

COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS AND INTELLIGENCE (C4I) SYSTEMS

The **Network** is critical to empowering leaders and soldiers with the right information at the right time to make the decisions essential to mission success.

Through a process known as **Capability Set Management**, the Army has adopted acquisition practices and is aligning programs so that operational units receive better capabilities more quickly through integrated and sustainable network capability sets. The capability sets are made up of equipment that is scalable and tailorable to provide connectivity and situational awareness for any mission in any region.

The capability sets enhance vertical and horizontal connectivity and provide an integrated network baseline from the fixed tactical operations center (TOC) to the commander on-the-move to the dismounted soldier. Fielding the Network as an integrated capability set throughout a brigade, rather than fielding individual pieces of equipment, provides soldiers with the best capability gap solutions and dramatically reduces or eliminates the integration burden on deployed troops.

The first capability set, **Capability Set 13 (CS 13)**, is now fielding to select brigade combat teams preparing for deployment. CS 13 is a direct response to operational needs statements submitted by commanders in Iraq and Afghanistan over the last decade and reflects soldier feedback from the ongoing Network Integration Evaluations (NIE) at Fort Bliss, Texas, and White Sands Missile Range, N.M.

CS 13 is arriving in Operation Enduring

Freedom at a critical time. As U.S. forces continue to retrograde, they are turning over many of their forward operating bases and other infrastructure to local forces, gradually losing fixed network locations. CS 13 systems allow commanders and soldiers to take the network with them in vehicles and while dismounted as they conduct security assistance and other missions. For the first time, the troops closest to the action will have real-time voice and data communications. Those reach-back capabilities will be essential for U.S. forces as they work closely with and support the Afghan national security forces, often in mobile operations distributed over great distances and terrain obstructions.

The centerpiece of CS 13 is Warfighter Information Network-Tactical (WIN-T) Increment 2, a major upgrade to the Army's tactical communications backbone that introduces Mission-Command-on-the-move and extends satellite communications to the company level. CS 13 also delivers unprecedented connectivity to the dismounted soldier through the Rifleman Radio, which is carried by platoon-, squad- and team-level soldiers for voice communications and also links with handheld devices to transmit text messages, global positioning system (GPS) locations and other data. These devices, known as Nett Warrior (see Individual Equipment and Weapons listings), act as a smartphone-like Mission Command system that connects to the Rifleman Radio to provide dismounted leaders with position location information (PLI), text messaging and other applications. CS 13 also reflects the Army's efforts to converge existing Mission Command software and introduce enhanced, Web-based capa-

bilities that create the synergy necessary for a commander's decision making abilities and mission execution.

Critical U.S. Army C4I capabilities are provided through U.S. Army offices including the **Program Executive Office for Command, Control, Communications-Tactical (PEO C3T)**, **Program Executive Office for Intelligence, Electronic Warfare and Sensors (PEO IEW&S)**, and **Program Executive Office for Enterprise Information Systems (PEO EIS)**.

The **PEO C3T** provides soldiers with the networked Mission Command solutions they require to dominate now and in the future. PEO C3T supports more than 42 acquisition category programs at levels I, II and III, executing more than \$3 billion annually across multiple appropriations. PEO C3T develops, acquires and fields a diverse range of products for the Army including communications networks, Mission Command software applications, computers, satellite terminals, communications security devices, servers and the integrators that allow all the systems and components to function seamlessly.

Headquartered at Aberdeen Proving Ground, Md., PEO C3T has a workforce of more than 1,600 employees with a total annual budget of more than \$3 billion. Late in fiscal year (FY) 2012, following DoD's decision to disband the Joint Program Executive Office for the Joint Tactical Radio System (JPEO JTRS), PEO C3T was assigned management for several former JTRS programs, including handheld, manpack, small form fit (HMS), airborne/maritime/fixed station (AMF) and midtier networking vehicular radio (MNVR). MNVR is the replacement for the JTRS ground mobile radio. The non-proprietary JTRS software waveforms are now overseen by the Joint Tactical Networking Center (JTNC), which is under the executive management of PEO C3T and ensures interoperability across the services by allowing the continued development of open standards to which industry can build.

PEO C3T also sustains the force with over-the-shoulder training and system troubleshooting so that soldiers can focus on their prime objective of engaging the enemy. Facing emerging fiscal constraints, PEO C3T is using innovative methods to cut costs, streamline processes and quickly adapt in rapidly delivering advanced network technology to soldiers.

The following representative program sampling reflects how PEO C3T continues to improve and support current systems, while developing future systems to support the Army's vision of a networked, information-enabled force.

The **Advanced Field Artillery Tactical Data System (AFATDS)** is a digitized sensor-to-shooter link that provides automated technical and tactical fire-direction solutions, fire asset-management tools, and de-



Warfighter Information Network-Tactical Increment 2

cision support functionality. AFATDS functions from firing platoons through echelons above corps and enhances dominant maneuver, survivability and continuity of operations for joint force commanders.

The AN/PRC-117G provides tactical and homeland defense forces and emergency operations elements with stand-alone, terrain-independent, robust communications for line-of-sight/beyond-line-of-sight secure voice and data communications. It also provides long-distance, wide-area, gap-free, fixed or on-the-move, ground, maritime, and ground-to-air communications.

The **Army Key Management System (AKMS)** consists of three subcomponents: local communications security management software, automated communications engineering software and a simple key loader. Under the umbrella of the National Security Agency's electronic key management system, AKMS provides tactical units and sustaining bases with an organic key generation capability and an efficient, secure means of distributing electronic keys.

Command Post of the Future (CPOF) provides the commander with a comprehensive view of the common operating picture for informed battlefield decision making. CPOF provides situational awareness and collaborative tools for tactical decision making, planning, rehearsal and execution

management from the corps to battalion levels. It provides 2-D and 3-D map-centric collaboration supported by voice over Internet protocol.

Command Web is a Web-enabled environment developed to meet the Army's direction for a common operating environment for the command post computing environment. With Command Web, users access applications over the Internet instead of through software installed on a computer to display warfighting functions on a common, geospatial map.

Data Products are a collection of mission data required to initialize Mission Command and other Army command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) systems, enabling them to digitally share situational awareness, collaboration and Mission Command data with each other over the tactical Internet.

Force XXI Battle Command Brigade and Below (FBCB2)-Blue Force Tracker (BFT) is a digital Mission Command system providing on-the-move information and situational awareness to tactical combat leaders and soldiers from brigade to platoon and across platforms within the brigade task force and other joint forces. It allows soldiers to track each other's locations through blue icons on a digital topographical map and manually add icons representing the

enemy and other obstacles to alert other units nearby. Relying on soldier feedback, the Army is executing a two-part upgrade to FBCB2-BFT: **Joint Capabilities Release (JCR)** and **Joint Battle Command-Platform (JBC-P)**. The upgrades are delivering a faster satellite network, Marine Corps interoperability, secure data encryption, touch-to-zoom maps, chat room functionality, and a seamless operational picture between maneuver and logistics forces.

Forward Entry Devices (FED) are handheld devices used by forward observers and fire support teams to transmit and receive fire support messages over standard military radios. They provide a digitized connection between the forward observers and AFATDS and provide a vital sensor-to-shooter link. The lightweight forward entry device (LFED) and pocket-sized forward entry device (PFED) are integral parts of the digitized system architecture.

The **HMS Rifleman Radio** is carried by platoon-, squad- and team-level soldiers for voice communications. It can link with handheld devices to transmit text messages, GPS locations and other data. Using the Soldier Radio Waveform (SRW), the radios form a network that connects lower-echelon soldiers to one another and back to their leaders at the company level so they can rapidly exchange information.

The **HMS Manpack Radio** is a two-chan-

nel, software-defined radio that allows lower-echelon soldiers carrying Rifleman Radios and Nett Warrior handheld devices to connect to the network backbone through the SRW and single-channel ground and airborne radio system (SINCGARS) waveforms. The Manpack will enhance current communications capabilities by allowing small units in austere environments to exchange voice and data information with their higher headquarters without having to rely on a fixed infrastructure.

The **Warfighter Information Network-Tactical (WIN-T) Increment 1**, the Army's tactical communications backbone, provides soldiers with high-speed, high-capacity voice, data and video communications down to battalion level units "at the quick halt." WIN-T Increment 1 is a joint-compatible communications package that allows the soldier to use advanced networking capabilities and retain interoperability with current force systems and follow-on increments of WIN-T.

WIN-T Increment 2 introduces mobility and reaches down to the company level by introducing networking radios to the architecture and enhancing Network Operations, a suite of integrated monitoring tools used by communications officers to command and control the network.

WIN-T Increment 3 will provide full network mobility and introduce the air tier, which provides a three-tiered architecture consisting of traditional line of sight, an airborne layer through the use of unmanned aerial vehicles (UAVs) and other airborne platforms and satellites.

The **Program Executive Office Intelligence, Electronic Warfare and Sensors (PEO IEW&S)** mission is to provide affordable, world-class sensor and electronic warfare capabilities, enabling rapid situa-

tional understanding and decisive actions. PEO IEW&S products can be used for targeting, situational awareness, force protection, and reconnaissance, surveillance, and target acquisition (RSTA). Several critical systems are integrated into the network's layers and enable persistent surveillance, allowing the joint and coalition warfighter to control time, space and the environment while greatly enhancing survivability and lethality.

PEO IEW&S rapidly transforms requirements and validated field requests into reality and supports critical current operations including counter-improvised explosive devices (IED), aviation platform survivability, persistent ISR and the integrated intelligence architecture. By working closely with C4ISR partners at the Communications-Electronics Research, Development and Engineering Center and Communications-Electronics Command, the PEO is able to facilitate the development, fielding and sustainment of critical systems.

The PEO is responsible for a multibillion-dollar portfolio consisting of a combination of more than 100 programs of record and quick reaction capabilities. Addressing soldiers' needs and providing them with capabilities in the most effective and financially responsible manner is paramount to success.

PEO IEW&S programs have played a significant role in a large array of missions. Among the major areas in which the organization's systems are involved are efforts with the Distributed Common Ground System-Army (DCGS-A), a dedicated avenue for ingesting, fusing, analyzing and disseminating information throughout the Army and associated defense agencies, which is now available through a tactical "cloud." These systems are integrated with other in-

telligence assets into a system-of-systems architecture that provides ISR, force protection, RSTA collection capabilities, data repositories, services and exploitation capabilities across coalition boundaries. Fielded assets range from airborne and ground sensors to the network connectivity and analyst tools used to exploit the large amounts of collected information.

In addition, PEO IEW&S fields a host of force protection systems including the base expeditionary target and surveillance systems-combined (BETSS-C), which provides day-and-night sensor coverage and an ability to use sensors collaboratively and cooperatively in support of both defensive and offensive operations.

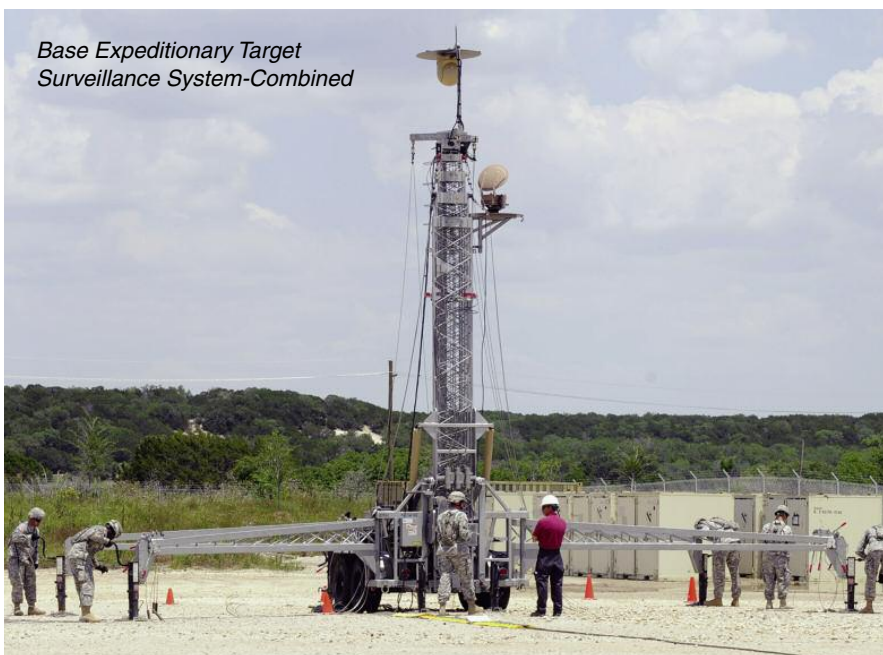
The PEO has fielded a number of notable devices. Many soldiers are familiar with the counter-radio controlled improvised explosive device (RCIED) jammers that protect them from remote-controlled IEDs. Also, aircraft survivability equipment—which will soon include the common infrared countermeasure system—protects aircrew and passengers and provides an envelope of protection from many threats.

Headquartered at Aberdeen Proving Ground, Md., the organization has a presence at Fort Belvoir, Va.; Redstone Arsenal, Ala.; and Los Angeles Air Force Base. From these locations, it also manages the fielding of a multitude of aerial and ground sensors with systems such as the future enhanced medium altitude reconnaissance surveillance system, which provides simultaneous multisensor capability, and the Prophet Enhanced, which provides relevant ground signal intelligence and electronic warfare capabilities to warfighters.

The **Common Infrared Countermeasure (CIRCM)** subprogram is the next-generation advanced threat infrared countermeasures (ATIRCM) and will provide the sole acquisition of future laser-based infrared countermeasure systems for all rotary-wing, tilt-rotor, and small fixed-wing aircraft across DoD. The CIRCM is a cooperative effort between the Army (lead) and Navy to provide modular self-protection suite upgrades for DoD aircraft. CIRCM will be developed as a directed infrared countermeasure/laser-based system that can be used with various missile warning systems (MWS) currently installed or planned for installation on Army, Navy or Air Force aircraft.

CIRCM will be designed to pay particular attention to multispectral manportable air defense systems (MANPADS) and advanced air-to-air infrared and/or pseudo-electro-optical weapons threats that can target rotary-wing, tilt-wing and slow-moving fixed-wing aircraft in the midst of ground clutter.

The **Prophet System** is a day/night, all-weather, near-real-time, ground-based tactical signals intelligence/electronic warfare capability organic to the brigade combat



Base Expeditionary Target Surveillance System-Combined

team (BCT), Stryker BCT and battlefield surveillance brigade. The Prophet family of systems provides force protection, situational awareness and actionable intelligence to the warfighter.

Prophet Enhanced (PE) serves as the Army's premier ground signals intelligence platform, building upon the success and lessons learned from preceding Prophet systems, including Prophet Spiral 1, Triton III and a quick-reaction capability version of Prophet Enhanced. PE gives soldiers a more robust operational capability, allowing for easier movement of the dismount system. By increasing the number of communications platforms, operators are afforded the flexibility to potentially conduct simultaneous, split, based, fixed and mobile operations. PE is installed onto Panther variants of the MRAP.

The **Base Expeditionary Target Surveillance System-Combined (BETSS-C)** is a family of systems that uses existing sensors and new technologies to deliver an integrated view of situational data, improving the accuracy and breadth of situational awareness in theater and saving lives. As such, BETSS-C has been seen as a proof of concept for the provision of integrated ISR data and was recognized as a DoD Top 5 Program for Systems Engineering Excellence in 2009. Soldiers have noted that enemy activity in the vicinity of a forward



Netted Long Range Advanced Scout Surveillance System

operating base or combat outpost decreases by approximately 60 percent when BETSS-C systems are installed and employed properly.

The **Netted Long Range Advanced Scout Surveillance System (LRAS3)** is a pioneering example of networking sensor systems to provide integrated views of the battle-



Distributed Common Ground System-Army

space. The LRAS3 provides long-range target acquisition capabilities to armor and infantry scouts, enabling them to conduct reconnaissance and surveillance operations while remaining outside of threat acquisition and engagement ranges. By networking one LRAS3 with another (Netted LRAS3), operators will be able to share information across each netted LRAS3, thereby achieving a more integrated view of the battlespace.

The **Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS)** is under development and provides the capability to detect, locate, classify/identify and track surface targets with a high degree of timeliness and accuracy to the BCT. EMARSS is a multi-intelligence airborne intelligence, surveillance and reconnaissance (AISR) system hosted on a King Air 350 ER platform. It provides simultaneous multisensor capability (full motion video/electro-optical/infrared, signals intelligence geolocation, internals and aerial precision geolocation). It enables point-to-point (sensor-to-shooter) and beyond-line-of-sight network communications linked to DCGS Enterprise. The Army plans to procure and field 12 EMARSS to complement 12 King Air 350-based quick reaction capability platforms that the Army will transition into its fleet of aircraft. These systems, along with the guardrail common sensor-X models and the enhanced airborne reconnaissance low systems, will provide a robust, multisensor AISR capability to support worldwide operations.

The **Distributed Common Ground System-Army (DCGS-A)** gathers, analyzes and shares significant amounts of information, enhances soldier situational awareness, and improves the commander's ability to protect the force. DCGS-A is the

globally networked flagship intelligence warfighting system that supports continuous intelligence tasking, processing, analysis, exploitation and dissemination operations, from peace through war.

DCGS-A provides actionable intelligence support at every echelon. It ingests data from every sensor—from space-based sensors to the soldier-as-a-sensor—and fuses that data together in a common relevant product that is compliant with the defense intelligence information enterprise, intelligence community and joint information enterprise standards.

Collecting information from more than 600 data sources, DCGS-A provides sensor ingest and processing; exploitation and dissemination/distribution of information; support for weather, terrain, and geospatial analysis; imagery exploitation (including full motion video); link analysis; visualization; and target development and nomination.

The **Program Executive Office Enterprise Information Systems (PEO EIS)** enables information dominance by developing, acquiring, integrating and deploying information technology (IT) systems to meet the Army's demands today while preparing for the challenges of tomorrow.

PEO EIS is composed of 40 acquisition programs, crossing all functional domains, in all acquisition life-cycle phases. Through the hard work and dedication of a workforce of more than 1,500 government civilians, military, and contractor support, PEO EIS successfully fields systems globally and sets the course for innovation, with an annual budget of approximately \$5.2 billion. These systems support Army and DoD-wide communications, logistics, medical, finance, personnel, biometrics, training and procurement operations.

Acquisition Business (AcqBusiness) is the trusted broker of Army acquisition program data and provides a portfolio of enterprise business systems and Web services that support effective decision making. AcqBusiness provides decision makers with critical visibility into the Army's acquisition investments.

The **Army Enterprise Systems Integration Program (AESIP)** provides enterprise resource planning (ERP) enterprise hub services, centralized master data management and business intelligence reporting. The Army continues to modernize its ERP business systems to simplify operations, optimize processes and provide an accurate, enterprise view of business information to all users. AESIP integrates business processes and systems by serving as the enterprise hub for the Army's logistics and financial ERP business systems, including General Fund Enterprise Business System (GFEB), the Army's first financial system; Global Combat Support System-Army (GCSS-Army), the tactical logistics system; and Logistics Modernization Program (LMP), the national logistics system.

AESIP enables integration by linking business processes and data across existing IT systems. This integration optimizes business processes and supports enterprise-level information requirements. AESIP has successfully delivered a Web-based solution for the creation and management of customer and vendor master data and implemented an optimized messaging and hub services capability.

AESIP houses and enables the Army enterprise material master, which provides the Army a single authoritative source for material data supporting all Army constituent (modernized and legacy) systems. This Army enterprise material master provides the catalyst to manage, control, create, change, archive and validate data, while providing a single global view of material. This provides the basic building blocks for product life-cycle management and weapon system management. Implementation of the enterprise material master enables inventory management, accountability, pricing, accounting functions and material requirements planning operations to be seamlessly integrated into the Army enterprise vision.

In September 2012, PEO EIS directed the merging of the transportation information systems and joint automatic identification technology product offices. Known as **Automated Movement and Identification Solutions (AMIS)**, this convergence of complementary capabilities will increase the quality of both the transportation coordinators' automated information for movements system II (TC-AIMS II) and the radio frequency in-transit visibility (RF-ITV) system capabilities, maximize effectiveness, and deliver the best value to customers. TC-

AIMS II automates and manages the movement of personnel, equipment and sustainment cargo, maintaining visibility at the tactical, operational and strategic levels. RF-ITV produces, collects and integrates movement and ITV information through a worldwide infrastructure of mobile and fixed RF-ITV read-and-write stations and satellite transponder-equipped vehicles and servers, making ITV data available to users through a Web-based tracking portal that shares the data with 35 other DoD systems.

Global Combat Support System-Army (GCSS-Army) manages the development, deployment and sustainment of the tactical logistics ERP solution for the Army's logistics enterprise. GCSS-Army replaces the aging standard Army management information systems that manage Army tactical logistics and the associated financial management systems with one integrated solution.

The Logistics Modernization Program (LMP) supports the Army national-level logistics mission to develop, acquire, field and sustain the world's best equipment and services, providing soldiers with a decisive advantage. LMP delivers an enterprise system for Army Materiel Command (AMC) with a fully integrated suite of software and business processes, providing streamlined data on maintenance, repair and overhaul; planning, finance and acquisition; and weapon systems supplies, spare parts, services, and materiel. LMP Increment 1 is deployed to approximately 50 locations with more than 20,000 users throughout AMC and related major subordinate commands, depots and arsenals, as well as the Defense Finance and Accounting Service.

As the Army's designated, primary source for commercial off-the-shelf (COTS) IT, **Computer Hardware, Enterprise Software and Solutions (CHES)** provides a no-fee flexible procurement strategy through which an Army user may procure COTS IT hardware, software and services through an e-commerce-based process, IT e-mart. CHES contracts provide continuous vendor competition for best value and consolidation of requirements to maximize cost avoidance and the Army's buying power.

Defense Communications and Army Transmission Systems (DCATS) is among the largest organizations in the PEO EIS portfolio, composed of the following: Defense-Wide Transmission Systems, land mobile radio (LMR), vehicular intercom systems (VIS) and wideband enterprise satellite systems (WESS).

DCATS provides total, best-value solutions in a wide array of subject matter, including acquisition/program management, contract management, funds management/planning, programming, budget and execution, systems design and engineering, site preparation, testing and acceptance, legal-acquisition law review, logistics support,

rapid response, price negotiations, and training.

Defense-Wide Transmission Systems (DWTS) has three primary missions. The first mission entails program and life-cycle management of the connect-the-logistician systems, including combat service support (CSS) automated information systems interface and the CSS satellite communications programs. The second entails implementing and sustaining wide-area transmissions systems, which include terrestrial transmissions-global command, control, communications and computers commercialization as well as technical control facilities. The third entails the special-users global command terrestrial communications program, to provide and sustain long-haul communications, video teleconference services and IT support to a highly classified Special Operations Command customer.

Land Mobile Radio (LMR) provides Armywide, nontactical, garrison-level systems and radios. LMR systems are commercial solutions that provide mobile and portable communication support for garrison public safety, force protection and facilities maintenance operations. First responders are the primary users of LMR, including installation military police, fire departments and emergency medical personnel. LMR maximizes the use of a scarce radio spectrum and provides secure voice transmissions and mutual aid interoperability with local, state and federal entities. LMR systems are vital components of the Army Enterprise that provide a seamless communications network in support of base-level communications and infrastructure.

Vehicular Intercom Systems (VIS) provide noise-canceling intercom solutions for U.S. Army tactical vehicles. The AN/VIC-3 is the standard intercom system for more

than 70 tactical vehicle platform variants. VIS is working to produce the AN/VIC-5, which will be the next-generation intercom solution utilized across crew-served tactical vehicle platforms. It will provide the soldier with a customizable, mix-and-match, modular architecture that scales to accommodate virtually any platform requirement.

Wideband Enterprise Satellite Systems (WESS) supports the wideband global satellite communications and constellations with super-high-frequency band satellite communications to the soldier and joint forces, with faster response times and greater capacity from the garrison to the battlefield. WESS provides Earth terminals and gateways, network planning and monitoring, satellite payload control, jamming response, and power and bandwidth management.

DoD Biometrics systems capture, transmit, store, manage, share, retrieve and display biometric data 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.

Biometric Enabling Capabilities (BEC) designs, engineers, develops, acquires, deploys and sustains an enterprise biometric system that serves as the DoD's authoritative biometric repository. This biometric system enables identity verification superiority across DoD as part of the BEC program of record. The DoD automated biometric identification system (DoD ABIS) was developed as a quick reaction capability (QRC) to receive multimodal biometric submissions from collection devices, allowing the soldier to positively identify and verify actual or potential adversaries. DoD ABIS v1.2 will be the initial baseline capability for the BEC program: BEC In-



Handheld Interagency Identity Detection Equipment measures personal biometric data.



Deployed Digital Training Campus

crement 0. BEC Increment 1 is an acquisition category 1AC program and will replace DoD ABIS v1.2 in FY 2016. Planned capability improvements include a customizable, Web-based, biometrically enabled watch list; a Web-based nonsecure and secure Internet protocol router interface; additional sizing/throughput; mission assurance category level II sensitive continuity of operations; and faster automated biometric match processing times.

Joint Personnel Identification (JPI) fields biometric collection devices, which were developed as QRCs used to collect, match, store and share biometric data and contextual information. JPI's QRC systems include the secure electronic enrollment kit II, the biometric automated toolset-Army and the biometric identification system for access. JPI systems enable positive identification, authentication, authorization and surveillance of individuals wherever U.S. forces operate. The JPIv2, designated as an acquisition category 1AC program, will replace existing QRCs beginning in the fourth quarter of FY 2017. JPIv2 offers improved data matching and synchronization, decreased size and weight, and enhanced ruggedness. In addition, architectural improvements enable the integration of emerging biometric technologies.

Distributed Learning System (DLS) provides a worldwide IT infrastructure that innovatively combines hardware, software and telecommunications resources with training facilities and Web-based applications. DLS delivers training for soldiers and Department of the Army civilians anytime, anywhere. Deployed Digital Training Campuses (DDTC), a component of DLS, deliver multimedia courseware to soldiers deployed in operational areas. The DDTC is designed to Army require-

ments to be expeditionary and self-contained. Each DDTC can be set up in less than two hours and is equipped with 20 laptop workstations, Internet accessibility, video tele-training, voice over Internet protocol and designated satellite access.

Enterprise Services (ES) was established in September 2012 to provide management of three product director offices within the PEO EIS enterprise management systems portfolio: enterprise email (EE), Army Knowledge Online (AKO), and acquisition, logistics, and technology enterprise systems and services (ALTESS). ES synchronizes initiatives and major lines of effort among these three programs to deliver effective enterprise-level services to the Army to meet current and future hosting, email, collaboration and content management needs. ES also supports the execution of the Army data center consolidation plan by acquiring and fielding the operating environment to selected installation processing nodes and Army core data centers. The end state of this initiative will enable the rationalization of more than 13,000 existing Army applications and allow consolidation at the installation level for local applications and into several enterprise-level data centers for enterprise applications.

Acquisition, Logistics and Technology Enterprise Systems and Services (ALTESS) provides full life-cycle support for DoD information systems. In addition to providing IT service management based on IT Infrastructure Library v3 best practices, ALTESS operates a state-of-the-art data center and provides data management, information security, applications sustainment and customer support to federal organizations and soldiers worldwide.

Each day, more than 350,000 users log in to **Army Knowledge Online (AKO)** to

read or send email, collaborate on documents, or search for information. In FY 2012, AKO directed more than 2 billion email messages, facilitated more than 150 million logins to the AKO portal and stored more than 26 million files. AKO provides a secure enterprise suite of collaboration, communication and identity management services to the Army around the world. AKO's intranet services include a single enterprise Web portal, single sign-on services to more than 1,000 applications, Armywide directory services, organizational and personal file storage, email, calendars, contacts, presence and awareness, instant messaging, chat, video messaging, blogging, business process management, and search.

Enterprise Email (EE) provides secure email to the DoD enterprise that is designed to increase operational efficiency and to facilitate collaboration across the organization. The EE service provides users secure access to email at any time and from any location. EE supports coordination efforts by sharing individual, organizational and resource calendars across the DoD and its mission partners. EE reduces the cost of email by eliminating unnecessary administration and inefficient network configurations, thereby freeing resources to focus on other priorities. EE replicates users' data in highly secure defense enterprise computing centers to provide organizations the level of assurance they need to ensure their communications are secure. The Army is obtaining EE capabilities as a managed service through an interagency acquisition with the DISA.

Force Management System (FMS) establishes accurate, consistent and timely force structure information to the Army force management community. FMS will directly support the Army Force Management Director mission of managing and allocating manpower and force structure information, documenting requirements and authorizations for unit models over time, and providing organizational/force structure solutions in support of the Army's transformation toward the Future Force. FMS is the Army's system to support the DoD J-8 global force management data initiative (GFMDI) and the Army's organizational server effort. GFMDI is a DoD methodology that allows units, for the first time, to track forces down to the individual levels.

General Fund Enterprise Business System (GFEB) is moving the Army toward a more responsible financial environment and, more specifically, to a cost management culture. Since 2012, GFEB has expanded its reach and now governs the Army contract writing system (ACWS) and GFEB sensitive activities (GFEB-SA) and supports critical life-cycle management and acquisition processes.

ACWS will be the Army's next-genera-

tion, single-enterprise contracts writing system, providing full spectrum contract management, including execution and close-out. ACWS will be a mixed system that meets compliance requirements of the Federal Financial Management Improvement Act. The system will be designed to meet the contract activity requirements of all Army users, including forward-deployed disconnected users, installations, weapons systems and secure contracting missions. ACWS will function in low bandwidth/disconnected status for expeditionary forces and will support unclassified networks, classified networks and all Army contracting requirements. ACWS is expected to utilize centralized services such as clause logic and standardized business rules, including contract line-item number structure and standard data schemas such as the procurement data standard and standard financial information structure.

GFEBs Sensitive Activities (GFEBs-SA) will operate in a secure and classified environment and offer the functionality of GFEBs to the special operations community. It will enable the final retirement of expensive and outdated legacy core financial systems, including the standard operations and maintenance, Army research and development system and the standard finance systems. GFEBs-SA will integrate seamlessly with GFEBs and provide se-

curity, Web-based, real-time data to Special Operations Command and other classified, intelligence and special-access-program Army activities.

Human Resource (HR) Solutions develops performance-based acquisition packages and provides full life-cycle contract management and support in four mission areas: management and administrative support, personnel services and support, recruitment and retention, and studies and analysis.

Through the use of 57 indefinite delivery/indefinite quantity contracts, HR Solutions provides timely and high-quality services at a reduced cost to support a wide variety of support services important to senior leaders, soldiers and their families.

Installation Information Infrastructure-Communications and Capabilities (I3C2) supports the Army's installation-level IT activities by providing the engineering and design of the network and infrastructure as well as the tools and capabilities required to plan, coordinate, synchronize and conduct network operations. Streamlining acquisition practices to implement available technologies and deliver relevant capabilities to soldiers is essential to maintaining the technological advantage in today's battlespace. I3C2 is focused on delivering LandWarNet strategic-level infra-

structure and capabilities to transform the Army network into a centralized, secure, operational and sustainable enterprise. I3C2 is delivering enhancements to the soldier's ability to effectively "fight upon arrival" and is making a significant contribution toward achieving the Army's IT objectives.

The **Installation Information Infrastructure Modernization Program (I3MP)** modernizes installation network infrastructure including voice, video, data and connectivity at Army installations in the continental United States. I3MP supports worldwide, network-centric operations and enterprise unified capabilities (UC). I3MP engineers, furnishes, fields and tests a converged UC-ready infrastructure system, connecting the desktop to the defense information systems network through the installation's campus area network, delivering security boundary equipment and supporting strategic command centers worldwide.

Established in February 2012, **Korea Transformation (KT)** was the principal enabler for achieving the joint U.S./Republic of Korea (ROK) Strategic Alliance 2015 objectives. KT develops, engineers and delivers command, control, communications, computers and intelligence (C4I) systems and services throughout Korea as part of a seamless transition to U.S. Army Garrison (USAG) Humphreys, with no impact on



Medical Communications for Combat Casualty Care

soldiers' ability to conduct operations. These efforts are in direct support of the \$10 billion transformation of forces in Korea from Cold War locations to the new alliance warfighting command structure, consolidating 104 camps and stations into 48 installations and two enduring hubs. This will align and shape the force structure based on U.S. and ROK enhanced capabilities, and it will position U.S. forces for increased peninsular and regional security.

The KT product office provides an end-to-end architecture for the relocation of United Nations Command and U.S. Forces Korea C4I assets and capabilities from USAG Yongsan, the Seoul metropolitan area, and other designated locations to USAG Humphreys. The U.S. Army Pacific (USARPAC) area of responsibility was added to the program in August 2012, including modernization of IT infrastructure for voice and data systems, inside and outside plant, and C4I capabilities for all USARPAC command centers.

Power Projection Enablers (P2E) has a global presence and is responsible for acquiring and implementing enterprisewide IT capabilities and services supporting deployed forces in the Central Command, European Command, Africa Command and Pacific Command areas of operation. P2E provides the Army with capabilities and adaptive processes that support net-centricity, secure access to knowledge, and improved information systems and services throughout the Army. P2E supports the Army's ability to integrate and manage the infrastructure as an enterprise to enhance capabilities and efficiencies through the im-

plementing enterprise systems. Examples include email, active directory, Army global directories, Army processing centers and related technologies deployed across all Army organizations.

Integrated Personnel and Pay System-Army (IPPS-A) will provide the Army with an integrated, multicomponent personnel and pay system that will streamline Army HR and enhance the efficiency and accuracy of Army personnel and pay procedures. The tool will be Web-based; available 24 hours a day; and accessible to soldiers, HR professionals, combatant commanders, personnel and pay managers, and other authorized users throughout the Army. IPPS-A addresses major deficiencies in the delivery of military personnel and pay services and also provides internal controls and audit procedures that prevent erroneous payments and loss of funds.

Army Human Resource Systems (AHRS) is a system of systems that consists of three main components. The deployed theater accountability system is a real-time system available in theater and worldwide, capable of interfacing with other DoD systems and providing top-of-the-system analytical information by name, Social Security number/electronic data interchange-person identifier, unit, location, and day. The tactical personnel system is a stand-alone portable system that creates manifests and jump manifests for tactical units and provides accountability for all soldiers and civilians. The electronic military personnel office is a reliable, timely and efficient mechanism that performs personnel actions and strengthens accounting with

multicomponent unit functionality.

Within AHRS, **Installation Management Systems-Army (IMS-A)** provides automated standard business applications to assist installation commanders in managing critical business functions at Army installations to better support sustaining base operations, and it deploys to meet the needs of warfighters. IMS-A consists of the installation support modules system and range facility management support system.

Medical Communications for Combat Casualty Care (MC4) provides the Army's solution to the presidential and congressional objectives set forth in 1997 by Title 10, which calls for a medical tracking system for all deployed servicemembers. MC4 is a ruggedized system of systems containing medical software packages fielded to operational medical forces worldwide. Composed of joint software and commercial- and government-off-the-shelf products, MC4 provides the tools necessary to digitally record and transfer critical medical data from the foxhole to medical treatment facilities worldwide.

Reserve Component Automation Systems (RCAS) provides integrated Web-based software solutions and support services to administer, manage, prepare and mobilize approximately 550,000 Army National Guard and U.S. Army Reserve soldiers serving in units located at nearly 4,000 sites in all 50 states, three U.S. territories, the District of Columbia and Europe. The RCAS suite of software consists of 14 applications within four major functional areas: mobilization, safety, personnel and force authorization.

Along with the representative PEO programs noted previously, the U.S. Army G-3/5/7 Force Management Enterprise Division sponsors **Enterprise Management Decision Support (EMDS)**, a Web-enabled, database-driven readiness and resourcing data system operated on the secret Internet protocol router network (SIPRNet). EMDS pulls disparate data from multiple authoritative data source systems in near real-time to deliver an Armywide common operating picture of global force readiness information for planning, assessment and forecasting. The disparate, holistic data enable Army leaders to evaluate Army aggregate and unit readiness, personnel, equipment, training and information resources from a desktop computer, 24/7.

The EMDS enterprise business intelligence system retrieves and integrates classified and unclassified data retrieved from multiple data sources to deliver customizable, automated dashboards and table/chart views of readiness and resourcing information—all from a single, common access point portal for historic, current, predictive and future data, thus eliminating long hours of manual data collection and the need to research multiple data systems.