for communication and weapon systems
- Radio Test Set (TS-4549/T): Tests and troubleshoots U.S. Army radios
- Future TEMOD Projects: Upcoming TEMOD equipment includes a Transmission Test Set to test the transmission characteristics of communications lines and Earth/Ground Tester to provide ground and resistance measurements

PROGRAM STATUS

- **4QFY20:**
  - Contract award for the Optical Time Domain Reflectometer, the TS-4558/U
  - Logistics Demonstration for the Telecommunications Test Set, the TS-4544/P

PROJECTED ACTIVITIES

- **1QFY21:**
  - Oscilloscopes, the OS-305 (bench), the OS-307 (hand-held) First Unit Equipped (FUE)
  - Telecommunication System Test Set and Radio Frequency Power Test Set
  - Complete Product Verification Testing
  - Product Verification Testing for the Radio Frequency Power Test Set, the TS-4548/P, and Telecommunications System Test Set, the TS-4544/U, complete

- Preliminary Design Review for Radio Test Set, TS-4549/T

- **2QFY21:**
  - Critical Design Review for the Radio Test Set, TS-4549/T
  - FUE for the Radio Frequency Power Test Set, the TS-4548/P
  - Release the Lowest Price, Technically Acceptable Request for Proposals for the Spectrum Analyzer, the CM-523/U
- **3QFY21:**
  - FUE for the Telecommunications Systems Test Set, the TS-4544/U
  - Product Verification Testing complete for the Optical Time Domain Reflectometer, the TS-4558/U
- **4QFY21:** Logistics Demonstration for the Optical Time Domain Reflectometer, the TS-4558/U



AN/GSM-437



TS-4530A



TS-4548



OS-305



OS-307



TS-4544



TS-4558



TS-4549



CM-523

TEMOD

CONTRACTORS
Oscilloscope (bench-top): Keysight Technologies (Santa Rosa, CA)
Oscilloscope (portable): Keysight Technologies (Santa Rosa, CA)
Radio Frequency Power Test Set: Anritsu (Morgan Hill, CA)
Radio Test Set: TBD
Telecommunication System Test Set: Viavi Solutions, Inc. (Germantown, MD)



Third Generation Forward Looking Infrared (3GEN FLIR)

PEO Intelligence, Electronic Warfare and Sensors | Aberdeen Proving Ground, MD

ACAT II

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Third Generation Forward Looking Infrared (3GEN FLIR) is the next generation of reconnaissance, surveillance, and target acquisition (RSTA) sights to restore sensor overmatch through significant improvements in range and resolution. The 3GEN FLIR program incorporates High Definition (HD) Dual-Band Mid-Wave Infrared and Long-Wave Infrared (MWIR/LWIR) sensing technology advances into a common B-Kit for RSTA capabilities in day-night and degraded battlefield environments. 3GEN FLIR will replace Second Generation (2GEN) FLIR sights on the Abrams and, potentially, become the RSTA sight for the Optionally Manned Fighting Vehicle (OMFV) platforms.

BENEFIT TO THE SOLDIER

3GEN FLIR will enable Soldiers to detect, recognize, and identify military targets from civilian targets in all operating environments and conditions via improved long-range imaging capabilities. These range improvements are necessary for the accurate identification of human and vehicular activity and enables among other things, improved targeting, fratricide avoidance, and disruption of enemy operations. 3GEN FLIR increases target identification range up to 2.6 times compared to legacy 2GEN FLIR and allows operations day or night in all battlefield conditions and weather. As such, the 3GEN FLIR's capability enhancements are essential to ensure overmatch in Target Identification, Reconnaissance and Surveillance, and Situational Awareness.

SPECIFICATIONS

- Incorporates HD Dual-Band MWIR/LWIR sensing technology for RSTA capabilities in day/night and degraded battlefield environments
- 3GEN FLIR B-Kit integrates into Abrams and is capable of being integrated into additional platforms (e.g., Next Generation Combat Vehicle/OMFV)
- 3GEN FLIR B-Kit replaces 2GEN FLIR B-Kit
- 3GEN FLIR B-Kit includes common FLIR subassemblies (Afocal, Imager, Dewar Cooler Bench (DCB), and Circuit Card Assemblies) for integration into a platform's unique sensor

PROGRAM STATUS

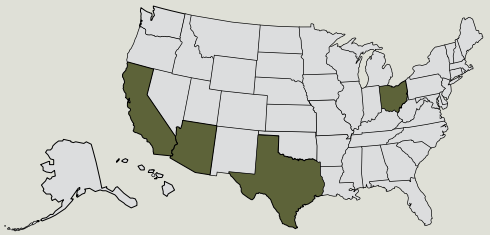
- **1QFY19:** B-Kit Hardware Critical Design Review Entrance, December 2018
- **2QFY19:** Acquisition Program Baseline update approved, January 2019
- **3QFY20:** B-Kit Test Readiness Review Entrance, April 2020

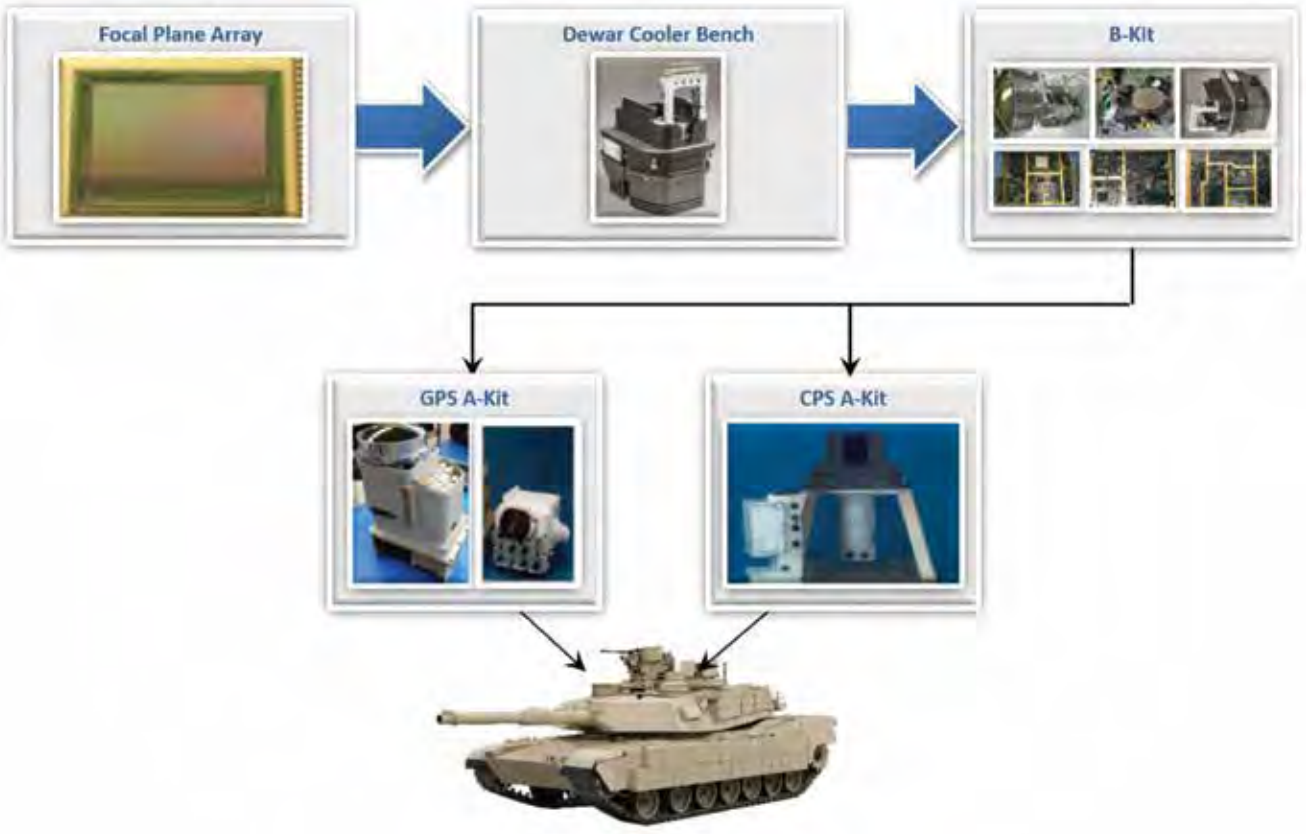
PROJECTED ACTIVITIES

- **FY21:** B-Kit System Integration Unit Deliveries for Qualification Testing
- **FY22:**
  - Milestone C
  - Low-Rate Initial Production award
- **FY25:** Full-Rate Production

3GEN FLIR

CONTRACTORS
B-Kit: Raytheon Missiles & Defense (Tucson, AZ, and McKinney, TX)
DCB: DRS (Dallas, TX), L3Harris (Mason, OH), and Raytheon Vision Systems (Goleta, CA)





Transportable Tactical Command Communications (T2C2)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Transportable Tactical Command Communications (T2C2) Program of Record is an initial entry satellite system that provides agile robust voice, video, and data communications without the need of static infrastructure. The system is easy-to-use and can be operated by non-signal Soldiers.

T2C2 Lite (1.2-meter tri-band) and T2C2 Heavy (2.4-meter tri-band) high-bandwidth inflatable satellite terminals enable initial entry forces to connect to the U.S. Army's tactical network to obtain the situational awareness and mission command capabilities needed to conduct initial entry operations and set the stage for follow-on forces. In more mature operations, T2C2 Heavy will provide high-bandwidth tactical network extension to company level and small forward operating bases, while T2C2 Lite will support special teams in austere locations with high-bandwidth requirements. Because the T2C2 Lite and Heavy solutions are inflatable, they can provide a larger dish size, with increased capability and bandwidth efficiency, in a smaller transport package.

Scalable Class of Unified Terminals (SCOUT) provide compact low-bandwidth beyond-line-of-sight communications for transmission of secure and non-secure data, voice, and video, all in a compact package supporting the team level and above. Variants of the SCOUT Medium (1.3-meter dish) support the U.S. Army's Security Force Assistance Brigades (SFABs), the Integrated Tactical Network (ITN), and the SCOUT Small (0.65/0.95 meter) supports numerous expeditionary requirements.

Until T2C2 fielding is complete, Secure Internet Protocol Router Network/Non-Secure Internet Protocol Router Access Points and even smaller suitcase-sized Global Rapid Response Information Packages are being used as bridging capability.

T2C2 is a key component of the Army's Capability Set 21 Expeditionary Signal Battalion-Enhanced network tool suite, which will be fielded to modernize the Army's Expeditionary Signal Battalions.

BENEFIT TO THE SOLDIER

T2C2 provides satellite capability to small detachments and teams operating in remote locations without network infrastructure, enabling them to securely relay critical and time-sensitive information, increasing the situational awareness for the entire operation. By taking advantage of military satellite capability, the system greatly increases throughput over currently fielded capability. These highly expeditionary satellite systems provide the commander with increased operational flexibility and speed in maneuver.

SPECIFICATIONS

- **T2C2 Heavy 2.4 m (AN/TSC-233(v)1):**
  - Transportable in seven hard-side transit cases
  - Supports 48 users over multiple enclaves
- **T2C2 Lite 1.2 m (AN/TSC-232(v)1):**
  - Transportable in five hard-side transit cases or two soft cases plus one ancillary
  - Supports six users over multiple enclaves
- **SCOUT Medium 1.3 m - SFAB (AN/TSC-243A(v)2):**
  - Transportable in three hard-side transit cases
  - Supports 12 users over multiple enclaves
- **SCOUT Medium 1.3 m - ITN (AN/TSC-243B(v)2):**
  - Transportable in four hard-side transit cases
  - Supports 48 users over two enclaves
- **SCOUT Small 0.65/0.95m (AN/TSC-243A(v)1):**
  - Transportable in five hard-side transit cases or one soft case plus one ancillary
  - Supports three users over two enclaves
- **All Systems:**
  - Tri-band capable (X, Ku, and Ka)

- Airline checkable for commercial transport
- Rapidly setup by two Soldiers in under 35 minutes

PROGRAM STATUS

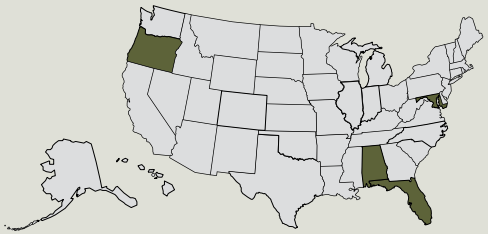
- **2QFY18:** Full-Rate Production Decision/Began Fielding Low-Rate Initial Production quantities

PROJECTED ACTIVITIES

- **FY21–FY23:** Fielding to Basis of Issue

T2C2

CONTRACTORS
GATR (Huntsville, AL)
L3Harris (Melbourne, FL)
Linchpin Solutions (Aberdeen, MD)
Pacific Star (PacStar) Communications (Portland, OR)





Tube-Launched, Optically Tracked, Wireless-Guided (TOW) Missiles

PEO Missiles and Space | Redstone Arsenal, AL

ACAT I

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

The TOW weapon system has been sold to more than 43 allied nations over the life of the system.

DESCRIPTION

The Close Combat Missile System – Heavy Tube-Launched, Optically Tracked, Wireless-Guided (TOW) Missile is a heavy anti-tank/precision assault weapon system consisting of a launcher and a missile. The gunner defines the aim point by maintaining the sight crosshairs on the target. The launcher automatically steers the missile along the line-of-sight toward the aim point via a one-way radio frequency (RF) link, which links the launcher and missile.

TOW missiles are employed on the High Mobility Multipurpose Wheeled Vehicle (HMMWV)-mounted Improved Target Acquisition System, Stryker Anti-Tank Guided Missile (ATGM) Vehicles, and Bradley Fighting Vehicles variants (A2/A2ODS/A2OIF/A3) within the Infantry, Stryker, and Armor Brigade Combat Teams, respectively. TOW missiles are also utilized on the Marine HMMWV-mounted Saber and Light Armored Vehicle-ATGM Vehicle. Additionally, TOW is used by allied nations on a variety of ground and airborne platforms (wired variants only).

The TOW 2B Aero RF is the most modern and capable missile in the TOW family, with an extended maximum range to 4,500 meters. The TOW 2B Aero RF defeats all threat armor systems. The TOW 2B Aero Gen2 also incorporates an advanced counteractive protection system capability. The TOW 2B flies over the target, detects the target, and fires two downward-directed, explosively formed penetrator warheads into the target.

The TOW Bunker Buster (BB) is optimized for performance against urban structures, earthen and timbered bunkers, field fortifications, and light-skinned armor threats. The TOW BB has an impact sensor located in the main charge and optimizes warhead effectiveness. The TOW BB can defeat double reinforced concrete walls at range.

BENEFIT TO THE SOLDIER

The TOW Missile provides the Warfighter with precise, lethal, direct fires against main battle tanks, field fortifications, heavy weapons teams, snipers, and other targets of opportunity while minimizing collateral damage.

SPECIFICATIONS

- Weight: 49.8 pounds (65 lbs encased)
- Length: 49 inches
- Diameter: 6 inches (8.6 inches encased)
- Range: 4,500 meters (TOW 2B Aero)

PROGRAM STATUS

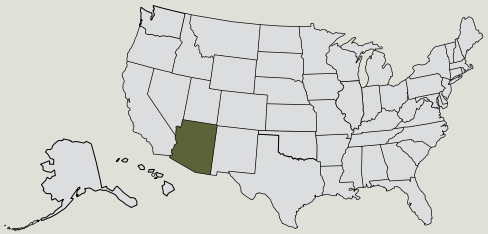
- **FY20:**
  - Accepted final deliveries from the FY12–FY16 Multi-Year Production (MYP) contract
  - Awarded Production Year Four of the FY17–FY21 MYP contract

PROJECTED ACTIVITIES

- **FY21:**
  - Award Production Year Five of the FY17–FY21 MYP contract
  - Begin Production of the TOW Obsolescence and Safety Engineering Change Proposal to improve gunner safety, address parts obsolescence, and improve production efficiencies
- **FY21–FY26:** Integrate and qualify an improved compliance insensitive munitions propulsion system that will increase missile range and reduce missiles time to range over current production TOW 2 missiles

TOW Missiles

CONTRACTORS
Raytheon Missiles & Defense (Tucson, AZ)





Ultra Lightweight Camouflage Net System (ULCANS) Increment I

PEO Combat Support and Combat Service Support | Detroit Arsenal, MI

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The U.S. Army's Ultra Lightweight Camouflage Net System (ULCANS) Increment I is a multispectral camouflage system replacing outdated static, legacy camouflage nets currently in inventory. The new system represents a significant improvement in concealment capability and will provide superior concealment in the ultraviolet, visual, near/shortwave infrared, thermal infrared, and radar bands.

BENEFIT TO THE SOLDIER

ULCANS Increment I features reversible Light/Dark Woodland, Snow/Alpine, and Desert/Urban variants to restore combat overmatch against new and future foreign sensor threats. ULCANS Increment I systems incorporate Short Wave Infrared defeat, radar background matching capability, and improved thermal performance to mitigate known sensor gaps. ULCANS is designed to improve survivability of military personnel and hardware as an all-weather modular concealment system that provides visual, infrared, and radar signature reduction.

SPECIFICATIONS

- Snag resistant, field repairable, and maintainable
- Designed for easy, rapid deployment and recovery with minimal personnel
- Provides full multispectral concealment
- Defeats known enemy surveillance and targeting systems, and provides modern battlefield protection

PROGRAM STATUS

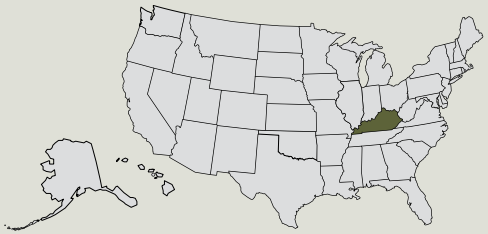
- **4QFY19:**
  - Urgent Materiel Release for Woodland variant Fielding
  - Low-Rate Initial Production (LRIP) to support Fielding
- **2QFY20:**
  - Approved LRIP ceiling increase
  - Procured additional LRIP Woodland variants
- **3QFY20–4QFY20:**
  - Full-Rate Production for Woodland variant
  - Type Classification-Standard for Woodland variant
  - Full Materiel Release for Woodland variant

PROJECTED ACTIVITIES

- **1QFY21:** Complete Fielding to U.S. Army Europe
- **FY21:** Continue Development/Testing of Desert/Urban and Snow/Alpine variants

ULCANS Increment I

CONTRACTORS
Fibrotex USA (Stearns, KY)





Unified Command Suite (UCS)

JPEO for Chemical, Biological, Radiological and Nuclear Defense | Aberdeen Proving Ground, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The Unified Command Suite (UCS) is a fully integrated mobile communications platform that is self-sufficient and highly interoperable by integrating commercial-off-the-shelf (COTS) and Government-off-the-shelf military communications hardware. UCS provides secure, continuous, reliable, short- and long-range communications between the Weapons of Mass Destruction – Civil Support Team (WMD-CST), lateral/higher-echelon civilian and military operational commanders, and Incident Command Posts.

UCS is the Commander's capability to exercise tactical command and control of the WMD-CST and serves as the communications link between Analytical Laboratory System (ALS), Survey Teams, and the Operations Center. UCS provides video capability required by analytical assets, medical providers, and Chemical, Biological, Radiological, and Nuclear (CBRN) Response Enterprise forces to enable research for supported agencies, situational awareness, and external data sources.

BENEFIT TO THE SOLDIER

UCS gives the Warfighter communications interoperability with federal, state, local, and military emergency response elements at an incident scene. UCS enables a Commander's ability to conduct mission planning and coordination with supporting and inbound tactical and civil units, monitor communications safety nets, and coordinate administrative and logistics support.

SPECIFICATIONS

- Military/Public Safety compatible system; providing interoperable secure and non-secure radio communications (military, state, local, and emergency service agencies)
- High-speed Internet Protocol communications connected through Ku-band satellite network and supporting secure and non-secure telephony and video teleconferencing
- Non-classified Internet Protocol Router Network/Secret Internet Protocol Router Network; facilitating Command, Control, Communications, and Computers operations with local, state, federal, Department of Defense (DoD) partners, and WMD-CSTs
- Automated information systems and Cyber tools authorized to operate on both DoD and Federal protected networks
- Direct connection (reachback) to National Laboratories; processing CBRN threat data from ALS and other survey equipment or response teams
- Response time <60 minutes operational

PROGRAM STATUS

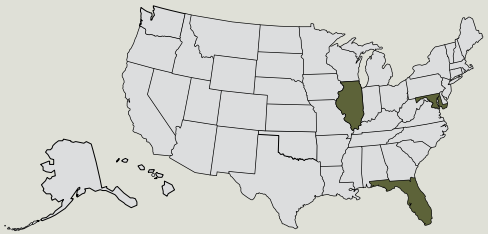
- **FY18–FY23:** Undergoing a modernization effort (Block 2 upgrades)

PROJECTED ACTIVITIES

- **FY21–FY23:**
  - Modernize UCS ahead of cyber and technical obsolescence to retain system operational requirements for WMD-CST
  - Leverage commercial competition using COTS equipment capabilities to inject technology without costly development
  - Preserve command, control, communication, and computers capabilities in accordance with system requirements document
  - Block 3 upgrades begin FY23

UCS

CONTRACTORS
BAE Systems (St. Inigoes, MD)
Booz Allen Hamilton (Lexington Park, MD)
CACI (St. Inigoes, MD)
L3Harris (Melbourne, FL)
MIL Corporation (Lexington Park, MD)
Motorola, Inc. (Shaumburg, IL)
Naval Air Warfare Center Aircraft Division (Patuxent, MD)
Smartronix (St. Inigoes, MD)



Unified Network Operations (UNO)

PEO Command, Control, Communications–Tactical | Aberdeen Proving Ground, MD

PEO C3T

OTHER

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Unified Network Operations (UNO), a Middle Tier Acquisition program, will deliver an integrated Network Operations (NetOps) capability, based on an open framework, aggregating network data to enable common planning, configuration, management, monitoring, and defense of the network. This will be accomplished through the integration, co-hosting, and federation of multiple NetOps systems from handheld devices to the enterprise. UNO aligns with the U.S. Army's intent to develop NetOps prototypes, conduct development operations, collect user feedback, and refine Government-off-the-shelf and commercial-off-the-shelf applications. It will deliver enhanced capabilities to the operational force in the shortest time possible, using technology that is available in industry or through other Government agencies, through an adapt and buy approach based on experimentation and demonstration.

UNO efforts simplify and reduce the number of network management tools communication officers (G6s and S6s) use to manage and defend the tactical communications network and the program leads the U.S. Army's Tactical NetOps convergence efforts. UNO assures uninterrupted access to critical communications and information links (satellite communications, positioning, navigation, and timing, and intelligence, surveillance, and reconnaissance) across a multidomain architecture, even when operating in a contested, congested, and competitive operating environment.

UNO delivers capability as software upgrades that run in multiple common operating environment (COE) computing environments. Additionally, the program integrates functionality between the tools of the Upper Tactical Internet and Lower Tactical Internet, enhances visualization of NetOps functions, and pushes network data to cyber situational awareness tools. UNO also implements a common data model that enables reconfiguration of the Network in support of unit task reorganization.

BENEFIT TO THE SOLDIER

UNO integrates network management capability to simplify user experience, increase situational awareness, strengthen Cyber Network Defense capability, and integrate network planning with mission planning capabilities.

SPECIFICATIONS

- Delivers advancements in monitoring, controlling, and planning tools to simplify management of emerging voice, data, and internet transport networks
- Modeling and simulation capability to analyze the best possible network configuration with dynamically changing network due to global complex variants
- Provides improved information assurance and Network Centric Enterprise Services
- Inherent software modernization through recurring technical refresh within the Project Manager Tactical Network family of programs
- Provides NetOps users with the capability to "operational-ize" the planning, configuration, monitoring, and manage-ment of the network through a single consistent tailorable user interface
- COE-compliant, portable, and interactive common graphical user interface with a user definable presentation workspace/ dashboard
- Integrates network planning with mission planning, enabling the S6 to optimize capability to move data around the virtual battlefield in support of the commander's scheme of maneuver
- Integrates Upper Tactical Internet and Lower Tactical Internet network management tools and services
- Provides near-term "bridging" of NetOps capabilities for tactical radios and tactical network transmission systems operating within the tactical environment

UNO

- Sets the foundation for further integration of tactical and strategic networks for both network management services and cyberspace operations

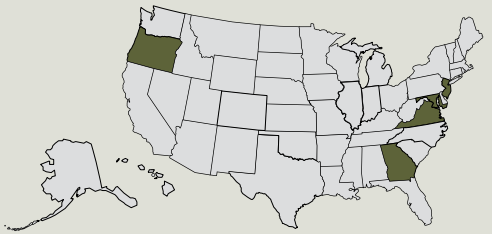
PROGRAM STATUS

- **FY19–FY23:** UNO Middle Tier Acquisition Rapid Prototyping

PROJECTED ACTIVITIES

- **FY21:** Transitions to Rapid Fielding/Engineering Change Proposals
- **FY23:** Fielding to units

CONTRACTORS
CodeMettle (Atlanta, GA)
General Dynamics Information Technology (Falls Church, VA)
Johns Hopkins University Applied Physics Laboratory (Columbia, MD)
L3Harris (Clifton, NJ)
Pacific Star (PacStar) Communications (Portland, OR)
Perspecta Labs (Basking Ridge, NJ)







Warfighter Brain Health (WBH)

U.S. Army Medical Research and Development Command | Fort Detrick, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

The mission of the Warfighter Brain Health (WBH) (previously Neurotrauma and Psychological Health) Project Management Office (PMO) is to rapidly develop and field Food and Drug Administration (FDA)-approved medical solutions across the continuum of care. These solutions aid in the detection, protection, prevention, and treatment of neurotrauma/head injury and psychological health conditions, such as Traumatic Brain Injury (TBI), Post-Traumatic Stress Disorder, and suicide. This program enables Warfighter health, readiness, and lethality.

The portfolio consists of:

- **Laboratory Assays for TBI (LATBI):** LATBI is a blood test that aids in the evaluation of service members with TBI. This field-deployable blood test detects the presence of proteins in the blood and can be used at any time up to 8 hours after the suspected brain injury. The blood test will be used to determine if the service member requires a Computed Tomography scan of the head or can return to the mission. Initially the test will be a plasma assay for laboratory settings, followed by whole blood assay for point-of-care efficient management of service members with TBI.
- **Noninvasive Neuro-Assessment Devices (NINAD):** The development effort supports a device to identify solutions that support TBI assessment and Return to Duty decision-making in a large-scale ground combat operation environment to support the TBI Field Assessment strategy and WBH PMO. The NINAD program will remain Army focused and pursue far forward Multi-Domain Operations capable field TBI assessment solution with a low logistical footprint and low-unit cost.
- **Increment II:** Supports technologies that can be used in conjunction with the LATBI to provide clinicians a broad spectrum of capabilities for diagnosing brain injury. These technologies include, but are not limited to, eye tracking and brain blood flow motion tracking.

BENEFIT TO THE SOLDIER

TBI results in a variety of physical, cognitive, social, emotional, and behavioral effects with outcomes ranging from complete recovery to permanent disability or death. This FDA-approved medical device will enable medical personnel to quickly assess the severity of the TBI to determine return to duty; therefore, keeping the Soldier in the fight and improving lethality.

SPECIFICATIONS

- System attributes established in the requirements documentation include FDA licensure.

PROGRAM STATUS

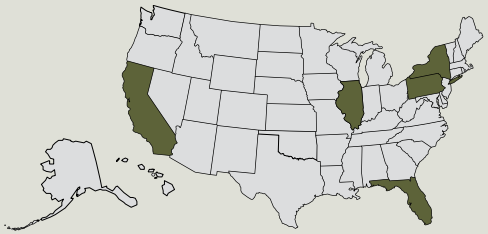
- **FY18–FY20:** Products in varying stages of completion and undergoing Development Test/Operational Test

PROJECTED ACTIVITIES

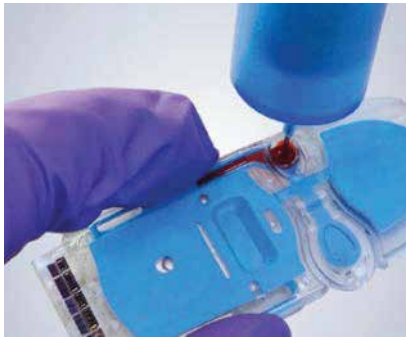
- **FY21–FY25:** Human studies will be conducted for these devices to receive FDA clearance

WBH

CONTRACTORS
Abbott Point of Care (Abbott Park, IL, and Ottawa, Canada)
Banyan Biomarkers (San Diego, CA, and Alachua, FL)
Infrascan (Philadelphia, PA)
Oculogica (New York, NY)







Warfighter Expeditionary Medicine and Treatment (WEMT)

U.S. Army Medical Research and Development Command | Fort Detrick, MD

ACAT IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Warfighter Expeditionary Medicine and Treatment (WEMT) (previously Combat Trauma and Acute Rehabilitation) includes innovative Food and Drug Administration (FDA)-cleared/approved devices, drugs, and biologics to address unique and catastrophic injuries sustained by Warfighters. The solutions in development are focused on medical products applicable to large-scale combat operations expected in future Multi-Domain Operations. The portfolio includes:

- **Burn Treatment Skin Repair:** Point-of-injury product to limit the severity of severe, life-threatening burns, which account for up to 20% of combat casualties, with percentages expected to climb during Multi-Domain Operations. The product speeds healing, reduces hospitalization time, minimizes disfigurement and disability, and expedites return to duty.
- **Extremity Injury Repair – Vascular:** A bioengineered material that restores blood flow to injured limbs, facilitating reestablishment of limb function, and reducing the need for amputation. Current methods to repair blood flow using veins or arteries from other parts of the body are often not possible for wounded Soldiers, as injuries typically extend to these other body parts.
- **Non-Compressible Hemorrhage Control (NCHC):** In partnership with the Defense Health Agency, the NCHC is a family of systems to stop massive bleeding that cannot be mitigated by current products. Solutions will provide a stopgap for patients who are awaiting definitive surgical care.
- **Temporary Corneal Repair (TCR):** A product to temporarily close eye injuries. If left untreated for longer than 72 hours, the wounded eye may be completely non-recoverable. A TCR product will stabilize the injured eye closer to the point of injury so it can later be repaired by a specialist. Combat eye injuries remain a significant cause of disability among Warfighters, despite the use of eye protection.

BENEFIT TO THE SOLDIER

WEMT products save lives, limbs, and vision in combat-wounded Soldiers, speed recovery, improve quality of life, make return to duty possible, and reduce the need for future chronic treatment.

SPECIFICATIONS

- FDA Licensure
- Each medical product has individual technical and logistics (maintenance and consumable resupply) specifications

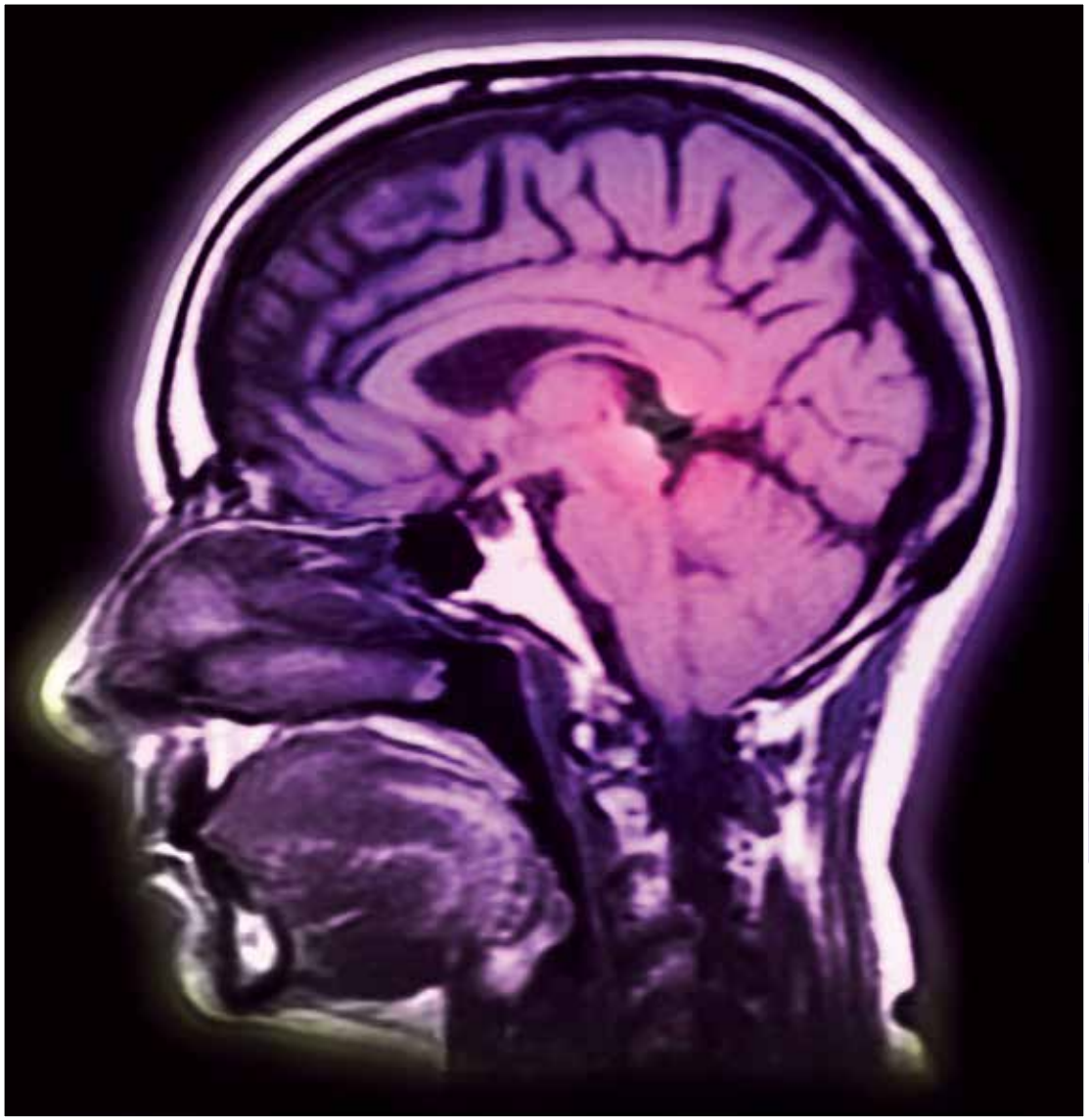
PROGRAM STATUS

- **FY18–FY20:**
  - WEMT products are in varying stages of maturity; activities range from laboratory studies to human studies and FDA clearance
  - Two programs achieved Milestone A, and one was terminated

PROJECTED ACTIVITIES

- **FY21–FY25:** WEMT products will remain in varying stages as activities range from laboratory studies to FDA approval

WEMT



CONTRACTORS

Arcos Medical, Inc. (Missouri City, TX)
Ashvattha Therapeutics, LLC (Redwood City, CA)
Humacyte, Inc. (Morrisville, NC)
KeraNetics (Winston Salem, NC)
SpectralMD (Dallas, TX)
Synedgen, Inc. (Claremont, CA)
University of Southern California (Los Angeles, CA)
Wearable Artificial Organs (Beverly Hills, CA)





Warfighter Health, Performance, and Evacuation (WHPE)

U.S. Army Medical Research and Development Command | Fort Detrick, MD

ACAT III

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Warfighter Health, Performance, and Evacuation (WHPE) (previously Medical Support Systems and Evacuation) is a family of products supporting medical evacuation (MEDEVAC), casualty extraction and movement, and operational and preventive medicine. This program supports Soldier and Brigade medical evacuation readiness and modernization in support of Multi-Domain Operations. The portfolio includes:

- **Transport Telemedicine System (Acquisition Category (ACAT) III):** The Medical Hands-Free Unified Broadcast (MEDHUB) is a medical platform that displays near real-time medical data over the Department of Defense tactical satellite — the Blue Force Tracker network — and provides a Common Operational Picture of medical assets and casualties on the battlefield. It offers situational awareness of incoming patients by automatically transmitting the number of patients, their vital signs, and estimated time of arrival to the field hospital. The MEDHUB automates the Tactical Combat Casualty Care card, increasing accuracy and speed of documentation while providing multipatient monitoring capabilities and automating weight-based drug calculations that reduce medic task saturation.
- **MEDEVAC and Treatment Vehicle Medical Equipment Package (MEP) (Non-ACAT):** This program supports unique medical evacuation requirements for air and ground vehicles. In partnership with Program Executive Office (PEO) Aviation and PEO Ground Combat Systems, these programs address specifications, product development, testing, and integration of medical equipment into the UH-60M Air Ambulances and the Armored Multi-purpose Vehicle Medical Treatment and Evacuation variants.
- **Environmental Sentinel Biomonitor (ESB) (ACAT IV):** The ESB rapidly screens and identifies toxic industrial chemicals in field drinking water. This Environmental Protection Agency registered device will be used by Preventative Medicine personnel in support of Combat Teams and higher.
- **Chemical Patient Protective Wrap (CPPW) (ACAT IV):** The military unique CPPW was modernized and upgraded to replace a late 1980s legacy product with the new version manufactured in partnership with Pine Bluff Arsenal in Arkansas. Designed similar in style to a sleeping bag, the CPPW is a portable, protective, patient transport device, which allows for patient treatment, while protecting patients from contamination by chemical agents and pathogens of operational and clinical concern.
- **Future Vertical Lift (FVL) Medical MEP (Non-ACAT):** The MEDEVAC is a critical U.S. Army requirement with a Planned Future Long Range Assault Aircraft (FLRAA) mission set as part of the FVL program. The WHPE will partner with PEO Aviation to design, develop, and deploy aeromedical evacuation mission equipment for the FLRAA.
- **Health Readiness and Performance System (HRAPS) (ACAT III):** In partnership with PEO Soldier and the Defense Health Agency, the HRAPS supports the health and medical mission of an integrated system of wearable sensors that provide commanders with actionable information to improve performance and mitigate injuries. Increments will address heat injuries, alertness, cognition, and physical readiness.
- **Canine Thermal Monitor (CTM) and Model (ACAT IV):** The heat strain decision software application for Military Working Dog (MWD) handlers, trainers, and veterinary staff works as a mission planning tool to reduce heat injury and safely acclimatize the MWD. The CTM provides safe, effective training and operations for MWD in extreme climates. The MWDs allow the Joint Force to disintegrate enemy cohesion in close area, deep maneuver, and operational deep fire areas.

BENEFIT TO THE SOLDIER

WHPE products improve health outcomes, support medical evacuation, prevent illness and injury, enhance Operational readiness, and improve Soldier lethality.

WHPE

SPECIFICATIONS

- System attributes include Environmental Protection Agency registration, user evaluations, and air worthiness certification and effectiveness.

PROGRAM STATUS

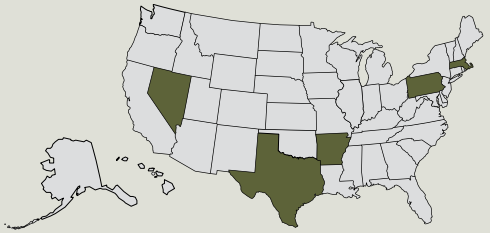
- **FY18–FY20:** Products in varying stages of completion, ranging from Materiel Development Decision through Initial Operation Capability

PROJECTED ACTIVITIES

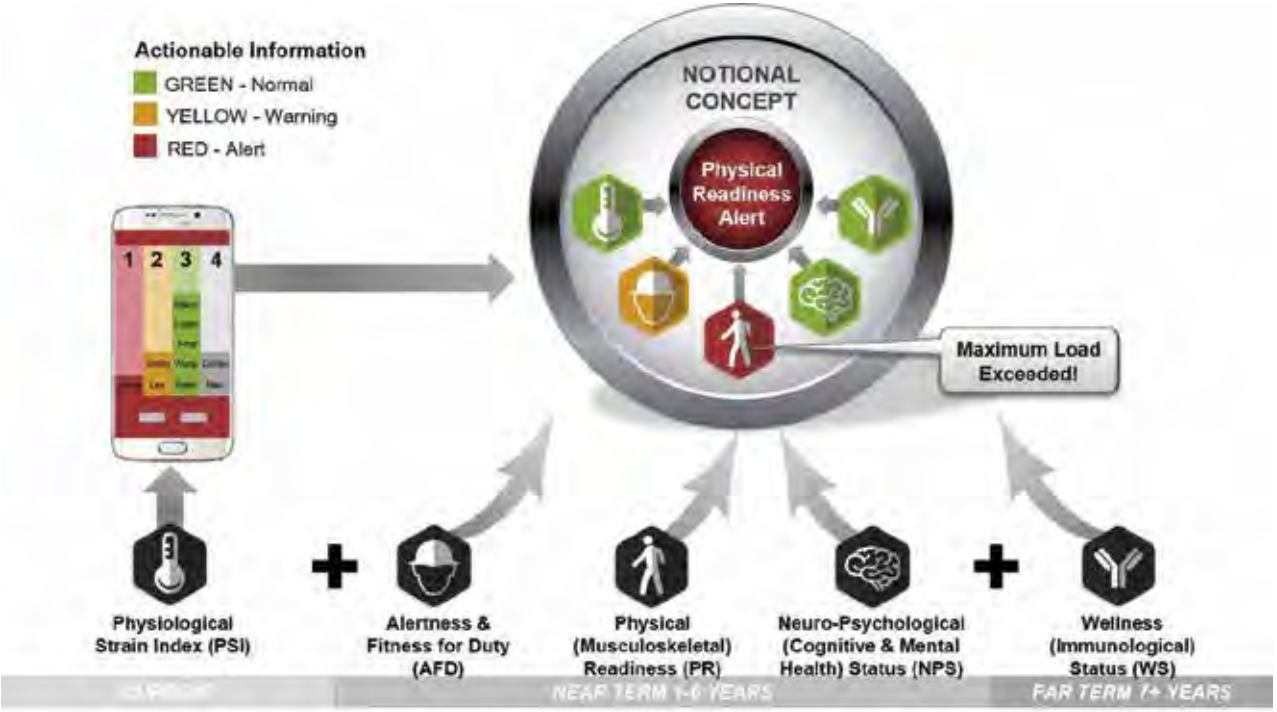
- **FY21–FY25:** Products will continue progress through Development and Full Operational Capability

CONTRACTORS

Lifelens (Ivyland, PA)
Massachusetts Institute of Technology, Lincoln Laboratory (Cambridge, MA)
Nanohmics (Austin, TX)
Sierra Nevada Corporation (Las Vegas, NV)
Organic Production Capability: Pine Bluff Arsenal (Pine Bluff, AR)







Warfighter Protection and Acute Care (WPAC)

U.S. Army Medical Research and Development Command | Fort Detrick, MD

ACAT III/IV

ACQUISITION LIFE CYCLE PHASE

Materiel Solution Analysis

Technology Maturation & Risk Reduction

Engineering & Manufacturing Development

Production & Deployment

Operations & Support

FOREIGN MILITARY SALES

None

DESCRIPTION

Warfighter Protection and Acute Care (WPAC) (previously Pharmaceutical Systems) develops and delivers U.S. Food and Drug Administration (FDA)-approved infectious disease drugs, vaccines, and diagnostics; blood products and components; and drugs for battlefield pain management to protect and sustain the Warfighter through all phases of Multi-Domain Operations. The portfolio includes:

- **Malaria Treatment Drug: Intravenous Artesunate (IVAS) (ACAT IV):** An intravenous drug to treat Warfighters with severe/complicated malaria. The IVAS is the only FDA-approved drug to treat severe/complicated malaria. It has been safely used around the world to save hundreds of lives since 2007 under a special FDA protocol.
- **Blood Products (ACAT III):** Blood products include Freeze Dried Plasma, Cryopreserved Platelets, and Cold Stored Platelets. On the battlefield, these products will be used far forward to stop bleeding and to replace lost fluids. Implementation will reduce the number of preventable deaths caused by bleeding, estimated to be approximately 24% of combat deaths before an injured Warfighter reached a Medical Treatment Facility. These life-saving products will also significantly reduce the logistics burden compared to current blood products.
- **Dengue Tetravalent Vaccine (ACAT III):** A vaccine to protect Warfighters from dengue virus, the most rapidly spreading mosquito-borne viral disease in the world. Dengue causes debilitating illness to U.S. Forces that results in approximately 14 lost duty days per event and reduces Soldier performance for approximately one month.
- **HIV Vaccines (ACAT III):** A vaccine to prevent HIV infection thus sustaining Troop readiness (approximately 350 new Service Members infected per year) and mitigating financial impact of lifelong treatment (approximately $500 million per year). The vaccine will protect against multiple subtypes representing over 97% of Department of Defense HIV infections.
- **Rapid Human Diagnostic Devices (ACAT IV):** Far forward, rapid response tests to rapidly diagnose a variety of military-relevant infectious diseases before the disease spreads, incapacitating troops, and degrading the operational mission.
- **Rapid Human Diagnostic Device – COVID (ACAT III):** A rapid diagnostic assay for diagnosis of SARS-CoV-2 in symptomatic and asymptomatic patients from a nasopharyngeal swab for direct antigen (SCoV-2 Ag DetectTM) detection and whole blood serology (SCoV-2 Ab DetectTM) detection.

BENEFIT TO THE SOLDIER

These products improve health, deployability, survivability, and lethality by preventing infectious diseases and enhancing battlefield trauma care.

SPECIFICATIONS

- FDA approval
- Each drug, vaccine, or blood product has individual technical and logistics specs

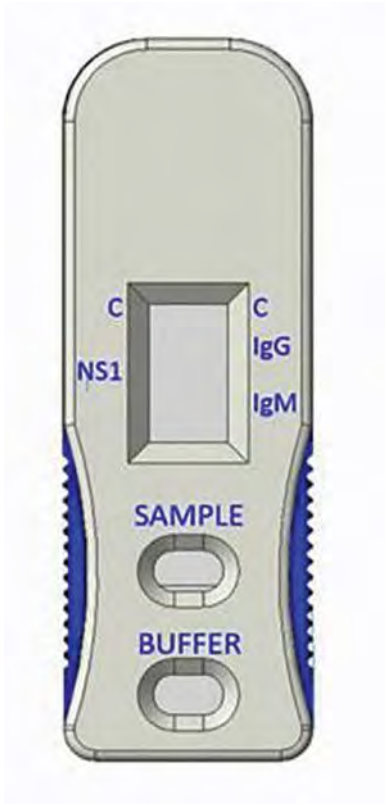
PROGRAM STATUS

- **FY18–FY20:** Products are in varying stages of completion. Some have received FDA approval for limited, emergency, or humanitarian use, pending full approval.

PROJECTED ACTIVITIES

- **FY21–FY25:** Anticipated Milestone C dates for these products beginning in FY21

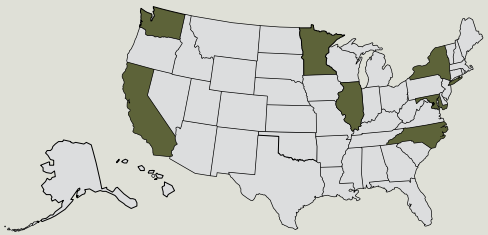
WPAC





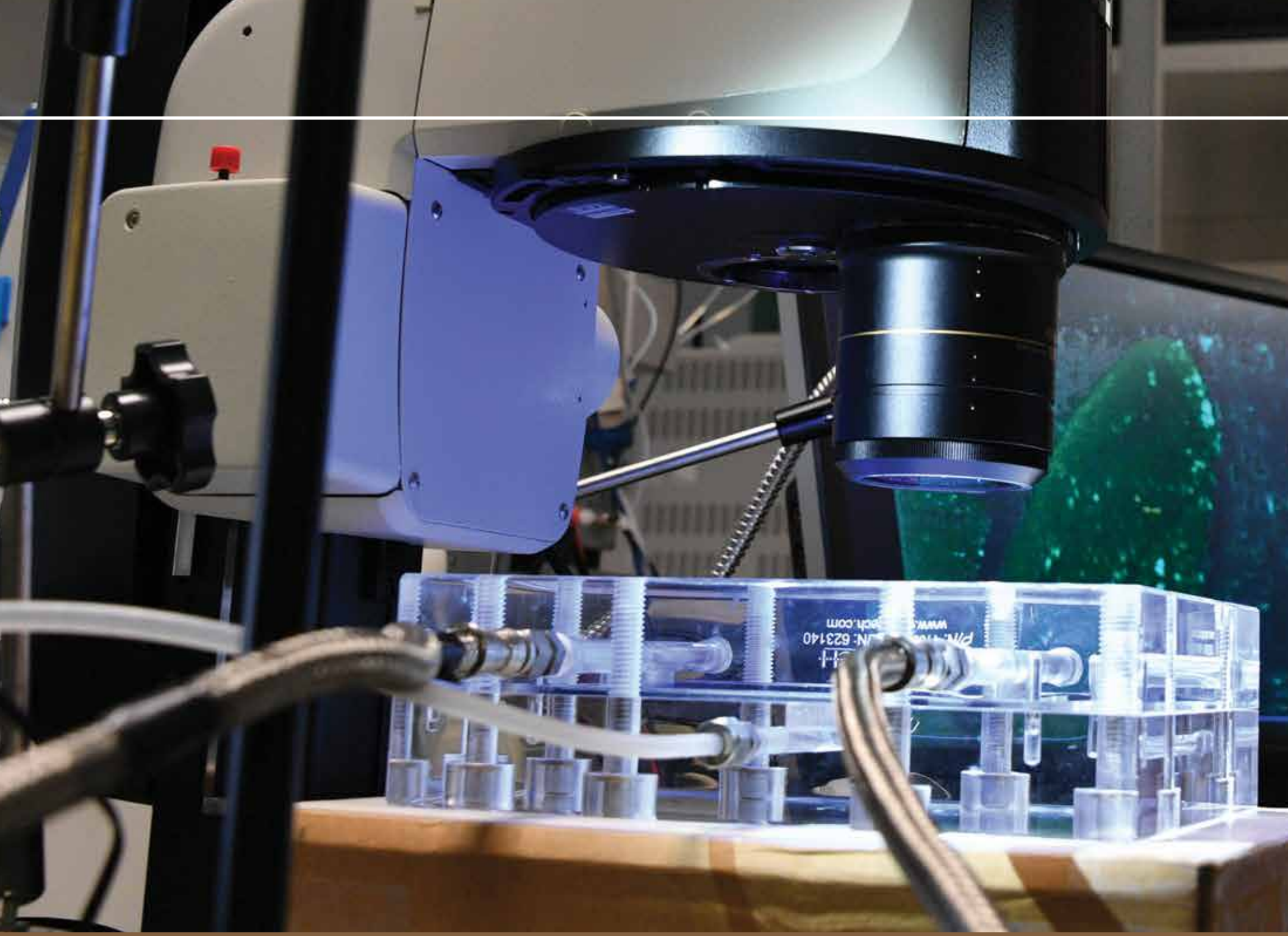
CONTRACTORS

60° Pharmaceuticals (Washington, DC)
AcelRx Pharmaceuticals (Redwood City, CA)
Amivas (Silver Spring, MD)
BodeVet, Inc. (Rockville, MD)
Cellphire, Inc. (Rockville, MD)
Emergent Biosolutions (Germantown, MD)
Fast-Track Drugs and Biologics, LLC (North Potomac, MD)
InBios International, Inc. (Seattle, WA)
Janssen (Belgium)
Ophirex, Inc. (Corta Madera, CA)
PPD (Wilmington, NC)
Scandinavian Biopharma (Solna, Sweden)
State University of New York (Albany, NY)
Takeda Pharmaceuticals (Deerfield, IL)
University of Maryland (Baltimore, MD)
Vascular Solutions Inc. (Minneapolis, MN)
Westa (Rockville, MD)











ARMY SCIENCE & TECHNOLOGY

Overview

Army Science and Technology

Army's S&T program fosters invention, innovation, and demonstration of affordable technology solutions.

ARMY SCIENCE AND TECHNOLOGY OVERVIEW

The U.S. Army is committed to ensuring our Soldiers remain the dominant land force across the full spectrum of conflict. Building upon this commitment, the Army's Science and Technology (S&T) program focuses on enabling the Army's Modernization Priorities, established by the Secretary of the Army while addressing the full spectrum of existing and emerging threats.

The Army S&T vision is to provide Soldiers with the capabilities needed to deploy, fight, and win our Nation's wars. The future operational environment will demand land power dominance with increased flexibility, adaptability, and speed of responsiveness. To address capability shortfalls and outpace anticipated threats, the Army's S&T program fosters invention, innovation, and demonstration of affordable technology solutions. It matures advanced technologies into affordable and sustainable solutions, pursues foundational technology developments and breakthroughs, leverages organic capacity and the capacity of our partners, and invests in fundamental science that will yield decisive advantages in the future.

ARMY S&T ENTERPRISE

The Army S&T Enterprise is comprised of the Office of the Deputy Assistant Secretary of the Army Research and Technology and U.S. Army Futures Command, who is responsible for synchronization of S&T across the labs and centers within the following executing commands:

- U.S. Army Futures Command – Combat Capabilities Development Command (DEVCOM) (Army Research Laboratory and Army Centers) and the Medical Research and Development Command
- U.S. Army Corps of Engineers – Engineer Research and Development Center
- U.S. Army Space and Missile Defense Command/Army Forces Strategic Command – Space and Missile Defense Technical Center
- Headquarters, Department of the Army, G-1 – U.S. Army



OVERVIEW OF ARMY S&T INVESTMENTS

The Army Modernization Priorities were established to regain overmatch and attain competitive advantage over emerging threats, competitors, and adversaries. The Army's S&T investments are aligned to address the Army's top modernization challenges to ensure competitive advantage against near-peer threats. These include:

- Long Range Precision Fires
- Next Generation Combat Vehicles
- Future Vertical Lift
- Army Network
- Air and Missile Defense
- Soldier Lethality

Additionally, S&T investments that support and enable the modernization priority areas are focused under the following investment areas:

- Medical
- Maturation
- Basic Research

Army S&T executes Research and Development (R&D) funding for its S&T program through a variety of strategies, mechanisms, and partnerships. Scientists and engineers working at Army laboratories and other Government laboratories and centers conduct Basic Research (Budget Activity (BA)) 1), Applied Research (BA2), and Advanced Technology Development (BA3) activities. These investments are also carried out through university grants, contracts with industry, and agreements with other Government agencies and organizations.

The Army S&T enterprise is responsible for a portion of the Army's Advanced Component Development and Prototyping (BA4) and all its Manufacturing Technology (ManTech). These resources support the risk reduction of S&T products, ensuring technology maturation, and manufacturing feasibility for transition into systems development programs. Finally, the S&T Enterprise, in concert with the Program Executive Offices and Program Managers, executes the Army's R&D funding allocated under the Small Business Innovation Research and Small Business Technology Transfer Research program.

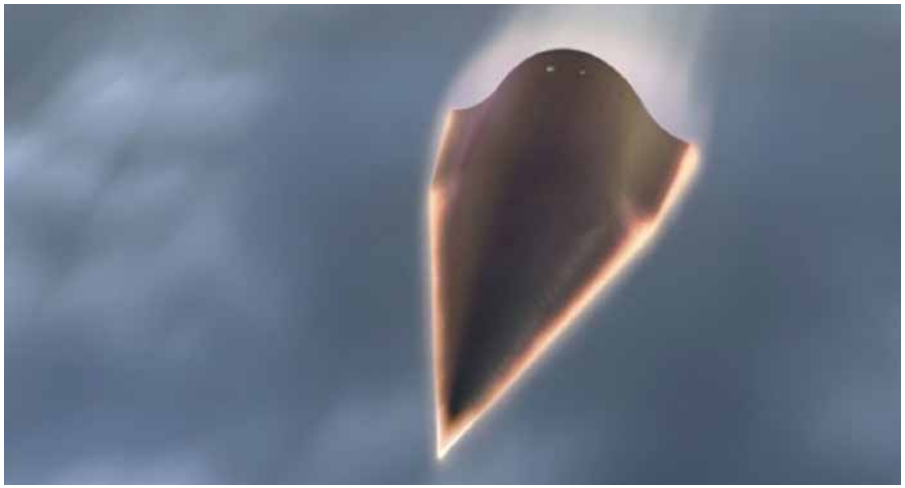
LONG RANGE PRECISION FIRES S&T

Long Range Precision Fires investments will provide massed, mobile, strike options at extended range and greater lethality to restore overmatch, improve deterrence, and disrupt anti-access/area denial (A2/AD) in Multi-Domain Operations (MDO). S&T products include:

- Hypersonic weapons
- Extended range cannon artillery
- Enhanced guidance and navigation for weapon systems
- Advanced energetics for improved propulsion and more lethal warheads
- Next-generation radars

Several S&T projects are developing key technologies and components for the Precision Strike Missile (PrSM) Program of Record (PoR), including Spiral 1 and future spirals to ensure this system keeps pace with emerging threats. The Land-Based Anti-Ship Missile project is developing sensor and payload component technologies for engaging and defeating land and maritime platforms and systems. The PrSM Modular Payload project will develop and demonstrate enhanced lethality payloads to find and engage deep moved, moving, dispersed, and poorly located targets in areas with contested access, transitioning to future spirals of PrSM. The Long Range Maneuver Fires (LRMF) project will develop and demonstrate extended range missile technology to survive and penetrate future A2/AD environments in increase the operational range. LRMF will also transition technology to the PrSM PoR in Fiscal Year (FY) 2026. Other enabling projects in energetics will improve range, speed, and lethality through new formulations and manufacturing techniques.

The Advanced Hypersonics Technology program is developing component technology for the common hypersonic glide body for the Long Range Hypersonic Weapon (LRHW). Technologies include advanced aerostructures for improved performance; cost and manufacturing throughput; datalink and dynamic kill chain integration; enhanced guidance, navigation, and control in global positioning system denied environments; and advanced thermal management. Transitions to the LRHW PoR will take place in FY22 and FY24.



Science and technology projects will address critical components required for hypersonics, such as the common hypersonic glide body.

NEXT GENERATION COMBAT VEHICLES S&T

Next Generation Combat Vehicle (NGCV) investments are dedicated to discovery and transition of technologies that ensure U.S. overmatch in offensive and defensive ground maneuver operations. S&T is focused to enable manned and unmanned ground combat formations to enter austere environments, survive and defeat emerging threats, and sustain an operationally feasible footprint.

The Army's NGCVs will need manned, unmanned, and optionally manned variants that include the most advanced lethality, protection, mobility, and power generation capabilities to ensure our Soldiers can survive first contact and defeat any adversary.

Combat Vehicle Robotics develop and integrate technologies that enable scalable integration of multidomain robotic and autonomous system capabilities, teamed with Army formations supporting combat warfighting functions that

include close combat, reconnaissance, and target acquisition. This program will also enable Soldiers to fight more distributed with increased standoff in close combat missions; providing increased lethality to the current formations while reducing Soldier exposure. Additionally, this program leverages the modular architecture, developed under the Autonomous Ground Resupply project, to expand autonomous behaviors to combat relevant scenarios: off-road maneuver at operational speeds; tactical behaviors to enable reconnaissance; indirect/direct fire mission roles for human and robotic teams.

Platform Electrification and Mobility provides the Army with the NGCV electrification architecture and mobility solutions that provides significantly improved mobility, operational duration, and on-board electrical power generation to the Robotic Combat Vehicle, Optionally Manned Fighting Vehicle, and optionally manned tank concepts. The development of a modular electrification architecture to accept multiple power sources (engine, fuel cell, battery) and scalable across system weight will allow industry to develop and innovate components needed for electrified military systems.



Demonstrate improved efficiency and silent operation and maneuver over increased terrain through powertrain electrification and mobility technologies.

FUTURE VERTICAL LIFT S&T

Aviation S&T provides research, development, demonstration, and transition of S&T products to provide the Army and joint force with manned, optionally manned, unmanned, and autonomous attack, reconnaissance, utility, and medical evacuation aviation platforms for high-speed and long-range operations. Army aviation platforms will need extended range and speed to maneuver into positions of advantage, actively engage threat formations, and survive in contested or A2/AD air space.

The Aviation Portfolio encompasses S&T projects that support Future Vertical Lift (FVL) research, technology development and demonstrations, and that enable research that will provide technology to address long-term needs. The goal of aviation S&T is to provide longer range and persistence, larger payloads, and increased speed, survivability, and combat overmatch in the future A2/AD battlefield, with an overall lower cost of ownership. S&T investments include:

- Module architecture
- Advanced Teaming
- Holistic aviation survivability
- Improved situational awareness in degraded environments
- Integrated mission systems
- Advanced power systems and thermal management
- Increased lethality
- Air Launched Effects
- Artificial Intelligence enhanced control systems



Air Launched Effects Demonstration: Area-I ALTIUS (Agile-Launch, Tactically Integrated, Unmanned System) horizontal launch from a UH-60.

The Air Launched Effects and Advanced Teaming efforts are demonstrating the ability to launch unmanned aircraft systems (UAS) from manned or unmanned FVL platforms, control UAS from the cockpit or a crew station, and mixed platform teaming behaviors and decision-making for manned and unmanned FVL Platforms.

ARMY NETWORK S&T

Army Network S&T investments develop, demonstrate, and transition technologies to enable: future hardware, software, and network infrastructure with resilient and assured communication links; Assured Position, Navigation, and Timing data for ground and air domains using trusted signals of opportunities and non-radio frequency (RF) capabilities; decision aids that expedite situational understanding and decision-making; and space-based assets that will provide the ability to sense and understand in real-time the multidomain battlefield to reveal threat intentions, strategies, capabilities, and tactics of a peer adversary in a contested cyber and electromagnetic environment.



Army S&T investments will provide Joint Forces' Command and Control systems with integrated Situational Awareness and Situational Understanding of the Adversary Cyber and Electromagnetic Activities.

To support the Army's Network modernization objectives, the Army is focusing S&T investments in the following areas:

- Tactical Communications and Networking
- Assured Positioning, Navigation, and Timing
- Cyber Electromagnetic Activities
- Decision Aids that Enable Situational Understanding
- Persistent Intelligence, Surveillance, and Reconnaissance (ISR)
- Command Post Mobility and Survivability
- Space-based Technologies
- Quantum and 5G Communications

Tactical Communications and Networking efforts investigate and develop automated and intelligent networks, anti-jam voice and data, autonomous platform communications, spectrum situational awareness, and high-bandwidth commercial technologies providing assured and resilient communication links in contested, congested, and degraded environments.

Assured Positioning, Navigation, and Timing addresses the Army's needs by investing in trusted RF signals and non-RF capabilities that provide reliable and resilient location and timing data to all Army systems through modular and scalable sub-systems.

Cyber Electromagnetic Activity S&T investments deliver technologies that enable the resilience to fight through an attack and to acquire situational awareness by developing and maturing cyber architectures, techniques to enable Cyber Electromagnetic Activities against adversary communication links, and harden the Army's tactical communication networks against cyber-attacks.

Command Post Mobility and Survivability provides the Army with survivable, modular, scalable, and decentralized command posts that are rapidly deployed, reduce manpower requirements, and minimize time to setup/tear-down. Investments in next-generation camouflage nets will provide increased command post survivability against current and future adversary ISR Sensors.

AIR AND MISSILE DEFENSE S&T

Air and Missile Defense investments will provide the Army and joint force overmatch at extended ranges, with precise and affordable weapons. S&T activities in this area seek to reduce the cost of missile defense, restore overmatch, survive volley-fire attacks, and operate within sophisticated A2/AD and contested domains, and focus on:

- Maneuver-Short Range Air Defense (M-SHORAD)
- Smaller and more affordable missiles
- High-Energy Lasers (HEL)
- Defense against emerging threats, including UAS
- Advanced seekers
- Advanced energetics and propulsion
- Next generation radars

The HEL Tactical Demonstrator will develop HEL weapon components and subsystems in coordination with the Under Secretary of Defense for Research and Engineering Laser Scaling Initiative to demonstrate a pre-prototype weapon system on a mobile platform to defeat various surface and aerial threats. This effort will transition to the Indirect Fire Protection Capability PoR in FY23. Enabling and support projects will develop foundational technologies, such as lethality modules and analytic tools, adaptive optics, beam combiners, improved laser sources, and thermal management systems to improve performance and ensure future growth.



Army S&T is making significant strides to advance HEL weapons, like this one. They have the potential to be a low-cost, effective complement to kinetic energy weapons to address threats from rockets, artillery, and mortars, as well as from cruise missiles and UAS.

The Maneuver Air Defense Technologies program is developing and demonstrating missile technologies and components (such as seekers, guidance, and control systems) for an affordable, short-range air defense intercept capability to defeat rotary-wing, tactical UAS, and fixed-wing threats. This effort supports the M-SHORAD PoR, with an FY24 transition. This project will be complemented by enabling projects in advanced and disruptive energetics, propulsion, guidance, and materials.

SOLDIER LETHALITY S&T

Soldier Lethality investments are oriented to the discovery, innovation, and transition of S&T solutions that provide Army Close Combat Forces with improved lethality, communication, mobility, situational awareness, protection, survivability, training, and human performance required to dominate in MDO.

Soldier Lethality leads research, development, and demonstration of S&T solutions to improve individual and team performance, reduce tactical surprise, increase protection, and enhance lethality in close combat on an intensely lethal and distributed battlefield and within complex, urban terrain. Investments focus on integrated, lightweight, and energy-efficient Soldier-centric systems and equipment, decision-making, human performance research, and advanced training technologies. Areas of critical investment include:

- Next Generation weapons and munitions with advanced fire control
- Integrated Soldier architecture
- Advanced Soldier protection
- Power and energy harvesting and distribution
- Optimized and Enhanced Soldier and squad performance
- Joint Combat Feeding advanced technologies
- Synthetic Training Environment

Next generation weapons and munitions with advanced fire control investments include research into lighter weight materials, improved ammunition, modular components, and enabling technologies, such as integrated fire controls, optics, and sensors. Future weapons and munitions will need to defeat adversaries employing partial and full defilade to protect their positions and equipment, limiting the effects of direct-fire small arms and indirect fire systems. Therefore, Army S&T is focused on weapon system standoff and increased range performance while reducing the size and weight of counter-defilade capabilities, putting counter-defilade in the hands of Soldiers and squads along with more lethal weapons.

As technology matures and is incorporated into Soldier and small-unit equipment, and the future operational environment becomes increasingly arduous and complex for our ground forces, Soldier Lethality S&T seeks to configure an Integrated Soldier Architecture that incorporates ergonomically designed systems and components developed through material research, component miniaturization, and capability integration. Advanced Soldier Protection technologies seek to provide our Soldiers with lighter and more effective body armor, increased ballistic and blast head protection, integrated multi-functional environmental protection and camouflage, concealment, and decoy capabilities from elevated and ground-based sensors across the electromagnetic spectrum. Power and Energy Harvesting and Distribution is a critical research area that will

contribute to this architecture through reduced weight, new and enhanced battery chemistries, and energy management approaches that can extend dismounted Soldier mission duration.

Additionally, S&T investments in Joint Combat Feeding advanced technologies seek to enhance combat ration nutrient composition and optimize Soldier nutrition to maximize cognitive and physical performance on the battlefield. These solutions will improve performance, recovery, and lethality across the Department of Defense as the Army is the Executive Agent for the Joint Combat Feeding program. Optimized and Enhanced Soldier and squad performance advancements focus on S&T solutions that improve cognitive and physical capabilities of our Soldiers to enable them to fight and win in MDO.

S&T investments in Synthetic Training Environments combine advanced virtual reality technology with constructive and live environments to provide responsive and reconfigurable training that immerses human senses in mixed reality, including providing touch and feel to simulate objects, such as obstacles and walls. New training technologies and environments are emphasized to allow Soldiers to train and rehearse skills, such as faster decision-making, and to gain the advantage of speed over adversaries. Integrated with capabilities, such as intelligent agents that challenge the Soldier, synthetic training environments will improve individual and team performance, while reducing training time and cost.



The future operational environment will push our Soldiers to the extreme limits of their cognitive, physical, and emotional capabilities. Army S&T focuses on optimizing and enhancing the capabilities of Soldiers and small units. These capabilities will be critical for the success of Multi-Domain Operations (MDO).

MEDICAL S&T

Medical S&T's intent is to meet the medical needs of Soldiers in a near peer battle scenario with numerous casualties and requiring prolonged care (the Golden Day +) due to limited evacuation capabilities, with limited medical-related communication and resupply, and Soldiers with increased mental and physical stress.

Medical S&T efforts address diverse health threats and seek to optimize, enhance, sustain, and restore Soldier health and performance from accession through training, deployment, and treatment of combat injuries. Investments are focused on materiel and knowledge-based medical solutions, including the delivery of improved combat casualty care, enhanced survivability, reduced impact of injury, and optimized downrange medical footprint. This investment strategy covers:

- Combat Casualty Care
- Soldier Medical Readiness

Work in Combat Casualty Care reflects lessons learned over the last 19 years of contingency operations that will improve medical treatment in future operations, as well. Medical S&T is working to provide better solutions for severe burns, brain trauma, and tactical combat casualty care and to provide blood products with fewer logistical complications, longer shelf life, and more easily used in the far-forward environment. Additionally, in MDOs against a near-peer adversary, operational threats such as A2/AD challenge the Army's ability to evacuate Soldiers to surgical treatment within the Golden Hour, therefore Army S&T is researching medical materiel and knowledge solutions to accelerate delivery of lifesaving medical care.

Prolonged Field Care will enable medical personnel, such as combat medics and battalion surgeons, to stabilize wounded personnel for extended periods of time until evacuation is feasible. The capability initially will consist of advanced blood products and new medical devices to control severe bleeding, and a portable, closed-loop, external life support system to provide lung and kidney function to patients who need them.

For when medical evacuation is not feasible, the Army is developing Autonomous Evacuation technologies that use unmanned ground or air platforms, in conjunction with autonomous life support equipment, to move casualties to surgical care facilities. These platforms will also be useful for resupplying medical personnel during sustained operations. Army S&T investments in autonomous systems and advanced medical devices will provide tomorrow's force dramatic increases in survival rates.

Army S&T's efforts in Soldier Medical Readiness span a wide range of activities, from protecting Soldiers from diseases that would degrade combat effectiveness, to providing Soldiers with the right nutrients for the type of activity, stress, and situation to optimize their performance. This area of effort provides leader tools for assessing musculoskeletal injury and readiness to return to duty. Additionally, it provides tools for medics and unit leaders to ensure the psychological readiness and far-forward performance of Soldiers through a reduction in combat psychological health-associated medical care needs.

TECHNOLOGY MATURATION INITIATIVE

The Technology Maturation Initiative (TMI) program serves as a strategic partnership between the S&T Enterprise and the requirements and acquisition communities to speed the transition of the Army's highest priority S&T efforts. Through technology maturation, integration, and experimental prototyping, S&T can hasten the transition of emerging technologies and enable the development of feasible and affordable capabilities under future Programs of Record.



The MMHEL will demonstrate a Stryker-based HEL experimental prototype that is suitable for maneuvering Brigade Combat Teams and capable of countering UAS, RAM, and ISR threats.

The Multi-Mission High-Energy Laser (MMHEL) is a priority TMI effort to integrate a laser system onto a Stryker, with the intent to reduce the risk of key component technologies and conduct demonstrations to inform requirements for the M-SHORAD objective capability. The MMHEL will undergo an operational demonstration in the near future to validate the laser system's counter-rocket, artillery, mortar; counter-UAS; counter-battery targeting and counter-materiel capabilities.

MANUFACTURING TECHNOLOGY (MANTECH)

The Army's Manufacturing Technology (ManTech) program develops and refines manufacturing processes for affordable products, improved system performance, and reduced life cycle costs. By exploring methods to manufacture technologies in parallel with the execution of S&T efforts, the Army ensures that any new manufacturing processes required for emerging technologies are developed prior to transition. As a result, ManTech activities reduce transition risk for emerging S&T products to acquisition programs.

As one example of numerous recent ManTech successes, Army scientists developed a first-of-its-kind antenna that could change how ground vehicles and airborne systems communicate, transmit, and receive radio frequency communications.

The Army's ManTech program matured a manufacturing process using a special class of engineered materials known as metaferrites to make an ultra-thin wideband antenna. The antenna conforms to curved surfaces, making them ideal to integrate in UAS, rotary-wing aircraft, and ground vehicles.

BASIC RESEARCH

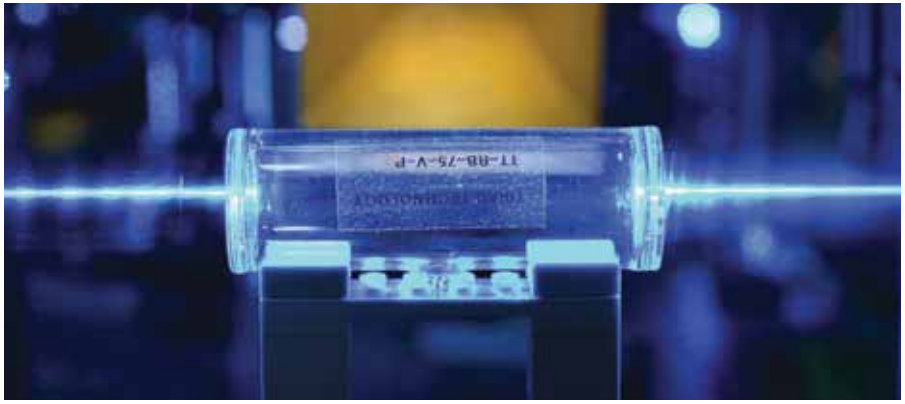
Army Basic Research seeks to advance the frontiers of fundamental S&T and drive long-term, game-changing Army capabilities through a multidisciplinary portfolio that links the Army's in-house researchers with the global academic community. Basic Research investments are the Army's primary drivers to enable leap-ahead technologies that will enhance Soldier capability and increase Soldier protection. These investments support the nine Priority Research Areas outlined in the 2019 Army Modernization Strategy. Activities are focused on discovering and understanding fundamental science through Army-led investigations and by assessing breakthrough innovations to advance overall scientific knowledge. This work generates new knowledge for the Army to address diverse, rapidly evolving threats, while simultaneously attracting the country's most talented and gifted scientists and engineers to the future workforce.

The Basic Research investment area leverages partnerships such as University Affiliated Research Centers, Collaborative Research Alliances, Multidisciplinary University Research Initiatives, and the Single Investigator Program to exploit a range of research opportunities. Some major Army Basic Research efforts include:

Synthetic Biology
Synthetic biology is the creation of new biological systems or the redesign of existing biological systems. Army Basic Research in this area focuses on harnessing biology's capacity for custom/responsive materials development to support disruptive capabilities, such as self-healing, adaptation, and protection. This research will enable agility in production and reclamation of materials at the point-of-need and advanced situational awareness and countermeasures to threats in theater; allowing the Army to adapt at the pace of war.

Disruptive Energetics
Achieving the range and lethality necessary for the future battlefield requires new and powerful energetic materials and propulsive concepts. Army Basic Research in this area focuses on the discovery, synthesis, and experimental verification of these disruptive energetic materials and concepts. This research enables overmatching lethality and range of U.S. Army ordnance.

Artificial Intelligence
Artificial Intelligence (AI) is expected to strongly enhance performance of all technological components and Army systems. Army Basic Research in this area focuses on integration of AI algorithms and approaches to advancing distributive sensing, target recognition, and cooperative and distributed navigation and mobility. This research will enable optimal and highly coordinated operation of various Army units.



Experiments with quantum technologies may open the door to new battlefield devices that provide Soldiers with key advantages against adversaries. Atoms in a glass cell probed by lasers can act as a microwave receiver in a completely different way than traditional metal antennas.

Quantum Effects and Quantum Information Sciences
Quantum science is the study of the behavior of matter and its interactions with energy on the scale of atoms and subatomic particles. Army Basic Research in this area focuses on generating advances in quantum science by investigating the ultimate performance limits of quantum sensors, clocks, networks, and information processing through distributed quantum entanglement. Quantum sensing, quantum navigation, quantum communications and networks, and processing have the potential to revolutionize Army technologies.

CONCLUSION

The Army's Modernization Priorities and supporting S&T investment strategy provide a robust and unifying framework that postures the S&T program, workforce, laboratories and engineering centers, and industrial and academic partners to deliver disruptive technologies for Army and joint force operational overmatch. To facilitate critical developments for the future, the Army will leverage the best and brightest from across the S&T Enterprise, and bring together scientific professionals from Government, academia, and industry to address the most challenging technical barriers and ensure for competitive advantage to the U.S. Army and the joint force.


PLT-1



APPENDICES

Glossary of Terms
Systems by Contractor
Contractors by State
Points of Contact

Glossary of Terms

ACQUISITION CATEGORY (ACAT)

ACATs are established to facilitate decentralized decision-making and execution and compliance with statutorily imposed requirements. The categories determine the level of review, decision authority, and applicable procedures. ACAT categories include: ACAT I, ACAT II, ACAT III, ACAT IV (Army, Navy, and Marine Corps only), and Abbreviated Acquisition Program (Navy and Marine Corps only).

ACAT I

ACAT I programs are Major Defense Acquisition Programs (MDAPs). A MDAP is a program that is designated by the Milestone Decision Authority (MDA). Dollar value for all increments of the program: estimated by the Defense Acquisition Executive (DAE) to require an eventual total expenditure for research, development, test, and evaluation of more than $525 million in Fiscal Year (FY) 2020 constant dollars or, for procurement, of more than $3.065 billion in FY20 constant dollars.

ACAT I programs have three subcategories:

- ACAT ID, for which the Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)) as the DAE makes a decision to become the MDA or designate another Office of the Secretary of Defense (OSD) official as the MDA. This decision would be based on one or more exceptions in Title 10 of the U.S. Code, section 2430(d) (10 U.S.C. 2430(d)). The DAE or designee will review ACAT ID programs.
- ACAT IC, for which the USD(A&S) delegated ACAT I MDA to the Head of the Department of Defense (DoD) Component or, if delegated, the Component Acquisition Executive (CAE). This designation (ACAT IC) is only for programs that reached Milestone A before October 1, 2016.
- ACAT IB, a MDAP for which the Service Acquisition Executive (SAE) is the MDA by operation of 10 U.S.C. 2430e, will be designated within the DoD as ACAT IB programs. The SAE of the Military Department that is managing an MDAP reaching Milestone A after October 1, 2016, will be the MDA for the MDAP and designated ACAT IB to differentiate these programs from ACAT ID programs or ACAT IC programs.

ACAT II

ACAT II programs are defined as those acquisition programs that do not meet the criteria for an ACAT I program, but do meet the criteria for a major system as defined in 10 U.S.C. 2302(d). The dollar value as estimated by the DoD Component head would require an eventual total expenditure for research, development, test, and evaluation of more than $200 million in FY20 constant dollars, or for procurement of more than $920 million in FY20 constant dollars. The CAE, or the individual designated by the CAE, will review ACAT II programs as the MDA.

ACAT III

ACAT III programs are defined as those acquisition programs that do not meet the dollar value thresholds for ACAT II or above, and are not designated a “major system” by the MDA. The MDA is designated by the CAE.

ACAT IV

ACAT IV programs are defined as those acquisition programs that do not meet the criteria for ACAT I, ACAT II, or ACAT III. The MDA is designated by the AAE and shall be at the lowest appropriate level, typically the Program Executive Officer (PEO), however MDA can be further delegated to the Colonel-level Program/ Project Manager. The estimated costs for ACAT IV acquisition programs are below the thresholds for ACAT III acquisition programs.

ACQUISITION LIFE CYCLE PHASE

Acquisition Life Cycle: The relationship between the acquisition phases and work efforts, and key program events such as decision points and reviews. It employs acquisition processes that match the characteristics of the capability being acquired.

Acquisition Phase: All the tasks and activities needed to bring a program to the next major milestone occur during an acquisition phase. Phases provide a logical means of progressively translating broadly stated capabilities into well-defined, system-specific requirements and ultimately into operationally effective, suitable, and survivable systems. The acquisition phases for the systems described in this handbook are defined below:

- *Materiel Solution Analysis (MSA) Phase:* The first phase of the Major Capability Acquisition process. The purpose of this phase is to conduct an Analysis of Alternatives (AoA) and other activities needed to choose the concept for the product that will be acquired, to begin translating validated capability gaps into system-specific requirements, and to conduct planning to support a decision on the acquisition strategy for the product. An AoA will be conducted and the initial Acquisition Strategy and draft Capability Development Document (CDD) will be formulated. The CAE will select a Program Manager (PM) and establish a Program Office to complete actions associated with planning the acquisition program preparing for the next decision point. This phase ends when the necessary analysis and activities

to support a decision to proceed to the next decision point/phase in the acquisition process.

- *Technology Maturation and Risk Reduction (TMRR) Phase:* The second phase of the Major Capability Acquisition process. Its purpose is to reduce technology, engineering, integration, and life cycle cost risk to the point that a decision to contract for Engineering and Manufacturing Development can be made with confidence in successful program execution for development, production, and sustainment. The phase includes activities intended to reduce specific risks associated with the product to be developed. Activities include additional design trades and requirements trades to ensure an affordable product and an executable development and production program. Capability requirements are matured and validated, and affordability caps are finalized during this phase. This phase normally includes competitive sources conducting TMRR activities to demonstrate new technologies in a relevant environment. A Preliminary Design Review prior to Milestone B will be conducted, unless waived by the MDA.

- *Engineering and Manufacturing Development (EMD) Phase:* The third phase of the Major Capability Acquisition process. The purpose of the phase is to develop, build, test, and evaluate a materiel solution to verify that all operational and implied requirements, including those for security, have been met, and to support production, deployment, and sustainment decisions. The program will complete all needed hardware and software detailed designs. A critical design review assesses design maturity, design build-to or code-to documentation, and remaining risks and establishes the initial technical baseline. The EMD phase will end when the design is stable; the system meets validated capability requirements demonstrated by developmental, live fire (as appropriate), and early operational testing; manufacturing processes have been effectively demonstrated and are under control; software sustainment processes are in place and functioning; industrial production capabilities are reasonably available; program security remains uncompromised; and the program has met or exceeds all directed phase exit criteria and Milestone C entrance criteria per the MDA's direction.

- *Production and Deployment (P&D) Phase:* The fourth phase of the Major Capability Acquisition process. The purpose of the P&D Phase is to produce and deploy requirements-compliant materiel solutions to receiving operating organizations. In this phase, the product is produced and fielded for use by operational units and encompasses a number of events: Low-Rate Initial Production, personnel training, completion of developmental test and evaluation (if required), Initial Operational Test and Evaluation, and the Full-Rate Production Decision or the Full Deployment Decision. All system sustainment and support activities are initiated if not already begun, and the appropriate operational authority will declare Initial Operational Capability when the defined operational organization has been equipped, trained, and determined to be capable of conducting mission operations. "Should cost" management and other techniques will be used to control and reduce cost.

- *Operations and Support (O&S) Phase:* The fifth phase of the Major Capability Acquisition process. The purpose of the O&S phase is to execute the Product Support Strategy (PSS), satisfy materiel readiness and operational support performance requirements including personnel training, and sustain the system over its life cycle, including disposal. This phase has two major efforts: Sustainment and Disposal. The MDA-approved PSS is the basis for the activities conducted during this phase. The PM will deploy the support package and monitor its performance according to the PSS. At the end of its useful life, a system will be demilitarized and disposed of in accordance with all legal and regulatory requirements and policy relating to safety (including explosives safety), security, and the environment, in accordance with the PSS. Disposal planning will include consideration of retirement, disposition, and reclamation.

ACQUISITION PROGRAM

A directed, funded effort that provides a new, improved, or continuing materiel, weapon, information system, or service capability in response to an approved need. Acquisition programs are divided into categories that are established to facilitate decentralized decision-making, execution, and compliance with statutory requirements.

BUSINESS SYSTEM CATEGORY (BSC)

BSC I:
- Priority DBS expected to have a total amount of budget authority over the period of the current Future Years Defense Program (FYDP) in excess of $250,000,000
- DoD Chief Management Officer (CMO) designation as priority based on complexity, scope, technical risk, and after notification to Congress

Decision Authorities:
- Requirements Validation/CMO Certification: DoD CMO or as delegated
- MDA: DAE or as delegated (not below CAE)

BSC II:
- DBS that do not meet criteria for BSC I and are expected to have a total amount of budget authority over the period of the current FYDP in excess of $50,000,000

Decision Authorities:
- Requirements Validation/CMO Certification: Military Department CMO or as delegated; DoD CMO or as delegated for all other DoD Components
- MDA: CAE or as delegated

BSC III:
- DBS that do not meet the criteria for BSC II

Decision Authorities:
- Requirements Validation/CMO Certification: DoD CMO or MILDEP CMO may designate as requiring certification
- MDA: Same as category II and further delegation is encouraged

CROSS-FUNCTIONAL TEAM (CFT)

The U.S. Army initiated a realignment of modernization responsibilities in 2017. This involved the establishment of a pilot program consisting of eight CFTs aligned with the U.S. Army's six modernization priorities. The CFTs are led by Warfighters with combat experience and given the task to develop a requirement informed by experimentation and technical demonstrations through teaming, agility, and rapid feedback. This enables the development of a capability document and improves the decision-making for a potential Program of Record to regain overmatch over near-peer competitors. Each CFT includes program management, finance, science and technology, and other components.

DEFENSE BUSINESS SYSTEM (DBS)

An information system that is operated by, for, or on behalf of DoD, including financial systems, financial data feeder systems, contracting systems, logistics systems, planning and budgeting systems, installations management systems, human resources management systems, and training and readiness systems. A business system does not include a national security system or an information system used exclusively by and within the defense commissary system or the exchange system or other instrumentality of the DoD conducted for the morale, welfare, and recreation of members of the Armed Forces using non-appropriated funds.

DEMILITARIZATION AND DISPOSAL

Demilitarization is the act of destroying the military offensive or defensive capability inherent in certain types of equipment or materiel. The term includes mutilation, scrapping, melting, burning, or alteration designed to prevent the further use of this equipment and materiel for its originally intended military or lethal purpose. It applies equally to materiel in unserviceable or serviceable condition that has been screened through an Inventory Control Point and declared excess or foreign excess.

Disposal is the second effort of the O&S phase. At the end of its useful life, a system will be demilitarized and disposed of in accordance with all legal and regulatory requirements and policy relating to safety (including explosives safety), security, and the environment, in accordance with the PSS. Disposal planning will include consideration of retirement, disposition, and reclamation.

DEVELOPMENTAL TEST AND EVALUATION (DT&E)

DT&E identifies potential operational and technological capabilities and limitations of the alternative concepts and design options being pursued, supports the identification and description of design technical risks, and provides data and analysis in support of the decision to certify the system ready for Operational Test and Evaluation. It includes any testing used to assist in the development and maturation of products, product elements, or manufacturing or support processes. It also includes any engineering-type test used to verify status of technical progress, verify that design risks are minimized, substantiate achievement of contract technical performance, and certify readiness for initial operational testing. Development tests generally require instrumentation and measurements and are accomplished by engineers, technicians, or Soldier operator-maintainer test personnel in a controlled environment to facilitate failure analysis.

DIRECTED REQUIREMENT

Directed Requirements are the U.S. Army Staff's response to Operational Needs Statements (ONS), which are U.S. Army capability requests to Headquarters constituting a request for materiel and/or non-materiel solution to correct a deficiency or to improve a capability impacting mission accomplishment. A Directed Requirement results when the analysis determines that the need is valid, technology is available to meet the need, resources can be sourced, and that the need is critical. While normally capabilities compete for program funding, senior leadership specifies the funding source and priority for a Directed Requirement. The scope is limited to Urgent Operational Needs that seriously endanger personnel or pose a major threat to the success of ongoing operations.

FULL OPERATIONAL CAPABILITY (FOC)

In general, FOC is attained when all units and/or organizations in the force structure scheduled to receive a system have received it and have the ability to employ and maintain it. The specifics for any particular system FOC are defined in that system's CDD, which identifies operational performance attributes of the proposed system, and updated CDD.

FULL-RATE PRODUCTION (FRP) DECISION REVIEW

MDA review to assess the results of Initial Operational Test and Evaluation (IOT&E) and initial manufacturing and deployment to determine whether to approve

proceeding to FRP or Full Deployment. Continuing into FRP or Full Deployment requires demonstrated control of the manufacturing process, acceptable performance and reliability, and the establishment of adequate sustainment and support.

INITIAL OPERATIONAL CAPABILITY (IOC)

In general, IOC is attained when some units and/or organizations in the force structure scheduled to receive a system have received it and have the ability to employ and maintain it. The specifics for any particular system IOC are defined in that system's CDD and updated CDD.

JOINT ACQUISITION PROGRAM

Any acquisition system, subsystem, component, or technology program with a strategy that includes funding by more than one DoD component during any phase of a system's life cycle. The MDA decides whether to place the program under joint acquisition management. The MDA should make this decision and, if appropriate, designate the lead executive DoD component as early as possible in the acquisition process.

LIVE FIRE TEST AND EVALUATION (LFT&E)

LFT&E is a test process that provides a timely assessment of the survivability and/or lethality of a conventional weapon or conventional weapon system as it progresses through its design and development. LFT&E is a statutory requirement (Title 10 U.S.C. § 2366) for covered systems, major munitions programs, missile programs, or product improvements to a covered system, major munitions programs, or missile programs before they can proceed beyond Low-Rate Initial Production (LRIP).

LOW-RATE INITIAL PRODUCTION (LRIP)

The objective of LRIP is to produce the minimum quantity necessary to provide production-configured or representative articles for Operational Tests, establish an initial production base for the system, and permit an orderly increase in the production rate for the system, sufficient to lead to FRP upon successful completion of Operational Testing. The LRIP quantity may not exceed 10% of the total production quantity without an approved waiver by the MDA and documented in the Acquisition Decision Memorandum.

MAJOR DEFENSE ACQUISITION PROGRAM (MDAP)

An acquisition program within the meaning of 10 U.S.C. 2430. The term "major defense acquisition program" means a DoD acquisition program that is not a highly sensitive classified program (as determined by the Secretary of Defense) and (A) that is designated by the Secretary of Defense as a MDAP; or (B) in the case of a program that is not a program for the acquisition of an automated information system (either a product or a service) that is estimated by the Secretary of Defense for all increments of the program to require an eventual total expenditure for research, development, test, and evaluation of more than $525 million in FY20 constant dollars or, for procurement, of more than $3.065 billion in FY20 constant dollars.

MAJOR MILESTONE

A major milestone is the decision point that separates the phases of an acquisition program. MDAP milestones include, as examples, the decisions to authorize entry into the EMD phase or FRP.

- Milestone A: Entry into the TMRR Phase
- Milestone B: Entry into the EMD Phase
- Milestone C: Entry into the P&D Phase

MAJOR SYSTEMS

A combination of elements that will function together to produce the capabilities required to fulfill a mission need. The elements may include hardware, equipment, software, or any combination thereof, but excludes construction or other improvements to real property. A system shall be considered a major system if the dollar value is estimated by the DoD component head to require an eventual total expenditure for research, development, test, and evaluation of more than $200 million in FY20 constant dollars, or for procurement of more than $920 million in FY20 constant dollars; or if the system is designated a "major system" by the head of the agency responsible for the system.

MIDDLE TIER ACQUISITION (MTA)

Sometimes referred to as Section 804 acquisition, MTA is established in Public Law 114–92, Section 804, and in DoD Instruction 5000.80. The MTA pathway is used to rapidly develop fieldable prototypes within an acquisition program to demonstrate new capabilities and/or rapidly field production quantities of systems with proven technologies that require minimal development. The MTA pathway is intended to fill a gap in the Defense Acquisition System (DAS) for those capabilities that have a level of maturity to allow them to be rapidly prototyped within an acquisition program or fielded within five years of MTA program start. The MTA pathway may be used to accelerate capability maturation before transitioning to another acquisition pathway or may be used to minimally develop a capability before rapidly fielding.

Glossary of Terms

MILESTONE

The point at which a recommendation is made and approval sought regarding starting or continuing an acquisition program, e.g., proceeding to the next phase.

MILESTONE DECISION AUTHORITY (MDA)

Designated individual with overall responsibility for a program. The MDA will have the authority to approve entry of an acquisition program into the next phase of the acquisition process and shall be accountable for cost, schedule, and performance reporting to higher authority, including Congressional reporting.
Defense Acquisition Executive (DAE): The individual responsible for supervising the Defense Acquisition System. The DAE takes precedence on all acquisition matters after the Secretary of Defense and the Deputy Secretary of Defense.

Army Acquisition Executive (AAE): The individual solely responsible for acquisition matters within the Department of the Army and the single decision authority for all Army acquisition matters. The AAE is responsible for approving requests to initiate new acquisition programs and will do so only when they are supported by approved capability documents, requisite funding, and program documentation.

Program Executive Officer (PEO): A military or civilian assigned program responsibilities for the execution and management of ACAT II, III, and IV programs, or for any other program determined by the AAE to require dedicated executive management.

MODERNIZATION PRIORITIES

In December 2017, the U.S. Army established six modernization priorities with one simple focus: make Soldiers and units more lethal. To be successful, ideas must be turned into actions through continuous experimenting and prototyping, improving acquisition business processes, pursuing appropriate commercial-off-the-shelf options, and improving training. Additionally, the Army's modernized capabilities must have interoperability with allies built-in. Based on these fundamentals, the Army's Modernization priorities are:

- *Long Range Precision Fires.* Develop platforms, capabilities, munitions, and formations that restore U.S. Army dominance in range, lethality, mobility, precision, and target acquisition.
- *Next Generation Combat Vehicles.* Develop combat vehicles that integrate other close combat capabilities in manned, unmanned, and optionally manned teaming that leverages semi-autonomous and autonomous platforms in conjunction with the most modern firepower, protection, mobility, and power generation capabilities necessary to ensure that our future combat formations can fight and win against any foe, in any environment.
- *Future Vertical Lift.* A set of manned, unmanned, and optionally manned platforms that can execute attack, lift, and reconnaissance missions on the modern and future battlefields at greater range, altitude, lethality, and payload.
- *Army Network.* An integrated system of hardware, software, and infrastructure that is sufficiently mobile, reliable, user-friendly, discreet in signature, expeditionary, and can be used to fight effectively in any environment where the electromagnetic spectrum is denied or degraded.
- *Air and Missile Defense.* A series of mobile integrated platforms, capabilities, munitions, and formations that ensure future combat formations are lethal while remaining protected from modern and advanced air and missile delivered fires, to include drones.
- *Soldier Lethality.* A holistic series of capabilities, equipment, training, and enhancements that span all fundamentals of combat: shooting, moving, communicating, protecting, and sustaining to ensure Soldiers are more lethal and less vulnerable on the modern battlefield. This will include not only next generation individual and squad weapons, but also improved body armor, sensors, radios, and load-bearing exoskeletons. These efforts will be joined by research in improved human performance and decision-making.

MODIFICATIONS

A configuration change to the form, fit, function, or interface (F3I) of an in-service, configuration-managed or produced Configuration Item (CI). Modifications are defined by their purpose. A capability modification alters the F3I in a manner that requires a change to the existing system, performance, or technical specification of the asset. Such modifications are accomplished to add a new capability or function to a system or component, or to enhance existing technical performance or operational effectiveness. A sustainment modification alters the F3I of an asset in a manner that does not change the existing system, performance, or technical specification of the asset. Such modifications correct product quality deficiencies, or to bring the asset in compliance with established technical or performance specification(s) associated with the asset. Sustainment modifications may improve the reliability, availability, maintainability, or supportability, and reduce its ownership costs.

OPERATIONAL TEST AND EVALUATION (OT&E)

OT&E is a field test, under realistic conditions, of any item (or key component) of weapons, equipment, or munitions for the purpose of determining the effectiveness and suitability of the weapons, equipment, or munitions for use in combat by typical military users, and the evaluation of the results of such tests.

OPERATIONS AND SUPPORT (O&S)

The objectives of this activity are the execution of a support program that meets the threshold values of all support performance requirements and sustainment in the most cost-effective manner. A follow-on OT&E program that assesses performance and quality, compatibility, and interoperability and identifies deficiencies will be conducted, as appropriate. This activity also includes the execution of operational support plans, to include the transition from contractor to organic support, as appropriate.

PRE-MAJOR DEFENSE ACQUISITION PROGRAM (PRE-MDAP)

Pre-MDAP programs are presumed to become ACAT ID programs that will require specific delegation. Normally, these are programs still in technology development that may become MDAPs at Milestone B.

URGENT MATERIEL RELEASE (UMR)

The Army Deputy Chief of Staff (DCS), G-3/5/7 validates UMR. This process is determined according to ONS and must be authorized by an approved or validated Headquarters, Department of Army, Modified Tables of Organization and Equipment or Tables of Distribution and Allowances, Mission Essential Equipment List ONS, or any other DCS, G-3/5/7 approved authorization or validation document. Once the immediate need is filled, the PM will withdraw the system and provide the appropriate disposition instructions.

ADDITIONAL RESOURCES

For additional information on acquisition terms, or terms not defined, please refer to DoD Directives, available on the Internet at http://www.esd.whs.mil/Directives/issuances/dodd. DoD Instruction 5000.02, Operation of the Adaptive Acquisition Framework is available at https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500002p.pdf?ver=2020-01-23-144114-093 and the Defense Acquisition Guidebook is available at https://www.dau.edu/tools/dag.

Systems by Contractor

4K Solutions
- Integrated Tactical Network (ITN)

4M Research
- Global Combat Support System-Army (GCSS-Army)

60° Pharmaceuticals
- Warfighter Protection and Acute Care (WPAC)

AASKI Technologies: A MAG Aerospace Company
- Guardrail Common Sensor (GRCS)
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

AASKI Technology
- Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS)

Abbott Point of Care
- Warfighter Brain Health (WBH)

Acambis plc
- Chemical, Biological, Radiological and Nuclear Medical — BIO2

Accurate Energetic
- Artillery Ammunition

Ace Electronics Defense Systems
- Joint Battle Command-Platform (JBC-P)

AcelRx Pharmaceuticals
- Warfighter Protection and Acute Care (WPAC)

Acrow
- Military Bridging Systems

Acrow Global Limited
- Military Bridging Systems

Action Manufacturing
- Artillery Ammunition
- Hydra-70 2.75-Inch Rocket Systems

Adams Communication and Engineering Technology, Inc.
- Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS)
- Fixed Wing
- Guardrail Common Sensor (GRCS)

ADSI
- High Mobility Engineer Excavator Type I and Type III (HMEE)

AECOM Management Services
- Military Bridging Systems

Aerojet Rocketdyne
- Stinger Block I with Proximity Fuze (PROX)

Agile Defense
- Games for Training (GFT)

Aimpoint Inc.
- Multi-purpose Anti-armor Anti-personnel Weapon System (MAAWS) — M3E1

Airbus Helicopter, Inc.
- Lakota – UH-72A/B Light Utility Helicopter (LUH)

Alion Science and Technology
- Army Watercraft Systems (AWS)

Allison Transmission
- Abrams Main Battle Tank

AlphaMicron
- Soldier Protection System (SPS)

AM General
- High Mobility Multipurpose Wheeled Vehicle (HMMWV)

American Ordnance
- Artillery Ammunition
- Mortar Weapon Systems

Amivas
- Warfighter Protection and Acute Care (WPAC)

Amtec Corporation
- Artillery Ammunition

AMTEC Corporation
- Ammunition – Medium Caliber

AMETEK-ORTEC
- Man-portable Radiological Detection System (MRDS)

Anniston Army Depot
- Abrams Main Battle Tank
- Military Bridging Systems

Anritsu
- Test Equipment Modernization (TEMOD)

Applied Visual Technology Simulation
- Aviation Combined Arms Tactical Trainer (AVCATT)
- Close Combat Tactical Trainer (CCTT)

Aranea Solutions, Inc.
- Airborne Reconnaissance Low (ARL)

Arcturus UAV
- Future Tactical Unmanned Aircraft System (FTUAS)

Argon ST: A Boeing Company
- Guardrail Common Sensor (GRCS)

Armtec Defense Technologies
- Artillery Ammunition

Arcos Medical, Inc.
- Warfighter Expeditionary Medicine and Treatment (WEMT)

Aruba
- Signal Modernization

Ashvattha Therapeutics, LLC
- Warfighter Expeditionary Medicine and Treatment (WEMT)

Asynchrony Labs
- Man-portable Radiological Detection System (MRDS)

AT&T Government Solutions
- Installation Information Infrastructure Modernization Program (I3MP)

Avaya Federal Solutions
- Installation Information Infrastructure Modernization Program (I3MP)

Avox Systems
- Joint Service Aircrew Mask – Rotary Wing (JSAM – RW)

BAE Systems
- Aircraft Survivability Equipment
- Armored Multi-Purpose Vehicle
- Artillery Ammunition

- Bradley Fighting Vehicle — M2A4
- Distributed Common Ground System-Army (DCGS-A)
- Heavy Equipment Recovery Combat Utility Lift and Evacuation System (HERCULES) Improved Recovery Vehicle – M88A2
- High Mobility Engineer Excavator Type I and Type III (HMEE)
- Hydra-70 2.75-Inch Rocket Systems
- Lightweight Towed Howitzer – M777A2
- Medium Dozer – T-9
- Mine Protection Vehicle Family (MPVF)
- Paladin FOV
- Range Radar Replacement Program (RRRP)
- Unified Command Suite (UCS)

Banyan Biomarkers
- Warfighter Brain Health (WBH)

Barrett Firearms Manufacturing, Inc.
- Precision Weapons – Individual Weapons (IW)

Battelle Memorial Institute
- Army Watercraft Systems (AWS)
- Chemical, Biological, Radiological and Nuclear Medical — Chemical Defense Pharmaceuticals

Bausch Health Companies, Inc.
- Chemical, Biological, Radiological and Nuclear Medical — Chemical Defense Pharmaceuticals

Bechtel Parsons Blue Grass
- Assembled Chemical Weapons Alternatives (ACWA)

Bechtel Pueblo
- Assembled Chemical Weapons Alternatives (ACWA)

Bell
- Future Attack Reconnaissance Aircraft (FARA)
- Future Long Range Assault Aircraft (FLRAA)

Berg
- Force Provider Expeditionary (FPE)

Bethel Industries
- Soldier Protection System (SPS)

BioFire Defense, LLC
- Chemical, Biological, Radiological and Nuclear Medical — Diagnostics

Birdon America Inc.
- Military Bridging Systems

Blue Sky Mast
- Signal Modernization

BodeVet, Inc.
- Warfighter Protection and Acute Care (WPAC)

Boeing
- Apache Attack Helicopter – AH-64D/E
- Avenger Air Defense System
- Chinook – CH-47F
- Defense Enterprise Wideband SATCOM System (DEWSS)
- Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS)
- Guradrail Common Sensor (GRCS)
- Maneuver Short-Range Air Defense (M-SHORAD)
- Signal Modernization

Bohemia Interactive Simulations
- Games for Training (GFT)

Booz Allen Hamilton
- Common Hardware Systems (CHS)
- Distributed Common Ground System-Army (DCGS-A)
- Unified Command Suite (UCS)

Bowhead
- Common Hardware Systems (CHS)
- Joint Battle Command-Platform (JBC-P)

Broshuis B.V.
- Enhanced Heavy Equipment Transporter System (EHETS)

Bruker Detection Corporation
- Man-portable Radiological Detection System (MRDS)

Buffalo Turbine
- Mine Protection Vehicle Family (MPVF)

ByLight/Metova
- Persistent Cyber Training Environment (PCTE)

CACI
- Distributed Common Ground System-Army (DCGS-A)
- Integrated Personnel and Pay System-Army (IPPS-A)
- Medical Communications for Combat Casualty Care (MC4)
- Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) – Stryker Sensor Suites
- Unified Command Suite (UCS)

Cangene Corporation
- Chemical, Biological, Radiological and Nuclear Medical — BIO2

Carahsoft Technology Corporation
- General Fund Enterprise Business System (GFEBS)

Case New Holland
- High Mobility Engineer Excavator Type I and Type III (HMEE)

Caterpillar, Inc.
- Medium Dozer – T-9
- Motor Grader – 120M
- Scraper — 621G

Cellphire, Inc.
- Warfighter Protection and Acute Care (WPAC)

Ceradyne, Inc.
- Soldier Protection System (SPS)

Chemring Sensors & Electronic Systems
- Joint Biological Tactical Detection System (JBTDS)
- Next Generation Chemical Detector (NGCD)

Cisco Systems
- Signal Modernization

CodeMettle
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)
- Unified Network Operations (UNO)

Cole Engineering
- Persistent Cyber Training Environment (PCTE)

Systems by Contractor

Cole Engineering and Services Incorporated
- Aviation Combined Arms Tactical Trainer (AVCATT)
- Reconfigurable Virtual Collective Trainer (RVCT)

Collins Aerospace
- Aviation Combined Arms Tactical Trainer (AVCATT)
- Handheld, Manpack, and Small Form Fit (HMS)
- Mounted Assured Positioning, Navigation, and Timing (PNT) System (MAPS)
- Tactical Unmanned Aircraft System (TUAS) – RQ-7Bv2 Shadow

Colsa
- Persistent Cyber Training Environment (PCTE)

CONCO
- Hydra-70 2.75-Inch Rocket Systems

Connectec
- Mortar Weapon Systems

Critical Solutions International, Inc.
- Mine Protection Vehicle Family (MPVF)

Cubic Defense Applications
- Instrumentable-Multiple Integrated Laser Engagement System (I-MILES)

Cubic/DTECH
- Signal Modernization

Cubic/GATR
- Sustainment Tactical Network (STN)

Cummins
- Bradley Fighting Vehicle — M2A4

Cummins Power Generation
- Tactical Electric Power (TEP)

DTECH Labs
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

Daimler Trucks North America LLC/ Freightliner
- Line Haul Tractor

Danbury Mission Technologies
- Aircraft Survivability Equipment

Data Machines Corporation
- Next Generation Biometric Collection Capability (NXGBCC)

Day & Zimmerman
- Artillery Ammunition
- Mortar Weapon Systems

Dell
- Distributed Common Ground System-Army (DCGS-A)

Detroit Diesel
- Line Haul Tractor

DCS Corporation
- Joint Warning and Reporting Network 2 (JWARN 2)

DOK-ING
- Robotic Mine Flail — M160

DRS
- Bradley Fighting Vehicle — M2A4
- Lightweight Towed Howitzer – M777A2
- Sustainment Tactical Network (STN)
- Third Generation Forward Looking Infrared (3GEN FLIR)

DRS Network & Imaging Systems
- Military Bridging Systems

DRS Sustainment Systems, Inc.
- Maneuver Short-Range Air Defense (M-SHORAD)

DynCorp International
- Fixed Wing

Dynetics
- Calibration Sets (CALSETS)
- Indirect Fire Protection Capability (IFPC) Increment 2

DynPort Vaccine
- Chemical, Biological, Radiological and Nuclear (CBRN) Medical — BIO1

Eagle Industries
- Soldier Protection Systems (SPS)

Elbit Systems of America
- Enhanced Night Vision Goggle – Binocular (ENVG-B)
- Mortar Weapon Systems

Emergent BioSolutions
- Chemical, Biological, Radiological and Nuclear Medical — BIO2
- Chemical, Biological, Radiological and Nuclear Medical — Chemical Defense Pharmaceuticals
- Warfighter Protection and Acute Care (WPAC)

Engense
- Soldier Protection System (SPS)

Envistacom
- Phoenix E-Model Ground Satellite Terminal
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

Ersi
- Distributed Common Ground System-Army (DCGS-A)

Fabrique National Manufacturing, LLC
- Small Arms – Crew Served Weapons (CSW)

Fast-Track Drugs and Biologics, LLC
- Warfighter Protection and Acute Care (WPAC)

Fibrotex USA
- Ultra Lightweight Camouflage Net System (ULCANS)

Fidelity Technologies Corporation
- Tactical Electric Power (TEP)

Flexible Concepts
- Mortar Weapon Systems

FLIR Detection Inc.
- Next Generation Chemical Detector (NGCD)

FLIR Systems
- Common Robotic System – Heavy (CRS-H)
- Man Transportable Robotic System Increment II (MTRS Inc II)

- Soldier Borne Sensor (SBS)

Florida Armor LLC
- Soldier Protection System (SPS)

Fluke Corp.
- Calibration Sets (CALSETS)

FN America, LLC
- Small Arms – Crew Served Weapons (CSW)

Galvion
- Soldier Protection System (SPS)

GATR
- Transportable Tactical Command Communications (T2C2)

Gayston Corporation
- Mortar Weapon Systems

General Atomics, ASI
- Endurance Unmanned Aircraft Systems (EUAS) – MQ-1C Gray Eagle/ER

General Dynamics
- Air and Missile Defense Planning and Control System (AMDPCS)
- Distributed Common Ground System-Army (DCGS-A)
- Handheld, Manpack, and Small Form Fit (HMS)
- Hydra-70 2.75-Inch Rocket Systems
- Instrumentable-Multiple Integrated Laser Engagement System (I-MILES)
- Integrated Tactical Network (ITN)
- Mortar Weapon Systems
- Signal Modernization
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

General Dynamics European Land Systems
- Military Bridging Systems

General Dynamics Information Technology
- Installation Information Infrastructure Modernization Program (I3MP)
- Unified Network Operations (UNO)

General Dynamics Land Systems
- Abrams Main Battle Tank
- Maneuver Short-Range Air Defense (M-SHORAD)
- Military Bridging Systems
- Mine Protection Vehicle Family (MPVF)
- Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) – Stryker Sensor Suites
- Stryker Brigade Combat Team (SBCT)
- Small Multipurpose Equipment Transport (S-MET)

General Dynamics Land Systems-Canada
- Mine Protection Vehicle Family (MPVF)

General Dynamics Mission Systems
- Army Standard Family of Rigid Wall Shelters (ASF-RWS)
- Common Hardware Systems (CHS)
- Future Army System of Integrated Targets (FASIT)
- Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT)

General Dynamics One Source
- Combat Training Center-Instrumentation System (CTC-IS)

General Dynamics Ordnance and Tactical Systems
- Ammunition – Medium Caliber
- Ammunition – Large Caliber
- Artillery Ammunition
- Hydra-70 2.75-Inch Rocket Systems
- Next Generation Squad Weapons (NGSW)
- Small Arms – Crew Served Weapons (CSW)

General Electric
- Black Hawk Utility Helicopter – UH/HH-60M

General Motors Defense, LLC
- Infantry Squad Vehicle (ISV)

Gentex Corporation
- Soldier Protection System (SPS)

Georgia Tech Applied Research Corporation
- Aircraft Survivability Equipment

Gilead Sciences
- Chemical, Biological, Radiological and Nuclear Medical — BIO2

Global Ordnance
- Ammunition – Medium Caliber

Globe Tech
- Mine Protection Vehicle Family (MPVF)

Goodrich
- Chinook – CH-47F

GPS Source
- Mounted Assured Positioning, Navigation, and Timing (PNT) System (MAPS)

Gulfstream
- Fixed Wing

Harris
- Enhanced Night Vision Goggle (ENVG)
- Joint Battle Command-Platform (JBC-P)

HDT Global
- Force Provider Expeditionary (FPE)

HDT-Manufacture
- Containerized Weapon System (CWS)

HP
- Distributed Common Ground System-Army (DCGS-A)

Honeywell
- Abrams Main Battle Tank
- Chinook – CH-47F
- Endurance Unmanned Aircraft Systems (EUAS) – MQ-1C Gray Eagle/ER
- Lightweight Towed Howitzer – M777A2
- Signal Modernization

Hoverfly
- Integrated Tactical Network (ITN)

Systems by Contractor

Humacyte, Inc.
- Warfighter Expeditionary Medicine and Treatment (WEMT)

Hydrema
- Mine Protection Vehicle Family (MPVF)

IAP Inc.
- Defense Enterprise Wideband SATCOM System (DEWSS)

IBM
- Distributed Common Ground System-Army (DCGS-A)

ICF
- Force Provider Expeditionary (FPE)

InBios International, Inc.
- Warfighter Protection and Acute Care (WPAC)

Infrascan
- Warfighter Brain Health (WBH)

INMARSAT Government
- Signal Modernization

InSAP
- Global Combat Support System-Army (GCSS-Army)

Integrated Solutions for Systems, Inc.
- Assured Positioning, Navigation, and Timing (APNT) — Dismounted APNT System (DAPS)

International Business Machines
- General Fund Enterprise Business System (GFEBS)

Invariant Corporation
- Containerized Weapon System (CWS)

Invictus International Consulting
- Persistent Cyber Training Environment (PCTE)

Janssen
- Warfighter Protection and Acute Care (WPAC)

JANUS Research Group
- Phoenix E-Model Ground Satellite Terminal
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

JCB
- High Mobility Engineer Excavator Type I and Type III (HMEE)

Johns Hopkins University
- Persistent Cyber Training Environment (PCTE)

Johns Hopkins University Applied Physics Laboratory
- Defense Enterprise Wideband SATCOM System (DEWSS)
- Unified Network Operations (UNO)

Joint Systems Manufacturing Center
- Abrams Main Battle Tank

Junghans
- Artillery Ammunition

kaleo, Inc.
- Chemical, Biological, Radiological and Nuclear Medical — Chemical Defense Pharmaceuticals

KDH Defense Systems
- Soldier Protection System (SPS)

KeraNetics
- Warfighter Expeditionary Medicine and Treatment (WEMT)

Keysight Technologies, Inc.
- Calibration Sets (CALSETS)
- Test Equipment Modernization (TEMOD)

King Aerospace
- Fixed Wing

KLAS Telecom
- Integrated Tactical Network (ITN)
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

Knights Armament Company
- Family of Weapon Sights – Sniper (FWS-S)
- Precision Weapons – Individual Weapons (IW)

Kongsberg Defense & Aerospace
- Common Remotely Operated Weapon Station (CROWS)

L3
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

L-3 Communications Aerospace Systems
- Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS)

L3 Communications Systems
- Distributed Common Ground System-Army (DCGS-A)

L3 Communications Systems West
- Guardrail Common Sensor (GRCS)

L3 Fuzing and Ordnance Systems
- Mortar Weapon Systems

L3Harris
- Artillery Ammunition
- Defense Enterprise Wideband SATCOM System (DEWSS)
- Enhanced Night Vision Goggle - Binocular (ENVG-B)
- Future Tactical Unmanned Aircraft System (FTUAS)
- Handheld, Manpack, and Small Form Fit (HMS)
- Next Generation Squad Weapons (NGSW)
- Phoenix E-Model Ground Satellite Terminal
- Screening Obscuration Module (SOM)
- Signal Modernization
- Small Tactical Optical Rifle Mounted (STORM) — Laser Range Finder
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)
- Third Generation Forward Looking Infrared (3GEN FLIR)
- Transportable Tactical Command Communications (T2C2)

- Unified Command Suite (UCS)
- Unified Network Operations (UNO)

L3 Harris, Combat Propulsion Systems
- Bradley Fighting Vehicle — M2A4

L-3 Harris MID
- Fixed Wing

L3Harris Technologies
- Endurance Unmanned Aircraft Systems (EUAS) – MQ-1C Gray Eagle/ER

L3 Technologies
- Apache Attack Helicopter – AH-64D/E
- Tactical Unmanned Aircraft System (TUAS) – RQ-7Bv2 Shadow

L3 Warrior
- Enhanced Night Vision Goggle (ENVG)

Leading Technology Composites Inc.
- Soldier Protection System (SPS)

Leidos
- Advanced Field Artillery Tactical Data System (AFTADS)
- Airborne Reconnaissance Low (ARL)
- Distributed Common Ground System-Army (DCGS-A)
- Fixed Wing

Lewis Engineering Corporation
- Mortar Weapon Systems

Leonardo DRS
- Enhanced Night Vision Goggle (ENVG)
- Family of Weapon Sights – Crew Served (FWS-CS)
- Family of Weapon Sights – Individual (FWS-I)
- Joint Battle Command-Platform (JBC-P)
- Joint Effects Targeting System (JETS) Target Location Designation System (TLDS)
- Military Bridging Systems

Letterkenny Army Depot
- Force Provider Expeditionary (FPE)

Lex Products Corporation - LEX TM3
- Force Provider Expeditionary (FPE)

Lifelens
- Warfighter Health, Performance, and Evacuation (WHPE)

Linchpin Solutions
- Transportable Tactical Command Communications (T2C2)

Lite Coms/AVL
- Phoenix E-Model Ground Satellite Terminal

LMI
- Army Vantage
- Global Combat Support System-Army (GCSS-Army)

Loc Performance
- Bradley Fighting Vehicle — M2A4

Lockheed Martin
- Apache Attack Helicopter – AH-64D/E
- Army Integrated Air and Missile Defense (AIAMD)
- Distributed Common Ground System-Army (DCGS-A)
- Guardrail Common Sensor (GRCS)
- Guided Multiple Launch Rocket System (GMLRS) Dual-Purpose Improved Conventional Munition/ Unitary/Alternative Warhead
- HELLFIRE Family of Missiles
- High Mobility Artillery Rocket System (HIMARS) – M142
- Instrumentable-Multiple Integrated Laser Engagement System (I-MILES)
- Javelin Close Combat Missile System – Medium (CCMS-M)
- Joint Air-to-Ground Missile (JAGM)
- Multifunction Electronic Warfare – Air Large (MFEW-AL)
- Multiple Launch Rocket System (MLRS) – M270A1
- PATRIOT Advanced Capability-3 (PAC-3)
- Precision Strike Missile (PrSM)
- Range Radar Replacement Program (RRRP)
- Sentinel – AN/MPQ-64 A3/A4
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

Lockheed Martin Corporation, Rotary and Mission Systems
- Counterfire Radar – AN/TPQ-53
- Close Combat Tactical Trainer (CCTT)

Lockheed Martin Missiles and Fire Control
- Army Tactical Missile Systems (ATACMS)

Lockheed Martin-Sippican
- Stinger Block I with Proximity Fuze (PROX)

Longbow LLC
- Apache Attack Helicopter – AH-64D/E

Mandus Group
- Mobile Maintenance Equipment Systems (MMES)

ManTech
- Distributed Common Ground System-Army (DCGS-A)
- Persistent Cyber Training Environment (PCTE)

Martin UAV
- Future Tactical Unmanned Aircraft System (FTUAS)

Massachusetts Institute of Technology, Lincoln Laboratory (Cambridge, MA)
- Warfighter Health, Performance, and Evacuation (WHPE)

Matech Industries
- Mortar Weapon Systems

Maxar Technologies, Inc.
- Synthetic Training Environment – Information Systems (STE-IS)

McAlester Army Ammunition Plant
- Ammunition – Medium Caliber

Systems by Contractor

Meggitt Training Systems
- Future Army System of Integrated Targets (FASIT)

Meridian Medical Technologies
- Chemical, Biological, Radiological and Nuclear Medical — Chemical Defense Pharmaceuticals

Meritor
- Line Haul Tractor

Microsoft
- Distributed Common Ground System-Army (DCGS-A)
- Integrated Visual Augmentation System (IVAS) Squad Immersive Virtual Trainer
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

MIL Corporation
- Unified Command Suite (UCS)

MITRE
- Distributed Common Ground System-Army (DCGS-A)
- Persistent Cyber Training Environment (PCTE)

Motorola, Inc.
- Unified Command Suite (UCS)

N2
- Family of Weapon Sights – Sniper (FWS-S)

NAL Research Corporation
- Assured Positioning, Navigation, and Timing (APNT) — Dismounted APNT System (DAPS)

Nammo Pocal
- Artillery Ammunition
- Mortar Weapon Systems

Nanohmics
- Warfighter Health, Performance, and Evacuation (WHPE)

Naval Air Warfare Center Aircraft Division
- Unified Command Suite (UCS)

Naval Information Warfare Center Atlantic
- Persistent Cyber Training Environment (PCTE)

Navigator Development Group, Inc.
- Aircraft Survivability Equipment

NCI
- Installation Information Infrastructure Modernization Program (I3MP)

NetApp
- Distributed Common Ground System-Army (DCGS-A)

Networks Electronic Company
- Stinger Block I with Proximity Fuze (PROX)

Nisgaa Tek, LLC
- Installation Information Infrastructure Modernization Program (I3MP)

Northrop Grumman Corporation
- Airborne Reconnaissance Low (ARL)
- Air and Missile Defense Planning and Control System (AMDPCS)
- Aircraft Survivability Equipment (ASE)
- Ammunition – Medium Caliber
- Army Integrated Air and Missile Defense (AIAMD)
- Defense Enterprise Wideband SATCOM System (DEWSS)
- Forward Area Air Defense Command and Control (FAAD C2)
- Guardrail Common Sensor (GRCS)
- Joint Tactical Ground Stations (JTAGS)
- Lightweight Laser Designator Rangefinder (LLDR)
- Rocket, Artillery, Mortar (RAM) Warn

Northrop Grumman Defense Systems
- Ammunition – Medium Caliber
- Ammunition – Large Caliber

Northrop Grumman Information Technology, Inc.
- Guardrail Common Sensor (GRCS)

Northrop Grumman Mission Systems
- Guardrail Common Sensor (GRCS)

Northrop Grumman Technical Services
- Fixed Wing

Oculogica
- Warfighter Brain Health (WBH)

Olin Winchester
- Ammunition – Small Caliber

Ology Bioservices
- Chemical, Biological, Radiological and Nuclear Medical — Chemical Defense Pharmaceuticals

Ophirex, Inc.
- Warfighter Protection and Acute Care (WPAC)

Optics 1
- Laser Target Locator Module II (LTLM II)
- Small Tactical Optical Rifle Mounted (STORM) — Laser Range Finder

Optimal Solutions and Technology
- Persistent Cyber Training Environment (PCTE)

Oracle
- Distributed Common Ground System-Army (DCGS-A)

Orbital Alliant Techsystems, Inc.
- Ammunition – Precision Guidance Kit (PGK)

Oshkosh
- Joint Light Tactical Vehicles (JLTV)

Oshkosh Defense
- Enhanced Heavy Equipment Transporter System (EHETS)
- Family of Medium Tactical Vehicles (FMTV)
- Heavy Expanded Mobility Tactical Truck (HEMTT) Extended Service Program
- Military Bridging Systems
- Palletized Load System (PLS) and PLS Extended Service Program (ESP)

Pacific Star (PacStar) Communications
- Signal Modernization
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)
- Transportable Tactical Command Communications (T2C2)
- Unified Network Operations (UNO)

Palantir
- Army Vantage
- Distributed Common Ground System-Army (DCGS-A)

PC Connection Public Sector Solutions
- Games for Training (GFT)

PD Systems
- Tactical Electric Power (TEP)

Pearson Engineering Limited
- Military Bridging Systems

Perspecta Labs
- Unified Network Operations (UNO)

Pine Bluff Arsenal
- Chemical Biological Protective Shelter (CBPS) — M8E1
- Chemical, Biological, Radiological, Nuclear Dismounted Reconnaissance Systems (CBRN DRS)
- Mortar Weapon Systems
- Warfighter Health, Performance, and Evacuation (WHPE)

Phoenix Defense
- Joint Land Component Constructive Training Capability (JLCCTC)

Pinnacle Solutions, Inc.
- Games for Training (GFT)

PM Ground Soldier
- Mortar Weapon Systems

Point Blank Protective Apparel and Uniforms
- Soldier Protection System (SPS)

PPD
- Warfighter Protection and Acute Care (WPAC)

Pyrotechnique by Grucci
- Artillery Ammunition

QED
- Distributed Common Ground System-Army (DCGS-A)

QinetiQ North America
- Common Robotic System – Heavy (CRS-I)

Quantitech, Inc.
- Aircraft Survivability Equipment

Rafa Laboratories
- Chemical, Biological, Radiological and Nuclear Medical — Chemical Defense Pharmaceuticals

Raydon Corporation
- Reconfigurable Virtual Collective Trainer (RVCT)

Raytheon
- Army Integrated Air and Missile Defense (AIAMD)
- Distributed Common Ground System-Army (DCGS-A)
- Electronic Warfare Planning and Management Tool (EWPMT)
- Improved Target Acquisition System (ITAS)
- Javelin Close Combat Missile System – Medium (CCMS-M)
- Lower Tier Air and Missile Defense Sensor (LTAMDS)
- PATRIOT Advanced Capability-3 (PAC-3)
- Sentinel – AN/MPQ-64 A3/A4
- Signal Modernization

Raytheon Missiles & Defense
- Excalibur Precision 155 mm Projectiles
- Land-based Phalanx Weapon System (LPWS)
- Maneuver Short-Range Air Defense (M-SHORAD)
- Stinger Block I with Proximity Fuze (PROX)
- Third Generation Forward Looking Infrared (3GEN FLIR)
- Tube-Launched, Optically Tracked, Wireless-Guided (TOW) Missiles

Raytheon Technologies
- Indirect Fire Protection Capability (IFPC) Increment 2

Raytheon Vision Systems
- Third Generation Forward Looking Infrared (3GEN FLIR)

Ready One Industries
- Force Provider Expeditionary (FPE)

Redhat
- Distributed Common Ground System-Army (DCGS-A)

Red River Army Depot
- High Mobility Multipurpose Wheeled Vehicle (HMMWV)

Remington Arms Company, LLC
- Precision Weapons – Individual Weapons (IW)

Research Innovations Inc.
- Cyber Situational Understanding (Cyber SU)

Riptide Software
- Future Army System of Integrated Targets (FASIT)

Riverbed Technology
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

Rock Island Arsenal Joint Manufacturing & Technology Center
- Enhanced Heavy Equipment Transporter System (EHETS)
- High Mobility Multipurpose Wheeled Vehicle (HMMWV)
- Mobile Maintenance Equipment Systems (MMES)

Rockwell Collins
- Chinook – CH-47F

Saab Defense and Security
- Future Army System of Integrated Targets (FASIT)

Saab Dynamics AB
- Multi-purpose Anti-armor Anti-personnel Weapon System (MAAWS) — M3E1

Systems by Contractor

Saab Training USA
- Instrumentable-Multiple Integrated Laser Engagement System (I-MILES)

SAIC
- Aircraft Survivability Equipment

Scandinavian Biopharma
- Warfighter Protection and Acute Care (WPAC)

Scientific Research Corporation
- Cyber Environment Replication (CER)

SevTech
- Distributed Common Ground System-Army (DCGS-A)

Sierra Nevada Corporation
- Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS)
- Fixed Wing
- Integrated Tactical Network (ITN)
- Tactical Unmanned Aircraft System (TUAS) – RQ-7Bv2 Shadow
- Warfighter Health, Performance, and Evacuation (WHPE)

Sierra Nevada Corporation Electronic and Information Systems
- Guardrail Common Sensor (GRCS)

Sierra Nevada Corporation Integrated Mission Systems
- Guardrail Common Sensor (GRCS)

Sig Sauer
- Next Generation Squad Weapons (NGSW)

Signature Science LLC
- Next Generation Chemical Detector (NGCD)

Sikorsky
- Black Hawk Utility Helicopter – UH/HH-60M
- Future Attack Reconnaissance Aircraft (FARA)
- Future Long Range Assault Aircraft (FLRAA)

Silvus Technologies
- Integrated Tactical Network (ITN)
- Signal Modernization

SimSpace
- Persistent Cyber Training Environment (PCTE)

Sius Target Systems
- Future Army System of Integrated Targets (FASIT)

Smartronix
- Unified Command Suite (UCS)

Smiths Detection
- Joint Chemical Agent Detector (JCAD)
- Next Generation Chemical Detector (NGCD)

Software, Simulation, Systems Engineering (S3I)
- Joint Battle Command-Platform (JBC-P)

Sosi
- Sustainment Tactical Network (STN)

Spectra
- Artillery Ammunition

SpectralMD
- Warfighter Expeditionary Medicine and Treatment (WEMT)

SRCTec
- Lightweight Counter Mortar Radar (LCMR) – AN/TPQ-50

Stark
- Tactical Unmanned Aircraft System (TUAS) – RQ-7Bv2 Shadow

State University of New York
- Warfighter Protection and Acute Care (WPAC)

Steven Aerospace and Defense Systems
- Guardrail Common Sensor (GRCS)

Strategic Systems
- Future Army System of Integrated Targets (FASIT)

STS
- Signal Modernization

Support Systems Associates, Inc.
- Fixed Wing

Synedgen, Inc.
- Warfighter Expeditionary Medicine and Treatment (WEMT)

Systems Engineering Solutions, Inc.
- Fixed Wing
- Guardrail Common Sensor (GRCS)

Takeda Pharmaceuticals
- Warfighter Protection and Acute Care (WPAC)

Tampa Microwave
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

Teksynap
- Installation Information Infrastructure Modernization Program (I3MP)

Telecommunications Systems, Inc
- Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)

TenCate Advanced Armor USA Inc.
- Soldier Protection System (SPS)

Textron
- Endurance Unmanned Aircraft Systems (EUAS) – MQ-1C Gray Eagle/ER
- Next Generation Squad Weapons (NGSW)

Textron Aviation
- Fixed Wing
- Guardrail Common Sensor (GRCS)

Textron Systems
- Future Tactical Unmanned Aircraft System (FTUAS)
- Tactical Unmanned Aircraft System (TUAS) – RQ-7Bv2 Shadow

Thales
- Man-portable Radiological Detection System (MRDS)

Thales Defense & Security, Inc.
- Handheld, Manpack, and Small Form Fit (HMS)

Theissen Training System
- Future Army System of Integrated Targets (FASIT)

TrellisWare
- Integrated Tactical Network (ITN)
- Man-portable Radiological Detection System (MRDS)

Tobyhanna Army Depot
- Mobile Maintenance Equipment Systems (MMES)

TRX Systems, Inc.
- Assured Positioning, Navigation, and Timing (APNT) — Dismounted APNT System (DAPS)

Tyonek
- 9/18/36K British Thermal Unit (BTU) Improved Environmental Control Units (9/18/36K IECU)

UAV Engines Limited
- Tactical Unmanned Aircraft System (TUAS) – RQ-7Bv2 Shadow

Ultra Defense Corporation
- Ammunition – Medium Caliber

Ultra Electronics
- Air and Missile Defense Planning and Control System (AMDPCS)
- Signal Modernization

University of Central Florida
- Persistent Cyber Training Environment (PCTE)

University of Maryland
- Warfighter Protection and Acute Care (WPAC)

University of Southern California
- Warfighter Expeditionary Medicine and Treatment (WEMT)

U.S. Ordnance
- Small Arms – Crew Served Weapons (CSW)

VAE
- Installation Information Infrastructure Modernization Program (I3MP)

Valley Tech Systems
- Guardrail Common Sensor (GRCS)

Vantage Robotics
- Soldier Borne Sensor (SBS)

Vascular Solutions Inc.
- Warfighter Protection and Acute Care (WPAC)

Veterans Corps of America
- Man-portable Radiological Detection System (MRDS)

ViaSat
- Joint Battle Command-Platform (JBC-P)
- Signal Modernization

Viavi Solutions, Inc.
- Test Equipment Modernization (TEMOD)

Vigor Works LLC
- Army Watercraft Systems (AWS)

Visionary Products, Inc.
- Radiological Detection System (RDS)

VMware
- Distributed Common Ground System-Army (DCGS-A)
- Persistent Cyber Training Environment (PCTE)

Vortex Optics
- Next Generation Squad Weapons (NGSW)

VT Miltope
- Mortar Weapon Systems

Watervliet Arsenal
- Mortar Weapon Systems

Wearable Artificial Organs
- Warfighter Expeditionary Medicine and Treatment (WEMT)

Westa
- Warfighter Protection and Acute Care (WPAC)

Wildflower International
- Installation Information Infrastructure Modernization Program (I3MP)

XMCO Inc.
- High Mobility Engineer Excavator Type I and Type III (HMEE)

Yoland Corp.
- Artillery Ammunition

Zantech IT Services, Inc.
- General Fund Enterprise Business System (GFEBS)

Zel Tech
- Future Army System of Integrated Targets (FASIT)

Zeta Associates Inc.
- Guardrail Common Sensor (GRCS)

Contractors by State

Alabama
- 4M Research
- Anniston Army Depot
- BAE Systems
- Boeing
- Colsa
- Cubic/GATR
- DRS
- DRS Network & Imaging Systems
- Dynetics
- GATR
- General Dynamics Ordnance and Tactical Systems
- HDT-Manufacture
- Integrated Solutions for Systems, Inc.
- Invariant Corporation
- Navigator Development Group, Inc.
- Northrop Grumman Corporation
- Pinnacle Solutions, Inc.
- Quantitech, Inc.
- SAIC
- Scientific Research Corporation
- Software, Simulation, Systems Engineering (S3I)
- Strategic Systems
- Support Systems Associates, Inc
- Systems Engineering Solutions, Inc.
- Tyonek
- VT Miltope

Arizona
- Boeing
- General Dynamics
- General Dynamics Mission Systems
- Honeywell
- L3 Communication Systems
- Phoenix Defense
- Raytheon
- Raytheon Missiles & Defense

Arkansas
- Aerojet Rocketdyne
- Lockheed Martin
- Lockheed Martin Missiles and Fire Control
- Pine Bluff Arsenal
- Spectra

California
- AcelRx Pharmaceuticals
- Anritsu
- Arcturus UAV
- Argon ST: A Boeing Company
- Armtec Defense Technologies
- Aruba
- Ashvattha Therapeutics, LLC
- BAE Systems
- Banyan Biomarkers
- Boeing
- Ceradyne, Inc.
- Cisco Systems
- Collins Aerospace
- Connectec
- Cubic Defense Applications
- DRS Network & Imaging Systems
- Esri
- General Atomics, ASI
- Gilead Sciences
- HP
- Keysight Technologies, Inc.
- L3
- N2
- NetApp
- Networks Electronic Company
- Northrop Grumman Corporation
- Northrop Grumman Information Technology
- Northrop Grumman Mission Systems
- Ophirex, Inc.
- Oracle
- Palantir
- Raytheon
- Raytheon Vision Systems
- Riverbed Technology
- Sierra Nevada Corporation Electronic and Information Systems
- Silvus Technologies
- Synedgen, Inc.
- TrellisWare
- University of Southern California
- Valley Tech Systems
- Vantage Robotics
- ViaSat
- VMware
- Wearable Artificial Organs

Colorado
- Bechtel Pueblo
- Birdon America Inc.
- GPS Source
- Lockheed Martin
- Maxar Technologies, Inc.
- Northrop Grumman Corporation

Connecticut
- Danbury Mission Technologies
- Goodrich
- Sikorsky

District of Columbia (DC)
- 60° Pharmaceuticals

Florida
- Agile Defense
- Applied Visual Technology Simulation
- Banyan Biomarkers
- Blue Sky
- Bohemia Interactive Simulations
- Cole Engineering
- Cole Engineering and Services Inc.
- DCS Corporation
- DRS
- Engense
- Florida Armor LLC
- General Dynamics
- General Dynamics Mission Systems
- General Dynamics One Source
- General Dynamics Ordnance and Tactical Systems
- Global Ordnance
- Harris
- Honeywell
- Hoverfly
- Knights Armament Company
- L3Harris
- Leonardo DRS
- Lex Products Corporation - LEX TM3
- Lockheed Martin
- Lockheed Martin Rotary and Mission Systems
- Longbow LLC
- Maxar Technologies, Inc.
- MITRE
- Northrop Grumman
- Ology Bioservices
- Optimal Solutions and Technology
- Phoenix Defense
- Point Blank Protective Apparel and Uniforms
- Raydon Corporation
- Raytheon
- Riptide Software
- Tampa Microwave
- Ultra Defense Corporation
- University of Central Florida
- Saab Defense and Security
- Saab Training USA
- Theissen Training System
- Zel Tech

Georgia
- 4K Solutions
- CodeMettle
- Envistacom
- Georgia Tech Applied Research Corporation

- Gulfstream
- JANUS Research Group
- JCB
- Meggitt Training Systems

Idaho
- TrellisWare

Illinois
- Abbott Point of Care
- Boeing
- Caterpillar, Inc.
- General Dynamics
- General Dynamics Ordnance and Tactical Systems
- Mandus Group
- Motorola, Inc.
- Northrop Grumman
- Raytheon
- Rock Island Arsenal Joint Manufacturing & Technology Center
- Sosi
- Takeda Pharmaceuticals

Indiana
- AECOM Management Services
- Allison Transmission
- AM General
- Cummins
- Flexible Concepts
- FLIR Detection Inc.
- Raytheon

Iowa
- American Ordnance
- Collins Aerospace
- Rockwell Collins

Kansas
- Day & Zimmerman
- Leading Technology Composites Inc.
- Textron Aviation

Kentucky
- Bechtel Parsons Blue Grass
- CONCO
- Fibrotex USA
- FLIR

Maine
- General Dynamics Ordnance and Tactical Systems

Maryland
- AASKI Technology
- Ace Electronics Defense Systems
- Adams Communication and Engineering Technology, Inc.
- Amivas
- BAE Systems
- BodeVet, Inc.
- Booz Allen Hamilton
- CACI
- Cellphire, Inc.
- DCS Corporation
- DynPort Vaccine
- Emergent BioSolutions
- Fast-Track Drugs and Biologics, LLC
- International Business Machines
- JANUS Research Group
- Johns Hopkins University
- Johns Hopkins University Applied Physics Laboratory
- Linchpin Solutions
- Lockheed Martin
- Matech Industries
- Meridian Medical Technologies
- MIL Corporation
- Naval Air Warfare Center Aircraft Division
- Northrop Grumman Corporation
- PC Connection Public Sector Solutions
- QED
- Sierra Nevada Corporation
- Sierra Nevada Corporation Integrated Mission Systems
- Smartronix
- Smiths Detection
- Telecommunications Systems, Inc
- Textron
- Textron Systems
- Thales Defense & Security, Inc.
- TRX Systems, Inc.
- University of Maryland
- Veterans Corps of America
- Viavi Solutions, Inc.
- Westa

Massachusetts
- Acambis plc
- Bruker Detection Corporation
- General Dynamics
- General Dynamics Mission Systems
- General Electric
- FLIR Systems
- Lockheed Martin-Sippican
- Massachusetts Institute of Technology, Lincoln Laboratory
- QinetiQ North America
- Raytheon
- Raytheon Technologies
- SimSpace

Michigan
- BAE Systems
- Detroit Diesel
- General Dynamics Land Systems
- General Motors Defense, LLC
- Globe Tech
- L3Harris, Combat Propulsion Systems
- Loc Performance
- Meritor
- XMCO Inc.

Minnesota
- Cummins Power Generation
- Northrop Grumman Defense Systems
- Orbital Alliant Techsystems, Inc.
- Vascular Solutions Inc.

Mississippi
- Stark

Missouri
- Asynchrony Labs
- DRS Sustainment Systems, Inc.
- Leonardo DRS
- Olin Winchester
- Northrop Grumman Corporation

Nevada
- Sierra Nevada Corporation
- U.S. Ordnance

New Hampshire
- BAE Systems
- L3Harris
- L3 Warrior
- Optics 1
- Sig Sauer

New Jersey
- AASKI Technologies: A MAG Aerospace Company
- AASKI Technology
- Acrow
- Bethel Industries
- Booz Allen Hamilton
- InSAP
- L3Harris
- MITRE
- Perspecta Labs
- Yoland Corp.

Contractors by State

New Mexico
- Raytheon Missiles & Defense
- Wildflower International

New York
- Amtec Corporation
- Avox Systems
- Buffalo Turbine
- IBM
- Lite Coms/AVL
- Lockheed Martin
- Lockheed Martin Corporation, Rotary and Mission Systems
- Oculogica
- Remington Arms Company, LLC
- SRCTec
- State University of New York
- Watervliet Arsenal

North Carolina
- Chemring Sensors & Electronic Systems
- Daimler Trucks North America LLC/ Freightliner
- Honeywell
- Humacyte, Inc.
- KDH Defense Systems
- KeraNetics
- Lite Coms/AVL
- Redhat
- PPD

Ohio
- AlphaMicron
- BAE Systems
- Battelle Memorial Institute
- Gayston Corporation
- HDT Global
- Joint Systems Manufacturing Center (JSMC)
- L3 Fuzing and Ordnance Systems
- L3Harris
- TenCate Advanced Armor USA Inc.

Oklahoma
- McAlester Army Ammunition Plant (MCAAP)

Oregon
- Daimler Trucks North America LLC/ Freightliner
- Pacific Star (PacStar) Communications
- Vigor Works LLC

Pennsylvania
- Action Manufacturing
- BAE Systems
- Boeing
- Fidelity Technologies Corporation
- General Dynamics
- General Dynamics Ordnance and Tactical Systems
- Gentex Corporation
- Infrascan
- Kongsberg Defense & Aerospace
- Letterkenny Army Depot
- Lifelens
- Nammo Pocal
- Tobyhanna Army Depot

Rhode Island
- Textron

South Carolina
- Critical Solutions International, Inc.
- Fabrique National Manufacturing, LLC
- FN America, LLC
- Naval Information Warfare Center Atlantic
- Sius Target Systems
- Steven Aerospace and Defense Systems

Tennessee
- Accurate Energetic
- AMETEK-ORTEC
- BAE Systems
- Barrett Firearms Manufacturing, Inc.

Texas
- Airbus Helicopter, Inc.
- Arcos Medical, Inc.
- BAE Systems
- Bell
- Dell
- DRS
- Elbit Systems of America
- King Aerospace
- L-3 Communications Aerospace Systems
- L-3 Harris MID
- Leonardo DRS
- Lewis Engineering Corporation
- Lockheed Martin
- Lockheed Martin Missiles and Fire Control
- Martin UAV
- Nanohmics
- Northrop Grumman Technical Services
- Raytheon
- Raytheon Missiles & Defense
- Ready One Industries
- Red River Army Depot
- Sev1Tech
- SpectralMD
- Ultra Electronics

Utah
- BioFire Defense, LLC
- L3 Communications Systems West
- L3Harris
- L3Harris Technologies
- L3 Technologies
- Visionary Products, Inc.

Vermont
- Galvion
- General Dynamics
- General Dynamics Ordnance and Tactical Systems

Virginia
- Adams Communications & Engineering Technology, Inc.
- Aimpoint Inc.
- Alion Science and Technology
- Aranea Solutions, Inc.
- AT7T Government Solutions
- Avaya Federal Solutions
- BAE Systems
- Booz Allen Hamilton
- Bowhead
- ByLight/Metova
- CACI
- Carahsoft Technology Corporation
- Collins Aerospace
- Cubic/DTECH
- Data Machines Corporation
- DCS Corporation
- DTECH Labs
- DynCorp International
- Eagle Industries
- Elbit Systems of America
- FLIR
- General Dynamics
- General Dynamics Information Technology
- General Dynamics Mission Systems
- Harris
- HDT-Manufacture
- IAP Inc.
- ICF
- INMARSAT Government
- Invictus International Consulting
- kaleo, Inc.
- KLAS Telecom
- L3Harris
- Leidos

- LMI
- ManTech
- NAL Research Corporation
- NCI
- Nisaa Tekm LLC
- Northrop Grumman Corporation
- Northrop Grumman Systems Corporation
- PD Systems
- PM Ground Soldier
- Pyrotechnique by Grucci
- Raytheon
- Research Innovations Inc.
- Signature Science LLC
- Sosi
- STS
- Teksynap
- VAE
- Zantech IT Services, Inc.
- Zeta Associates Inc.

Washington
- Berg
- Fluke Corp.
- InBios International, Inc.
- Microsoft
- Oshkosh Defense

Wisconsin
- AMTEC Corporation
- Case New Holland
- Oshkosh
- Oshkosh Defense
- Vortex Optics

INTERNATIONAL CONTRACTORS

Belgium
- Janssen

Canada
- Abbott Point of Care
- Bausch Health Companies, Inc.
- Cangene Corporation
- General Dynamics
- General Dynamics Land Systems-Canada
- General Dynamics Ordnance and Tactical Systems
- Ultra Electronics

Croatia
- DOK-ING

Denmark
- Hydrema

France
- Thales

Germany
- General Dynamics European Land Systems
- Junghans

Israel
- Rafa Laboratories

Netherlands
- Broshuis B.V.

Norway
- FLIR

South West Asia
- Sosi

Sweden
- Saab Dynamics AB
- Scandinavian Biopharma

United Kingdom
- Acrow Global Limited
- BAE Systems
- Pearson Engineering Limited
- Raytheon Missiles & Defense
- UAV Engines Limited

Points of Contact

9/18/36K British Thermal Unit (BTU) Improved Environmental Control Units (9/18/36K IECU)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Abrams Main Battle Tank
PEO Ground Combat Systems
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Advanced Field Artillery Tactical Data System (AFATDS)
PEO Command, Control, Communications-Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Air and Missile Defense Planning and Control System (AMDPCS)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Airborne Reconnaissance Low (ARL)
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Aircraft Survivability Equipment (ASE)
PEO Intelligence, Electronic Warfare and Sensors
6585 Surveillance Loop, Building 6002
Aberdeen Proving Ground, MD 21005

Ammunition – Large Caliber
JPEO Armaments and Ammunition
Building 1, Buffington Road
Picatinny Arsenal, NJ 07806

Ammunition – Medium Caliber
JPEO Armaments and Ammunition
Building 1, Buffington Road
Picatinny Arsenal, NJ 07806

Ammunition – Precision Guidance Kit
JPEO Armaments and Ammunition
Building 1, Buffington Road
Picatinny Arsenal, NJ 07806

Ammunition – Small Caliber
JPEO Armaments and Ammunition
Building 1, Buffington Road
Picatinny Arsenal, NJ 07806

Apache Attack Helicopter AH-64D/E
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Armored Multi-Purpose Vehicle
PEO Ground Combat Systems
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Army Integrated Air and Missile Defense (AIAMD)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Army Standard Family of Rigid Wall Shelters (ASF-RWS)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Army Tactical Missile Systems (ATACMS)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Army Vantage
PEO Enterprise Information Systems
9350 Hall Road
Building 1445, Room 159
Fort Belvoir, VA 22060

Army Watercraft Systems (AWS)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Artillery Ammunition
JPEO Armaments and Ammunition
Building 1, Buffington Road
Picatinny Arsenal, NJ 07806

Assembled Chemical Weapons Alternatives (ACWA)
PEO Assembled Chemical Weapons Alternatives
6160 Guardian Gateway
Aberdeen Proving Ground, MD 21005

Assured Positioning, Navigation, and Timing (APNT) — Dismounted APNT System (DAPS)
PEO Intelligence, Electronic Warfare and Sensors
6585 Surveillance Loop, Building 6002
Aberdeen Proving Ground, MD 21005

Assured Positioning, Navigation and Timing (APNT) — Mounted APNT System (MAPS)
PEO Intelligence, Electronic Warfare and Sensors
6585 Surveillance Loop, Building 6002
Aberdeen Proving Ground, MD 21005

Avenger Air Defense System
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Aviation Combined Arms Tactical Trainer (AVCATT)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Black Hawk Utility Helicopter UH/HH 60M
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Bradley Fighting Vehicle — M2A4
PEO Ground Combat Systems
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Calibration Sets (CALSETS)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Chemical Biological Protective Shelter (CBPS) — M8E1
JPEO for Chemical, Biological, and Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Chemical, Biological, Radiological, Nuclear Dismounted Reconnaissance Systems (CBRN DRS)
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Chemical, Biological, Radiological and Nuclear (CBRN) Medical — BIO1
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Chemical, Biological, Radiological and Nuclear Medical — BIO2
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Chemical, Biological, Radiological and Nuclear Medical — Chemical Defense Pharmaceuticals
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Chemical, Biological, Radiological and Nuclear Medical — Diagnostics
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Chinook Helicopter – CH-47F
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Close Combat Tactical Trainer (CCTT)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Common Hardware Systems (CHS)
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Combat Training Center-Instrumentation System (CTC-IS)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Common Remotely Operated Weapon Station (CROWS)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Common Robotic System – Heavy (CRS-H)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Common Robotic System – Heavy (CRS-I)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Containerized Weapon System (CWS)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Counterfire Radar – AN/TPQ-53
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Cyber Environment Replication (CER)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Cyber Situational Understanding (Cyber SU)
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Defense Enterprise Wideband SATCOM System (DEWSS)
PEO Enterprise Information Systems
9350 Hall Road
Building 1445, Room 159
Fort Belvoir, VA 22060

Distributed Common Ground System-Army (DCGS-A)
PEO Intelligence, Electronic Warfare and Sensors
6585 Surveillance Loop, Building 6002
Aberdeen Proving Ground, MD 21005

Early Entry Fluid Distribution System (E2FDS)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Electronic Warfare Planning and Management Tool (EWPMT)
PEO Intelligence, Electronic Warfare and Sensors
6585 Surveillance Loop, Building 6002
Aberdeen Proving Ground, MD 21005

Endurance Unmanned Aircraft Systems (EUAS) – MQ-1C Gray Eagle/ER
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Enhanced Heavy Equipment Transporter System (EHETS)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS)
PEO Intelligence, Electronic Warfare and Sensor
6585 Surveillance Loop, Building 6002
Aberdeen Proving Ground, MD 21005

Enhanced Night Vision Goggle (ENVG)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Points of Contact

Enhanced Night Vision Goggle - Binocular (ENVG-B)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Excalibur Precision 155 mm Projectiles
JPEO Armaments and Ammunition
Building 1, Buffington Road
Picatinny Arsenal, NJ 07806

Family of Medium Tactical Vehicles (FMTV)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Family of Weapon Sights – Crew Served (FWS-CS)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Family of Weapon Sights – Individual (FWS-I)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Family of Weapon Sights – Sniper (FWS-S)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Fixed Wing
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Force Provider Expeditionary (FPE)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Forward Area Air Defense Command and Control (FAAD C2)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Future Army System of Integrated Targets (FASIT)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Future Attack Reconnaissance Aircraft (FARA)
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Future Long Range Assault Aircraft (FLRAA)
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Future Tactical Unmanned Aircraft System (FTUAS)
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Games for Training (GFT)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

General Fund Enterprise Business System (GFEBS)
PEO Enterprise Information Systems
9350 Hall Road
Building 1445, Room 159
Fort Belvoir, VA 22060

Global Combat Support System – Army (GCSS-Army)
PEO Enterprise Information Systems
9350 Hall Road
Building 1445, Room 159
Fort Belvoir, VA 22060

Guardrail Common Sensor (GRCS)
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Guided Multiple Launch Rocket System (GMLRS) Dual-Purpose Improved Conventional Munition/ Unitary/ Alternative Warhead
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Handheld, Manpack and Small Form Fit (HMS)
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Heavy Equipment Recovery Combat Utility Lift and Evacuation System (HERCULES) Improved Recovery Vehicle – M88A2
PEO Ground Combat Systems
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Heavy Expanded Mobility Tactical Truck (HEMTT)/HEMTT Extended Service Program (ESP)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

HELLFIRE Family of Missiles
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

High Mobility Artillery Rocket System (HIMARS) M142
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

High Mobility Engineer Excavator Type I and Type III (HMEE)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

High Mobility Multipurpose Wheeled Vehicle (HMMWV)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Hydra-70 2.75 Inch Rocket Systems
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Improved Target Acquisition System (ITAS)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Indirect Fire Protection Capability (IFPC) Increment 2
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Infantry Squad Vehicle (ISV)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Installation Information Infrastructure Modernization Program (I3MP)
PEO Enterprise Information Systems
9350 Hall Road
Building 1445, Room 159
Fort Belvoir, VA 22060

Instrumentable-Multiple Integrated Laser Engagement System (I-MILES)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Integrated Personnel and Pay System Army (IPPS-A)
PEO Enterprise Information Systems
9350 Hall Road
Building 1445, Room 159
Fort Belvoir, VA 22060

Integrated Tactical Network (ITN)
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Integrated Visual Augmentation System (IVAS) Squad Immersive Virtual Trainer (SiVT)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Javelin Close Combat Missile System – Medium (CCMS-M)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Joint Air-to-Ground Missile (JAGM)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Joint Battle Command-Platform (JBC-P)
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Joint Biological Tactical Detection System (JBTDS)
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Joint Chemical Agent Detector (JCAD) — M4A1
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Joint Effects Targeting System (JETS) Target Location Designation System (TLDS)
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Joint Land Component Constructive Training Capability (JLCCTC)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Joint Light Tactical Vehicles (JLTV)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Joint Service Aircrew Mask Rotary Wing (JSAM RW)
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Joint Tactical Ground Stations (JTAGS)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Joint Warning and Reporting Network (JWARN) 2
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Lakota UH-72A/B Light Utility Helicopter (LUH)
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Land-based Phalanx Weapon System (LPWS)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Laser Target Locator Module II (LTLM II)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Points of Contact

Lightweight Counter Mortar Radar (LCMR) – AN/TPQ-50
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Lightweight Laser Designator Rangefinder (LLDR) AN/PED-1, AN/PED-1A, and AN/PED-1B
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Lightweight Towed Howitzer – M777A2
JPEO Armaments and Ammunition
Building 1, Buffington Road
Picatinny Arsenal, NJ 07806

Line Haul Tractor
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Lower Tier Air and Missile Defense Sensor (LTAMDS)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Man Transportable Robotic System Increment II (MTRS Inc II)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Warren, MI 48397

Man-portable Radiological Detection System (MRDS)
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Maneuver-Short Range Air Defense (M-SHORAD)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Medical Communications for Combat Casualty Care (MC4)
PEO Enterprise Information Systems
9350 Hall Road
Building 1445, Room 159
Fort Belvoir, VA 22060

Medium Dozer – T-9
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Warren, MI 48397

Military Bridging Systems
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Mine Protection Vehicle Family (MPVF)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Mobile Maintenance Equipment Systems (MMES)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Warren, MI 48397

Mortar Weapon Systems
JPEO Armaments and Ammunition
Building 1, Buffington Road
Picatinny Arsenal, NJ 07806

Motor Grader – 120M
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Multifunction Electronic Warfare – Air Large (MFEW-AL)
PEO Intelligence, Electronic Warfare and Sensors
6585 Surveillance Loop, Building 6002
Aberdeen Proving Ground, MD 21005

Multiple Launch Rocket System (MLRS) – M270A1
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Multi-purpose Anti-armor Anti-personnel Weapon System (MAAWS) — M3E1
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Nett Warrior (NW)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Next Generation Biometric Collection Capability (NXGBCC)
PEO Intelligence, Electronic Warfare and Sensors
6585 Surveillance Loop, Building 6002
Aberdeen Proving Ground, MD 21005

Next Generation Chemical Detector (NGCD)
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Next Generation Squad Weapons (NGSW)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) – Stryker Sensor Suites
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Optionally Manned Fighting Vehicle (OMFV)
PEO Ground Combat Systems
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Paladin Family of Vehicles (FOV) – M109A6 Paladin/M992A2 FAASV/M109A7 SPH/M992A3 CAT and ERCA
PEO Ground Combat Systems
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Palletized Load System (PLS) and PLS Extended Service Program (ESP)
PEO Combat Support and Combat Service
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

PATRIOT Advanced Capability-3 (PAC-3)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Persistent Cyber Training Environment (PCTE)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Phoenix E-Model Ground Satellite Terminal
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Precision Strike Missile (PrSM)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Precision Weapons — Individual Weapons (IW)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Radiological Detection System (RDS)
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen
Aberdeen Proving Ground
Edgewood, MD 21010

Range Radar Replacement Program (RRRP)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Reconfigurable Virtual Collective Trainer (RVCT)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Render Safe Sets, Kits, and Outfits (RS SKO)
JPEO Armaments and Ammunition
Building 1, Buffington Road
Picatinny Arsenal, NJ 07806

Robotic Combat Vehicles (RCVs)
PEO Ground Combat Systems
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Robotic Mine Flail — M160
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Warren, MI 48397

Rocket, Artillery, Mortar (RAM) Warn
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Scraper — 621G
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Screening Obscuration Module (SOM)
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Sentinel Radar – AN/MPQ-64 A3/A4
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Signal Modernization
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Small Arms – Crew Served Weapons (CSW)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Small Multipurpose Equipment Transport (S-MET)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Small Tactical Optical Rifle Mounted (STORM) — Laser Range Finder
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Soldier Borne Sensor (SBS) Immersive System
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Soldier Protection System (SPS)
PEO Soldier
5901 Putman Road
Building 328
Fort Belvoir, VA 22060

Stinger Block I with Proximity Fuze (PROX)
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Stryker Brigade Combat Team (SBCT)
PEO Ground Combat Systems
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Points of Contact

Sustainment Tactical Network (STN)
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Synthetic Training Environment – Information Systems (STE-IS)
PEO Simulation, Training and Instrumentation
12211 Science Drive
Orlando, FL 32826

Tactical Electric Power (TEP)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Tactical Network Transport – At the Halt (TNT-ATH) and On the Move (TNT-OTM)
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Tactical Unmanned Aircraft System (TUAS) – RQ-7Bv2 Shadow
PEO Aviation
5681 Wood Road
Redstone Arsenal, AL 35898

Test Equipment Modernization (TEMOD)
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Warren, MI 48397

Third Generation Forward Looking Infrared (3GEN FLIR)
PEO Intelligence, Electronic Warfare and Sensors
6585 Surveillance Loop, Building 6002
Aberdeen Proving Ground, MD 21005

Transportable Tactical Command Communications (T2C2)
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Tube-Launched, Optically Tracked, Wireless-Guided (TOW) Missiles
PEO Missiles and Space
5250 Martin Road
Redstone Arsenal, AL 35898

Ultra-Lightweight Camouflage Net System (ULCANS) Increment I
PEO Combat Support and Combat Service Support
6501 E. Eleven Mile Road
Detroit Arsenal, MI 48397

Unified Command Suite (UCS)
JPEO for Chemical, Biological, Radiological and Nuclear Defense
Aberdeen Proving Ground
Edgewood, MD 21010

Unified Network Operations (UNO)
PEO Command, Control, Communications–Tactical
6590 Reconnaissance Street
Aberdeen Proving Ground, MD 21005

Warfighter Brain Health (WBH)
U.S. Army Medical Research and Development Command
810 Schreider Street
Fort Detrick, MD 21702

Warfighter Expeditionary Medicine and Treatment (WEMT)
U.S. Army Medical Research and Development Command
810 Schreider Street
Fort Detrick, MD 21702

Warfighter Health, Performance, and Evacuation (WHPE)
U.S. Army Medical Research and Development Command
810 Schreider Street
Fort Detrick, MD 21702

Warfighter Protection and Acute Care (WPAC)
U.S. Army Medical Research and Development Command
810 Schreider Street
Fort Detrick, MD 21702









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