The soldier is the Army’s most deployed combat system and the essential weapon in the Army’s arsenal. Program Executive Office (PEO) Soldier was activated in October 2002 to equip the soldier as a system through centralized development, acquisition, fielding and sustainment of virtually everything the soldier wears or carries.

PEO Soldier is the first organization in U.S. Army history to be charged with the mission to treat the soldier as a system. All aspects of soldier equipment are integrated, modular, interoperable and mission-tailorable. This focused effort has led to the most lethal and survivable ground force in modern warfare.

**Project Manager Soldier Warrior**

Project Manager Soldier Warrior (PM SWAR) supports soldiers through the acquisition of integrated soldier systems. Current systems include Nett Warrior (formerly Ground Soldier), Air Soldier; Soldier Power, and Tactical Communication and Protective Systems. Project Manager Soldier Warrior’s product managers and directors develop and integrate components into complete systems designed to increase combat effectiveness, decrease combat load and improve mission flexibility.

**Product Manager Ground Soldier**

Nett Warrior (NW) builds upon Land Warrior as an integrated dismounted soldier situational awareness system for use during combat operations. The system provides unparalleled situational awareness and understanding to the dismounted soldier, allowing faster and more accurate decision making in the tactical fight. Nett Warrior reduces time on target, greatly reducing the risk of fratricide; allows for immediate feedback of battlefield effects; reduces the use of voice communication; clears the fog of battle by displaying a real-time common operating picture (COP); and provides immediate command and control.

The centerpiece capability of NW is the ability to graphically display the individual soldier’s location on a digital map. Additional soldiers’ locations are also graphically displayed through the Army Battle Command System, connected via a secure radio that sends and receives information. The system also connects the combat soldier to higher-echelon data and information products to assist the soldier in decision making and situational understanding. All of this is integrated in a graphical user interface that is user-defined, allowing soldiers to easily see, understand and interact in the method that best suits the user and his particular mission.

The physical subcomponents of NW include a display to provide the soldier’s information, a computer to process and populate the information on the screen, an interface device that allows user interaction with the system, a power source, an operating system to provide the system functionality to run tactical applications and Battle Command, and a networked radio transmitter/receiver device to send and receive information. As an integrated system on the combat soldier, size and weight are kept to a minimum with the ruggedness for combat operations including water immersion. NW has a slim and flexible form factor that can accommodate the shooter’s preference method of employing the system with the variety of different mission profiles and soldier configurations.

NW entered the technology development phase in February 2009 and recently achieved Milestone C. During fiscal year (FY) 2012, the program was scheduled to award low-rate initial production contracts.

**Product Manager Air Warrior**

Air Warrior (AW) is a modular, integrated, rapidly reconfigurable combat aircrew ensemble that saves lives and maximizes Army aircrew mission performance. More than 20,000 Army aircrew members have been equipped with the system. AW increases personal protection and mission performance and consists of a primary survival gear carrier that includes first aid, survival, signaling and communications equipment; body armor tailored for the unique requirements of the aircrew member; the aircrew integrated helmet system including a Communication Enhancement and Protection System (CEPS) that provides a helmet hear-through capability; over-water survival equipment, including personal flotation, an emergency escape breathing device, and body-mounted life raft; and the Microclimate Cooling System (MCS), a mix of platform-mounted and soldier-mounted cooling gear that increases mission endurance under extreme heat by more than 350 percent. The MCS has been adopted for use by ground forces including Stryker, Abrams, Bradley, M9 ACE, Navy, Marine Corps and foreign militaries, with more than 16,000 systems fielded to date. The Portable Helicopter Oxygen Delivery System (PHODS) is a soldier-worn system that delivers compressed oxygen from a lightweight steel bottle attached to the Air Warrior vest. The system provides oxygen via a nasal cannula up to 18,000 feet and via a mask at altitudes above 18,000 feet. More than 3,000 PHODS have been fielded. The **Electronic Data Manager (EDM)** is a touchscreen, keyboard computer that enables the aircrew member to quickly plan missions and react to mission changes in flight. The EDM, compatible with night-vision goggles and readable in direct sunlight, features a moving map, Blue Force Tracking, and a new terrain and obstacle avoidance capability expected to achieve airworthiness certification in FY 2012. More than 2,700 EDM systems have been fielded to the Army, Navy, Marine Corps and foreign militaries. The **Encrypted Aircraft Wireless Intercom System (EAWIS)** provides encrypted, hands-free wireless intercrew communications for nonrated aircrew members requiring mobility inside and in the immediate vicinity of the aircraft. EAWIS provides the first true aircraft intercom cat-

![Air Warrior Electronic Data Manager (EDM)](image-url)
pability for medical evacuation helicopter personnel during rescue hoist missions and consists of an aircraft-mounted interface unit and mobile equipment units worn by the crew member. The Survival Kit, Ready Access, Modular (SKRAM) gives aircrews readily accessible carriage of a 72-hour suite of life-support equipment in a flame-retardant, modular and configurable backpack, including supplemental survival gear for extreme environmental conditions.

The Air Soldier program formally entered into the engineering and manufacturing development phase in December 2011 with a requirement to reduce aircrew member weight and bulk while improving safety and situational awareness and mission duration. Air Soldier capabilities will be fielded in two increments, with the first delivery of capability in FY 2015, which includes:

**Common Helmet Mounted Display System** with integrated head tracking, providing all Army aviators (except AH-64 Apache) with critical day/night flight and 3-D Degraded Visual Environment flight symbology (Apache aviators will be equipped in the second increment of Air Soldier); **Lightweight Environmental Control System** delivering a cooling capability to OH-58D aviators previously unavailable due to the space, weight and power constraints inherent in the Kiowa Warrior; and **soldier-worn Integrated Soldier Power and Data System (ISPSD)**—a smart, on-aircraft rechargeable, single source of extended duration power for all aircrew-worn electronics. Developed through teamwork with the Product Director Soldier Power, the ISPSD eliminates the need to wear and carry separate sets and types of batteries and spares.

Air Soldier also includes **Personal Electronics Control and Display System (PE CDS)**, consisting of a Personal Display Module (PDM), Soldier Computer Module (SCM), and Mission Display Module (MDM). The PDM is worn by the soldier and is the single user interface and dismounted display for all body-mounted electronic equipment. The PDM reduces bulk and weight by eliminating the need for separate hardware control and display components. The SCM provides a single processing and data storage device for all soldier-worn electronics and reduces bulk and weight by replacing separate component processors. The aircraft-mounted MDM replaces the Air Warrior EDM in the nondigitized rotary-wing fleet and interfaces with platform sensors for mission execution, including situational awareness and command-and-control messaging through Blue Force Tracking. A **Layered Clothing Ensemble (LCE)** introduces an active heating capability and reduces the bulk and weight of the current AW aircrew flexible body armor, cooling vest, chemi-

**Survival Equipment Subsystem (SES)**

The second and final delivery of Air Soldier capability in FY 2018 will fully replace the Air Warrior and will include: **Wide Field of View/High Resolution Helmet Mounted Display** incorporating 3-D DVE symbology for AH-64 Apache aviators; **Radio Interface Control Module (RICM)**, which combines the functionality of, and replaces, the soldier-worn Encrypted Aircraft Wireless Intercom System transceiver and Combat Survivor Evader Locator survival radio, and adds a wireless data capability; **Enhanced Laser Eye Protection (ELEP)**, providing increased wavelength protection in a spectacle or visor configuration; **Integrated Protective Ensemble (IPE)**, which fully replaces the legacy Air Warrior gear carriage and body armor system. The IPE reduces weight and bulk by using electro-textile technology to eliminate heavy electrical power/data cabling, eliminating the body-mounted raft, reducing the size and weight of breathing devices, and integrating personal flotation into the IPE.

**Product Director Soldier Power**

**Product Director Soldier Power** is a vital enabler for operations, essential for patrols and required for soldier sustainment. Providing energy-alternative capabilities and interoperability builds flexibility and resilience through the increased ability to respond to changes in operational demands and a greater ability to adapt to changes in the operational environment. These capabilities include soldier power sources, power scavenging, renewable energy, power distribution, power management, and power storage solutions that are lightweight and soldier-portable/wearable. The type of gear carried into battle by soldiers in the past had a low power requirement that could be addressed with a small amount of conventional batteries. As technologies mature and new power-consuming systems get added onto the current soldier load, the Army needs to address how to reduce that load and eliminate the logistical footprint associated with battery resupply.

The **Soldier Worn Integrated Power System (SWIPES)** provides a central power source for extended mission duration when used with the ergonomic soldier-worn conformal battery, while reducing the numbers and varieties of batteries carried by the soldier. The SWIPES system can provide power for up to four devices including (but not limited to) a radio via a smart charging pouch, a USB hub to power any USB device, a defense advanced global positioning system (GPS) receiver (DAGR) and an end user device such as Nett Warrior.

The **Soldier Power Manager** is a lightweight, portable power management system that can use power from primary batteries and manage power from solar, vehicle and fuel cell sources.

The **Rucksack Enhanced Portable Power System** is a solar power energy system that can provide power to the individual or team and can be carried in an assault pack.

The **Modular Universal Battery Charger (MUBC)** with a 120-watt solar blanket weighs approximately 6 pounds and brings recharging forward for the entire networked squad in a Tier 1 environment.
This charger will reduce and potentially eliminate the need to return to the forward operating base for recharging. The MUBC will allow the warfighter to extend his mission duration without being tethered to a logistics battery resupply.

The 1KW JP8 Generator allows the warfighter to use existing logistics infrastructure while providing a lightweight, manportable solution. The Army is developing a multifuel-compatible capability.

The Conformal Battery is an ergonomic soldier-worn battery that provides a central source of power for a variety of soldier-worn capabilities. The ergonomic engineering of the conformal battery provides the warfighter with a lightweight power source that shares space with existing equipment on the soldier’s combat uniform.

The Tactical Communication and Protective System (TCAPS) provides concurrent hearing protection and auditory situational awareness. Historically, soldiers had to choose between hearing protection and force protection. As a combat force multiplier, TCAPS maintains hearing protection while enabling soldiers to use existing tactical radios, resulting in increased mission effectiveness, safety, and survivability.

Active hearing-protection technology coupled with hearing-attenuation technology enables soldiers wearing TCAPS to hear in steady-state and impulse environments. TCAPS’ ambient-sound capability provides soldiers with localized, 360-degree acoustic situational awareness.

An increase in soldier use of hearing protection devices will result in a reduction of hearing injuries and subsequent post-service disabilities. According to a General Accounting Office (GAO) report, in FY 2009 “some of the most common impairments for veterans receiving disability benefits were hearing-related. Annual payments for such conditions exceeded $1.1 billion.”

The Rapid Fielding Initiative is presently issuing an early version of TCAPS to deploying units. The TCAPS program of record will seek to offer a lighter, more interoperable, nonradio-dependent material solution. Milestone C is planned for FY 2013.

Project Manager Soldier Sensors and Lasers (PM SSL)

Project Manager Soldier Sensors and Lasers (PM SSL) provides soldier-borne sensors and lasers that enhance the soldier’s ability to see and dominate in all battlefield and lighting conditions, to acquire objects of military significance before the soldier is detected, and to target threat objects accurately for engagement by soldiers or guided munitions. These systems provide critical, on-the-ground direct support to U.S. forces.

Product Manager Soldier Maneuver Sensors (PM SMS)

Product Manager Soldier Maneuver Sensors (PM SMS) is responsible for developing and equipping the soldier with sensors and lasers to help dominate the battlefield through improved lethality, mobility, and survivability in all weather and visibility conditions.

The AN/PSQ-20 Enhanced Night Vision Goggle (ENVG) provides increased capability by incorporating image intensification and long-wave infrared sensors into a single, helmet-mounted passive device. The ENVG combines the visual detail in low-light conditions provided by image intensification with the thermal sensor’s ability to see through fog, dust and foliage that obscure vision. This thermal capability makes the ENVG, unlike earlier night-vision devices, useful during the day as well as at night.

The AN/PSVS-14 Monocular Night Vision Device (MNVD) is a head- or helmet-mounted passive device that amplifies ambient light and very near infrared energy to enable night operations. The system is designed for use in conjunction with rifle-mounted aiming lights.

The AN/AVS-6 Aviator’s Night Vision Imaging System (ANVIS) is a third-generation, helmet-mounted, direct-view, image-intensification device that enables aviators to operate more effectively and safely during low-light and degraded battlefield conditions. The low-light sensitivity represents a 35 to 40 percent improvement over the earliest ANVIS. In addition, the gated power supply enables operation at significantly higher light levels than any of the previous designs.

The AN/PAS-13 Thermal Weapon Sight (TWS) gives soldiers with individual and crew-served weapons the capability to see deep into the battlefield, increase surveillance and target acquisition range, and penetrate obscurants, day or night. The TWS systems use uncooled, forward-looking infrared (FLIR) technology and provide a standard video output for training or remote viewing. Thermal weapon sights are lightweight systems that are mountable onto each weapon’s rail and operate to the maximum effective range of the weapon. In 2013, deliveries of TWS will include 17 micron technology, which will result in size, weight and power improvements over present configurations.

The TWS family includes three variants: The AN/PAS-13(V)1 Light Weapon Thermal Sight (LWTS) for the M16 and M4 series rifles and carbines, as well as the M136 Light Anti-Armor Weapon; the AN/PAS-13(V)2 Medium Weapon Thermal Sight (MWTs) for the M249 Squad Automatic Weapon and M240B series medium machine guns; and the AN/PAS-13(V)3 Heavy Weapon Thermal Sight (HWTS) for the squad leader’s weapon M16 and M4 series rifles and carbines, M24 and M107 sniper rifles, and M2 HB and Mk 19 machine guns.

The Family of Weapon Sights (FWS) program will provide soldiers with networked individual, crew-served, and sniper weapons sensor capability, allowing for significantly reduced target engagement times, increased identification ranges, and reduced weight during all visibility conditions. The FWS systems will use uncooled FLIR technology, digital low-light level technologies, and additional features to provide improved offensive firing capabilities, decreased transition time between mobility and targeting sensors, and improved firing accuracy.
The FWS will have three variants: the Family of Weapon Sights Individual (FWSI) for the M16 and M4 series rifles and carbines, the M249 Squad Automatic Weapon, the M136 Light Anti-Armor Weapon and M141 Bunker Defeat Munitions; the Family of Weapon Sights Crew Served (FWSCS) for the M240B series medium machine guns, the M2 HB and Mk 19 machine guns; and the Family of Weapon Sights Sniper (FWSS) for the M110, M107 and XM2010 sniper rifles.

The AN/PVS-30 Clip-On Sniper Night Sight (CoSNS) is a lightweight, in-line, weapon-mounted sight used in conjunction with the day optic sight on the M110 SASS and the XM2010 Enhanced Sniper Rifle (ESR). It employs a variable gain image tube that can be adjusted by the sniper depending on ambient light levels. When used in conjunction with the M110 or XM2010 day optical sight, it provides for personnel-sized target recognition at quarter-moon illumination in clear air to a range of 600 meters. The CoSNS has an integrated rail adapter that attaches directly to the MIL-STD-1913 rail for quick and easy mounting to or dismounting from the weapon. Use of the CoSNS does not affect the zero of the day optical sight and allows weapon-mounted sight use in conjunction with the M110 or XM2010 to maintain bore sight throughout the focus range of the CoSNS and the weapon system’s day optical sights.

The Multifunction Aiming Light (MFAL) family includes the AN/PEQ-15 Advanced Target Pointer Illuminator Aiming Light (ATPIAL) and the AN/PEQ-15A Dual Beam Aiming Laser Advanced2 (DBAL-A2). The AN/PEQ-15 and AN/PEQ-15A class 3B MFAL devices replace the AN/PAQ-4C. The infrared (IR) and visible aiming lasers are co-aligned. The visible laser can be used to bore-sight the device to a weapon without the need of night-vision goggles. The IR lasers emit a highly collimated beam of IR light for precise weapon aiming, as well as a separate, IR-illuminating laser with adjustable focus. A visible red-dot aiming laser can also be selected to provide precise aiming of a weapon during daylight or night operations. AN/PEQ-15 and AN/PEQ-15A IR lasers can be used as handheld illuminator pointers or can be weapon-mounted with included hardware. These units can be used with night-vision equipment to allow engagement of enemy targets at night.

The AN/PEQ-14 Integrated Laser White Light Pointer (ILWLP) is a small, lightweight device that can be handheld or mounted on the M9 pistol with a MIL-STD-1913 rail adapter and combines the functions of a white-light flashlight with adjustable focus, visible aiming laser, infrared aiming laser, and IR illuminator into one system. The ILWLP is used to engage targets with the M9 pistol on the battlefield and in close-quarters combat engagements. It is fielded to military police units.

The LA-5/F Aircrew Laser Pointer (ALP) is a finger-mounted laser that has the capability to direct fires, identify friend and foe, and signal adjacent formations during night operations. It is mounted on a fire-resistant fabric designed to attach to the aircrew member’s glove. Because it is worn on the hand, it does not interfere with aircraft operation. The master arming switch allows a high-power (Class IIIb) or low-power (Class I) infrared laser operation. A momentary fire button allows easy activation with the thumb to light an LED. The ALP incorporates a laser diode that projects a pinpoint beam that is brighter and more defined than other lasers.

The Green Laser Interdiction System (GLIS) is a rifle-mounted laser that allows the soldier to interdict hostile actions through nonlethal effects. It is used to divert, disrupt or delay potential threats before they can engage friendly forces. It is also an effective, nonlethal means to warn civilians that they are approaching a zone of military operations.

**Product Manager Soldier Precision Targeting Devices (PM SPTD)**

**Product Manager Soldier Precision Targeting Devices (PM SPTD)** is responsible for developing and equipping the soldier with manportable precision targeting systems (locators, designators and entry devices) for the joint force scout, forward observer, and joint terminal attack controller for use across the full spectrum of operations.

The AN/PED-1 Lightweight Laser Designator Rangefinder (LLDR) provides dismounted fire support teams, combat observation and lasing teams, and scouts with a precision target-location and laser-designation system that allows them to call for fire using precision, near-precision and area munitions. It is a crew-served, manportable, modular target locator and laser designation system. The primary components are the Target Locator Module (TLM) and the Laser Designator Module (LDM). The TLM incorporates a thermal imager, day camera, laser designator spot imaging, electronic display, eye-safe laser rangefinder, digital magnetic compass, selective availability/anti-spoofing module global positioning system (SAASM GPS), and digital export capability. A new compact laser designator is being fielded with the LLDR 2, which requires less power and operates on one common single-channel ground and airborne radio system (SINCGARS) battery (BA-5390 or BA-5590). To provide a precision targeting capability to the dismounted soldier, PM SPTD has developed the LLDR 2H, which integrates a celestial navigation system with the digital magnetic compass in the TLM to provide highly accurate target coordinates. The TLM can be used as a stand-alone device or in conjunction with the LDM. During day operations, targets can be recognized at more than 7 kilometers. At night and in obscured battlefield conditions, the operator can recognize vehicle-sized targets at more than 3 kilometers.

The Laser Target Locator (LTL) has the mission of providing daylight and limited night capabilities to accurately locate targets and transmit target data. These are commercial off-the-shelf, handheld or tripod-mounted, lightweight laser target lo-
For increased sight range, a laser rangefinder enables the system to determine target location. The Mark VII integrates a monocular direct view optic, an image intensifier, a laser rangefinder and a digital compass into a day/night target location device. The Mark VII provides a limited night capability. Combined with a precision lightweight GPS receiver or a defense advanced GPS receiver, the system can compute and display target locations.

The Mark VII is an improved Mark VII, which adds to all the Mark VII’s capabilities a more powerful 8x day optic, an uncooled thermal sight for increased night performance, and an embedded GPS receiver for greater accuracy.

The TRIGR incorporates a 7x direct view optic, an improved uncooled thermal sight for increased sight range, a laser rangefinder, a digital compass and GPS that allows the system to determine target location.

The Joint Effects Targeting System (JETS) provides the dismounted forward observer and joint terminal attack controller the ability to acquire, locate, mark and designate for precision GPS-guided and laser-guided munitions, and provides connectivity to the joint forces through fire and close air support digital planning/messaging devices. JETS is an Army-led, joint program with the Air Force and Marine Corps to develop and field a one-man portable targeting system for forward observers and joint terminal attack controllers.

The AN/PSQ-23 Small Tactical Optical Rifle Mounted (STORM) Micro-Laser Rangefinder (MLRF) is a lightweight, multifunctional laser system designed to operate on individual and crew-served weapons, the Stryker Remote Weapons Station, and the Common Remotely Operated Weapons Station. It combines the functionality of a laser rangefinder, the AN/PEQ-2A Infrared Aiming Laser and Illuminator, the Multiple Integrated Laser Engagement System, a digital compass, and a visible pointer into a single system. Combined with a precision lightweight GPS receiver or a defense advanced GPS receiver, the system can compute and display target locations.

Project Manager Soldier Protection and Individual Equipment (PM SPE)

Project Manager Soldier Protection and Individual Equipment (PM SPIE) develops and fields advanced soldier protection products, uniforms that enhance mission effectiveness, and improved parachute systems. These products are designed to protect soldiers and enable them to operate in any conditions.

Product Manager Soldier Clothing and Individual Equipment (PM SCIIE)

Soldiers wear different uniforms depending on where they are or the duty they are performing. All Army combat uniforms will have a standardized insect repellent treatment called permethrin. This treatment to the uniform adds additional protection against flying and crawling insects.

The Army Combat Uniform (ACU) and Flame Resistant Combat Uniform (FRACU) consist of a jacket, trousers, patrol cap, moisture-wicking T-shirt and Army combat boot (temperate and hot weather) or the mountain combat boot for rugged terrain. After receiving soldier feedback, in February 2010, the Army announced that it was changing the operational camouflage pattern for Afghanistan from the pixelated Universal Camouflage Pattern (UCP) to the Operation Enduring Freedom Camouflage Pattern (OCP). OCP was selected for its effectiveness in the varied visual environments found in Afghanistan.

Soldiers who deployed in late August 2010 were the first to receive the new camouflage uniform, while soldiers in theater received them that fall. Beginning in August 2012, the OCP uniforms included an improved fabric and several design changes that make them more durable in the rugged terrain and easier to wear.

Along with changes in blouses and trousers, there have been some changes in the headgear that can be worn with this uniform. Effective June 2011, the patrol cap that matches the ACU is the primary headgear for this duty uniform, but at the commander’s discretion, the black beret can be worn instead.

The Army Service Uniform (ASU) is a traditional uniform that fully embodies the imperatives of utility, simplicity and quality. The ASU presents a distinctive appearance that readily identifies a soldier to the American public. Army blue, green and white service uniforms have been streamlined to one blue uniform as part of an evolutionary process to reduce the number of Army dress uniforms. Army blue as a uniform color traces its origins back to the national blue of the U.S. flag and was first mandated for wear by soldiers in the Continental Army of 1779.

The ASU provides a basic set of components that allow soldiers to dress from the lowest end to the highest end of service uniforms with little variation required. The ASU eliminates the need for numerous sets of green Class A uniforms, dress blue uniforms and, for some, dress white uniforms. Streamlining various dress uniforms into one ASU reduces the burden on soldiers in the same manner that the ACU did for the field utility uniform.

The ASU includes a coat and low-waist trousers for male soldiers, and a coat, slacks and skirt for female soldiers. The fabric of the ASU consists of a 55 percent wool and 45 percent polyester blend, which is heavier and more wrinkle-resistant than the present commercially avail-
able blue uniform. The new ASU coat has an athletic cut to improve fit and appearance, and includes an improved heavier and wrinkle-resistant short- and long-sleeved white shirt with permanent military creases and shoulder loops.

The primary headgear for the ASU is the beret. Officers and enlisted soldiers will be required to have both the service cap and the beret by the mandatory possession date. Commanders have the discretion to determine if corporals and above wear either the service cap or the beret. The current black accessories, such as the windbreaker, all-weather coat, overcoat and sweaters, may be worn with the ASU.

In addition to the clothing changes, the ASU will allow soldiers to wear the new Combat Service Identification Badge (CSIB) to honor the heritage and traditions of combat service. The CSIB replicates the former Wartime Service Shoulder Sleeve Insignia on the ACU. In addition, the green leaders tab is not authorized for wear on the ASU.

The blue ASU was introduced to military clothing sales stores in the fourth quarter of FY 2007. The Army introduced the ASU into soldiers’ clothing bags at initial-entry training in FY 2010. The mandatory possession date for the ASU for all soldiers is the fourth quarter of FY 2014.

**Product Manager Soldier Protective Equipment**

Product Manager Soldier Protective Equipment (PM SPE) increases the warfighter’s lethality and mobility by optimizing soldier protection while effectively managing all life-cycle aspects of personal protective equipment.

**Interceptor Body Armor (IBA)** is a joint-service item designed and developed to incorporate the requirements of the Army and Marine Corps. Interceptor is the model name for a modular, multiple-threat body armor system consisting of a base tactical vest and modular components, with small-arms protective inserts designed to defeat multiple ballistic hazards across the battlefield continuum. The Improved Outer Tactical Vest (IOTV) is a side-opening vest that can be donned over the head or right shoulder. An internal waistband is incorporated inside the vest for increased stability. The vest provides fragmentation and handgun protection. The IOTV consists of a groin protector, front yoke and collar, lower back protector and deltoid protector. The IOTV integrates with all modular lightweight load-carrying equipment (MOLLE) components and incorporates a quick-release system for emergency donning. Since the inception of the IOTV, there have been numerous upgrades to the vest due to warfighter feedback. All these improvements have enhanced the form, fit and functionality of the system. The Deltoid and Auxiliary Protector (DAP) is a component of IBA that provides additional fragmentation and handgun protection to the upper arm and underarm areas. The DAP was developed as an add-on to the OTV to protect soldiers from the threat of improvised explosive devices in current operations. This auxiliary protective capability is not required for the IOTV, as it is already integrated. The Enhanced Small Arms Protective Insert (ESAPI) plates provide multiple-hit protection to the chest and back against various small-arms threats. The Enhanced Side Ballistic Insert (ESBI) plates provide additional ballistic protection for the soldier’s sides, which are not covered by ESAPI. The ESBI can also withstand small-arms hits from the same threats the ESAPI defends against. The X-Threat Small Arms Protective Insert (XS-API) plate was designed to meet short-term emerging threats and provide additional ballistic protection against more lethal small-arms rounds. The X-Threat Side Ballistic Insert (XSBI) plates provide ballistic protection for the soldier’s sides, which are not covered by XSAPI. The XSBI can also withstand small-arms hits from the same threats the XSAPI defends against. The IOTV includes integrated ESBI/XSBI side-plate carriers, which reduces redundant overlapping soft armor protection and decreases overall weight.

The Soldier Plate Carrier System (SPCS) is a lightweight, flexible vest that provides a comfortable and secure fit with the capacity to accommodate hard body armor plates. It is designed to accommodate the ESAPI, XS-API, ESBI, and XSBI hard armor ballistic plates. Specific characteristics include a MOLLE webbing on the front and back of the carrier for mounting of MOLLE components; compatibility with other equipment (Nett Warrior, rucksack and tactical assault panel—without impeding the ability to shoulder a weapon); easy don and doff capability; an increased range of sizes to ensure a comfortable fit for soldiers with the appropriate size ballistic plates inserted; wiring integration; drag strap for casualty removal capability; durability; and availability in OCP. An optional cummerbund has been added as a result of feedback received from soldiers in the field.

The legacy Concealable Body Armor (CBA) is intended to be worn by soldiers in military police units, corrections, confinement and law-enforcement operations, Department of Defense investigative and security components, and other U.S. military forces. The CBA offers ballistic protection NIJ Level IIIA. The CBA provides maximum torso coverage while maintaining comfort and the ability to conceal.

The Family of Concealable Body Armor (FoCBA) program will replace the legacy CBA. The FoCBA will standardize the CBA for all Army components and a portion of the DoD police force. The FoCBA provides two types of vest protection based on the operating environment or mission. The Type 1 vest will provide Level IIIA ballistic protection to the NIJ 0101.06 standard and stab protection to Level I of the NIJ 0115.00 standard. The Type 2 vest will provide stab protection that will meet NIJ 0115.00 standard for Level III stab protection (California ice pick, single-edged blades, and dou-
ble-edged blades), while meeting additional Army requirements. These vests will allow for increased mission effectiveness by providing improved protection and a selection based on the operational environment.

The Pelvic Protection System (PPS) is a two-tiered system composed of a Tier I protective under garment (POG) and a Tier II protective outer garment (POG). The PUG is a system worn next to the skin designed to stop small fragments, reduce the penetration of dirt in wounds and minimize the risk of infection from fine debris. The POG is a system worn over the ACU and, in conjunction with the Tier 1 PUG, designed to reduce penetrations of larger threats and debris. The POG provides ballistic protection similar to that of the Improved Outer Tactical Vest (IOTV).

The Advanced Combat Helmet (ACH) comes in five shell sizes (small, medium, large, extra-large, and extra-extra large) and includes a modular pad suspension system, retention system and ballistic nape pad. The modular pad suspension system improves blunt-force impact protection, stability and comfort. The cotton/polyester retention system, a four-point design, allows for quick adjustment for head size. The ballistic nape pad attaches to the retention system, improving comfort and stability and providing protection against small arms and fragmentation threats to the nape area of the neck. The ACH weighs 2.9 to 3.8 pounds, depending on size. The helmet cover is available in UCP and OCP.

The Enhanced Combat Helmet (ECH) improves ballistic protection, stability and comfort without adding weight or degrading the soldier’s hearing and field of vision. The ECH provides increased protection against ballistic and fragmentation threats. The ECH uses advanced thermoplastic materials that require different manufacturing processes from those associated with resin-impregnatedaramids. The ECH weighs from 2.8 pounds (for a size small) to 4.0 pounds (for a size large). The helmet cover is available in UCP or OCP.

The Helmet Sensor (HS) GEN II is a small, lightweight, low-power sensor suite that mounts inside the Advanced Combat Helmet or combat vehicle crewman helmet to record traumatic incidents such as IED explosions or vehicle accidents and document the forces exerted by those incidents on the soldier’s head. Soldiers sometimes appear to go through traumatic incidents unscathed, only to later develop symptoms of mild traumatic brain injury. The helmet sensors measure and record G forces exerted on six different axes and also collect information on overpressure. This goes into a database that compiles many such incidents and can be cross-correlated with medical records and reports to help researchers determine if there is a link between brain injuries of various types and the forces exerted on the soldier’s head. This database of incidents and medical outcomes will help the Army medical community establish a body of knowledge for development of an objective head exposure monitor and rapid head injury screening tool.

The Military Combat Eye Protection (MCEP) program is an umbrella program geared toward protecting soldiers’ eyes from external threats and hazards such as ballistic fragmentation, electromagnetic radiation, sand, wind, and dust during day and night missions. The MCEP provides eye protection for both prescription and nonprescription wearers in a variety of commercial styles and sizes. Given this variety of eye wear, soldiers can choose the best eyewear for their mission while still maintaining military standards for eye protection.

The Advanced Bomb Suit (ABS) protects explosive ordnance disposal (EOD) soldiers against ordnance and IEDs. This system uses new materials technology and design to provide protection, comfort, and ergonomic efficiency. The ABS ensemble consists of the EOD 8 bomb suit and EOD 9 helmet. The bomb suit is a full-body ensemble that protects from fragmentation, blast overpressure, impact, heat and flame. To minimize weight and maximize flexibility, fragmentation protection is provided at various levels specific to body regions, based on wounding potential. Blast overpressure protection is provided to the front of the thorax. Impact protection is provided to the head and spine. Heat and flame protection are provided by resistant materials. The suit includes an ice-based cooling system to extend mission duration. A hand-protection module provides increased protection. The system can be removed in less than 30 seconds. All ballistic inserts are removable to facilitate laundering and repair. The system is equipped with provisions that allow for future communications, performance and capability upgrades.

Project Manager Soldier Weapons (PM SW)
Project Manager Soldier Weapons (PM SW) ensures that soldiers have battlefield dominance in individual and crew-served weapons capabilities. PM SW supports soldiers through the development, acquisition, fielding and sustainment of current and future weapons systems and associated target acquisition/fire control products. As a result of PM SW’s efforts, soldiers benefit from continuous improvement programs and are equipped with systems that enhance their lethality and survivability. Two product managers under PM SW drive the mission: Product Manager Individual Weapons (PM IW) and Product Manager Crew Served Weapons (PM CSW).

Product Manager Individual Weapons (PM IW)
Product Manager Individual Weapons (PM IW) is responsible for current and future rifles, carbines, pistols, shotguns, grenade launchers, sniper systems, airburst weapons and related target acquisition/fire control products.

The XM25 Individual Semi-Automatic Airburst System (ISAAS) is the U.S. Army’s latest developmental weapon designed to address the problem of defeating enemies behind cover, defilade and ex-
posed targets at ranges and accuracies not seen in today’s small arms by firing 25 mm high-explosive airburst (HEAB) munitions. The XM25 incorporates full-solution target acquisition/fire control that integrates a thermal sight, 2x direct-view optics, a laser rangefinder, compass, fuze setter, ballistic computer and internal display.

The M4/M4A1 5.56 mm Carbine is designed for lightness, speed, mobility and firepower and is standard issue for brigade combat teams. Throughout more than 10 years of sustained combat operations, the M4 has proven itself an effective weapon system that serves soldiers extremely well. The system is 1 pound lighter and more portable than the M16 series of rifles. The M4 series of carbines can also be mounted with the M203A2 Grenade Launcher, M320 Grenade Launcher or M26 Modular Accessory Shot Gun System. The weapon has received many performance-based design improvements since its inception. The Army authorized the upgrade of all M4s to the M4A1 configuration in September 2010. The M4A1 has full automatic capability, an ambidextrous fire selector and a slightly heavier barrel that increases the sustained rate of fire.

The M16A2/A4 Series 5.56 mm Rifle is the most prevalent combat rifle in the U.S. Army inventory. It is a gas-operated, air-cooled, shoulder-fired weapon that can be fired either in automatic three-round bursts or semiautomatic single shots. The M16A2 has an integral rear sight, while the M16A4 includes a military standard (MIL-STD) 1913 upper receiver and forward rail system with a backup iron sight. Both systems can accommodate modern optics and accessories, as well as configurations that incorporate M203 and M320 40 mm grenade launchers.

The M320 Grenade Launcher enables soldiers to accurately engage the enemy in daylight or total darkness out to 350 meters with 40 mm low-velocity grenades. The M320 will replace all M203 series grenade launchers mounted on the M16/M4 series of rifles and carbines. The weapon includes a side-loading unrestricted breech that permits the system to fire longer 40 mm projectiles (NATO standard and nonstandard) and also features the enhanced safety of a double-action trigger/firing system.

The M26 12-Gauge Modular Accessory Shot Gun System (MASS) provides soldiers with a 12-gauge shotgun accessory attachment with lethal, less-than-lethal and door-breaching capabilities. The system attaches underneath the barrel of the M4 Carbine and provides a capability equivalent to a stand-alone shotgun without carrying a second separate weapon. The M26 can also be converted without tools to operate in a stand-alone mode. The Army began fielding the M26 to select engineer and MP units in 2012.

The M107 Semi-Automatic Long Range Sniper Rifle (LRSR) fires .50-caliber ammunition and is capable of delivering precise, rapid fire on targets out to 2,000 meters. It is especially valuable during military operations in urban terrain, where greater firepower and standoff ranges provide counter-sniper capability while enhancing sniper survivability.

The new XM2010 Enhanced Sniper Rifle (ESR) is a fully upgraded M24 Sniper Weapon System that has been rechambered to fire .300 WinMag ammunition. The bolt action, magazine-fed system provides precision fire on targets at ranges 50 percent farther than existing 7.62 mm sniper systems. The XM2010 is equipped with a suppressor and a fully adjustable right-folding chassis system featuring a monolithic MIL-STD 1913 accessory rail and accessory cable routing channels. The shooter interface can be tailored to accommodate a wide range of shooter preferences. The XM2010 is fielded with a Leupold Mark 4 6.5 to 20x50 mm extended range/tactical riflescope with a scalable ranging and targeting reticle and an AN/PVS-29 Clip-on Sniper Night Sight. The Army fielded the XM2010 to all sniper teams operating in Afghanistan in 2011.

The M110 Semi-Automatic Sniper System (SASS) is the U.S. Army’s medium-caliber sniper rifle that supplements the sniper’s role to support combat operations with greater firepower and versatility. The 7.62 mm SASS brings a semiautomatic capability to sniper teams and is particularly effective in urban areas where there are multiple targets and frequent close-combat situations. The M110 comes with a suppressor and incorporates a 3.5x10 scope with illuminated mil-reticle. It also comes with the M151 Enhanced Spotting Scope, which allows recognition and identification of targets at long distances. With powerful and bright optics, the spotting scope has 12 to 40x magnification with a 60 mm objective lens diameter. The scope has a Leupold mil dot (round dot) reticle for both range estimation and tactical collaboration with the shooter. The scope is weatherproof and fogproof.

The M14 7.62 mm Enhanced Battle Rifle (EBR) provides infantry squads operating in Afghanistan with interim capability to engage enemy targets beyond the range of M4 Carbines and M16 Rifles. The weapon is air-cooled, gas-operated and magazine-fed. It is a modern M14 rifle mated to an enhanced aluminum billet stock, tactical scope and cantilever mount. The rifle is effective in close-quarters combat and in the conceptual squad designated marksman role.

The M9 9 mm Pistol enhances lethality and survivability in close combat situations via a pistol with rail-attachment capabilities. It is the primary sidearm of the crew-served weapon crewmembers and others who have a personal defense requirement, such as law-enforcement personnel, unit leaders and aviators.

The XM25 Grenade Launcher

M320 Grenade Launcher

The M68 Close Combat Optic (CCO) is a red-dot aiming device that enhances target acquisition speed, allowing soldiers to engage targets up to 500 meters with both eyes open to maintain situational awareness. The sight has no magnification and can be used
with all current night-vision enhancements.

The M150 Rifle Combat Optic (RCO) is a rugged, battery-free, 4x magnified optic that provides full mission profile optical capability for use on the M4/M16/M249 weapon systems. Enhanced capabilities provided by the M150 RCO include range estimation, which, along with the bullet drop compensated reticle, provides accurate target engagements out to 800 meters for trained operators.

Product Manager Crew Served Weapons (PM CSW)

Product Manager Crew Served Weapons (PM CSW) is responsible for current and future light and heavy machine guns, grenade launchers, related target acquisition/fire control products and remote weapons systems.

The M153 Common Remotely Operated Weapon Station (CROWS) provides soldiers with the ability to acquire and engage targets while protected inside an armored vehicle. 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. 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 is capable of target engagement under day and night conditions, the CROWS sensor suite is capable of target engagement under day and night conditions.

The M2 .50-caliber Machine Gun is automatic, belt-fed, recoil-operated and air-cooled. The battle-proven system mounts on the M3 tripod and on most vehicles while also serving as an antipersonnel and antiaircraft weapon. It is highly effective against light armored vehicles, low- and slow-flying aircraft, and small boats. The M2 provides automatic weapon suppressive fire for offensive and defensive purposes. It is capable of single-shot (ground M2 machine gun) and automatic fire. In post-combat surveys, soldiers rated the M2 among the most effective weapon systems in their small-arms arsenal.

The M2A1 with Quick-Change Barrel and fixed headspace and timing is an enhancement to the M2 .50-caliber machine gun, offering soldiers increased performance and design improvements that make it easier and safer to use. The M2A1 speeds target engagement and improves survivability and safety by reducing the time required to change the barrel and eliminating the need to manually adjust headspace and timing. The M2A1 also provides a flash hider that reduces muzzle flash by 95 percent, making the weapon less detectable in darkness. The Army began fielding the M2A1 in 2011 and plans to upgrade its entire fleet of 45,000 M2s to the M2A1 standard.

The M240B 7.62 mm Medium Machine Gun is a ground-mounted, gas-operated, crew-served machine gun. The cyclic rate is 550 to 650 rounds per minute, and the weapon’s maximum effective range against area targets is 1,800 meters. It comes with an accessory rail integrated with the top cover that is used to attach sighting devices. It is issued to infantry, armor, field artillery and combat engineer units that require medium-support fire.

The M240L 7.62 mm Medium Machine Gun (Light) weighs approximately 5 pounds less than the existing M240B, while meeting all of its reliability and operational characteristics. The M240L incorporates titanium construction and alternative manufacturing methods to achieve its weight savings. These improvements reduce the soldier’s combat load while the weapon system’s short barrel and collapsible buttstock configuration allow easier handling and movement of the weapon. Designated an Army’s Greatest Invention of 2010, the M240L is rugged and reliable and has a minimum 50,000-round receiver life.

The M240H 7.62 mm Machine Gun (Aviation Version) is designed for aviation application and demonstrates reliability equal to that of the M240B. It delivers two minutes of continuous suppressive fire and is removable for use in a ground role. It replaces the M60D machine gun for the UH-60 Black Hawk and CH-47 Chinook helicopters as part of their defensive armament systems.

The M249 5.56 mm Squad Automatic Weapon (SAW) serves as an automatic rifle and light machine gun for infantry squads. The M249 SAW is an air-cooled, belt-fed, 5.56 mm weapon with fixed headspace and a quick-change barrel. The weapon can be fired from the shoulder, bipod/tripod-mounted or vehicle-mounted position. It replaced the M16 rifle in the squad automatic rifle role.

The Army’s improved machine-gun tripod systems include the M192 Lightweight Ground Mount for Machine Guns and the XM205 Lightweight Heavy Machine Gun Tripod. The M192 provides a lighter weight, low-profile mounting platform for the M249 and M240 for controlled, sustained and accurate fire at extended ranges. The M192 is compact and collapsible and weighs 6 pounds less than the M122A1 tripod it replaces. PM CSW will begin fielding the XM205 in 2013 for the dismounted M2 and Mk 19 to enable a quicker, more accurate target engagement. At 34 pounds, the XM205 weighs 16 pounds less than the current M3 heavy tripod and offers an integrated traverse and elevation mechanism that can be operated with one hand.