COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS AND INTELLIGENCE (C4I) SYSTEMS AND CAPABILITY SET 13

The **Network** is the Army's top modernization priority, and the Army is changing the way it supplies network systems and capabilities to operational units by incrementally aligning the delivery of new technology with the Army force generation (ARFORGEN) process. This effort will drive networked capabilities down to the small unit and soldier level—those at the tactical edge who need these critical capabilities the most. 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 will enhance vertical and horizontal connectivity and provide an integrated network baseline from the static tactical operations center (TOC) 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)**, will be fielded to Army brigade combat teams starting in fall 2012. CS 13 was developed and validated through the Network Integration Evaluations (NIEs) and agile process, the Army's new strategy to rapidly evaluate, procure and field network technologies in a more cost-effective manner.

Capability Set 13 tested, validated and finalized during Network Integration Evaluation 12.2 at White Sands Missile Range, N.M., the first integrated package of tactical communications gear.

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 will also deliver unprecedented connectivity to the dismounted soldier through the JTRS Rifleman Radio, a 2-pound radio carried by platoon-, squad- and team-level soldiers for voice communications that 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 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 its mission command applications providing situational awareness, collaboration, fires, sustainment, air defense and airspace management.

Critical U.S. Army C4I capabilities are provided through U.S. Army offices such as 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)**. In addition, current and next-generation warfighter support is being delivered through the **Joint Program Executive Office for Joint Tactical Radio Systems (JPEO JTRS)**.

The **Program Executive Office for Command, Control and Communications-Tactical (PEO C3T)** provides soldiers with the networked mission command solutions they require to dominate now and in the future. PEO C3T supports 41 key acquisition programs that develop, acquire and field a diverse range of products for the Army including mission command software applications, power generators, radios, computers, satellite terminals, communications security devices, servers, and the integrators that allow all the systems and components to function seamlessly.

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.

Headquartered at Aberdeen Proving Ground, Md., PEO C3T has a workforce of almost 1,600 employees with a total annual budget of $4 billion. 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

"It's a jungle out there."

to improve and support current systems, while developing future systems to support the Army's vision of a networked, information-enabled force.

Advanced Field Artillery Tactical Data System (AFATDS) is the digitized sensor-to-shooter link providing automated technical and tactical fire-direction solutions, fire asset-management tools and decision support functionality. AFATDS functions from firing platoons through echelons above corps. AFATDS is the fire support node of the Army Battle Command System (ABCS). It 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 (LOS/BLOS) 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.

The **Combat Survivor Evader Locator (CSEL)** is a handheld survival radio in use by Army Aviation units and special operations forces to assist in recovering isolated crews in the event of a downed aircraft. CSEL allows rescue execution orders to be delivered within minutes, increasing the probability of rescue and reducing risk to rescue forces.

Command Post of the Future (CPOF) and the **Mission Command Workstation** provide the commander with a comprehensive view 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. CPOF is the core framework for the mission command collapse workstation, which provides collaborative command-and-control/maneuver, fires, sustainment and airspace functions on a common workstation. **Command Web** is a lightweight, Web-enabled tool that extends the strong collaboration capabilities of CPOF and Mission Command Workstation to additional users down to the company level.

Data Products are software products that allow Force XXI Battle Command Brigade and Below (FBCB2)-Blue Force Tracker (BFT), Army Battle Command System (ABCS) and other C4ISR systems to 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 information system providing integrated, on-the-move, timely, relevant information and situational awareness to tactical combat leaders and soldiers from brigade to platform and across platforms within the brigade task force and other Joint forces. It allows soldiers to track one another'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. FBCB2's next-genera-

tion technologies, the **Joint Capabilities Release (JCR)** and **Joint Battle Command-Platform (JBC-P)**, enhance these capabilities with the faster **BFT 2** satellite network, secure data encryption, chat room functionality and an improved user interface. **JCR-Logistics (JCR-LOG)** also integrates FBCB2/BFT capability with the **Movement Tracking System (MTS)**. The MTS is a vehicle-based system that tracks combat support and combat service support vehicles, as well as other assets.

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.

Tactical Electrical Power (TEP) is a family of ruggedized power generators and power distribution equipment that includes the military tactical generator, tactical quiet generator, advanced medium mobile power sources, power units, and power plants (trailer-mounted)—deployable power generation and distribution systems. PEO C3T's Project Manager for Mobile Electric Power is working across its tactical electric power portfolio to cut fuel use, integrate alternative energy sources and improve operational energy efficiencies.

The **Warfighter Information Network-Tactical (WIN-T) Increment 1**, the Army's tactical communications backbone, provides "networking 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 future increments of WIN-T.

The **Warfighter Information Network-Tactical (WIN-T) Increment 2** introduces mission command on-the-move and extends satellite communications to the company level. It also provides a self-forming, self-healing network and improved Network Operations (NetOps) tools for planning and monitoring the network.

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

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

Command Post of the Future (CPOF)

AN/TPQ-53 radar system

Lockheed Martin

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). These 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 (IEDs); sensors for counter-rocket, artillery and mortar, and the integrated intelligence architecture. PEO IEW&S is responsible for a multibillion-dollar portfolio consisting of a combination of more than 110 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. These systems are integrated with other intelligence assets into a system-of-systems architecture that provides ISR, force protection, and 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.

The **AN/TPQ-53 Radar** is a highly mobile radar system that automatically detects, classifies, tracks, and locates the point of origin of projectiles fired from mortar, artillery, and rocket systems with sufficient accuracy for first-round fire for effect. It mitigates close-combat radar coverage gaps and will replace a majority of the current Firefinder Radars, modernizing most brigade combat teams (BCTs) and Fires brigades. The AN/TPQ-53 system will interoperate with future battle command systems (BCSs) to provide the maneuver commander with increased coun-

terfire radar flexibility. The AN/TPQ-53 is capable of being deployed as part of the indirect fire protection capability (IFPC) system of systems to provide a sense-and-warn capability for fixed and semi-fixed sites. The AN/TPQ-53 system provides increased range and accuracy throughout a 90-degree search sector (in stare mode), as well as 360-degree coverage (rotating) for locating mortar, artillery and rocket firing positions.

Among the system's numerous key attributes are its quick setup time with an emplacement of five minutes, reduction of soldier support (from 12 soldiers on the Q-37 and six soldiers on the Q-36 to four soldiers for the AN/TPQ-53), ability to be transported via C-130 and linkage to the advanced field artillery tactical data system (AFATDS) and forward area air defense command and control (FA2DC2).

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 the 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 (DIRCM)/laser-based system that can be used with various missile warning systems (MWS) currently installed on or planned for installation on Army, Navy or Air Force aircraft.

CIRCM will be designed to pay particular attention to multi-spectral 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.
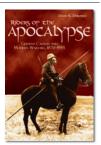
The **Prophet System** is a day/night, all-weather, near real-time, ground-based tactical signals intelligence/electronic war-

fare capability organic to the brigade combat 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. Also, by increasing the number of communications platforms, operators are afforded flexibility to potentially conduct simultaneous, split, based, fixed and mobile operations.

PE is installed onto Panther variants of the mine-resistant ambush-protected vehicle.

The **Distributed Common Ground System-Army (DCGS-A)** is the Army's cornerstone intelligence-processing and analytical system. Historically, every sensor had its own, unique ground system to receive, store, and process intelligence data. This forced the analyst to go to multiple separate ground stations to analyze other sensor data, and posed tremendous challenges to sharing intelligence.

DCGS-A has been built to the intelligence community framework standards and delivers unprecedented real-time, integrated intelligence analysis—fused into one common accessible format. DCGS-A receives data from multiple sensors (space-based, airborne, terrestrial) and multiple intelligence sources—signals intelligence, imagery, human intelligence and so on. With DCGS-A, the analyst can perform valuable multidisciplined intelligence, surveillance and reconnaissance

(ISR) analysis and easily share that data with other Army units, sister services and coalition partners. Better analysis and increased collaboration mean better intelligence support to the tactical commander.

DCGS-A provides an integrated solution that operates in a secure, distributed and collaborative environment. The system provides commanders, decision makers, and analysts at all echelons with real- and/or near real-time ISR data, information, and analytical products. DCGS-A utilizes software capabilities across multiple intelligence disciplines to enable intelligence analysts to obtain, process and disseminate the information they need to provide commanders with actionable intelligence at all echelons. The enhanced speed, accuracy and relevance of the ISR effort provide commanders the intelligence information they need when they need it to plan and conduct full spectrum operations in counterinsurgency environments and across the full range of military operations.

DCGS-A uses the latest Cloud technology to rapidly gather, collaborate and share intelligence data to shape combat operations. The DCGS-A Cloud provides cutting-edge, multi-intelligence analytical capabilities that allow analysts to explore a massive amount of intelligence data in different ways and rapidly fuse critical information into an accurate response. DCGS-A has successfully deployed the first tactical Cloud Node in the Department of Defense.

The mission of **Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS)** is to provide persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy to the brigade combat team (BCT) through mission overwatch in day/night, near-all-weather conditions.

EMARSS is a multi-intelligence airborne intelligence, surveillance and reconnaissance (AISR) system dedicated specifically to direct support of the tactical commander. It enhances BCT effectiveness by defining and assessing the environment and providing surveillance, targeting support and threat warning. EMARSS is a key contributor to the tightly woven, highly integrated network of intelligence and operations warfighting functions necessary to maintain contact and develop targets of interest in an irregular warfare environment and across the range of military operations. The EMARSS system is designed to provide direct support to the BCT commander but can also support regimental combat team (RCT), division or other tactical units as required by the tactical situation.

The EMARSS AISR capabilities include an electro-optical/infrared (EO/IR) with full-motion video (FMV) sensor, a communications intelligence sensor and an aerial precision guidance (APG) sensor, all supported by line-of-sight (LOS) and beyond-line-of-sight (BLOS) communications and hosted on a manned, medium-altitude derivative of the commercial Hawker-Beechcraft King Air 350ER aircraft. EMARSS operates as a single platform in support of tactical missions, but through connectivity to tactical and national networks it also contributes to the joint overall AISR constellation.

EMARSS contains a tailored set of distributed common ground system-A (DCGS-A)-enabled software and ISR processing software functionalities to process, exploit and rapidly disseminate the intelligence derived from the imagery sensor. The communications intelligence sensor is controlled through LOS and BLOS communications at the DCGS-A, where processing, analysis and timely reporting to the supported tactical force are accomplished. Selected EMARSS imagery is immediately processed on the aircraft, and the collected imagery is also forwarded to the DCGS-A for further processing, analysis and reporting. EMARSS complies with the DoD information technology standards registry and defense information systems network (DISN). This architecture permits interoperability with any multiservice or joint system that complies with DoD-standard formats for data transfer and dissemination.

The **Machine Foreign Language Translation System (MFLTS)** is a software-only program that will develop, acquire, field and sustain a basic automated foreign speech and text translation capability into Army systems of record. The language development design will allow for technical insertion of additional software language modules, performing translation as required by the Army. It is not a device or a set of stand-alone languages; rather, it is a software system that uses a modular open

Distributed Common Ground System-Army (DCGS-A) operations

system architecture solution to accept plug-in language modules written to an MFLTS established set of standards.

These integrated automated translation capabilities will be applicable across three different system configurations: a hand-held/wearable portable device, a laptop/mobile device, and within a networked/Web-enabled system. MFLTS will be interoperable with commercial off-the-shelf (COTS) or government off-the-shelf (GOTS) automation equipment including the DCGS-A, ground soldier systems, and counterintelligence human intelligence automated reporting and collection system (CHARCS).

The MFLTS program achieved milestone A approval and was awarded a contract in fiscal year (FY) 2011 for the technology development phase. The contractor began a prototyping effort focused on the architectural framework design to produce and manage MFLTS capability in Web-enabled, mobile and portable configurations through applications (speech to speech and text to text, under initial capabilities).

The engineering and manufacturing development phase of the MFLTS program will commence in FY 2013 with initial operating capability (IOC) for Pashto, Dari, Iraqi Arabic and Modern Standard Arabic.

The **Persistent Threat Detection System (PTDS)** is a quick reaction capability serv-

Persistent Threat Detection System (PTDS)

ing both intelligence and operational communities with real-time situational awareness, counter-IED, force protection and forensic capabilities. It is a significant ISR and force multiplier for the warfighter.

PTDS is a 74,000-cubic-foot, helium-filled, tethered aerostat envelope equipped with dual high-resolution EO/IR (Wescam MX-20s) sensors or an MX20 sensor with either a ground moving target indicator/dismounted moving target indicator radar (STARLite) or an EO/IR wide-area sensor (Kestrel) payload. PTDS is integrated with

existing acoustic sensors that cue the aerostat payload to provide near real-time eyes on target. PTDS provides a persistent surveillance and dissemination capability allowing quick reaction forces to find, fix, track, target and engage direct- and indirect-fire threats.

PTDS has proven its effectiveness in a combat environment by providing actionable information to the warfighter and ranks on U.S. Forces-Afghanistan's Top 10 list of urgently needed capabilities. Since 2010, 46 PTDS have been fielded to meet

urgent warfighter requirements with 66 systems becoming operational by the fourth quarter of FY 2012. As of June 2012, PTDS provided more than 500,000 hours of real-time FMV/ISR capability in both Operation New Dawn and Operation Enduring Freedom.

The **Program Executive Office Enterprise Information Systems (PEO EIS)** supports C4I capabilities by providing infrastructure and information management systems to the Army. As the Army's enterprise-wide technical leader for business information systems, PEO EIS enables information dominance by developing and delivering integrated, network-centric capabilities to accomplish the mission today and be prepared for the mission of tomorrow.

Acquisition Business (AcqBusiness) develops enterprise solutions and provides data-management services that support the acquisition community in conducting business. These capabilities enable consistent, effective, and efficient conduct and oversight of acquisition tasks. The planning and development of additional capabilities are ongoing; prototyping, user involvement and capability distribution via a modern and scalable network-centric architecture are core elements of the program strategy. AcqBusiness collaborates with the combat developer, performance assessment and root cause analysis (PARCA), and the Army acquisition community to identify enterprise business requirements and develop solutions that meet critical needs. The program has fielded a substantial infrastructure and variety of functional information technology (IT) tools and services providing an enterprise, service-oriented, business environment that brings the right information to the right people at the right time.

The **Army Enterprise Systems Integration Program (AESIP)** is a vital component of the Army's goal of modernizing enterprise resource planning (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: the General Fund Enterprise Business System (GFEBS), the Army's financial system; the Global Combat Support System-Army (GCSS-Army), the tactical logistics system; and the 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.

Acquisition, Logistics and Technology Enterprise Systems and Services (ALTESS) provides full life-cycle IT solutions, support, and services to the Army's acquisition community and DoD customers in a secure environment. With significant, secure infrastructure and data center capabilities, ALTESS provides critical support to more than 2.3 million users worldwide. ALTESS operates a state-of-the-art "green" data center with first-class enterprise network operations, systems engineering, applications sustainment and enterprise-level service management capabilities. ALTESS is a leader in providing cost-effective data center services for the Army and DoD.

Computer Hardware, Enterprise Software and Solutions (CHESS) provides architecturally sound standards and policy-compliant IT enterprise solutions from a broad range of industry IT providers to all Army activities and organizations. In accordance with Army Regulation 25-1 *Army Knowledge Management and Information Technology*, CHESS is also responsible for implementation of the biannual consolidated buy (CB) program that offers desktop and notebook computers and printers at a substantial price savings. The CB process is the most cost-effective approach to fulfilling user requirements for these products. It directly supports the Army CIO/G-6 strategy for acquiring products that are fully compliant with federal desktop computing regulations as well as DoD and Army security and interoperability standards.

Defense Communications and Army

Transmission Systems (DCATS) manages a suite of more than 100 projects and rapidly delivers these capabilities in direct support of global missions to Army forces, senior national leadership and combatant commands in joint, unified and multinational operations. DCATS provides worldwide strategic satellite communications and wideband control systems, long-haul terrestrial microwave and fiber-optic communications systems, technical control facilities (TCFs), combat service support communications systems, critical power infrastructure, terrestrial communications, combat vehicle intercom systems, in-transit visibility, and other leading technologies to meet current and future Army requirements.

The **Distributed Learning System (DLS)** acquires, deploys and maintains worldwide distributed learning online courseware to ensure that soldiers receive critical training for mission success. Through the Army Learning Management System (ALMS) and Army e-Learning, DLS delivers training to more than 1.4 million soldiers and Department of the Army civilians, manages training information, and provides training collaboration, scheduling, and career planning capabilities in both resident and nonresident training environments.

DoD Biometrics designs, engineers, acquires, deploys and sustains enterprise biometric solutions in multiple operating environments, enabling identity dominance on the battlefield and across the services. 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, de-

DoD Biometrics—an iris scan

tention and interception operations. DoD Biometrics protects the nation through identity dominance by enabling responsive, accurate and secure biometrics any place, any time, in cooperation with the Department of Homeland Security, Department of Justice, Department of State and other government agencies.

Defense Wide Transmission Systems (DWTS) provides best-value solutions to meet strategic long-haul and base-support communications needs worldwide for the DoD and other government agencies. DWTS has two primary missions: program and life-cycle management of the connect-the-logistician systems, and implementation and sustainment of wide-area transmissions systems. The first mission includes the CSS Automated Information Systems Interface (CAISI) and the CSS Satellite Communications (CSS SATCOM) programs. The second mission includes terrestrial transmissions (global C4 commercialization as well as TCFs) and very small aperture terminal (VSAT) satellite communications transmissions.

The **Force Management System (FMS)** designs, develops and deploys an integrated force-management capability that establishes accurate, consistent and timely force-structure information to the Army force management community. FMS directly supports the Army director, Force

Very small aperture terminal (VSAT) satellite dish

Management, whose mission is to manage and allocate manpower and force-structure information; document unit models (requirements and authorizations) over time; and provide organizational and force-structure solutions. FMS is the Army's system to support the DoD and Joint Chiefs of Staff (JCS) J-8 global force man-agement data initiative (GFMDI) mandate, which is the foundation of the Army's network-centric data environment. GFMDI is the authoritative data source for all Army force-structure data, from Department of the Army and state National Guard headquarters down to individual billet and equipment authorizations. FMS incorpo-

rates common software development tools and design and development standards, complying with DoD and Army architecture standards, and incorporating government and industry standards for security. The design also provides for online data warehousing of archived data and streamlined system maintenance.

Global Combat Support System-Army (GCSS-Army) oversees the implementation of the tactical logistics and financial ERP program to integrate business processes and offer an Army-wide view of logistics information from the battlefield. GCSS-Army will allow commanders to anticipate, allocate and synchronize the flow of resources across all areas of operations. Army logisticians will realize significant improvements in mission performance over the current tactical logistics management information systems. GCSS-Army will replace aging, stovepiped tactical logistics systems and associated financial capabilities and communicate with applicable Army command-and-control and joint systems as a follow-on initiative. This Web-based system, supported by laptops and automatic identification technology (AIT) devices, provides essential functionality for limited disconnected operations and for connected operations using robust deployable communications to connect to a centralized database for all users at all echelons.

General Fund Enterprise Business System (GFEBS) integrates financial, real property, cost, and performance data into a Web-based ERP system. GFEBS standardizes business processes and transactional input across the Army, provides real-time visibility of transactions, integrates data and produces full cost data. GFEBS will enable decision makers to better use current resources and enable better analyses of resource implications for programs and budgets. GFEBS brings the majority of Army financial and real property management processes into a single system, integrates performance data and produces full costs. This empowers leaders at all levels to consider the true costs of operations, functions, organizations, and more when making decisions. GFEBS is being implemented across the active Army, Army Reserve and Army National Guard. For the first time, the Army will have a single authoritative source for financial and related nonfinancial data for the entire general fund. Ultimately, GFEBS will replace and/or be subsuming more than 80 Army legacy accounting, financial and asset management systems. When fully implemented, GFEBS will be one of the world's largest ERP systems with some 79,000 users at more than 200 locations around the world and about 1 million transactions each day. GFEBS will enable the Army to better manage current budget requirements and better anticipate and estimate future budget requirements for its more than $140 billion in annual expenditures.

The **Installation Information Infrastructure Modernization Program (I3MP)** modernizes installation infrastructure and terrestrial transmission (voice, video, data and connectivity) by using standard architecture and equipment from multiple vendors. I3MP provides a robust and scalable networked information infrastructure that allows migration to a network-centric, knowledge-based operation and enhances connectivity between forward-deployed forces with continental United States-, Europe- and Pacific-based forces. I3MP is a part of the joint effort to improve and protect LandWarNet by enhancing the infrastructure for better efficiency and effectiveness of the network and Army interoperability across DoD.

Joint-Automatic Identification Technology (J-AIT) is the Army product management office for total radio frequency identification (RFID) and automatic identification technology (AIT) solutions. As an RFID technology leader, J-AIT provides global asset tracking and Web-based radio frequency in-transit visibility (RF-ITV) services through the upgrade, implementation and maintenance of the RF-ITV system. It offers a single point of contact for acquisition support and technical expertise for joint services, federal agencies, the North Atlantic Treaty Organization (NATO), and multinational forces by establishing and maintaining contract vehicles for the procurement of AIT products and services. J-AIT offers complete program life-cycle support while providing the joint warfighter and coalition partners with automated, near real-time ITV of materiel and equipment worldwide. It also supports multinational information sharing by the DoD with NATO and coalition partners.

The **Logistics Modernization Program (LMP)** provides a comprehensive, modernized logistics solution that enables Army Materiel Command (AMC) to provide world-class logistics readiness to the warfighter. Operational since July 2003, LMP delivers a fully integrated suite of software and business processes that streamlines the maintenance, repair, and overhaul (MRO), planning, finance, acquisition, and supply of weapon systems, spare parts, services and materiel to the soldier. Fundamental to the Army's transformation efforts, LMP replaces a stovepiped legacy systems environment and enables the Army to harness the power of precise, up-to-the-minute enterprise-wide data and improved business processes. The program manages a multibillion-dollar inventory with tens of thousands of vendors and integrates with more than 70 DoD systems. Now fully fielded, LMP operates at more than 50 locations worldwide with approximately 25,000 users, delivering materiel to soldiers when and where they need it.
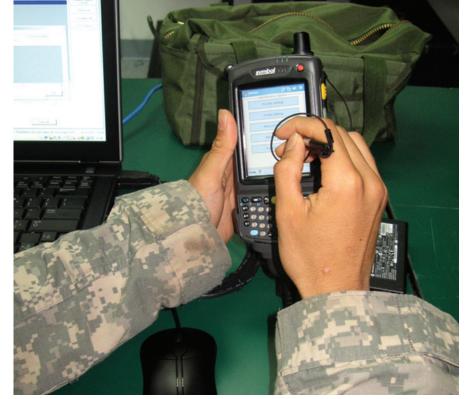
Land Mobile Radio (LMR) modernizes the Army's continental United States and Pacific nontactical LMR systems in order to support installation public safety organizations and functions. These include first responders, force protection measures and other installation management functions. LMR provides spectrum efficiencies by executing the migration of Army posts, camps and stations to narrowband frequencies as mandated by the National Telecommunica-

A Logistics Modernization Program (LMP) facility

tions and Information Administration. LMR acquires solutions that meet Association of Public Safety Communications Officials P25 interoperability standards.

Medical Communications for Combat Casualty Care (MC4) integrates, fields and supports a comprehensive medical information system, enabling lifelong electronic medical records, streamlined medical logistics and enhanced situational awareness for Army operational forces. MC4's vision is to be the premier enabler for improved tactical health care and better decision making through the power of IT. MC4 is a ruggedized system of systems containing medical software packages fielded to operational medical forces worldwide. MC4 provides the tools to digitally record and transfer critical medical data from the foxhole to medical treatment facilities worldwide. Deployable medical forces use the MC4 system to gain quick, accurate access to patient histories and forward casualty resuscitation information, as well as to deliver health-care services remotely through MC4 telehealth capabilities. Combatant commanders use the MC4 system to access medical surveillance information, resulting in enhanced medical situational awareness. Most importantly, MC4 is helping deployed servicemembers. By equipping deployed medical units with automated resources, MC4 helps ensure that

Medical Communications for Combat Casualty Care (MC4) system

servicemembers have a secure, accessible, lifelong, electronic medical record (EMR), which results in better informed health-care providers and easier access to Department of Veterans Affairs medical benefits. MC4 is a groundbreaking system, managing the DoD's first and most comprehensive battlefield medical recording system and enabling the capture of more than 17 million electronic patient encounters in the combat zone since 2003. MC4 has also trained more than 62,000 deployable medical staff

and commanders and has fielded 48,000 systems to 2,400 units with medical personnel, including Army National Guard and Reserve soldiers, and all active component divisional units in 21 countries. MC4 remains the most widely used, comprehensive information management medical system on the battlefield today.

Power Projection Enablers (P2E) enable the Army with globally connected capabilities that provide the full spectrum of network and information services so that soldiers, commands, and supporting organizations can access, process and act upon information anytime, anywhere, for all operations. This enables the application of force across all phases of joint operations. P2E's tenets are: host the Army's applications, data, and IT services in an interconnected set of globally linked and defended data centers in both a physical and Cloud environment; enable a globally connected Army to build and employ an informed warfighting force that can fight on arrival; build a standardized, global info-structure that is scalable, accessible and defensible; ensure streamlined access to applications, service and data; provide capability to perform joint network operations; and facilitate seamless transition from garrison to training to deployed missions with common services available in all environments.

Satellite Communications Systems (SCS) manages the acquisition, development and modernization of defense satellite communications system (DSCS) and wideband global satellite (WGS) communications system earth terminals and baseband equipment for all military services and agencies. SCS represents a system-of-systems approach for DoD satellite communications sites and facilities. SCS combines baseband and terminal expertise in one organization. The office provides comprehensive acquisition expertise; systems engineering for all strategic, DoD teleport, standard tactical entry point (STEP), and gateway sites; configuration management; and resolution of interoperability and interface issues between baseband and radio frequency equipment. SCS also provides for the application of Army and DoD policies, directives and mandates; planning and execution of advanced technology demonstration programs; and a common integrated logistics support (ILS) leadership to minimize redundancies and jurisdictional issues.

Transportation Information Systems (TIS) supports the joint logistics distribution process by improving efficiency and interoperability within the Army transportation information systems for deployment, sustainment and redeployment activities. Unit movements, theater operations, cargo management and air-load planning applications are used throughout the transportation community that supports soldiers worldwide. The applications support the movement of personnel, equipment, and sustainment cargo from home station to destination and back, thus maintaining visibility of the movement from the tactical, operational and strategic levels. TIS provides complete product life-cycle management, premier transportation and distribution IT solutions, transportation systems functional expertise and a 24/7 support operations center.

Vehicular Intercom Systems (VIS) allows soldiers to communicate in the high-noise environments of combat vehicles—a high Army safety priority. VIS provides the current VIC-3 intercom system for Army tactical vehicles, including those deployed in the conduct of current operations, as well as new production units. VIS provides systems for vehicle upgrades, resets and re-missioning programs. The VIC-3 allows crews of tactical vehicles to communicate with each other above vehicle and/or combat noise. VIC-3 enables all crew members to receive/transmit over a military radio. It protects soldiers from permanent hearing damage from high noise levels in modern tactical vehicles through the use of state-of-the-art active/passive noise-reducing headsets. VIC-3 is the standard vehicle intercom in more than 50 tactical vehicle variants. Multiple components allow tailoring for specific vehicle configurations and connectivity with many military communications systems.

The **Wideband Control (WC)** project office acquires and installs state-of-the-art strategic satellite network control and planning systems for use with the defense satellite communications systems (DSCS), WGS and commercial satellite systems. All of the subsystems operations and communications between operators and processors are provided at one console location and are viewed from a multi-headed workstation, which allows access to the network database and permits simultaneous display of database components. These systems are typically deployed at wideband satellite operation centers worldwide.

Enterprise Management Decision Support (EMDS) enables the Department of the Army to achieve faster and more confident enterprise management decision support by retrieving and integrating disparate data to create a common access point for holistic and detailed Army operating force data to enhance understanding and decision making. EMDS is a Secret Internet Protocol Router Network-based, Web-enabled enterprise solution that provides integrated data from multiple authoritative data sources to present a common operating picture for units progressing through the Army force generation (ARFORGEN) cycle. Sponsored by the U.S. Army G-3/5/7, EMDS provides an ARFORGEN common operating picture and, soon, a force management common operating picture to support the Army's global force management process of synchronizing, planning, sourcing, resourcing and executing unit and force deployments.

Vehicular Intercom System (VIS)