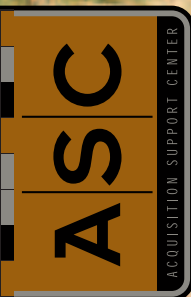


# ARMY AL&T

July - August 2005



## Lessons Learned From Freedom's Frontier



## From the Army Acquisition Executive

# Lessons Learned in Iraq and S&T Innovations



Our warfighters rely on and deserve the very best protection, equipment and weapon systems that America can provide. With Congress's support, the Army continues to work in partnership with its sister services and industry to ensure that all in harm's way have life-saving body armor and that their combat platforms have the ballistic protection required to safeguard them from improvised explosive devices (IEDs), rocket-propelled grenades (RPGs) and other life-threatening devices.

We are saving lives through a holistic approach to force protection: personal body armor, vehicle armor, electronic countermeasures, greater situational awareness (SA), improved weapon system capabilities and better training and operational focus. Operations in Iraq and Afghanistan highlight the power of highly mobile communications networks and network-centric operations. The network-centric force has dramatically improved SA and the quality of information that, in turn, leads to dramatic improvements in military effectiveness across the range of vital functions, including operational cycle times, battle command, force application, force protection and logistics. These improvements combine to create unprecedented flexibility and agility levels.

The 1st Cavalry Division and the 1st Armored Division have demonstrated this agility in their operations. Using the power of networked communications, they have been able to move information at unprecedented rates, which has shortened the time required to conduct tactical and operational updates. This has accelerated the speed of command by enabling faster planning and operations execution. Using this technology, Stryker units were able to move from northern locations to the south and fight two battles within 48 hours, demonstrating a significant improvement in both flexibility and agility.

The Stryker fleet has logged nearly 5 million miles, more than five times the projected annual usage. The vehicle has superior SA and focuses fires on both conventional and asymmetric threats. The addition of slat armor has greatly increased both Soldier and vehicle survivability. Stryker is a great success story!

Significantly increased SA, digital command and control and enhanced lethality and survivability helped make the Bradley Fighting Vehicle M2/M3 A3 into a highly praised urban assault vehicle. Its success with Soldiers stems from the combination of an Improved Bradley Acquisition Subsystem and the Commander's Independent Viewer, both incorporating 2nd Generation Forward Looking Infrared technology. Designed as a hunter/killer system to defeat multiple enemy vehicles at maximum ranges, it allows an A3 crew to maneuver "buttoned up" in an urban environment — superb SA and protection for both crew and infantry squads. This, in combination with the Bradley Reactive Armor Tiles, is saving lives every day and increasing infantry and cavalry squad lethality and battlefield sustainability.

Likewise, the M1114 up-armored Humvee is receiving praise for its integrated armor protection against bullet threats, IED fragments and antitank/antipersonnel mines. I heard from a father whose son was

driving the lead Humvee in mountainous terrain near the Afghanistan-Pakistan border when he drove over an IED. While the Humvee took a hard hit, the crew compartment's integrity protected both his son and his passenger. They sustained minor sprains and bruises and were back on duty within a few days.

Interceptor Body Armor (IBA) continues to save lives, and we are reducing its weight and improving it to offer even greater protection. IBA consists of an Outer Tactical

Vest (OTV) and a set of ballistic inserts, often referred to as Small Arms Protective Insert (SAPI) plates. Originally providing protection against fragmentation and small arms ammunition, the total IBA weight is now 16 pounds for size medium — a reduction in weight of 9 pounds from the previous version. The latest improvements were developed by our Soldiers in Iraq and include the Deltoid Auxiliary Protector (DAP) and the Enhanced SAPI (ESAPI). The DAP protects Soldiers' shoulder and armpit regions with the same ballistic protection level as OTVs. ESAPI is an improvement that provides protection against armor-piercing ammunition. In addition, the Cupola Protective Ensemble (CPE), originally designed for mine clearing as the Advanced Clearance Ensemble, has been redesigned to offer protection against blast and fragmentation effects of RPGs and IEDs. CPEs can be worn over standard IBAs to provide protection to the head, neck, face and extremities. The system also provides an integrated cooling system to combat heat effects.

The M4 is the preferred, individual weapon for Soldiers, who like its lightweight, compact design because it makes maneuvering within small confines much easier — both in vehicles and buildings. Our Soldiers also praise its accuracy. In addition, M240 family variants, including the M240B machine gun, are praised for both increased accuracy and reliability.

Army leaders have long recognized the fundamental importance of science, mathematics and technology to our global competitiveness and, especially, national security. That is why the Army sponsors the eCYBERMISSION program — to inspire and encourage America's youth to pursue careers in science, mathematics and engineering.

The application of technology in today's world is extremely important. It is the economic engine of nations worldwide and, as we see in this issue, it saves lives every day. eCYBERMISSION invites 6th-through 9th-grade students of all backgrounds, interests and proficiency levels to identify a problem in their community. Through eCYBERMISSION, these students are challenged as a team to develop a solution to an important community problem by applying the science and mathematics learned in the classroom. I have found that their innovative solutions speak volumes about the inventiveness of our Nation's youth, to their future and to the future of our great country.

If you are interested in volunteering or if someone you know would be interested in participating, go to <http://www.ecybermission.com> and accept the challenge! Also see the related article on Page 108 of this issue.

**Claude M. Bolton Jr.**  
Army Acquisition Executive



# ARMY AL&T

July - August 2005

# ACQUISITION, LOGISTICS & TECHNOLOGY

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# ARMY AL&T

July - August 2005

# ACQUISITION, LOGISTICS & TECHNOLOGY

## Cover Story

### Farewell to Debbie Fischer-Belous

The *Army AL&T* Magazine staff would like to wish a fond farewell to our friend and colleague Debbie Fischer-Belous as she departs government service. A graduate of Syracuse University, Debbie began her government career in December 1989 and came to what was then *Army RD&A* in August 1990. She has served in numerous editorial positions including Executive Editor.

Assistant Secretary of the Army for Acquisition, Logistics and Technology Claude M. Bolton Jr. recently presented Debbie a letter of appreciation in recognition of her contributions to the restructuring and reorganizing of *Army AL&T* Magazine. He stated that her superior writing and editing skills and management of daily operations helped draw Armywide attention to acquisition people, projects and policies.

Debbie's dedication, hard work and vast institutional knowledge greatly benefited this magazine. We will miss her and we wish her well.



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*This medium is approved for official dissemination of material designed to keep individuals within the Army knowledgeable of current and emerging developments within their areas of expertise for the purpose of enhancing their professional development.*

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# LESSONS LEARNED FROM FREEDOM'S FRONTIER

**T**his section reviews some key lessons learned from *Operations Enduring* and *Iraqi Freedom* detailing operations in Afghanistan, Iraq and Kuwait over the past year and how the Army Acquisition, Logistics and Technology (AL&T) Workforce is helping meet operational contingencies across the full spectrum of conflict. As the Army fulfills its vital role in supporting national security objectives, the AL&T Workforce continues to directly sustain our combatant commanders and their warfighters on the ground with improved communications and logistics support, technological innovations that enhance Soldier survivability and integrative technology that has yielded new combat and force protection capabilities that improve situational awareness (SA) and battle command.

From Blue Force Tracking to Combat Terrain Information Systems and Joint Network Node integration, improved weapon systems capabilities combined with highly mobile communications networks have helped orchestrate network-centric operational capabilities that empower battlefield commanders to make real-time decisions through improved SA across the operational battlespace. Advanced technology integration will continue to impact the U.S. Army's fundamental approach to operations and battle command, serving as force multipliers that are revolutionizing the roles of command and control, communications, computers and intelligence.

New communication systems have allowed nonhierarchical dissemination of intelligence, targeting and other operational data at all levels. This section's articles discuss several technological innovations and how this technology is directly benefiting our Soldiers while also greatly improving situational understanding to ensure rapid, clear battlefield communications. Advances in information management and distribution are facilitating the horizontal integration of battlefield functions and are yielding new combat capabilities as we redefine the way we collect, communicate and use information. Additionally, microprocessing technology is giving U.S. forces the capability to conduct and dominate increasingly sophisticated information operations by manipulating, isolating and controlling the electromagnetic spectrum.

By exploiting these technological successes, leaders at every level can visualize current and future states, assign missions, prioritize and allocate resources and then select the critical time and place to act. Because force digitization allows a relative common picture of the battlefield, these shared Information Age advantages will reduce battlespace uncertainties and shorten the commander's decision cycle radius.

**Editor-in-Chief**

# Linking the 3rd Infantry Joint Network

Terry Edwards

*“Wideband satellite access is the life blood of the maneuver fight for a Corps in the attack, a Division in the attack and, in many cases, a Brigade in the attack,” remarked V Corps Commander LTG William S. Wallace when describing lessons learned from Operation Iraqi Freedom (OIF) operational communications.*

**O**IF communication requirements and the Army’s conversion to modularity have generated a near-term need to rapidly design and deploy a flexible and highly mobile communications capability in lieu of Mobile Subscriber Equipment (MSE) and Tri-service Tactical Area Communications (TRI-TAC). The answer to this near-term requirement is the JNN architecture.

JNN will eventually replace MSE and TRI-TAC as the Army’s mobile battle command communications system. (U.S. Army photo.)

# Division (3ID) Into the Node (JNN)



The 3ID is the first unit to be fielded with JNN equipment. Developing and fielding the JNN solution took place over a 12-month period that culminated with a unit Maneuver Rehearsal Exercise in late 2004. Currently, 3ID is deployed in support of *OIF* and employs the JNN network to support battle

3ID is deployed in support of *OIF* and employs the JNN network to support battle command communication requirements.

command communication requirements. This network supports medium to larger command posts at the unit of employment-x (UEX) and brigade combat team (BCT) level and small command posts (CPs) at the battalion (Bn) level. The deployed JNN network also interfaces with multiple networks within theater

including deployed MSE and TRI-TAC systems; infrastructures at posts, camps and stations under the Iraqi commercialization effort; and Defense Information Systems Network (DISN) points of presence (PoPs) within theater.

The JNN is a Program Executive Office (PEO) Command, Control and Communications Tactical (C3T) non-developmental item rapid-acquisition effort using government-off-the-shelf (GOTS) and commercial-off-the-shelf



In response to combatant commanders' pleas for more flexible and highly mobile communication capabilities in Iraq and Afghanistan, JNN will provide the necessary modularity to support emerging bandwidth requirements. Here, SSG Clayborne Taylor, Network Switching Operator, 3ID Detachment, 3rd Signal Co., powers up switching equipment inside the JNN. (U.S. Army photo by Timothy L. Rider.)

(COTS) equipment to provide beyond-line-of-sight (BLOS) connectivity, communications at-the-quick-halt and the extension of DISN services. Additionally within the JNN architecture, tactical communications will be extended to Bn level within the BCTs

and support brigades under the UEx modularity construct.

The JNN architecture is an Internet Protocol (IP)-based solution for voice, data and video teleconferencing (VTC) supported by a Ku/Ka Satellite

Communications Time Division Multiple Access (TDMA) network for intra-JNN connectivity and a Frequency Division Multiple Access (FDMA) network for Joint and Global Information Grid (GIG)/DISN connectivity.

### **JNN Architecture**

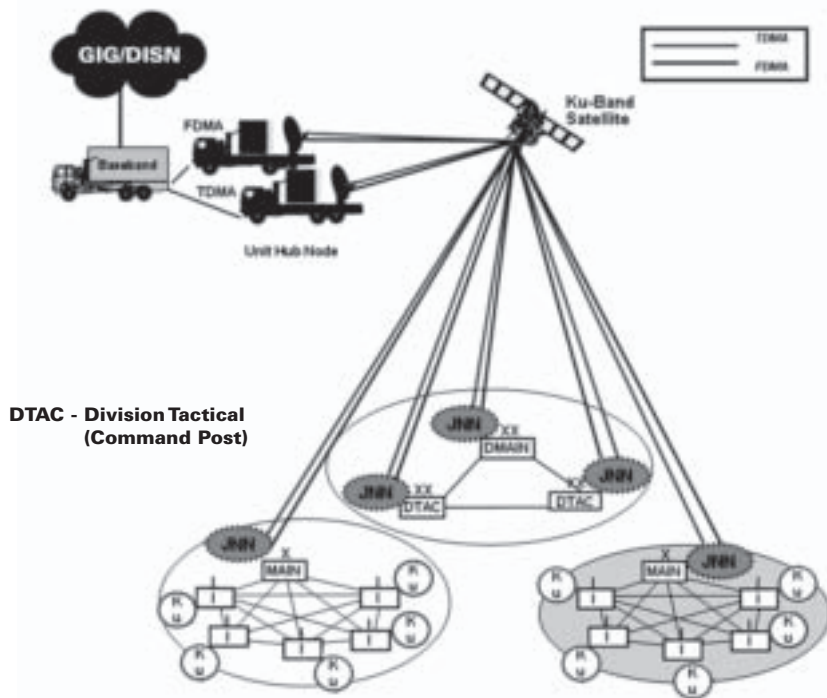
The JNN architecture is composed of three primary systems that support user requirements and provide intra-JNN network connectivity and inter-theater connectivity. The JNN Unit Hub Node (UHN) is the cornerstone of the JNN network. The UHN supports TDMA and FDMA satellite connection management for all elements of a UEx's JNN network and acts as a base-band or tactical technical node facility as depicted in Figure 1. The UHN will support TDMA bandwidth requirements up to 40 megabits per second (mbps) and FDMA bandwidth up to 36 mbps.

The UHN base-band assemblage performs two key functions: intra-JNN network routing and GIG/DISN connectivity. The intra-JNN network routing allows for the bridging across TDMA meshes at the UEx and BCT level within the architecture. This keeps network routing to no more than two satellite "hops" within the TDMA network, which optimizes the transport network and reduces latency issues. At the GIG and DISN interface level, the UHN acts as a Tier 1/2 interface to a DISN PoP. This direct interface to the DISN allows the JNN-equipped warfighter the ability to access robust DISN services from a tactical environment down to the Bn level.

### **Battle Command Capability**

At the UEx and BCT level, the JNN is the primary means of meeting battle command requirements at the CP





**Figure 1. JNN Unit Hub Node Connectivity**

provide redundant connectivity between JNNs at an aggregate bandwidth up to 18 mbps.

At the Bn level, the JNN Bn CP Node supports battle command requirements. The Bn CP Node is based on the same 2.4 meter Ku/Ka satellite terminal as the JNN. The Bn CP Node shares a 4 mbps TDMA mesh with its parent BCT and the other Bns assigned to the BCT. Subscriber services are extended via transit cases to the individual CP directly from the satellite terminal. At the Bn level, network services are limited to SIPR and secure voice-over IP.

**Connectivity and Reachback**

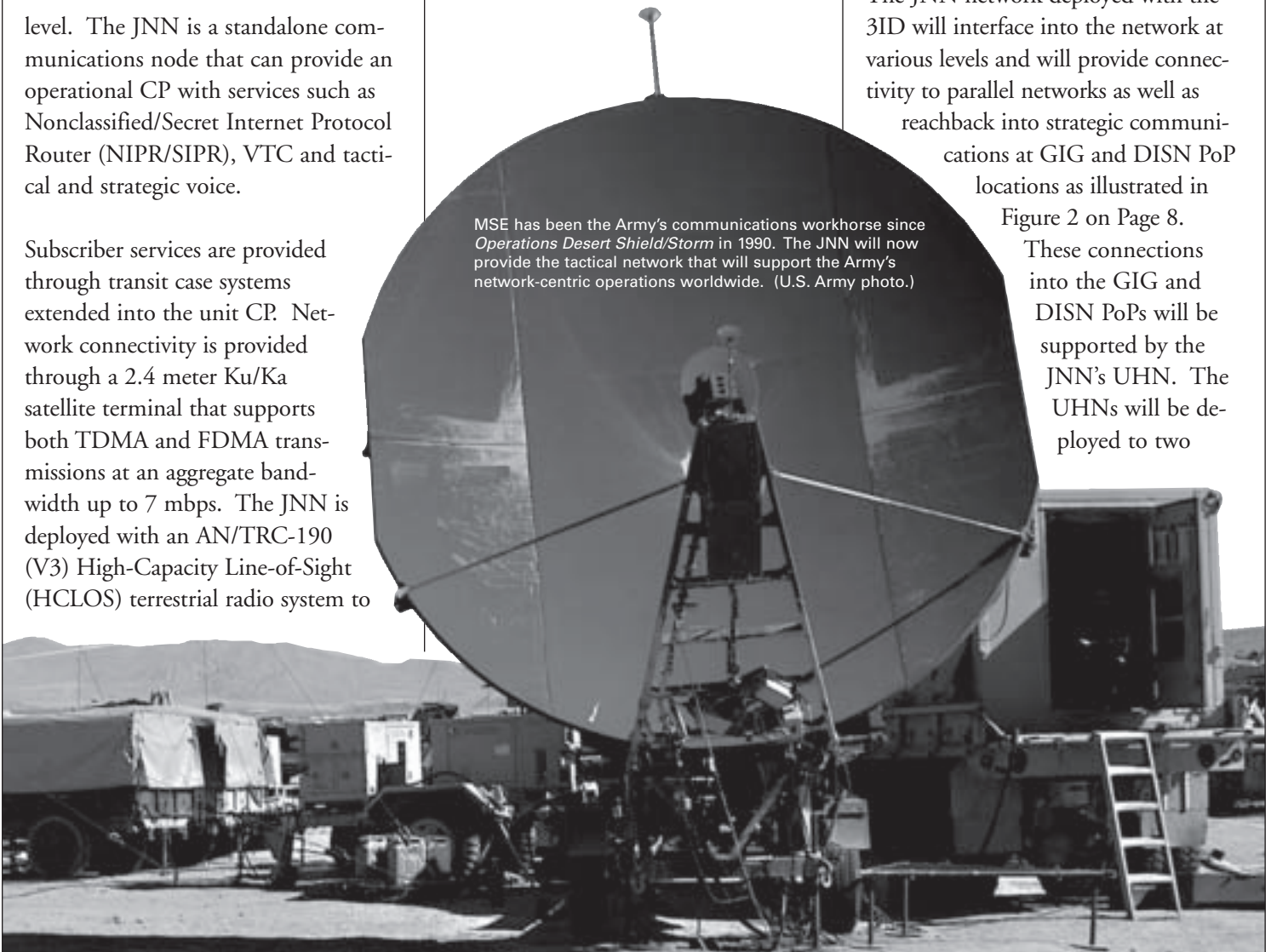
The JNN network deployed with the 3ID will interface into the network at various levels and will provide connectivity to parallel networks as well as reachback into strategic communications at GIG and DISN PoP locations as illustrated in Figure 2 on Page 8.

These connections into the GIG and DISN PoPs will be supported by the JNN's UHN. The UHNs will be deployed to two

level. The JNN is a standalone communications node that can provide an operational CP with services such as Nonclassified/Secret Internet Protocol Router (NIPR/SIPR), VTC and tactical and strategic voice.

Subscriber services are provided through transit case systems extended into the unit CP. Network connectivity is provided through a 2.4 meter Ku/Ka satellite terminal that supports both TDMA and FDMA transmissions at an aggregate bandwidth up to 7 mbps. The JNN is deployed with an AN/TRC-190 (V3) High-Capacity Line-of-Sight (HCLOS) terrestrial radio system to

MSE has been the Army's communications workhorse since Operations Desert Shield/Storm in 1990. The JNN will now provide the tactical network that will support the Army's network-centric operations worldwide. (U.S. Army photo.)



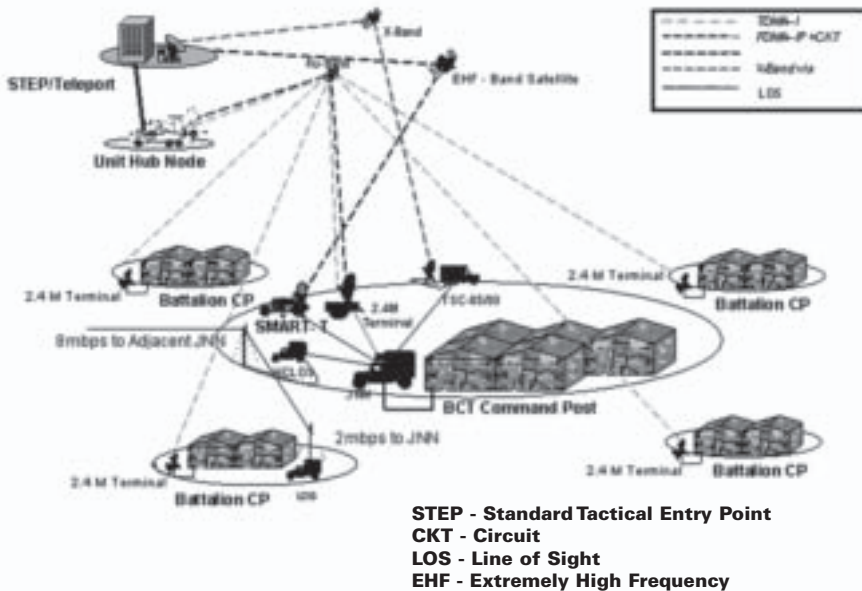


JNN is a PEO C3T nondevelopmental item rapid-acquisition effort using GOTS and COTS equipment to provide critical BLOS connectivity. (U.S. Army photo by Michael Castellana, Project Manager Tactical Radio Communications Systems.)

sanctuary locations within a theater that have robust bandwidth and redundant connectivity to the GIG/DISN. The UHNs will support the routing of reachback voice, data and VTC through their network interfaces to DISNs that include SIPR and NIPR: Tier 1 and/or Tier 2 routers, Defense Switched Network Private Branch Exchange interface and Prominia circuit interfaces.

With the UHNs in place to support GIG/DISN connectivity, the deployed JNNs will establish connectivity to the UHN over a TDMA satellite connection via a mesh configuration and over FDMA satellite via circuit-based connections. The UHN will support all intertheater network routing via its GIG/DISN connections. Additionally, the UHN will support JNN-to-JNN

network routing across established TDMA meshes between JNNs. Bn CP Nodes within the JNN network will gain network access by routing through the parent JNN within their assigned TDMA mesh. The parent JNN will determine and complete the required routing to the UHN to establish GIG/DISN connectivity or routing to another JNN or Bn CP Node in another JNN TDMA mesh.



**Figure 2. BCT Connectivity to the UHN**

Parallel to its connectivity to the UHN, the JNN can establish direct connectivity to a DISN Strategic Tactical Entry Point and/or another tactical network through current military satellite systems such as the AN/TSC-85 or 93, Secure Mobile Anti-jam Reliable Tactical-Terminal (SMART-T) or Phoenix terminal and terrestrial radio systems.

### Future Baseline

The 3ID's JNN architecture fielding and employment are the building blocks for future *OIF* rotations and for developing modular communications tactics, techniques and procedures for



The UHN supports TDMA and FDMA satellite connection management for all elements of a UE's JNN network. Here, SFC Nixon Camper, 3ID 3rd Forward Support Battalion, checks his operational connections as he brings the system on line. (U.S. Army photo by Stephen Larsen.)

units that will be converting to modularity in the coming years. The JNN network's ability to support multiple tactical and strategic network interfaces will be exercised to its fullest extent during 3ID's deployment. As a result, this network architecture will test all aspects of supporting dispersed units on a nonlinear battlefield, operating in a Joint and coalition environment and will establish the baseline for network-centric operations.

**TERRY EDWARDS** is the Director of Architecture in the Architecture, Operations, Networks and Space Directorate of the CIO/G-6, HQDA. He is responsible for directing, synchronizing and integrating Army enterprise architectures to support the functions and capabilities of a Joint warfighting force. He has a B.S. in mechanical engineering from the University of Alabama, an M.S. in computer science from Fairleigh Dickinson University and an M.S. in National Resource Strategy from the

Industrial College of the Armed Forces. He has also completed the Reliability and Maintainability program at the School of Engineering and Logistics.



# Good Enough Architecture Empowers Warfighter Decision Support Systems Today

Terry Edwards

**O**ver the past 5 years, the U.S. Army has been challenged with the fast pace of transformation as well as the immense responsibility of a nation at war in the midst of Army Transformation. To simultaneously support transformation and *Operations Enduring Freedom* and *Iraqi Freedom (OEF/OIF)* force improvements, the Army is now using alternative architecture products to inform decision support, investment and fielding strategies and other institutional processes that enable rapid acquisition and engineering solutions.

Good enough architectures are providing decision support tools that empower battlefield operational courses of action in Iraq and Afghanistan today. (U.S. Air Force photo by TSGT Mike Buytas, 1st Combat Camera Squadron.)



## Architecture Defined

Architecture is a widely used term that is commonly misunderstood because it means different things for different people and processes. The military generally defines architecture as the documented understanding of various relationships among defined entities that enable analysis and situational awareness. The entities can be systems, services, functions, organizations, personnel, units, developmental activities, institutions, processes or concepts. Each entity has both internal and external relationships and can be configured dynamically to form capabilities.

The very nature of architecture is generally in data form. In other words, the architectural construct is depicted by ratified data and information sets gathered from engineering, analyses,

decisions and developmental activities. This data is then used to develop coherent pictures, charts, drawings, maps, presentations, layouts, spreadsheets and documents that provide an understanding of meaningful and logical information sets of relationships, attributes and knowledge of assets. These, in turn, feed institutional processes, including decisions, analyses, modeling, experimentation, compliance, integration activities, assessments, investment strategies, community developmental efforts and recursive or other architecture developmental

efforts. The bottom line: the architecture itself is based on the derived or reusable data at hand.

The military generally defines architecture as the documented understanding of various relationships among defined entities that enable analysis and situational awareness.

Architecture types are determined by the specific functional relationships observed by customers, engineers or developers. There are several possible layers (perspectives) consisting of similar information derived from the artifacts that make up a particular architecture. The important thing here is that the user sets the rules in determining the type of architecture required and produced.

This is the single most important aspect in developing and using

architectures. Architectures can, by nature, be very complex. To reduce this complexity, the Army Architecture Integration Cell, with help from MITRE Corp., devised an architecture shortcut that is “good enough” for decision support at the leadership level and for developers at the staff level.

### Good Enough

“Good enough” is a term coined by senior Army leaders in 2002 to describe the best practical, viable and affordable solution that adequately fulfills warfighter requirements. Army leaders challenged the engineering, acquisition and architecture communities to conduct smart business practices resulting in rapid turnaround of required architectural products to expediently service warfighters to keep pace with Army transformation efforts as well as *OEF/OIF* resolutions. Hence, good enough architecture methodology was born. Although not doctrinal or scientific in nature, the term



A 3rd Infantry Division Joint Network Node operator monitors Secret Internet Protocol Router traffic on the network. (U.S. Army photo by Robert Wilson, Project Manager Tactical Radio Communications Systems.)

good enough has gained momentum in the engineering, architecture and decision community.

### Good Enough Architecture Versus DoD Architecture Framework (DoDAF)

Traditional architecture products were developed

within the DoDAF document's methodology, where architecture products consist of operational views (OVs), system views (SVs) and technical views (TVs). Each product provides a unique perspective of the overall architectural picture and is generally viewed separately because of its complex build.

The DoDAF approach is comprehensive, resource intensive and has a complex development cycle where the information exchange requirement is DoDAF's focus. It is very difficult to put all OVs, SVs and TVs in one viewing; and it is not capabilities and enterprise based. The need to rapidly derive easily understood products that negotiate these issues forced a derivation of the DoDAF process and products that depict OVs, SVs and TVs in one snapshot. This product is affectionately called a Graphical All View (GAV). The GAV is not as comprehensive as DoDAF products, but is good enough to support and inform decisions made by leaders, operators and engineers alike. It also provides insight and a high level of understanding on capabilities and the enterprise perspective.



Good enough architectures have become the Army's “tool of choice” for providing rapidly and efficiently designed warfighter solutions. Here, Soldiers from Co. A, 2nd Battalion, 130th Regiment, Illinois National Guard, secure a residence during a Military Operations on Urban Terrain training exercise at the Novo Selo training area in Bulgaria during *Exercise Bulwark 2004*. (U.S. Air Force photo by SSGT Derrick C. Goode.)



**BFT uses good enough architecture that has resulted in exceptional operational success since its fielding in 2003 to directly support OEF/OIF. (U.S. Army photo by Timothy L. Rider.)**

## Successes

With good enough architecture's advent, the Army rapidly resolved several critical problem spaces while saving resources and providing a quick turnaround of an architectural understanding. Some examples include:

- The fast fielding of Army-Joint Network Nodes (JNNs) within months of problem space identification.
- OEF/OIF Blue Force Tracking (BFT) and the 2003 Battle Command good enough architecture used to springboard current Army Battle Command System (ABCS) programmatic good enough decisions.
- OEF/OIF and future network technology solutions.

With good enough architecture's advent, the Army rapidly resolved several critical problem spaces while saving resources and providing a quick turnaround of an architectural understanding.

Today, the Army community can get quick and informative analytical insight of current problem spaces, associated resolutions and decisions required

because of the good enough approach. Good enough architectures are decision support tools that empower decisions now and in the future. It is the key to achieving and engineering near- and mid-term network-centric solutions and is the tool of choice to rapidly and efficiently design warfighter

solutions for leadership decisions that, in turn, empower warfighters with desired capabilities sooner rather than later.

Good enough architecture, generally found in the form of GAVs, is quickly taking on an evolutionary characteristic regarding architecture development and decision support utility. While traditional architecture still has a place in current institutional processes, on the horizon are better,


more efficient and innovative architecture methodologies and processes, such as good enough architectures that will keep pace with transformation

activities, capabilities-based acquisition and technology insertion strategies. Remember, architecture is the perspective of how you desire to view data of ratified engineering and analyses. If there is a faster, more effective way to get the architecture to service decision support, then we must capitalize accordingly.


**TERRY EDWARDS** is the Director of Architecture in the Architecture, Operations, Networks and Space Directorate of the CIO/G-6, HQDA. He is responsible for directing, synchronizing and integrating Army enterprise architectures to support the functions and capabilities of a Joint warfighting force. He has a B.S. in mechanical engineering from the University of Alabama, an M.S. in computer science from Fairleigh Dickinson University and an M.S. in National Resource Strategy from the Industrial College of the Armed Forces. He has also completed the Reliability and Maintainability program at the School of Engineering and Logistics.

# New Facility Allows PM DWTS to Support Warfighters

Linda Valenzano



**D**uring the early days of *Operation Iraqi Freedom*, people leaving the Program Executive Office Enterprise Information Systems (PEO EIS) at Fort Belvoir, VA, in the evening would often have to step around engineers in the lobby who were loading transit cases with communications products for shipment to Southwest Asia (SWA). That is no longer necessary, thanks to a new facility in Springfield, VA, from which PEO EIS' Project Manager Defense Communications and Army Transmission Systems (PM DCATS)/Product Manager Defense Wide Transmission Systems (PM DWTS) provides Combat Service Support Satellite Communications (CSS SATCOM) systems and support to warfighters.



Supplying our troops on the front line with timely logistics support will improve dramatically with the fielding of improved CSS SATCOM systems. (U.S. Army photo by SGT Michael Abney, 55th Signal Co. (Combat Camera).)



CSS SATCOM systems — which include CSS Very Small Aperture Terminals (VSAT) integrated with wireless CSS Automated Information Systems Interfaces (CAISI) — increase readiness by giving CSS Soldiers in the field the ability to electronically transmit supply requisitions and receive near-real-time status reports on their orders 24/7. This capability enhances force protection by greatly reducing the need for Soldiers to get into convoys and risk being ambushed while hand-delivering disks containing detailed logistics orders to other locations, or in traveling to maintenance meetings, which they can conduct “virtually” via CSS VSAT/CAISI.

The new facility, located in an industrial park, includes all components needed for PM DWTS to provide a total support package for CSS SATCOM systems, including CSS VSAT and CAISI laboratories;



Benjamin Pinx (left), CSS VSAT fielding team, and MAJ Michael Devine, APM DWTS, adjust a unit during 3ID's STAMIS gunnery at Camp Beuhring, Kuwait. (U.S. Army photo by Stephen Larsen.)

classroom space for training users in CSS VSAT and CAISI; a customer support area from which the PM DWTS team monitors conditions of CSS SATCOM networks around the world; and office space for project management, engineering, fielding team and administrative personnel.

Devine and his staff hosted a grand opening March 1, 2005, at which time PEO EIS Kevin Carroll; COL Lee Price, PM DCATS; and LTC Earl Noble, PM DWTS, toured the new facility.



“My staff is totally dedicated to meeting warfighters’ requirements and turnaround times for CSS SATCOM systems,” said MAJ Michael Devine, PM DWTS’ CSS SATCOM Assistant Product Manager (APM). “We provide support and services 24/7.”

CSS SATCOM systems increase readiness by giving CSS Soldiers in the field the ability to electronically transmit supply requisitions and receive near-real-time status reports on their orders 24/7.

PEO EIS Kevin Carroll (right) and APM CSS SATCOM MAJ Michael Devine thank their staff during the grand opening of their new facility in Springfield, VA, March 1, 2005. (U.S. Army photo by Linda Valenzano.)

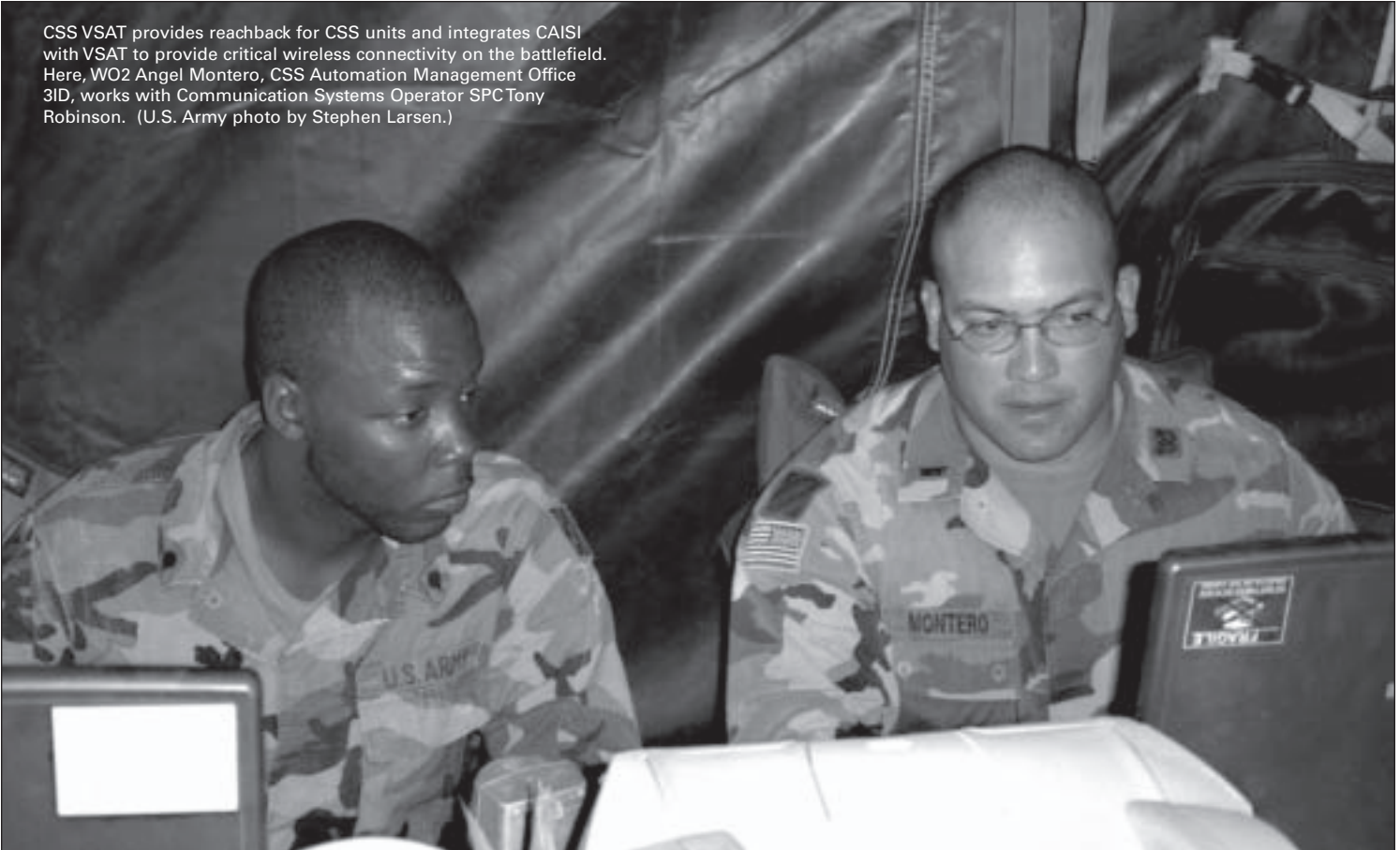
### CSS SATCOM Program History

Carroll noted that the CSS SATCOM program had roots in research done in the early 2000s by engineers George Knizewski and Ron Keller, who started a laboratory to address how to run Web applications that PEO EIS was developing for logistics community users.

“Our lab began looking to commercial satellite and testing our STAMIS [Standard Army Management

Information Systems] applications with it,” explained Carroll. “At the same time, our technical personnel began trying wireless solutions for our CAISI program, with the idea that logisticians

CSS VSAT provides reachback for CSS units and integrates CAISI with VSAT to provide critical wireless connectivity on the battlefield. Here, WO2 Angel Montero, CSS Automation Management Office 3ID, works with Communication Systems Operator SPC Tony Robinson. (U.S. Army photo by Stephen Larsen.)



would no longer have to drag wires along the battlefield.”

In October 2002, the call came from the Coalition Forces Land Component Command to provide a wireless CAISI solution for Coalition Forces in Southwest Asia (SWA). After coordinating with units that had priority because of deployment schedules, PM DWTS started fielding wireless CAISI to units in SWA in December 2002, completing the fielding in March 2003.

“After the war began, you could often find the CAISI guys in the PEO EIS lobby in the evening, preparing products for shipment to the field,” said Carroll.

PM DWTS has fielded 40 CSS SATCOM systems to the Army’s first unit of action, the 3rd Infantry Division, Fort Stewart, GA, which is now using the systems in Iraq.

In April 2003, Carroll assigned PM DCATS to acquire proof-of-concept and end-state SATCOM for all future PEO EIS satellite connectivity requirements — thus starting the CSS VSAT program to provide reachback for CSS units and integrating CAISI with CSS VSAT to provide last-mile wireless connectivity.

“PM DCATS rose to the occasion and really took the programs to another level,” remarked Carroll, relating how warfighters gave rave reviews to the CSS SATCOM systems in SWA and during training rotations at the National Training Center, Fort Irwin, CA — leading to LTG Claude Christianson, the Army Deputy Chief of Staff, G-4

(Logistics), budgeting for 770 VSATs across the Army.

According to Devine, PM DWTS has fielded 40 CSS SATCOM systems to the Army’s first unit of action, the 3rd Infantry Division (3ID), Fort Stewart, GA, which is now using the systems in Iraq; 32 CSS SATCOM systems to the 101st Airborne Division (Air Assault), Fort Campbell, KY; and is currently fielding 24 CCS VSATs to the 10th Mountain Division (Light Infantry), Fort Drum, NY.

LINDA VALENZANO provides contract support to PM DCATS/PEO EIS. She has a B.S. in mathematics from the University of Maryland.



# Combat Terrain Information Systems (CTIS) Provide Geospatial Capabilities to Commanders and Warfighters

Mark A. Hainsey and Lesley M. Kennedy

**U**nderstanding the terrain is essential to accurately plan and effectively execute combat operations. CTIS is the Project Management Office (PMO) responsible for the acquisition of tactical terrain analysis capabilities for the U.S. Army. PMO CTIS is using commercial-off-the-shelf (COTS) technology to develop the Digital Topographic Support System (DTSS), a state-of-the-art terrain analysis and geospatial data management system to provide commanders and warfighters with unprecedented geospatial awareness. Geospatial refers to information referenced to a location on the Earth and, in this context, includes digital maps, elevation data, satellite imagery and derived terrain analysis products.

DTSS provides commanders and warfighters unprecedented geospatial awareness so they can safely navigate terrain anywhere the mission takes them. Here, Marines from Weapons Co., 3rd Battalion, 6th Marine Regiment, negotiate rough terrain in Khowst, Afghanistan, during OEF using DTSS JC2. (U.S. Marine Corps photo by LCPL Justin M. Mason, 2nd Marine Division Combat Camera.)

The DTSS is an integral part of the current Army Battle Command System (ABCS) and is migrating current capabilities to other network-centric systems, including the Distributed Common Ground System-Army (DCGS-A) in support of Joint Command and Control and Future Combat Systems (FCS). The network-centric Army of the future will deploy a robust, globally interconnected network environment in which data is shared seamlessly among users, applications and platforms.

**Defining Today’s Battlefield**

PMO CTIS is the first formal program to create a system, the DTSS, that provides geographic information system (GIS), digital satellite image processing and 3-D terrain visualization capabilities, as well as high-volume digital map printing to the Army. DTSS is providing the Army

— and Joint force commanders and warfighters at all levels — with the geospatial information needed to fight on current and future battlefields. DTSS is defining the way missions are planned and executed by providing terrain analysis and visualization, terrain data generation and terrain data management and dissemination.

DTSS provides up-to-date geospatial information that can be combined with military intelligence to provide commanders and warfighters with true geospatial intelligence. It used to take weeks to gather enough terrain data to plan and execute a mission. Real-time geospatial information

and digital terrain imaging have given commanders and warfighters the ability to plan and execute missions in the span of minutes or hours versus days or weeks.

DTSSs compile data from a multitude of U.S. government, commercial, coalition and host nation sources. This information is used to create or enhance digital geospatial data that provides the common map background for ABCS.

**Using COTS Technology**

Interoperability is the building block of the “digital” Army. Using COTS technology has enabled PMO CTIS to develop the DTSS

The network-centric Army of the future will deploy a robust, globally interconnected network environment in which data is shared seamlessly among users, applications and platforms.



DTSS-Light, one of the four systems that make up DTSS, is a mobile terrain analysis system that is housed in a climate-controlled shelter on a Humvee. (U.S. Army photo by CTIS staff photographer.)



The Humvee-mounted DTSS-L brings high-tech terrain analysis capabilities to the front lines. (U.S. Army photo by CTIS staff photographer.)

family of interoperable systems that provide commanders and warfighters with the tools necessary to effectively plan and execute missions in wartime and in peacetime.

When PMO CTIS began developing DTSS, COTS technology was not widely used to develop military systems. Most military systems consisted of contractor-developed custom software. However, custom software development is often very time-consuming, expensive and ties a system to a specific contractor. PMO CTIS wanted to implement an acquisition strategy that would maximize commercial technological capabilities and minimize costs. Developers realized that using COTS technology would allow them to create a system with greater capabilities at a lower cost.

Linda Graff, CTIS Technical Management Team Lead, conservatively estimates that nearly 80 percent of all software used in DTSS is COTS-based software that is procured from commercial

vendors. "One of the biggest successes with using COTS technology has been the ability not to have to put all our money into research and development," Graff acknowledges. "For example, ERSi (Earth Resource Surveys Inc.), one of our major COTS vendors, has more than 2,500 people working full-time on the COTS software that we use. We could never have funded that."

By using the cost-effective COTS technologies that are available, PMO CTIS has saved millions of dollars in software and hardware research, development and maintenance. PMO CTIS can continue to improve DTSS capabilities by leveraging the developments made by the COTS vendors.

The COTS DTSS software is used to collect, manage, distribute and analyze geospatial data from various sources. The geospatial data and products provided to the Army by DTSS can be displayed on other ABCSs or be combined with intelligence and battle

command information to support intelligence preparation of the battlefield.

PMO CTIS uses COTS software such as ESRI's ArcGIS software, ERDAS Imagine image-processing software and Skyline Terra software suite for 3-D terrain visualization. These powerful software packages provide DTSS with many of its core capabilities and are designed to work with commercial and military geospatial data formats. ArcGIS provides advanced geoprocessing capabilities that can be used to create, import, edit, query, map, analyze and view geospatial information.

ERDAS Imagine provides the tools necessary to process all types of satellite and aerial imagery. These tools can be used to extract vector data features from digital imagery and to create user-defined image maps.

The Skyline Terra software suite allows users to create, edit, annotate and view photo-realistic, geographically accurate, 3-D models of the Earth for their georeferenced applications. All these capabilities, along with CTIS-developed terrain analysis software, are fielded to Army terrain teams to meet mission requirements.

Topographic analysts who use DTSS receive many weeks of institutional training that focuses on the COTS software products. Soldiers are then trained on the custom software pieces and additional refresher training on the COTS software is provided when a new software "build" is fielded. By having access to a variety of powerful COTS, government-off-the-shelf and custom-developed software packages, Soldiers can complete many different missions using DTSS.

"One of the unique features of DTSS is that the user can utilize different

software components based on mission needs and available data,” remarked Graff.

**CTIS**

The DTSS family of systems, developed under the purview of PMO CTIS, comprises a combination of operator workstations, software, scanners and large-format plotters. DTSS is capable of supporting the full spectrum of military operations, including peacetime stability and support operations. DTSS has the capability to analyze, generate, manage and disseminate geospatial information.

DTSS comprises four systems: DTSS-Base (DTSS-B), DTSS-Light (DTSS-L), DTSS-Deployable (DTSS-D) and High-Volume Map Production (HVMP) equipment. DTSS-B, is a theater-level, garrison-based system that provides increased data generation and production capabilities over the other DTSS configurations, as well as

enhanced feature and elevation data extraction tools.

DTSS-L is a tactically mobile system for terrain analysis that is housed in an environmentally controlled shelter on a Humvee. DTSS-L includes the Army Map Server for data management and dissemination.

DTSS-D is a transit-cased mobile computer system for deployment with tactical forces having the same terrain analysis capabilities as the DTSS-L.

The HVMP is a tactically mobile, forward-deployed system that generates large volumes of hard-copy maps, charts and situation overlays. High-volume map reproduction is still needed by today’s digital Army to

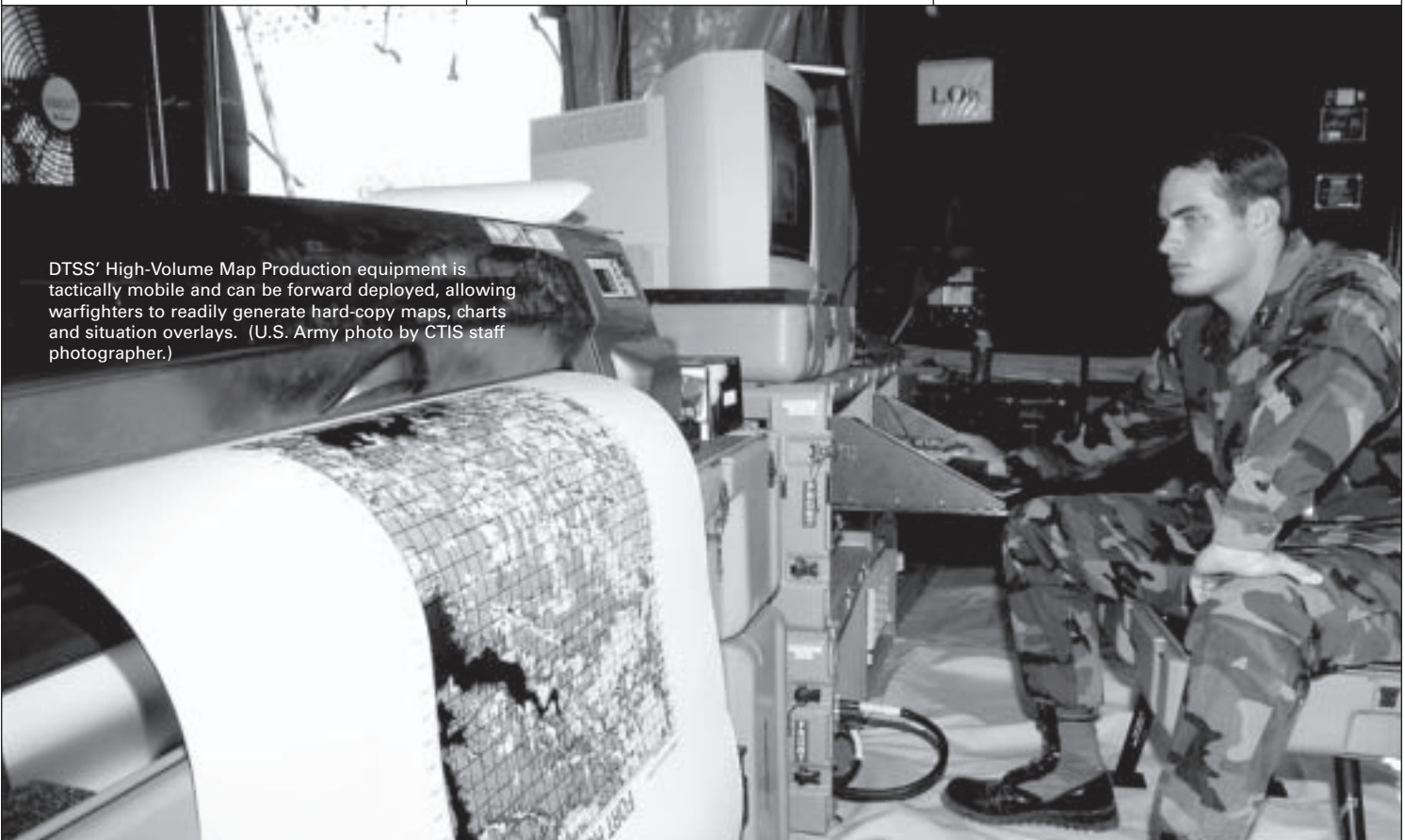
support Coalition Forces and homeland defense.

DTSS is defining the way missions are planned and executed by providing terrain analysis and visualization, terrain data generation and terrain data management and dissemination.

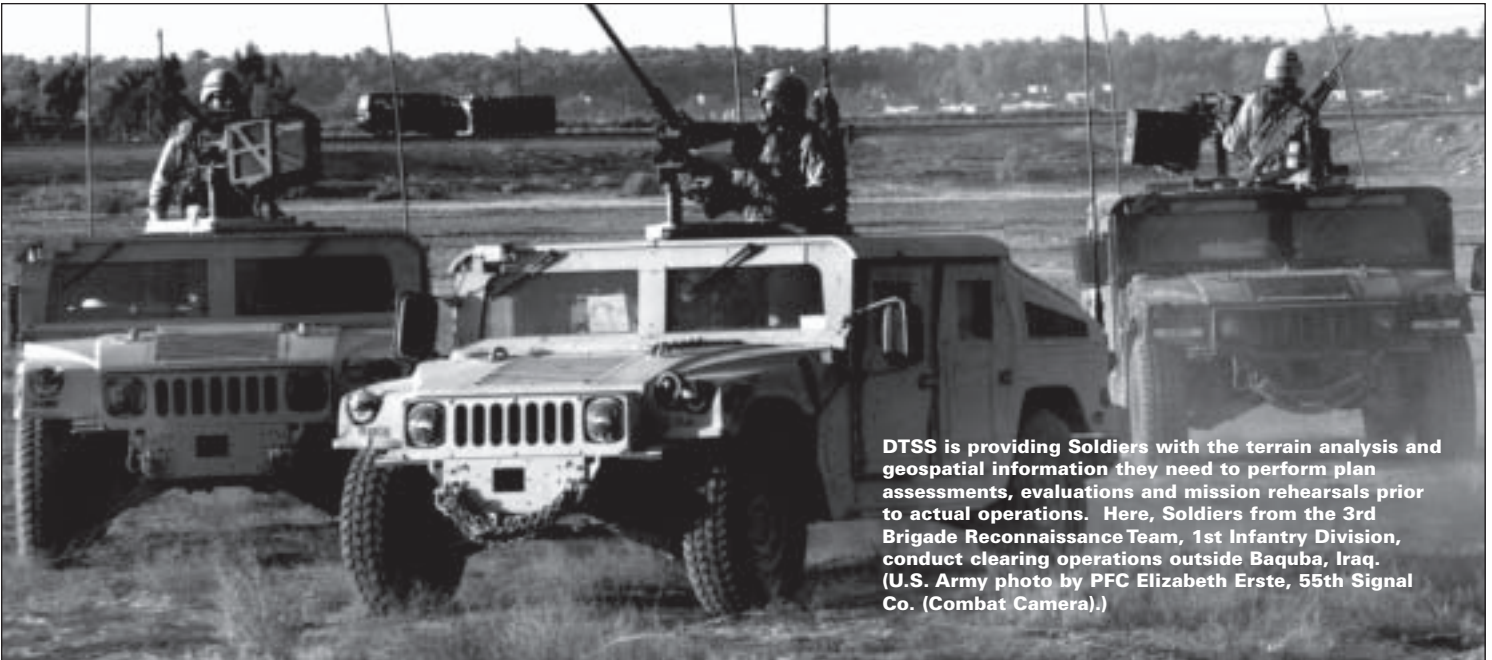
**Enabling Today’s Warfighters**

DTSS is an integral part of the ABCS architecture. It provides geospatial information to all other battle command systems to support the common operating picture. DTSS supports the military decision-making process (MDMP) by providing the battle staff with the geospatial information needed to accurately plan and execute mission operations.

DTSSs are located with key U.S. Army terrain teams worldwide. DTSS is deployed with most units supporting *Operations Enduring Freedom (OEF)* and *Iraqi Freedom (OIF)*. DTSSs are supporting the



DTSS’ High-Volume Map Production equipment is tactically mobile and can be forward deployed, allowing warfighters to readily generate hard-copy maps, charts and situation overlays. (U.S. Army photo by CTIS staff photographer.)



DTSS is providing Soldiers with the terrain analysis and geospatial information they need to perform plan assessments, evaluations and mission rehearsals prior to actual operations. Here, Soldiers from the 3rd Brigade Reconnaissance Team, 1st Infantry Division, conduct clearing operations outside Baquba, Iraq. (U.S. Army photo by PFC Elizabeth Erste, 55th Signal Co. (Combat Camera).)

deployed Army corps, divisions, maneuver combat brigades, aviation brigades, Stryker brigades and Special Forces groups. DTSS provides geospatial information in direct support of daily counterinsurgency missions to include combat patrolling, infrastructure, rehabilitation and counter-improvised explosive devices suppression.

DTSS is directly supporting *OEF* and *OIF* warfighters in visualizing the terrain in a 3-D view, with targets and buildings numbered for ready identification to immediate reaction missions. “The 3-D Skyline Terra suite software was procured and fielded by PMO CTIS in direct response to a need for this capability from the warfighters,” Graff explained. During DTSS fly-through missions, this 3-D software is used to gather valuable information that is used to assist commanders during the MDMP.”

CW4 Scott Owens, Directorate of Training, U.S. Army Engineering School, formerly a V Corps Terrain Analysis Technician, provided terrain analysis and geospatial support to V Corps during the fight to Baghdad. “Without the CTIS program and

DTSS, we would not have had the tools or the skills to accomplish our mission so successfully,” Owens reflected.

### What the Future Holds

“We are the recognized geospatial terrain information experts and we will migrate our systems capabilities to their environments,” Graff continued. “We are rapidly moving toward transition of DTSS capabilities into DCGS-A and FCS.”

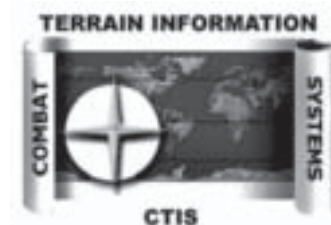
By merging geospatial and intelligence capabilities into a single system, DCGS-A will provide full-spectrum intelligence, surveillance and reconnaissance functionality for the Army. As part of FCS, DTSS capabilities will be carefully integrated into the Battle Command Mission Planning and Preparation and the 10 Situation Understanding Packages. To support these packages, DTSS will provide terrain analysis and geospatial information to support the development of deliberate, anticipatory and rapid response plans. DTSS will also support the ability to perform plan assessments, evaluations and mission rehearsals.

With the emergence of new threat environments, new weapons systems and new Army systems, the demand for

specially tailored, high-resolution geospatial terrain products has increased. Our Army is equipped with the most technologically advanced geospatial tools and information, thereby reducing operational risk to our warfighters.

**MARK A. HAINSEY** is Program Director CTIS. He has a B.S. in geosciences from Pennsylvania State University and is a Defense Systems Management College Program Manager’s Course graduate. Hainsey is also Level III certified in program management.

**LESLEY M. KENNEDY** supports the CTIS team in communications. She has extensive experience planning and implementing communications strategies for both government and private sector clients. Kennedy has a B.S. in business affairs and marketing from Towson University.



# Logistics Data — The Secret Weapon in the Global War on Terrorism (GWOT)

Cathy Skelding

**S**ince America began its counter-attack after the terrorist acts of Sept. 11, 2001, the Defense Logistics Information Service (DLIS) and the Defense Reutilization and Marketing Service (DRMS) have worked even harder to meet the logistics needs of U.S. and Coalition Forces.

DLIS supports Army logisticians delivering critical equipment, supplies and ammunition to Soldiers on the front lines. Here, Soldiers from C Co., 2nd Battalion, 5th Cavalry Regiment, 1st Cavalry Division, search for insurgents in the Al Thawra district of Baghdad. (Photo courtesy of DOD.)



Both organizations have long strived to support their pieces of the Defense Logistics Agency (DLA) mission — to bring the right item, to the right place, at the right time — goals that any logistician can appreciate. With its role in the acquisition process, DLIS:

- Supports provisioning efforts and identifies the need for and validates available technical documentation for cataloging purposes.
- Standardizes assignment of item names and maintains accurate item descriptions.
- Makes logistics information more interoperable between services.

DLIS is ready to help Army logisticians meet the added challenges of Joint and coalition logistics that come with the GWOT. The National Stock Numbers (NSNs) assigned by DLIS are valuable tools to help those engaged in that fight obtain the replacement parts they need. Customers can search DRMS' global inventory online, often using the NSN to help ensure that any reusable items they find are what they need. In fact, the Logistics Information Network allows Soldiers to search the DRMS inventory simultaneously with other supply sources.

DLIS manages logistics information for supply items used by the U.S. government, NATO, other international governments and private industry. DLIS personnel are responsible for administering the Federal Catalog System (FCS), a single cataloging system with uniform identification for all military supplies, providing economical, efficient and effective supply management. The FCS gathers, processes and distributes logistics information for more than 6.2 million supply items — ranging from weapon systems to nuts and bolts — used by

the U.S. military and its allies. The FCS operates through an automated data processing system, the Federal Logistics Information System (FLIS), which contains billions of characters of logistics data.

The NSN data stored in FLIS includes the following mandatory information:

- Item name.
- Federal supply class (FSC).
- Manufacturer's part number.
- Price.
- Unit of issue.
- Shelf life code.
- Precious metal information.
- Automated data processing information.

When available, descriptive data can include the following:

- Dimensions.
- Tolerances.
- Material.
- Finishes.
- Material parts.
- End item/used on applications.

The FCS gathers, processes and distributes logistics information for more than 6.2 million supply items — ranging from weapon systems to nuts and bolts — used by the U.S. military and its allies.

Whenever there is a major change in operations tempo, the most immediate impact on DLIS and DRMS is usually noticed first at the Battle Creek, MI, Customer Contact Center (CCC). CCC agents began working around the clock after the 9/11 terrorist attacks and saw a 300-percent increase in military call volumes in the first 2 months of *Operation Iraqi Freedom (OIF)*, according to Theresa Riley, DLIS' Customer Support Branch Chief. Military callers generally ask about the availability of items and if there are suitable substitutes



**A DLA Contingency Support Team member checks an incoming shipment bound for Afghanistan in support of Soldiers and Marines during Operation Enduring Freedom. (Photo courtesy of DLA.)**

available. Knowing that their efforts are helping American troops overseas makes Riley and her team proud.

“It is really an awesome feeling,” Riley reflected. “We all know the importance of getting Soldiers the items they need. All my agents take great pride in what they do.”

When the GWOT was taken to the Afghanistan mountains, warfighter calls increased dramatically. In one instance, an Air Force C-5 aircraft was grounded in Spain because of a ruptured hydraulic line. In less than 4 hours, CCC agents were able to resolve the issue so that the aircraft could continue its mission.

Additionally, DLIS supports the GWOT by participating in DLA Contingency Support Teams (DCSTs). Numerous employees from the Hart-Dole-Inouye Federal Center in Battle Creek have volunteered and served in the theater of military operations, including Iraq, Afghanistan and Kuwait,

by providing logistics and other support as required. For example, a call from a DCST member stationed in Iraq asked for help locating 3.5 million rounds of ammunition to supply the newly formed Iraqi army. By researching available databases and systems and contacting item managers and ammunition manufacturers, approximately 8 million rounds were located, and the information was provided to the requester for use in purchasing the required ammunition.

When another DLIS employee deployed to Iraq needed characteristic details on four NATO stock numbers for “rapid assembly of protective walls,” the International Cataloging Division contacted its counterparts in the United Kingdom and the manufacturing company. That call helped obtain the

number of sections, height, width and other requested specifications. Besides the required information, a Web site was provided that supplied pictures of the materiel. The complete technical information was added to the cataloging records in both the U.K. and U.S. national catalog files and is now available to all U.S. and NATO users.

The logistics information tools created by DLIS assist those engaged in the GWOT to research logistics data and obtain the required information needed to identify, order, receive and use the equipment.

The logistics information tools created by DLIS assist those engaged in the GWOT to research logistics data and obtain the required information needed to identify, order, receive and use the equipment.

Another challenge came when the Army Materiel Command (AMC) Logistics Support Activity sent an urgent request for supplier information on 1,153 NSNs in support of the Force Flow Requirements Analysis Program (FFRAP) under development by AMC’s G-3. They were required to provide the FFRAP’s status to the AMC commander. The data set required an automated FLIS extraction be provided in a specialized format. This request was met within 24 hours.

Another obstacle that DLIS personnel helped logisticians overcome involved reducing “frustrated cargo” in Iraq. Frustrated cargo is cargo that never reached the person who ordered it. A database extract, provided by DLIS personnel, used various cataloging data to help the supply personnel get more items back into the supply system versus sending the items to the disposal office. The Pentagon and the Joint Chiefs of Staff are tracking this issue.



DLA’s mission is to get the right items to the right place at the right time — by any means possible — to support warfighters. Here, cargo is offloaded at Port of Ash Shuaiba, Kuwait. (U.S. Army photo by Stephen Larsen, Public Affairs Officer, Defense Communications and Army Transmission Systems.)



At the outset of combat operations in Iraq, DRMS ensured that Soldiers had sufficient quantities of concertina wire that was shipped from base camps in the Balkans that had been closed. (Photo courtesy of DLA.)

When a customer deployed in support of *OIF* requested priority access to the DEfense Supply eXpert system (DESX), customers were immediately provided user identifications (IDs), passwords and personal ID numbers. This information allowed requestors to access DESX within minutes of their call. The automated computer system is used for tracking DOD supply requisitions and inventory items as well as placing or modifying requisitions.

Immediate action was taken when a customer support request for Mission Incapable Awaiting Parts was received from Mildenhall, England. Two plain, self-aligning bearings were needed, and both the DLA-Europe (DLA-E) Customer Support and Readiness Divisions and DLIS personnel worked to locate these bearings within the U.K. and immediately ship them to Mildenhall Air Base. Additionally, DLIS personnel located extra parts at McConnell Air

Force Base, KS, through a commercial contact at New Hampshire Ball Bearing. These items were going on a strut forward beam installation on a KC-135R aircraft. Together, DLIS and DLA-E worked with the customer to implement a long-term solution to ensure that these critical parts are available in the future.

DLIS's work in international codification also promises to enhance future acquisition processes because of "smart codification."

When WD-40® was thought to be unobtainable in Iraq and a congressman raised the non-supply issue, Army headquarters came to DLIS catalogers for assistance with identifying the many different NSNs used for the lubricant. The information helped Army spokesmen prepare for a *60 Minutes* interview by identifying how much lubricant was available in the military theater. Catalogers provided information on all items that referenced a part number for WD-40, items that were stock listed using the Military Performance Specification for WD-40

— MIL-PRF-32033 — and those items stock listed under the original WD-40 specification — MIL-C-1309. Applicable management data, such as supply source, price and unit of issue for all identified Army-used NSNs was provided, and through additional research, the Army provided CBS producers with enough new information that the program was not aired.

DLIS catalogers' expertise in international codification helped them support the Singapore National Codification Bureau (NCB), which requested assistance through the International Cataloging Division. Sourcing problems for parts on Singapore's M113 and M728 vehicle fleet were resolved when research on a list of M113 and M728 parts identified a possible supply support. "Last-source" data were obtained and provided to the NCB. Copies of military drawings for almost every item involved were obtained through the U.S. Army Tank-automotive and Armaments Command (TACOM) and forwarded. The drawings enabled Singapore to use competitive solicitation of alternate production in-country.

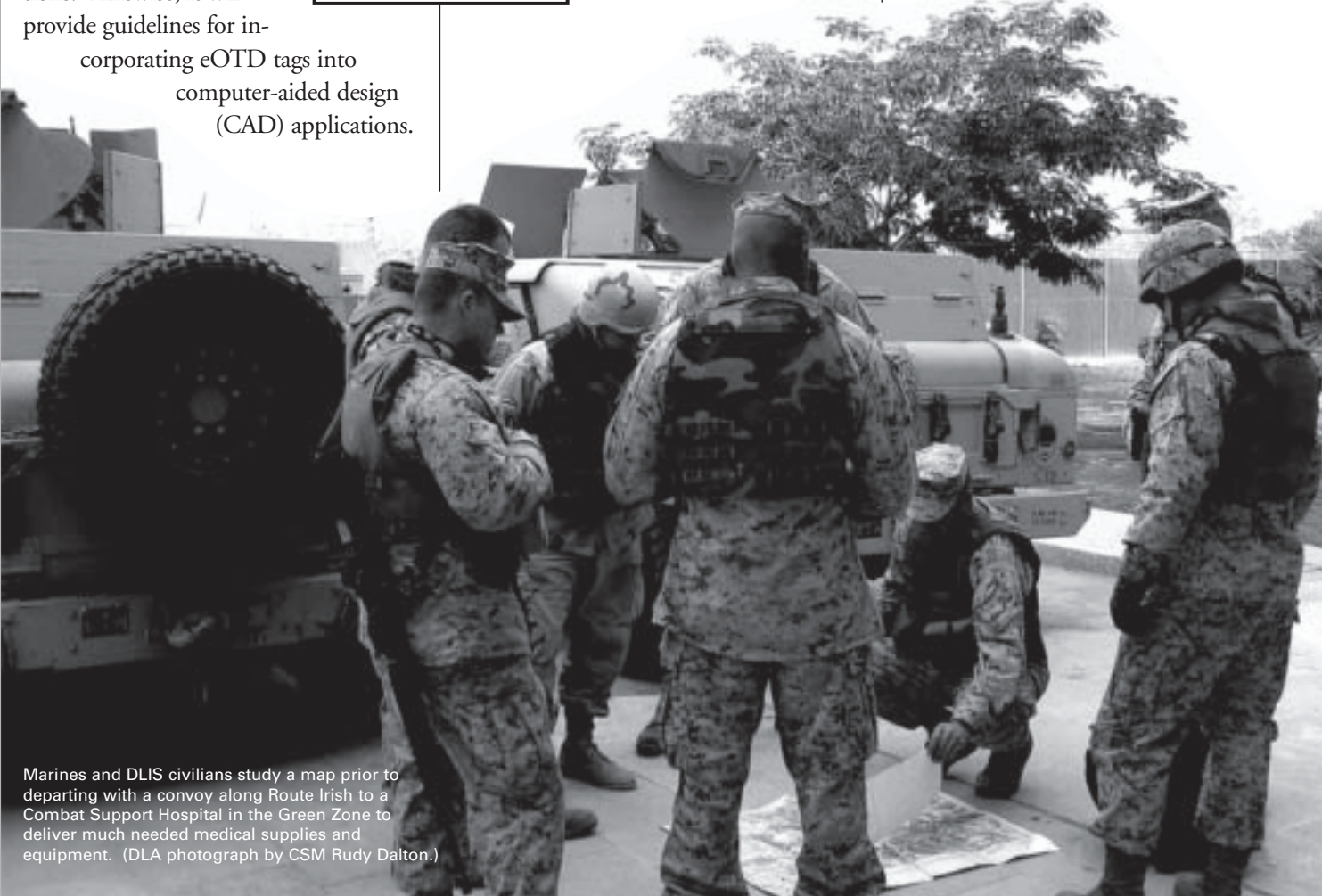
DLIS's work in international codification also promises to enhance future acquisition processes because of "smart codification." By accepting standard elements of the NATO Codifications System into its commercial cataloging information, the Electronic Commerce Code Management Association (ECCMA) has helped to create a new benchmark *International Organization for Standardization (ISO) 22745*. This standard seeks to assimilate the process and procedures for ECCMA Open Technical Directory (eOTD) maintenance as well as the naming convention and the design rules for definitions. Likewise, it will provide guidelines for incorporating eOTD tags into computer-aided design (CAD) applications.

The new STEP files will help suppliers characterize products accurately, consistently and efficiently at the source as an integral part of the design process, thus helping acquisition organizations more easily identify suitable products to meet their requirements.

The resulting codification process uses the eOTD to support a future functional capability that allows systems to seamlessly combine CAD and product data management into a Standard for the Exchange of Product (STEP) Model Data file that contains characteristic data encoded according to a standard catalog. The new STEP files will help suppliers characterize products accurately, consistently and efficiently at the source as an integral part of the design process, thus helping acquisition organizations more easily identify suitable products to meet their requirements. The smart

codification prototype is scheduled for unveiling at the 10th International Symposium on Codification, Oct. 10-13, 2005, in Edinburgh, Scotland.

DLIS has a strong history with the Army and continues to support it, the other military services, government agencies and the international community by providing logistics data in user-friendly products and services. DLIS's expertise in provisioning support initiatives, cataloging and managing information makes it an important contributor to electronic commerce between the U.S. government and its many suppliers. For additional information about DLIS, visit <http://www.dla.mil/dlis> or call the DLIS Public Affairs Office at (269) 961-7019.



Marines and DLIS civilians study a map prior to departing with a convoy along Route Irish to a Combat Support Hospital in the Green Zone to deliver much needed medical supplies and equipment. (DLA photograph by CSM Rudy Dalton.)

## Where We've Been

DLIS, formerly known as the Defense Logistics Services Center, is closely connected to the FCS, begun in 1914 when the Navy first published a Naval Depot Supply and Stock Catalog. At that time, the publication was the nearest thing to a uniform federal stock catalog. It became the *Federal Standard Stock Catalog* in 1929.

The enormous number of new items flooding the military supply systems during World War II often created duplication, lack of uniformity and inefficiency because each military service had its own means of parts identification. President Franklin D. Roosevelt recognized the costly duplication and the danger to both national security and the economy, so in 1945 he instructed the Bureau of the Budget to prepare and maintain a U.S. Standard Commodity Catalog. *Public Law 436, Defense Cataloging and Standardization Act*, was passed in 1952, further solidifying the FCS.

DOD consolidated military cataloging components at DLIS in 1997. This milestone event in the DLIS evolution has solidified its presence in the logistics community. Today, DLIS is the centralized activity responsible for gathering data, researching information and preparing transactions for stock listing of new supply items and for maintaining NSN information. The NSN is the key to materiel management for the information needed for acquisition, financial management, demilitarization, hazardous material, freight, packaging and pilferage reduction. Many logistics systems rely on NSN

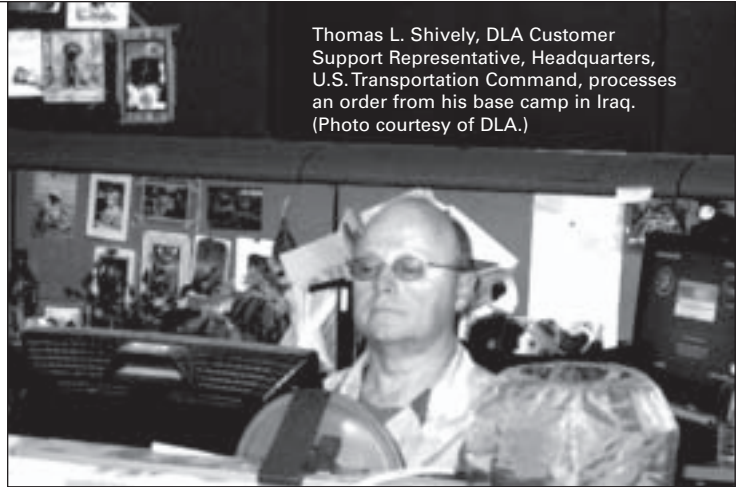
data to make automated decisions about stockage and reordering.

## Army Cataloging

The Army Cataloging Division (DLIS-KA) is the cataloging center for major subordinate commands. The division comprises three branches: Air, Land and Marine (DLIS-KAL); General and Troop Support (DLIS-KAG); and Communications and Electronics (DLIS-KAE). Each division has two sections, each responsible for the cataloging and provisioning support functions for its respective command. DLIS-KAL provides services for the U.S. Army Aviation and Missile Command (air and missile) and TACOM-Warren, MI (land and marine). DLIS-KAG provides services for TACOM-Natick, MA (troop support) and TACOM-Rock Island, IL (general).

DLIS-KAE provides services for the U.S. Army Communications-Electronics Command, both communications and electronic equipment. All branches provide services for the Army's management of supply items, such as provisioning support, emergency NSN assignments, supply support request processing, maintenance actions for user information, FSC, item name determination, descriptive characteristics, reference number maintenance and cataloging collaboration requests.

DLIS is the centralized activity responsible for gathering data, researching information and preparing transactions for stock listing of new supply items and for maintaining NSN information.



Thomas L. Shively, DLA Customer Support Representative, Headquarters, U.S. Transportation Command, processes an order from his base camp in Iraq. (Photo courtesy of DLA.)

## DOD EMALL

The DOD Electronic MALL (EMALL) is a single entry point for buyers to find and acquire commercial-off-the-shelf goods from suppliers and government sources. An example of its effectiveness can be seen through the partnership between the Naval Supply Systems Command, Mechanicsburg, PA, and DLA. The Navy uses DOD EMALL as the online hosting and ordering system to support Navy purchase card users. Currently, the Navy Fleet and Industrial Supply Center contracting centers have added more than 300 commercial catalogs to support historical purchase card buying patterns to meet the Navy's needs. Users can access DOD EMALL through One Touch Support using a single sign on.

DOD EMALL provides numerous benefits for customers such as reduced prices through negotiation with vendors for discounted prices that more closely match wholesale rather than retail. Secondly, customers will often see competition on commercial items. Also, customers can identify mandatory source items such as those that must be obtained from *Javits-Wagner-O'Day* suppliers. Customers can also see Material Safety Data Sheets for hazardous items, if included by suppliers. Finally, customers are provided the convenience of online ordering at their workplace, rather than the

inconvenience of driving from store to store or calling several vendors for information or to place orders.

## FED LOG

The FED LOG system provides user-friendly interfaces to quickly and easily retrieve information on more than 7.6 million NSNs and more than 13.7 million part numbers. Available on CD or digital video discs, the product contains basic NSN information, characteristics data and drawings. In March, an icon was added to FED LOG to allow users with Internet access to link with the Web-based version of the FLIS known as "WebFLIS." This allows FED LOG users to obtain the most current information available instead of data that was current at the time the disc was prepared.

"This is the real-time link that has never been achievable in FED LOG before," explained FED LOG Program Manager Joe Layton. "Rest assured, when users in the field are ordering parts, they need to know that the price has not significantly increased since they received their last copy of FED LOG on CD."

The basic information and characteristics data are updated monthly while the drawings CD-ROM is updated quarterly. Additional FED LOG information is located at [www.dlis.dla.mil/fedlog](http://www.dlis.dla.mil/fedlog).

## DLIS Virtual Representative

"Phyllis" is the DLIS virtual representative hosted on the DLIS Web site (<http://www.dla.mil/dlis>), which debuted May 21, 2001. Customers can ask Phyllis the same questions they'd ask a human agent. Phyllis can answer common or most frequently asked questions identified from an analysis of past customer contact responses. She provides the unique capability to help customers quickly navigate through layers of Web pages to locate the information they need by simply responding to a question phrased in natural language. In addition, Phyllis has been successfully linked to several DLIS databases that provide customers with a unique ability to ask a question and have her search the appropriate database for a response. Sample questions include:

- What is the Commercial and Government Entity (CAGE) code for General Motors?
- Who is CAGE code 80063?
- What is FSC 5820?

Phyllis can also provide suggested topics to the customer identifying what she knows about a given topic.

## DLA Map Catalog

The DLA Map Catalog is another area where DLIS uses its expertise in logistics information to offer an interactive catalog. The catalog features point-and-click technology to help customers produce a Military Standard Requisitioning and Issue Procedures-compliant order that can be submitted online. The materials in the catalog are produced at the Richmond Mapping Facility (RMF), which was formed in April 1998 when it assumed the inventory and distribution functions of mapping logistics from the National Geospatial-Intelligence Agency.

The RMF comprises two entities — Defense Supply Center Richmond (DSCR) and the Defense Distribution Mapping Activity — and is responsible for the supply management of an estimated 90,000 NSNs in four FSCs: 7641 (aeronautical), 7644 (digital), 7642 (hydrographic) and 7643 (topographic). RMF also manages several special programs for the Armed Forces and specified commands including Fleet Allowance and Flight Information Publications.

Topographic charts are maps that present the vertical position of features in measurable form, as well as their horizontal positions. Topographic maps show a terrain's shape and elevation in precise detail by using contour lines. They range from general wall maps and simple briefing graphics to accurate topographic line maps and inclusive city graphics.



DLIS helps Army logisticians overcome the challenges of fighting a war in a Joint and coalition environment by managing logistics information for supply items used by U.S. and international forces fighting in Iraq, such as the U.S. Marine Corps (USMC) and the Australian Army. Here, Australian Army MAJ Michael Cook and USMC MAJ Kenneth Oldham greet an Iraqi security guard at the Hands of Victory parade grounds in Baghdad. (U.S. Marine Corps photo.)

Small-scale products are intended for strategic decisions and missions. Large-scale products are intended for mass dissemination and acknowledging cross-country information.

To receive the *DLA Map Catalog* on automatic distribution, contact DSCR at (800) 826-0342 or visit the Web site at [www.dscr.dla.mil/rmf/](http://www.dscr.dla.mil/rmf/).

## DRMS

"A major component of DRMS's job is to identify what items are reusable and keep costs down, but it is also important to know the proper way to dispose of items that are not reusable," explained Mike Kelley, DRMS' Chief of International Logistics.

"We want to be a good steward of the environment — that's our No. 1 priority," Kelley remarked. "We always operate to moral standards. Host-nation laws are very different, but even in ones without specific waste disposal laws; we're not going to go below moral guidelines."

"Whatever items can be reused usually are turned in as a battle group leaves an area and are reissued to the new battle group coming in," Kelley continued. Such was the case when U.S.

Army troops were leaving the Balkans. When Soldiers there redeployed, much of the installation facilities were literally "pulled out" and were sent to Iraq to be used in the GWOT.

As the troops depart, some bases — such as Camp Comanche, Balkans — are left standing empty. That is when the "harvest" begins as the physical features are dismantled. Harvested, reusable materials can either be redistributed in the Balkans, the European theater or other operational areas such as Iraq. As always, DRMS' goal is to effectively reuse as much material as possible.

## Supporting the Reserve Component

Besides supporting National Guard and Reserve units, DLIS and DRMS are among the many employers nationwide who supported the citizen soldiery in their ranks. Among those deployed was Virgil Akins, who quickly transformed from a DLIS marketing specialist back into a Soldier when he was needed to serve in Bosnia. Akins' mission was to help oversee aspects of U.S. medical assistance there and to ensure the safety, health and well-being of enlisted Soldiers.

Likewise, Todd Kaminski went from overseeing the Quality of Life Office at

Battle Creek to influencing the combat environment as the Combat Engineer Officer for the II Marine Expeditionary Force.

"We measure our successes each day when the Iraqi government and Iraqis take control of more activities in their country, and it is happening," Kaminski wrote in a letter from Fallujah, Iraq.

CATHY SKELDING is a Supply Management Specialist for the DLIS Army Cataloging Division in Battle Creek. The majority of her 33-year career has been in the logistics and cataloging arena, working for Defense Logistics Service Center, the Air Force Cataloging and Standardization Center and for DLIS Army Cataloging. She received her Acquisition Professional Development Program Acquisition Logistics Certification from Wright-Patterson Air Force Base in 1994.



## Defense National Stockpile Center (DNSC) Sells Excess Materials

DNSC, a field activity under the Defense Logistics Agency, is selling excess strategic and critical materials, including metals, ores and minerals. *Federal Acquisition Regulation (FAR) 8.002 Priorities for Use of Government Supply Sources* addresses how agencies should satisfy requirements for supplies from government sources. *FAR 8.003 Use of Other Government Supply Sources* stipulates how agencies should satisfy their need for the metals, ores and minerals from available DNSC inventories. These materials can be purchased through agency-to-agency arrangements not subject to

normal competitive commercial sales procedures. Examples of agency use of DNSC materials include using titanium on the M1 Abrams tank refit, using tungsten on Navy vessels, using germanium on night vision equipment and using tannin for treating the leather on Army berets.

For more information, call Cheryl Deister or Jennifer Iribarren at the DNSC Contracts Office, 703-767-5475 or 703-767-5487 or visit DNSC's Web site at <https://www.dnsc.dla.mil/default.asp>.

# Managing Interde Unprecedented Scale

Rory Kirker

**T**o help manage the unprecedented scale and speed of change experienced by Army logisticians, the U.S. Army Logistics Transformation Agency (LTA) developed the Evolutionary Model, which provides a strategic plan to manage change. The interrelationships between the Evolutionary Model's operational experience and transformation spheres of influence facilitate and enhance change management within Army logistics. These processes may be applied to any organization undergoing transformation.

Someday, performance-based information will provide real-time "sense-and-respond" logistics systems to support maneuver units on the front lines. Here, warfighters rumble through an 82nd Engineer Battalion traffic control point near Baquba, Iraq. (U.S. Army photo by SPC James B. Smith, 55th Signal Co. (Combat Camera).)



# pendence and the and Speed of Change

## Sphere of Influence

Turning first to the operational experience sphere of influence depicted in Figure 1, we postulate that in the real world *policy* drives the *execution* of business processes and system behavior. For example, the Army is currently moving from a mass-based supply system, in which days of supply warehoused throughout the area of operations was the prime metric, to a distribution-based supply system focused on the time required to fill a customer's need.

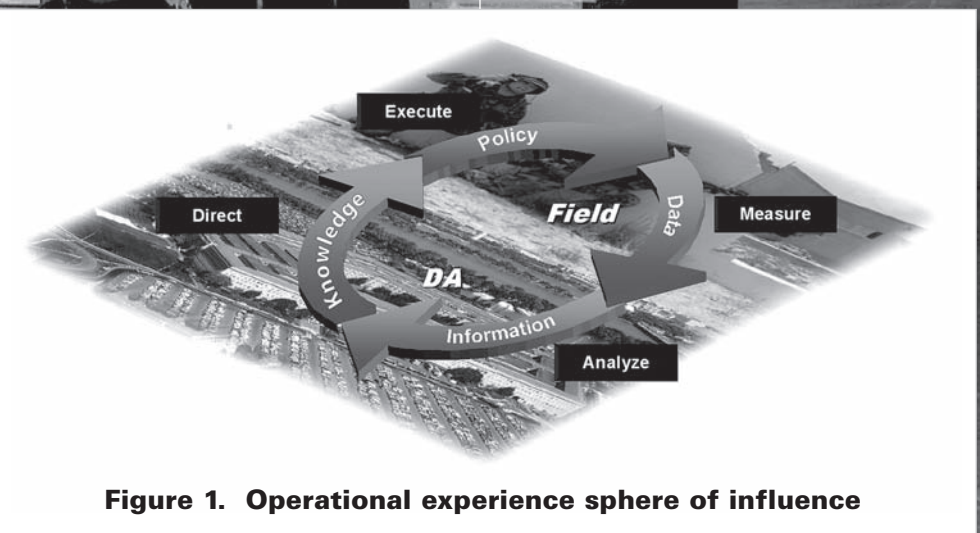
Changes within Army policy drive this supply system transformation. These policy changes result in *data* from the field that are *measured* against predetermined metrics, such as warehousing costs and time needed to fill customer requirements. These data reflect changes within Army business processes and system behavior. Once measured, data are *analyzed* using various tools to become *information*. For example, discreet event simulation

modeling is a critical tool that provides a better understanding of a logistics system's or business process's expected behavior under a given set of conditions.

Now, armed with performance-based information, Army leadership acquires system performance *knowledge*, determining policy impacts and whether additional changes would be beneficial and should be directed. In this

example, performance-based information may reflect a reduction in warehousing costs and improvement in the time needed to fill customer requirements.

However, analysis may reflect that additional improvements could be realized by providing a more adaptive and responsive distribution system. This would result in sufficient knowledge for department leadership



**Figure 1. Operational experience sphere of influence**



**Figure 2. Transformation process**

to be measured could include milestones to develop other sensor-equipped platforms such as containers or trailers, a sophisticated tracking and reporting system and business process changes. The predict-and-preempt logistics system might have weapon systems or unit readiness as its prime metric.

The transformation process's third phase is developing *programmatics*, including programs, funding and synchronization. The programmatics are carefully *analyzed* to identify potential problems, are *reassessed* and a *strategy* is developed. The strategy includes a holistic plan defining the enablers, initiatives and process changes necessary to achieve a vision-defined capability. The holistic plan is then banded to balance resources across all enablers and decisions relative to capability fulfillment. Banding involves grouping the enablers necessary for a given capability and determining how much of each is required to achieve the desired capability. This helps ensure that less visible enablers are appropriately funded; otherwise, we potentially purchase an excess of one enabler and do not achieve the capability desired. In the example, the strategy could include a holistic banded plan to balance

to direct some additional action, including a review of commercial sector best practices. The review's results could prompt the Army to establish policies to implement a "sense-and-respond" logistics system. That system may have speed and quality of effects as its prime metrics. Executing such a change may also be measured and analyzed to establish another follow-on course of action or policy change.

**Transformation Process**

In Figure 2, the model's transformation portion follows a series of rational phases, beginning with a *vision*. In this phase, the Army develops a vision of future logistics requirements based firmly on future warfighting requirements. This vision may include an advancement of the sense-and-respond concept mentioned earlier to a "predict-and-preempt" logistics system that predicts requirements and preempts failure.

The Army would then develop a *plan* to achieve that vision and establish *benchmarks* and *metrics* to measure desired capability and outcomes. In this example, the plan might include developing sensor-equipped vehicles capable of predicting component failures in enough

time to receive replacement parts before they are required. Direct linkages to warfighting command and control (C2) systems, combined with intelligent agents, may afford commanders greater flexibility and situational awareness (SA) by predicting unit capabilities based on equipment and logistics status. Such a system may also include a sophisticated tracking and reporting system, coupled with additional intelligent agents, to notify program managers and manufacturers that the vehicle or components will have to be produced at a higher rate to preempt critical shortages. Benchmarks



**Figure 3. Evolutionary Model optimizes interdependence**

funding for sensor-equipped platforms, the tracking and reporting system, intelligent agents and business process changes. Without funding each component at a minimum established level, we could not achieve the desired capability of predicting requirements and preempting failure. Hence, the strategy drives decision makers to ensure that every component within a system-of-systems is provided adequate funding to achieve a predetermined capability and deployment schedule.

### Evolutionary Model

By integrating these general operational and transformational theories, we produce the Evolutionary Model. As Figure 3 depicts, the figure eight's intersection, "information" from the operational circle can potentially influence the transformation process and programmatic could drive advances to the field. Likewise, just as potential performance of a logistics system or business process may be predicted using discreet event simulation modeling, it may also be *validated* using the same process-modeling tool after implementation. In this way, process modeling serves to link the operational and transformational environments. In the example, information from operational experience regarding the merits of a more adaptive distribution-based system could directly



As Army logisticians adapt to change and overall transformation initiatives, supply and maintenance distribution systems will become more responsive to operational unit needs. Here, 25th Infantry Division (Tropic Lightning) Soldiers provide convoy escort support during operations south of Mosul, Iraq. (U.S. Army photo by SGT Jeremiah Johnson, 55th Signal Co. (Combat Camera).)

influence the transformation process strategy or vision. Programmatic from the transformation process could provide sufficient information to influence departmental leadership to direct the development of a system that predicts requirements and preempts failure.

Because conditions that influence change do not always follow a step-by-step process, it is feasible that any phase in one portion of the model could influence any phase in the other portion. For example, if during the vision phase new technologies were uncovered that met departmental requirements, it would be feasible to proceed directly to the policy phase whereby the leadership could implement the new technology. Hence, both efforts can be constantly and consistently influenced

by each other. It is this interdependence that ensures constant updates and advances occur in both spheres of influence. Using the Evolutionary Model optimizes the interdependence between operational experience and the transformation process.

The Evolutionary Model provides a phased approach within the operational experience and transformation process and a comprehensive foundation for developing a strategic plan for change management. Using the Evolutionary Model capitalizes on the interrelationship between operational experience and transformation efforts. It greatly enhances the Army's capacity to formulate sound policy, program and priority decisions. By managing change more effectively, the Army can quickly overcome the unprecedented scale and speed of logistics transformation.



The Army's vision for future logistics support will be based on combatant commanders' operational requirements. For newly fielded vehicles such as the Stryker operating in a harsh desert environment at high levels of operations tempo, a "sense-and-respond" logistics system could help predict and preempt mechanical parts wearout and breakdown for specific vehicles and systems. (U.S. Army photo by SGT Jeremy Heckler.)

**RORY KIRKER** is a Logistics Management Specialist at LTA. He has a B.A. from the University of Arizona, an M.A. from Pepperdine University and is a graduate of the NATO Senior Officer's Course at the NATO Defense College in Rome, Italy. He has more than 28 years of enlisted and commissioned service in the Ordnance Corps.

# AMC Enhances Overseas Logistics Support and Capabilities for the Warfighter

Charles W. Fick Jr.

**T**aking the shape of the Army they serve, two Army Materiel Command (AMC) organizations in Iraq uncased new colors on May 31, 2005. Army Field Support Brigade–Iraq (AFSB-I) replaces AMC Logistics Support Element–Iraq and Equipment Support Activity–Iraq Zone has become Army Field Support Battalion–Iraq (AFSBn-I).



(Above) AFSB-E Soldiers uncased new battalion and company colors during a May 23 ceremony at Hammonds Barracks. The newly designated units provide expeditionary logistics support from locations in England, the Netherlands, Luxembourg, Italy and Germany. (U.S. Army photo by Charles W. Fick Jr.)

(Background) Soldiers from the AFSB-I and the AFSBn-I uncased their new colors during a May 31 ceremony at Logistics Support Area–Anaconda, Balad, Iraq. The newly designated units provide expeditionary logistics support to fighting forces on the front lines in Iraq. (U.S. Army photo by SGM Joe Adelizzi.)

“These newly designated units reflect their parent, Army Field Support Command, and signal a change from the static to the expeditionary. Our structure now matches that of the Army we support,” said AFSB-I Commander COL Xavier P. Lobeto.

AMC Commanding General (CG) GEN Benjamin S. Griffin remarked, “These newly designated units are on the forefront of transformation, providing combat logistics support to our troops in the field. The Army Field Support Command and our newest brigade and battalion provide the Army’s 911 capability and are able to respond immediately and deliver logistics power wherever and whenever Joint forces require our support.”

“Today’s ceremonial change validates our concept of expeditionary logistics support,” said Lobeto. “Here in Iraq, we’ve harnessed all AMC’s capabilities to serve Soldiers on the battlefield. From installing armor on the vehicle fleet to putting scientists to work on new methods of defeating insurgent tactics, the brigade and battalion are making a direct and positive contribution to the mission.”

With more than 2,500 people serving throughout Iraq, AFSB-I and its subordinate battalion are making good on the promise that if a Soldier wears it, drives it, shoots it, flies it or just plain needs it, AMC is poised to deliver it. “We’re one team of Soldiers, civilian employees and contractors dedicated to one mission — supporting maneuver units,” Lobeto concluded.

### **Europe Logistics Units Provide Power Projection Capability for Combat Units**

Five Europe-based units took a giant step into the future of logistics support



**AMC CG GEN Griffin addresses troops and guests during a May 23 ceremony at Hammonds Barracks. Four battalions and one company from AFSB-E were redesignated to reflect their new role in providing expeditionary logistics support. (U.S. Army photo by Kevin Koehler.)**

during a ceremony on May 23, 2005, at Hammonds Barracks, Seckenheim, Germany. Combat Equipment Battalions in Livorno, Italy; Bettembourg, Luxembourg; Eygelshoven, Netherlands; and Hythe, England were redesignated as Army Field Support Battalions. Additionally, a Combat Equipment Base at Rhine Ordnance Barracks, Germany, became an Army Field Support Company.

Griffin noted, “These newly designated units are the first of their kind and establish a more effective way to support expeditionary fighting forces. They are leading the effort in AMC and setting the standard.” He continued, “AFSB-Europe (AFSB-E) and its subordinate units are at the tip of the transformation spear, harnessing acquisition, logistics and technology in a way that will improve support to combat forces theaterwide.”

“This ceremonial change validates our concept of 21st century logistics support,” Lobeto explained. “We’ve been

adapting to change and shifting our mission focus for some time. Now, we can claim the name that describes what we do — Army Field Support.” “The new name reflects a new mission,” Lobeto continued. “We’re already well down the road of expeditionary logistics support. Two of our four battalion commanders, and many staff members, are deployed from their home stations to combat zones. Brigade headquarters has deployed an operations command post, providing command and control for AMC activities in Iraq,” Lobeto remarked.

“The direction of AFSB-E and its subordinate units is tied to two things — the Army’s transformation to expeditionary capabilities and the new shape of U.S. Army, Europe [USAREUR] and U.S. European Command [USEUCOM],” Lobeto said. “We deliver Army Field Support Command and AMC capabilities to USAREUR and USEUCOM, so we are smack in the middle of Army transformation.”

Today, AFSB-E units are heavily engaged in delivering urgently needed equipment and expert logistics assistance to supported units that include the 1st Armored and 1st Infantry Divisions. “Looking ahead, we will adapt to the new circumstances as USAREUR repositions, and press on doing what we do best — delivering logistics power projection capabilities to combat units,” Lobeto concluded.

**CHARLES W. FICK JR.** is the AFSB-E Public Affairs Officer. He is a graduate of the Defense Information School and the University of Oklahoma Short Course in Communications. He is a U.S. Air Force veteran and is an Aviation/Space Writers Association member.

# Mobile Parts Hospital (MPH)

Ashley John

**O**n a late September evening, a distressed Soldier entered the MPH, a rapid manufacturing system (RMS) located at Camp Arifjan, Kuwait, frantic for guidance in getting parts made to retrofit his Humvee. The Soldier faced a looming mission that was to take place early the next morning. Having a design in mind, he approached the team with a plan for a modified gun mount to attach a Squad Automatic Weapon (SAW) to his vehicle. Getting precision parts quickly was essential to the Soldier completing his mission. However, when the Soldier came in to the module, the MPH team was closing down operations for the day. But, realizing the importance and significance of the mission, the module stayed open late to meet the Soldier's need.



An LMM is put in place by a Rough Terrain Container Handler. (U.S. Army photo by Randy Talbot, TACOM Historian.)

# ) — the 'Parts Doctor' Is In



Racing against the clock, the U.S. Army Tank Automotive Research, Development and Engineering Center's (TARDEC's) MPH team successfully designed, manufactured and delivered the needed parts in about 5 hours. The Soldier installed them early the next morning. Later, while executing his mission, the Soldier and his crew ran into an insurgent ambush. According to

Racing against the clock, TARDEC's MPH team successfully designed, manufactured and delivered the needed parts in about 5 hours.

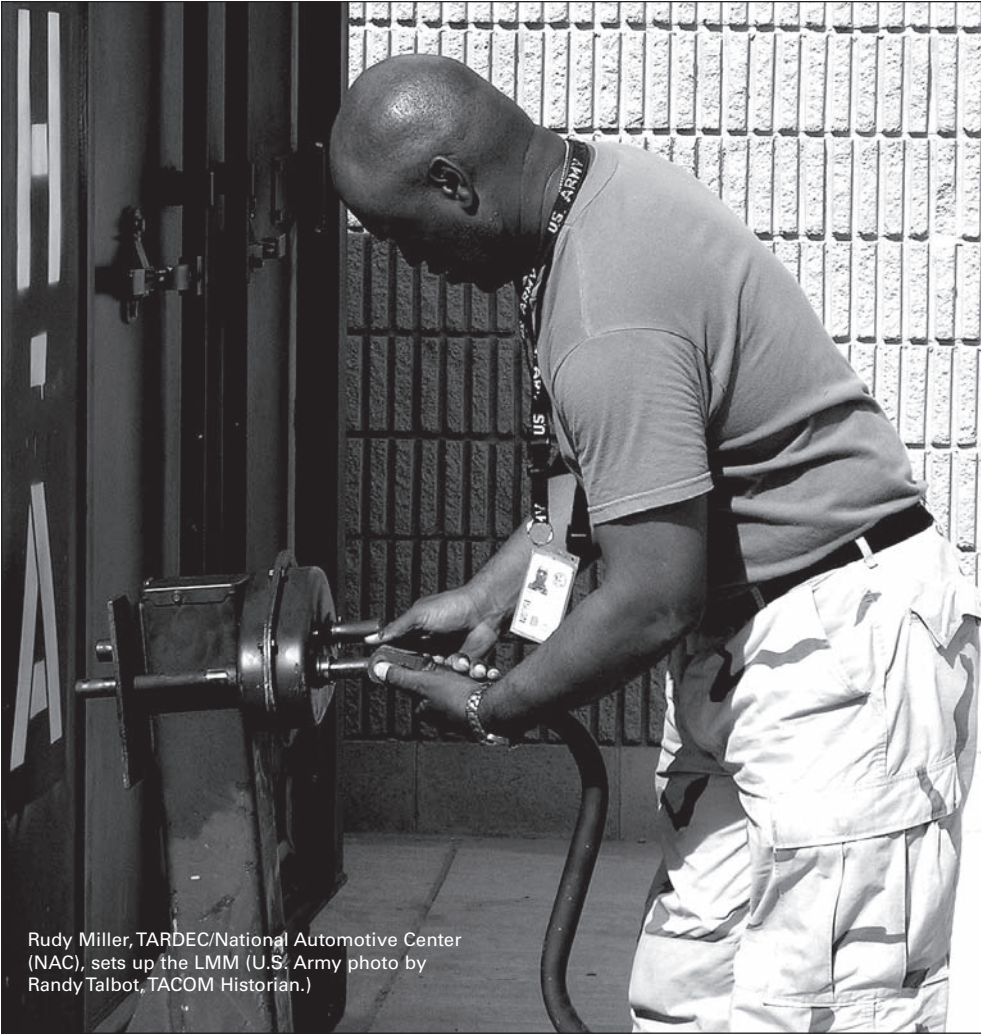
witnesses, the MPH gun mount enabled the Soldiers to deter and repel enemy attacks safely, allowing for maximum firepower and a successfully completed mission. After hearing witness accounts, the MPH crew realized the direct impact they had on helping Soldiers in need.

Since its October 2003 arrival at Camp Arifjan, the MPH has serviced

hundreds of Soldiers and has worked vigorously to meet identified maintenance needs for the logistics community and the warfighters they support. As tactical units move into Iraq, MPH is there to rapidly service and repair parts when timing is essential. Recently, to help tackle additional part requests, another MPH unit has been deployed to Camp Anaconda, Iraq, and since June 2005, MPH has had modules located at Bagram Air Force Base, Afghanistan.

Thousands of grateful Soldier testimonials have been sent to the MPH team,

In the early morning of Jan. 15, 2005, a Soldier from B Co., 103rd Armored Battalion, Task Force Dragoon, 28th Infantry Division, watches for any suspicious activity on the streets of As Siniyah, Iraq, as his fellow Soldiers perform a sweep for any vehicle-borne improvised explosive devices. (U.S. Army photo by SPC Elizabeth Erste, 55th Signal Co. (Combat Camera).)



Rudy Miller, TARDEC/National Automotive Center (NAC), sets up the LMM (U.S. Army photo by Randy Talbot, TACOM Historian.)

A revolutionary idea by TARDEC engineers and supported by the Focus: HOPE staff, MPH consists of three individual modules that can efficiently fabricate standard and customized parts for vehicles or systems with critical battlefield needs.

- The RMS — the first module — is a C-130 transportable, mobile manufacturing center composed of two International Organization for Standardization (ISO) containers: the Lathe Manufacturing Module (LMM) and the Rapid Manufacturing Module. Together, they house the most modern design and manufacturing technology supplied to Soldiers.
- The Communications and Control Center (C3) is the second MPH component. This station is where all the memory is stored and acts as the system's brain. C3 stores and sustains the wind-chill database, which houses all technical data for part production, along with the technical expertise to maintain the MPH program through use of satellite communication — linking it to databases, maintainers, engineers and Soldiers anywhere in the world.

headquartered at TARDEC in Warren, MI. Commenting on the team's speed and effectiveness of their work, 2LT Bruce Neighbor, 1486th Transportation Co. in Iraq, said that MPH is, "a necessity in a theater of war." Neighbor, a frequent MPH user, continues to spread the word about what a fabulous job the team is doing. "Simply put," he said, "the MPH has saved

lives. I continue to bring more and more orders to the MPH, and they have fulfilled my every need."

TARDEC is now working with Product Manager Sets, Kits, Outfits and Tools, located at Rock Island Arsenal, IL, to transition the MPH program. TARDEC has also partnered with a local Detroit nonprofit training and manufacturing school — Focus: HOPE — to help train Ground Systems Industrial Enterprise personnel and Soldiers to operate the RMS modules that will be stationed in Afghanistan.

Since its October 2003 arrival at Camp Arifjan, the MPH has serviced hundreds of Soldiers and has worked vigorously to meet identified maintenance needs for the logistics community and the warfighters they support.

program through use of satellite communication — linking it to databases, maintainers, engineers and Soldiers anywhere in the world.

- The Agile Manufacturing Cell — the MPH's final module — is currently located at Focus: HOPE. This fixed facility includes a multiple manufacturing system, reverse engineering and finishing capabilities. The unit increases the MPH's manufacturing capacity by producing specific parts that the RMS unit cannot

fabricate in-country because of size, weight or environmental restraints.



Kevin Green, Focus: HOPE Senior Machinist, hands a pintle adapter to CPT Ronnie Anderson, Commander, 514th Maintenance Co. (U.S. Army photo by Joe Shenosky.)





The MPH has provided critical replacement parts for Humvees, M2 Bradleys, M88 recovery vehicles and generators. The MPH C3 houses all the technical data for LMM part production. (U.S. Army photo by PFC Seth Laughter, 35th Signal Brigade (Airborne).)

This cell produces the larger production quantities of parts, therefore increasing production readiness of the deployed LMMs. This virtual factory has real-time access to CONUS-based military and industrial manufacturing capacity.

Nearly 13,000 parts have been produced since MPH's deployment into theater. Of these, the SAW vehicle

mount was awarded one of the Top 10 Greatest Inventions of 2003 by the U.S. Army Materiel Command.

Today, the MPH continues its Soldier support missions. According to a recent letter received from Kevin Green, an RMS manufacturing technician based at Camp Arifjan, "SGT McMillian from the 1st Infantry Division artillery came into the RMS to speak

about the adapter sleeves and mounts for the unit's Humvee gun truck that our team had made for them. On a recent mission, McMillian and his comrades survived a rocket-propelled grenade attack on their convoy. He believed that these items were instrumental in saving American lives."

Humvees are not the only military vehicle systems tended to by MPH. The MPH has also aided M88 recovery vehicles, M2 Bradleys and Heavy Expanded Mobility Tactical Truck vehicle systems and their components. Soldiers continue to display high demand for the parts included in the M249 SAW universal weapons mount and Blue Force Tracking systems.

With deployments to Kuwait, Iraq and Afghanistan, MPH has a direct impact on *Operation Iraqi Freedom* and the ongoing global war on terrorism. Point blank, the system is saving the lives of American Soldiers daily. As CPT Amy Ebitz, 2nd Military Police Battalion stated, "My company now will be going forward into danger better protected because of MPH." She is hearing no argument from TARDEC's MPH team, who continue to manufacture thousands of parts to ensure Soldiers successfully complete their missions.

**ASHLEY JOHN** is a Booz Allen Hamilton contractor working in support of the TARDEC Technology Promotions Team. She holds a B.A. in business marketing from Michigan State University.



SSG Kenneth Kennedy inspects a modified gun mount that the LMM produced, which he installed and welded in place. (U.S. Army photo by Greg Outland.)

— UNITED STATES ARMY  
**TARDEC**  
 TANK AUTOMOTIVE RESEARCH, DEVELOPMENT AND ENGINEERING CENTER



# Making a Difference in Iraq

Kim Polk

**E**ach day we wake up to images and stories from Iraq. When we turn on the news, we see car bombs, gunfire, missiles, violence and destruction, but we also witness the smiles of Iraqi children and selfless service from our military men and women. Many of us catch ourselves asking the questions that most of us cannot answer. What's it really like to be in Iraq? Is it truly that dangerous? How does one protect oneself from mortars, gunfire and bombs? Can we truly make a difference? What is it like to live in those conditions, and do the images we see on television really reflect the actual situation over there?

Butch Wentworth, U.S. Army Night Vision and Electronic Sensors Directorate's Special Products and Prototyping Division, stands outside his office in Balad, Iraq. Wentworth volunteered for a 6-month tour in Iraq because he wanted to support our Soldiers directly. (U.S. Army photo by Butch Wentworth.)

Butch Wentworth, U.S. Army Night Vision and Electronic Sensors Directorate's (NVESD's) Special Products and Prototyping Division, can tell you all about it. He volunteered for a 6-month tour in Iraq that started in December 2004. To start his adventure, Wentworth went through some rather intense training to prepare for the conditions in which he would be living and working. I recently interviewed Wentworth and got a whole lot more than answers. I was inspired by his willingness to take a chance, his loyalty to Soldiers and his dedication to the mission. Guess what? He is making a difference!

I think everyone wants to support our troops in one way or another. We all do it in different ways, and I prefer to have a face-to-face interaction with the troops.

**Q. Tell us what made you decide to go to Iraq considering the danger involved?**

A. Everyone asks that question and, for me, it makes me feel like I made a difference for the troops. I think everyone wants to support our troops in one way or another. We all do it in different ways, and I prefer to have a face-to-face interaction with the troops.

**Q. You were trained at Fort Bliss, TX. What did that involve?**

A. Shots, lots of shots. You get a medical and dental exam. You attend lots of briefings to get you prepared for what it's like in Iraq. You learn about the different religious sects and their customs. You take battlefield first aid classes consisting of treating wounds from bullets, shrapnel, burns and chemical contamination. It's not your everyday first aid. You are issued three duffle bags of clothing, a sleeping bag and Kevlar®/body armor.

**Q. Were you trained to protect yourself?**

A. Just common sense stuff like keeping your head down. They teach you how to use a chemical protective mask, and you get a force protection briefing that is geared to the threat in Iraq.

**Q. Do you carry a weapon?**

A. I'm authorized to carry a weapon but I prefer not to. I have 20,000 heavily armed Soldiers around me, so I don't feel the need for one. When I go to the Forward Observation Post, it's a different story. I might consider carrying one depending on the threat. I have qualified on the 9mm and the M16 here in Balad.

**Q. Once you arrived in Iraq, how did you get to your work site?**

A. Don Mumma picked me up at the Balad airport. He works out of the U.S. Army Materiel Command (AMC)

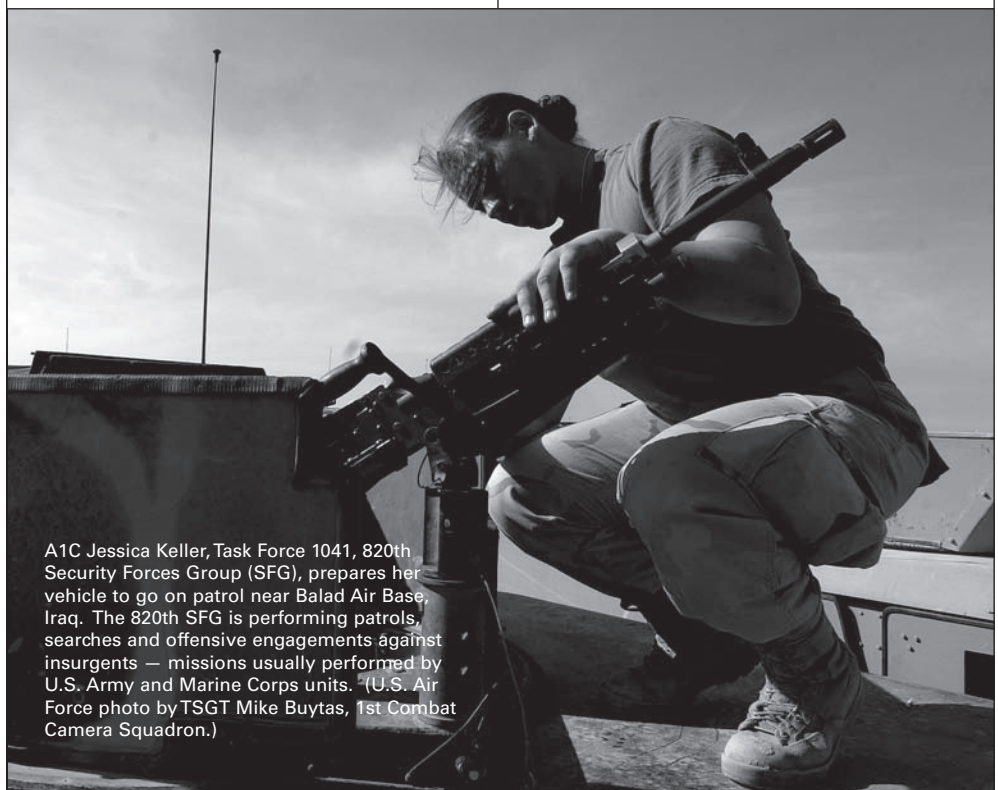
Headquarters building as the Communications-Electronics Command's Senior Command Representative. He gave me a quick tour of the base and introduced me to various commanders and their staffs. He also gave me keys to my vehicle and office. Basically, my first day was meeting all of the Forward Repair Activity (FRA) personnel, whom I came here to manage.

**Q. Are you protected?**

A. My office has sandbags and T-walls to protect me from mortar and rocket attacks. T-walls are cement barriers that are about 4-feet wide, 10-feet high and 14-inches thick. We get a lot of incoming [mortar attacks] here in Balad.

**Q. What's the average temperature in Iraq?**

A. At night, it gets real cold. This morning, we woke up to ice on the ground. During the day when the sun is out, it gets up to about 65-70 degrees Fahrenheit. It's the rainy season here now, and when it rains, it makes everything a big muddy mess.



A1C Jessica Keller, Task Force 1041, 820th Security Forces Group (SFG), prepares her vehicle to go on patrol near Balad Air Base, Iraq. The 820th SFG is performing patrols, searches and offensive engagements against insurgents — missions usually performed by U.S. Army and Marine Corps units. (U.S. Air Force photo by TSGT Mike Buytas, 1st Combat Camera Squadron.)



A1C Rebekah Deliz, 332nd Expeditionary Security Forces Squadron (ESFS), delivers shoes to Iraqi citizens in a village near Balad Air Base, Iraq, Feb. 18, 2005. The 332nd ESFS received more than 1,150 pairs of shoes donated by individual Americans and U.S. businesses. (U.S. Air Force photo by TSGT Mike Buytas, 1st Combat Camera Squadron.)

**Q. What are the conditions like where you work?**

A. It's noisy. We are powered by generators and they run 24 hours a day, 7 days a week. We are next to the Air Force runway and it's pretty active here. When F-16s take off they are extremely loud and they shake my office building. The dirt gets into everything. It's like talcum powder — it gets in your hair, nose and clothes.

**Q. Tell us about your average day in Iraq.**

A. I live and work out of my office. I am the only one who lives on the FRA compound; everyone else lives across the street in personnel trailers. I prepare a pot of coffee at 0700 and start reading and answering my e-mails. I

LTC Robert Cody, Commander, 118th Medical Battalion, Connecticut Army National Guard, visits the construction site for a new medical clinic in Anwar Village, Iraq. His medical unit supports 13th Corps Support Command headquartered at Logistical Supply Area Anaconda in Balad, Iraq. (U.S. Army photo by SGT David E. Gillespie.)

am responsible for the daily personnel accountability, which I report to our S-1 by 0800. I am responsible for keeping this place operational. I think I am the complaint department. I can authorize on-the-spot repairs to some unsupported items, such as repairing broken cables. The FRA personnel who work here are 100-percent supportive to Soldiers' needs. Balad receives mortar and rocket attacks about 3 days a week. After each attack, I am responsible for conducting personnel accountability and reporting it to the S-1 within 15 minutes after the "all clear" is sounded. I have personnel in Mosul, Tikrit, Balad and Baghdad. I am currently preparing the FRAs in Balad, Tikrit and Baghdad for growth in personnel and mission support, which includes making work/office space and

life support for additional personnel. My typical day ends at midnight.

**Q. Are you allowed to travel within Iraq?**

A. The only way to travel is by military convoy or by air. There are no safe areas in Iraq, so traveling is for business only. I've been to Tikrit once since I've been here.

**Q. Tell me about your living conditions — eating, sleeping and working.**

A. The dining facility food is good. I am comfortable with my workspace and sleeping quarters.

I do think that most Iraqis wanted a change here. The worst thing is watching the MEDEVAC helicopters fly overhead. Iraq's main hospital is here in Balad.

**Q. When you are not working, what kind of recreation and relaxation, such as TV or movies, are available?**

A. Yeah right! Although the Morale, Welfare and Recreation facilities are available for us to use, there really isn't any time. They have pool tables, game rooms, a library and a movie room. They also have karaoke on some nights. There is a Burger

King®, Pizza Hut® and Subway® here, but I haven't had time to visit them yet. I do have TV, and I can receive CNN and ESPN from the Armed Forces Network.

**Q. Are there shops close by for personal purchases?**

A. Yes, there are a few shops on base where you can buy souvenirs.

**Q. What is the best thing you can think of about Iraq and what is the worst?**

A. Sounds like a political question here, and I don't want to talk about politics — that's best left to our politicians. I do think that most Iraqis wanted a change here. The worst thing is watching the MEDEVAC helicopters fly overhead. Iraq's main hospital is here in Balad.

**Q. Do you hear explosions constantly?**

A. All the time. We hear incoming, outgoing and controlled explosions.

**Q. If you could have anything you wanted that you can't get in Iraq, what would it be?**

A. Starbucks coffee beans, doormats, 4-foot by 5-foot carpets and stiff-bristle cleaning brushes. We track a lot of mud into our office areas.

**Q. If you get sick, what process do you go through to see a doctor or get medicine?**



CPL Mike King scans for insurgents while PFC Brian Healy (far left) and SSG Jamie Goheens search for weapons caches near Balad, Iraq. These Soldiers are assigned to the 108th Infantry Regiment, 1st Infantry Division. (U.S. Army photo by PFC Abel Trevino.)

A. We just go to sick call.

**Q. How has this experience changed your life?**

A. It won't really change my life. I know what I am doing and why I am here. I knew what to expect before I came here.

**Q. Is there anything you would like to add?**

A. AMC is looking for volunteers to come here. If you sign up, be prepared to deal with all I talked about. The danger is real and the hours are long. However, the reward you get is the satisfaction of making a Soldier's day a little better.



Soldiers, Airmen and Marines are making a big difference every day in the lives of Iraqi citizens. Here, a Soldier tries to comfort a frightened child near Balad Air Base, Iraq. (U.S. Army photo.)

**KIM POLK** is a Program Integration Specialist at NVESD. She is currently working toward a bachelor's degree in business at Strayer University. Kim supports the lab in the protocol arena.

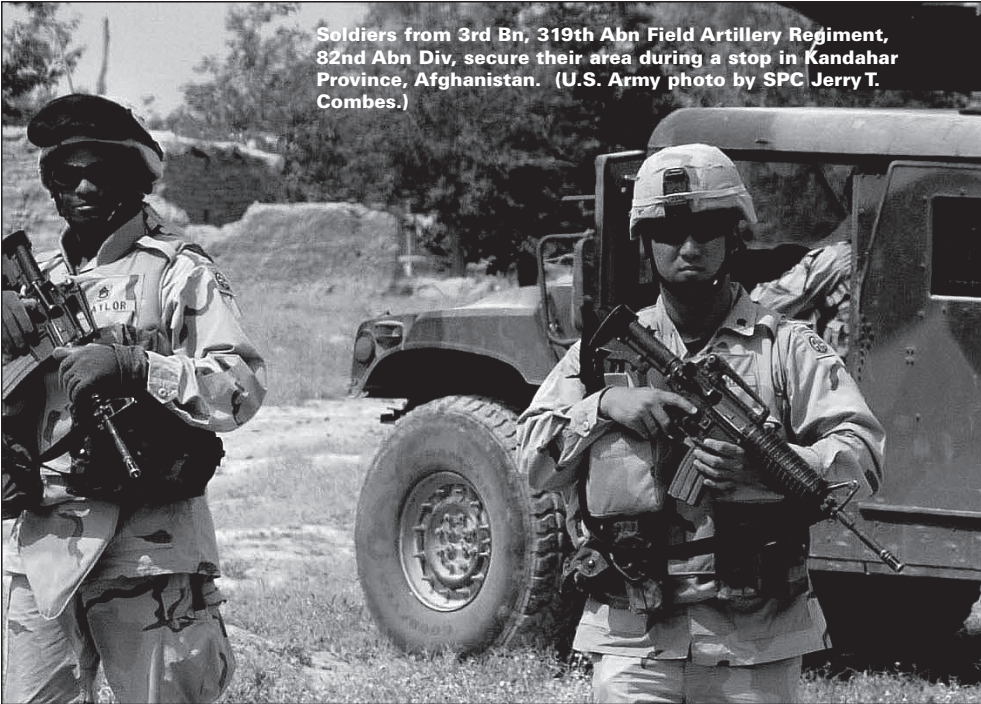


# Soldier Innovations Sought

Natick Soldier Center

**T**he *Soldier Innovation Initiative (SII)* is seeking resourceful equipment ideas from Soldiers who have served in *Operations Enduring Freedom* and *Iraqi Freedom*.

SSG Kevin Rãndolph, 1st Battalion, 505th PIR, shows Secretary of the Army Dr. Francis J. Harvey some of the weapons assigned to 82nd Abn Div Soldiers during the Secretary's visit to Fort Bragg, April 12, 2005. (U.S. Army photo by SSG Carmen Burgess.)



Soldiers from 3rd Bn, 319th Abn Field Artillery Regiment, 82nd Abn Div, secure their area during a stop in Kandahar Province, Afghanistan. (U.S. Army photo by SPC Jerry T. Combes.)

to gather field feedback. The *SII* piggy-backs on these visits to specifically target installations with units returning from Iraq and Afghanistan.

OFIG has been collecting field feedback for 20 years and the team employs three engineering psychologists who specialize in survey development and interpreting field feedback. The psychologists have developed surveys designed to prompt Soldiers to provide their innovations, creative modifications, field solutions and newly created or improvised items while in the field.

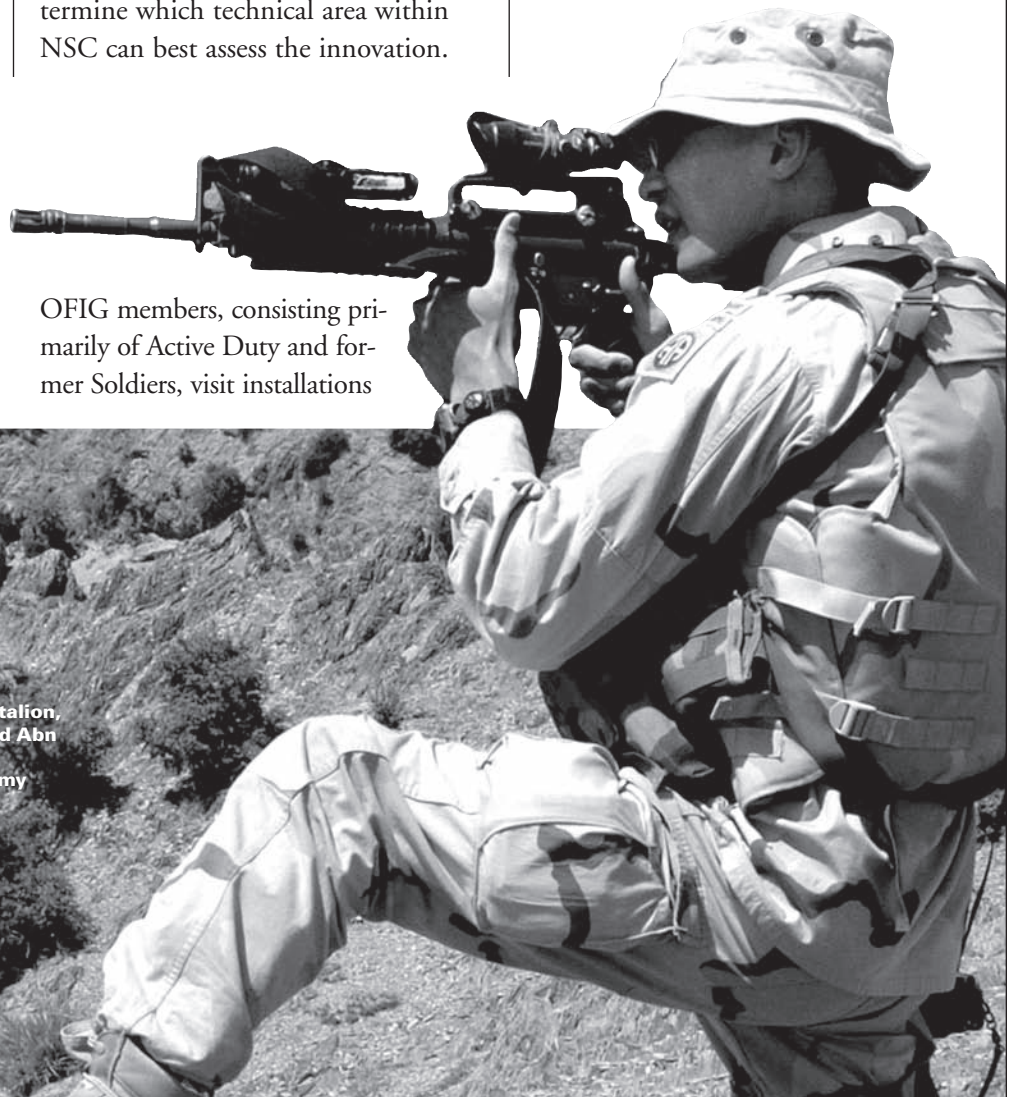
Soldiers are asked to provide information on their ideas and digital or hard-copy photographs to enhance

The Natick Soldier Center's (NSC's) Operational Forces Interface Group (OFIG) at the U.S. Army Soldier Systems Center, Natick, MA, began the effort in January 2004 to capture Soldier-modified equipment in the field as well as identify new equipment Soldiers have created from materials in the field.

process to field new or improved equipment. Ideas are reviewed to determine which technical area within NSC can best assess the innovation.

The project's goal is to discover successful field ideas, prototype the best ones for further evaluation and potentially influence the development

OFIG members, consisting primarily of Active Duty and former Soldiers, visit installations



Using the scope of his M4 carbine, Alpha Co. Commander CPT Edward Hollis, with 2nd Battalion, 504th Parachute Infantry Regiment (PIR), 82nd Abn Div, scans a ridgeline for enemy activity near Zambar, Afghanistan, May 12, 2005. (U.S. Army photo by SSG Bradley Rhen.)



understanding of their ideas or designs. Soldiers also submit contact information so they can be reached for further clarification, explanation or input.

Project officers conduct a review to determine when ideas merit further pursuit. Soldiers are sometimes invited to NSC to aid in prototyping and evaluating their ideas.

OFIG will continue to gather recommendations from returning units, providing new ideas for assessment and possible further development and fielding.

An initial survey with 2nd Battalion (Bn), 27th Infantry Regiment, 25th Infantry Division (Tropic Lightning) [25th ID], Schofield Barracks, HI, and units from the 82nd Airborne Division (82nd Abn Div), Fort Bragg, NC, now deployed in Afghanistan, provided several interesting and practical Soldier innovations, including a map pocket sewn into the inside of a patrol cap;



SGT John Diaz (right) and fellow Scout Platoon Soldiers from Headquarters and Headquarters Company, 2nd Bn, 27th Inf Reg, 25ID, patrol a snow-covered road in southern Afghanistan, March 11, 2005. (U.S. Army photo by SGT Frank Magni.)

modified sling that allows an M-4 carbine rifle to hang in the ready position; commercial earpiece for a Soldier Intercom that is better integrated with the Kevlar® helmet; and golf bag straps attached to a M-240B assistant machine gunner's bag to carry the weapon in a ruck configuration.

The NSC believes that the *SII* features important differences in process and scope than the Army Ideas for Excellence Program because the initiative employs OFIG to actively solicit creative ideas and solutions from returning combat Soldiers.

Soldiers whose ideas fit within the Army Ideas for Excellence Program are also encouraged to participate in the *SII*.

OFIG will continue to gather recommendations from returning units, providing new ideas for assessment and possible further development and fielding.

For more information about the NSC's *SII* program or OFIG, please visit our Web site at: <http://www.natick.army.mil>.



CPT Walter Christian, 411th Civil Affairs Bn, patrols near Wajihyah, Iraq, June 2, 2005. Like so many other Soldiers, he finds a new way to more effectively sling his weapon so it is always at the ready. NSC's OFIG is hoping to capture Soldier-modified equipment ideas to better assess form and functionality for the future. (U.S. Air Force photo by SSGT Suzanne M. Day.)



# New Kirkuk Business Center Provides Stronger Economy

CPT Ryan J. Robinson

**T**he Kirkuk Business Center (KBC) was recently formed in Kirkuk, Iraq. This center facilitates business development and investment opportunities in the Kirkuk province. The KBC is a nonprofit organization that provides a variety of services and training to businessmen and women. Initially the KBC was coalition run, but now the coalition has taken on more of an advisory and training role to assist in the development of new services. KBC's 10-employee team, made up of various ethnicities, religions and genders, is dubbed "Team Economics." Team Economics has developed the following services:

Small businesses continue to provide much needed manufacturing expertise. The KBC is working through "Team Economics" to expand local training programs. (U.S. Army photo.)



The EDN has a responsibility to build a strong long-term economy for Kirkuk's citizens by providing children and adults with good education and training opportunities to equip them for success now and in the future. (U.S. Army photo by MAJ Jonathan D. Long, Joint Contracting Command, Iraq.)

- Business Training Courses — accounting, budgeting, human resources, management, information technology and business plans.
- Micro-Loan Program — loans are available for start-up businesses, business expansions, franchises, etc.
- Security Assessment — analyze and recommend security improvements for local businesses.
- *Kirkuk Business Journal* — monthly journal that reports on local contracting project successes and business development issues. Local companies and contractors use this journal to advertise in English, Arab and Kurdish.
- eBusiness Center — provides a means for international investors to check e-mail and stay in touch with their home offices while working or visiting Kirkuk.
- Conference Support — facilitate conferences for different organizations and business functions.
- Investor Coordination — assist investors with business proposals, coordinate with government offices, contractors, local unions, etc., to get projects approved and completed.
- Business directory — a “yellow pages” phone book for Kirkuk.

- KBC Certification — scoring businesses against a standard of business practices, services and past performance. Much like an AAA rating.

The KBC acts as a nucleus for the economic community in Kirkuk. The KBC has brought together the Economic Development Network (EDN), a group of 15 representatives from both government and non-government organizations. The EDN has a responsibility to the Kirkuk people to work together to build a strong, long-term economy by discussing economic issues and giving recommendations to local government officials. For example, using this KBC network, an investor can build a factory. The investor receives support in:

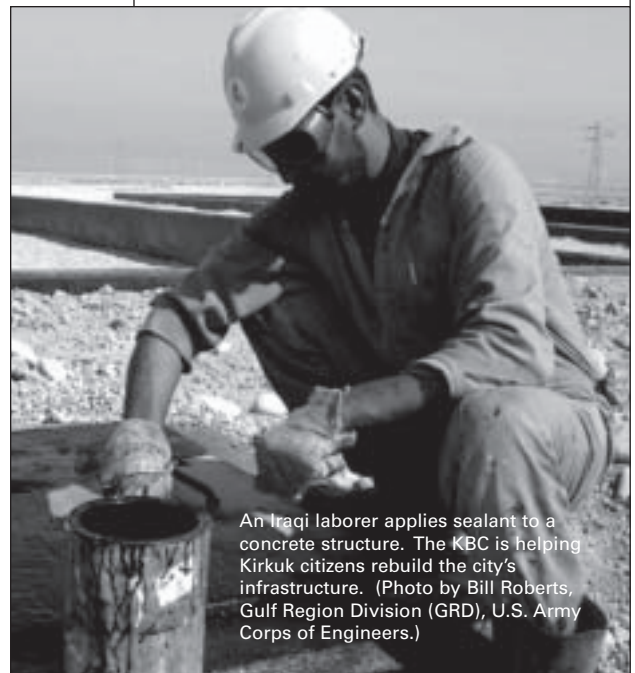
- Developing a business plan and project proposal.
- Performing environmental impact studies and market analysis reports.
- Ensuring proper permits and licenses are obtained.

- Coordinating with the city planning department.
- Obtaining financing.
- Ensuring project completion through the local Project Coordination Center (PCC).
- Working with the Kirkuk Vocational Training Center to train workers prior to factory completion.

Team Economics is supported by the 116th Brigade Combat Team (BCT), Idaho National Guard (NG), commanded by LTC Steve Knutzen. Team Economics invites you to visit the Kirkuk Business Center online at [www.kbciraq.org](http://www.kbciraq.org).

For more information about KBC operations, e-mail CPT Robinson at [cptrobinson116@hotmail.com](mailto:cptrobinson116@hotmail.com).

CPT RYAN J. ROBINSON is the KBC Business Advisor and a member of Team Economics, 116th BCT, Idaho NG. He has a B.A. in finance from Boise State University and has graduated from the Quartermaster Officer Basic and Advanced Courses and the Engineer Officer Advanced Course.



An Iraqi laborer applies sealant to a concrete structure. The KBC is helping Kirkuk citizens rebuild the city's infrastructure. (Photo by Bill Roberts, Gulf Region Division (GRD), U.S. Army Corps of Engineers.)

# SCIENCE & TECHNOLOGY INNOVATIONS

**T**he challenges facing battlefield commanders today are as dynamic as the world we live in. While advances in communications technology and computer applications will allow rapid, network-centric dissemination of information, targeting and other critical data at all levels across the battlefield, operating environment diversity, equipment sophistication and increased operations tempo will place unprecedented demands on combatant commanders and their Soldiers.

As the articles in this section illustrate, the human element in decision making, not machines, will always determine final battlefield outcomes. Make no mistake; the use of new technological innovations will certainly enhance situational awareness and force capabilities providing combatant commanders the potential for full-spectrum dominance. Likewise, advances in simulations, near real-time information dissemination and auxiliary power generation will enhance all aspects of battle command and continue to give U.S. Forces a decided operational advantage regardless of where the battlefield takes them.

There is little doubt that today's leaders must be technologically savvy to wield the awesome capabilities and weaponry the Army is providing them. But more importantly, they must also be skilled in operational art and be able to adjust rapidly to temporal and spatial battlespace variations to master complexity and use the advanced technology capabilities they've been given to meet current and future knowledge-based warfare operations challenges. However, as GEN George S. Patton Jr. stated so eloquently more than 60 years ago — "Wars may be fought with weapons, but they are won by men. It is the spirit of the men who follow and of the man who leads that gains the victory." The Army Acquisition, Logistics and Technology Workforce is striving to ensure that our warfighters are well equipped with the technology *and* the leadership tools by which to wield them.

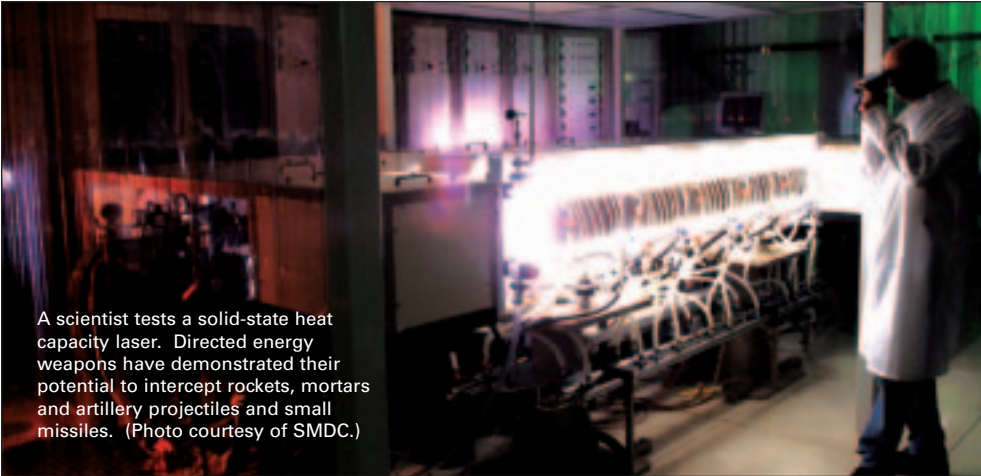
***Editor-in-Chief***

# Science and Technology (S&T) Enhances Current Operations

Michael C. Schexnayder

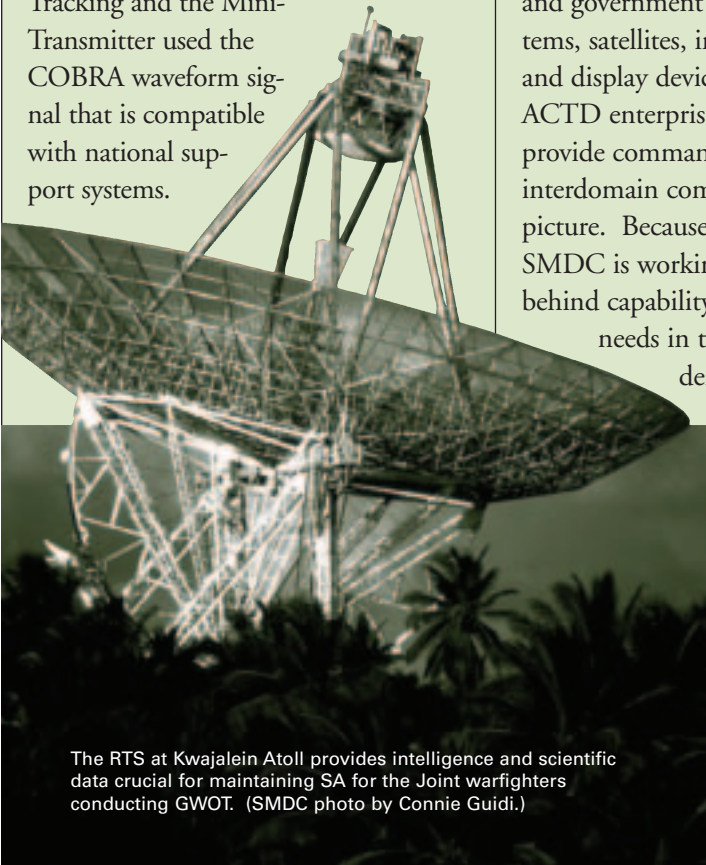
**N**ot just a theme for the U.S. Army Space and Missile Defense Command (SMDC)/Army Forces Strategic Command, “From Research to Reality — Relevant and Ready” describes how the command enhances current operations and prepares to meet future challenges. SMDC supports and conducts research, development and acquisition (RD&A) activities to support the Army, Missile Defense Agency and U.S. Strategic Command. SMDC’s research and development (R&D) mission is focused on S&T to develop and transition technologies and explore alternative concepts to enable Joint warfighting capabilities. SMDC’s contributions to current operations include Blue Force Tracking (BFT) and the Humvee Laser Ordnance Neutralization System (HLONS).

March 18, 2003, marked a pivotal date in the history of directed energy as ZEUS-HLONS became the first high-power laser weapon system to be deployed in a combat zone, supporting *Operation Enduring Freedom (OEF)* in Afghanistan. (Photo courtesy of U.S. Army Space and Missile Defense Command.)



A scientist tests a solid-state heat capacity laser. Directed energy weapons have demonstrated their potential to intercept rockets, mortars and artillery projectiles and small missiles. (Photo courtesy of SMDC.)

Warfighters at all levels must have timely and accurate information on their own location and the locations of friendly and enemy forces. BFT contributed to situational awareness (SA) during the initial phases of *Operation Iraqi Freedom (OIF)*, and has gained acceptance at the tactical and individual Soldier level based on its effectiveness in helping prevent “friendly fire” incidents. At *OIF*’s start, coalition forces arrived in theater with seven distinct BFT systems. The SMDC-developed Grenadier Beyond-Line-of-Sight Reporting and Tracking and the Mini-Transmitter used the COBRA waveform signal that is compatible with national support systems.



The RTS at Kwajalein Atoll provides intelligence and scientific data crucial for maintaining SA for the Joint warfighters conducting GWOT. (SMDC photo by Connie Guidi.)

The Force XXI Battle Command Brigade and Below used the commercial L-Band system.

The Joint BFT SA Advanced Concept Technology Demonstration (ACTD) is demonstrating how to collect, disseminate, display and improve BFT data. During a recent in-theater demonstration, SMDC integrated the seven different types of BFT technologies, on a variety of platforms, into a single enterprise system. Capitalizing on the potential of a wide range of commercial and government communications systems, satellites, information databases and display devices, the Joint BFT SA ACTD enterprise solution is a way to provide commanders at all levels an interdomain common operational picture. Because of ACTD’s success, SMDC is working to field a leave-behind capability to satisfy Joint force needs in the theater where the demonstration occurred.

### Space Control Operations

SMDC R&D continues to enhance current operations through its assets at the Ronald Reagan Ballistic Missile Defense Test Site (RTS) on the U.S. Army Kwajalein Atoll (see

article on Page 75, of May-June 2005 *Army AL&T Magazine*). Intelligence and scientific data is crucial for maintaining SA for the Joint warfighters conducting the global war on terrorism (GWOT). The RTS monitors the sky 24 hours a day providing this invaluable scientific and intelligence information to combatant commanders around the world.

Space control operations provide freedom of action in space for friendly forces while, when directed, denying it to an adversary. Collecting data on foreign space launch vehicles as they make their way to orbit is also a critical part of space surveillance, which supports overall space control. RTS sensors are uniquely suited and regularly tasked to collect critical data on cooperative or noncooperative launches. RTS provides this data to the U.S. Strategic Command, which then provides this information to sensors elsewhere in its Space Surveillance Network, to facilitate collection on the same launch vehicles as they pass other network sensors around the globe.

Looking toward the future, SMDC is actively seeking and developing technologies to ensure that the U.S. military will have the ability to use space assets, while protecting itself from an adversary’s potential use of space.

### HLONS

HLONS, commonly known as ZEUS, was developed for surface mine and unexploded ordnance neutralization. ZEUS was developed to demonstrate that a moderate-power commercial solid state laser (SSL) and beam control system can be integrated onto a Humvee platform and used to effectively clear surface mines, improvised explosive devices (IEDs), or unexploded ordnance (UXO) from supply routes and minefields.

In December 2002, Army Vice Chief of Staff GEN John M. Keane directed that ZEUS be deployed to Afghanistan to demonstrate its countermine capabilities in a combat environment and educate Soldiers on the revolutionary possibilities of lasers. ZEUS was transported to Afghanistan by March 2003, and neutralized more than 200 munitions of 10 different types before returning to the United States in August 2003. Over its test and deployment history, ZEUS has eliminated more than 1,600 ordnance items of 40 different types with more than a 98-percent success rate.

Recently, a 2-kilowatt (kW) solid-state fiber optic laser was integrated into the system. This new laser significantly reduces the overall system weight and provides increased output beam power, which equates to extended range. ZEUS is currently being prepared for deployment to *OIF* to assist in explosive ordnance disposal activities there.

### High Energy Laser Systems Test Facility (HELSTF)

The transformational potential of directed energy weapons (DEW) for the Future Force is being demonstrated today by the SMDC HELSTF. Rockets, mortars and artillery are potent battlefield killers. The HELSTF has successfully conducted live-fire tests of lasers against rockets, small missiles, mortar and artillery projectiles to demonstrate DEW's potential against these types of munitions. Testing at HELSTF is key to providing data to design, build and integrate laser weapons into the Future Force. In addition, the experience in operating and maintaining these high-energy lasers has provided insights into the maintainability and supportability of lasers on the battlefield.

In 2001, the Army initiated an SSL program at the SMDC Tech Center to

pursue the development of SSL technology for application as a tactically deployed DEW that would provide the required lethal effects with minimal logistics support. In FY03, the Office of the Secretary of Defense High Energy Laser Joint Technology Office and the U.S. Air Force partnered with the Army to pursue a focused SSL technology effort within DOD to achieve a reasonable goal of 25 kW. The Joint High Power Solid State Laser (JHPSSL) program awarded multiple development contracts to achieve program goals. The next phase of the JHPSSL program will commence in FY06 and will expand on at least two alternative SSL approaches in an attempt to achieve a 100 kW weapons-traceable capability that could easily be modified for tactical system applications.

At weapon power levels, SSLs have the potential to provide paradigm-shifting capabilities by defeating airborne rockets, artillery and mortars, while also defeating surface-based mines, IEDs and UXOs, and by countering electro-optical sensors. This technology supports the Future Force and, more



Space control operations and RTS sensors on Kwajalein Atoll are uniquely suited and regularly tasked to collect critical data on cooperative or noncooperative launches anywhere in the world. (SMDC photo by Connie Guidi.)



SMDC's current RD&A activities support the Army's warfighters on the ground, the Missile Defense Agency's Joint initiatives and the U.S. Strategic Command's combatant commander's battle command positions. (SMDC photo by Connie Guidi.)

specifically, Future Combat Systems, through its ability to be small, lightweight and operate through all-electric operation. Additional advantages include deep magazines, longer range and the ability to have scalable effects — lethal to nonlethal — on target, on demand.

SMDC is committed to making its S&T research a reality. By responding to the Joint warfighter's current operational requirements, while also leveraging current experience and operations capabilities, SMDC will ensure that the Army's S&T efforts guarantee U.S. military superiority on future battlefields across the full spectrum of combat operations.

**MICHAEL C. SCHEXNAYDER** is the Senior Executive Service Deputy to the Commander for RD&A at the U.S. Army SMDC/Army Forces Strategic Command, overseeing all materiel development functions, test and evaluations activities and simulations support. Schexnayder earned a B.S. in electrical engineering from Louisiana State University, an M.S. in electrical engineering from the Georgia Institute of Technology and an M.S. in management from the Massachusetts Institute of Technology.

# COMBAT HYBRID EVOLUTIONIZING POWER AND

MAJ Edwin W. Leathers Jr., Eugene Danielson, George Frazier and Byron Wong

**T**he Combat Hybrid Power System (CHPS) stemmed from an initial government research and development (R&D) effort focused on integrating hybrid electric component technologies toward a specific vehicle platform and application. This program's Phase I began in 1996 as a joint initiative between the Army and the Defense Advanced Research Projects Agency (DARPA). This first slice consisted of formulating basic capabilities, characteristics and requirements for a notional manned ground vehicle (MGV). Numerous design and concept candidates were analyzed and were considered for further investigation. Based on these CHPS program candidates, a series architecture configuration was selected to be constructed and commissioned during the next stage.

The CHPS program succeeded in demonstrating the integration of essential power elements. Here, SSG Thomas McKean, with Headquarters-Headquarters Company, 2nd Battalion, 63rd Armor Regiment, provides security from the hatch of an M113 APC, Sept. 11, 2004. (U.S. Army photo by SPC James B. Smith Jr., 55th Signal (Sig.) Co. (Combat Camera).)



# POWER SYSTEM — ENERGY DEVELOPMENT

The CHPS' goal was to demonstrate alternative vehicle power strategies with hybrid electric (HE) power architectures and power management strategies in a combination of real and virtual environments. The emerging Army vision of future land warfare places strong emphasis on technology supporting early entry of light, modular, efficient land forces. Future vehicles will be required to demonstrate significant increases in mobility, survivability and lethality while reducing logistics burdens.

The CHPS program demonstrated total integration of the essential power components and technologies that

enable these enhanced capabilities, which are important aspects of an early-entry capability. Military vehicles developed using the HE power architectures can be more fuel efficient than those with conventional drive trains. Total system weight will also be reduced by employing hybrid system vehicle designs that take advantage of smaller high-temperature power electronics components, centralized all-vehicle

The technologies being developed under the Army's CHPS program will continue to be increasingly crucial to fighting and winning future conflicts, with our goals of reduced logistics burden on complex, high-power-demand future battlefields.

power distribution, component placement flexibility and advanced weapons/protection systems that are not plausible with mechanical systems. HE power is an essential enabling technology for future combat vehicles, given the number of electrically powered subsystems planned for implementation in the Future Combat Systems (FCS) fleet.

Continuing as a DARPA-managed program with



The BFV benefited from early CHPS development. Soldiers from Bravo Co., 2nd Battalion, 2nd Infantry Regiment, 1st Infantry Division (11D), pull security along a road in Mosul, Iraq, Jan. 8, 2005. (U.S. Army photo by SPC Adam Sanders, 55th Sig. Co. (Combat Camera).)

focuses emerging from the hardware and software tools from Phase I, CHPS moved forward with three primary objectives:

- Develop a Systems Integration Laboratory (SIL).
- Develop virtual prototyping.
- Develop critical enabling component technologies.

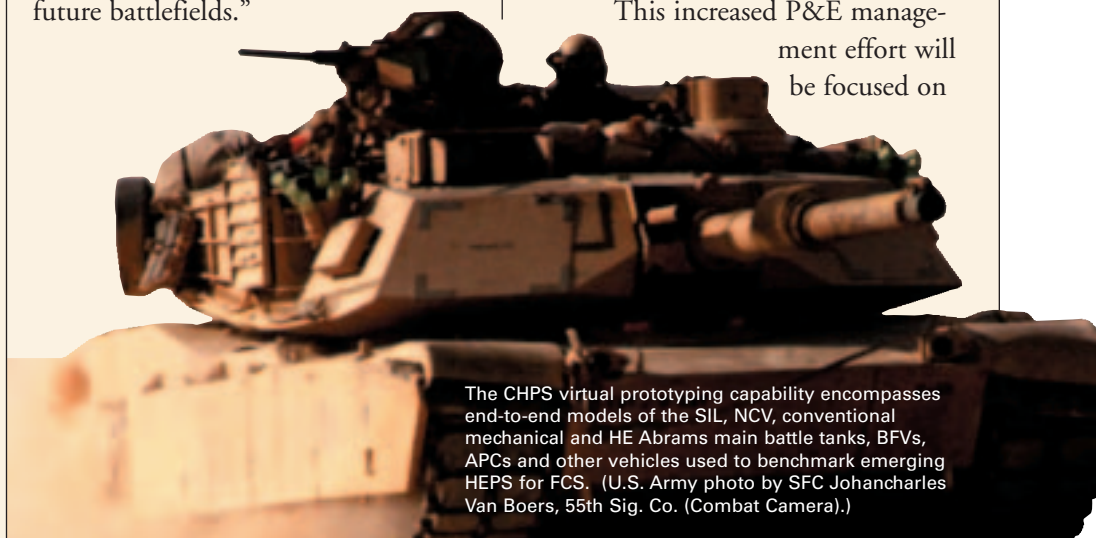
The basic objectives were to have an operating SIL and virtual prototyping capable of providing data critical to the characterization and validation of the hybrid power architecture with advanced components.

In 2000, CHPS transitioned from DARPA to the U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC), headquartered at the Detroit Arsenal in Warren, MI. CHPS was an Army Science and Technology Objective in 1999 with plans to continue through 2005. However, because of an emphasis to support the FCS Milestone B decision in 2003,

TARDEC accelerated the CHPS program to conclude by the end of FY03. The CHPS program succeeded in demonstrating the integration of essential power components representative of FCS MGVs. According to TARDEC's Power and Energy business manager, "The technologies being developed under the Army's CHPS program will continue to be increasingly crucial to fighting and winning future conflicts, with our goals of reduced logistics burden on complex, high-power-demand future battlefields."

The FCS Milestone B decision in 2003 led to a new baseline for the MGV variants and was issued in the FCS program's system development and demonstration phase. The baseline decision confirmed the original CHPS premise that the best propulsion choice for the MGV (18- to 20-ton range) was a series hybrid electric power system (HEPS). With the new Increment I FCS baseline established, TARDEC shifted the emphasis to future power and energy (P&E) technologies that can support FCS spirals.

This increased P&E management effort will be focused on



The CHPS virtual prototyping capability encompasses end-to-end models of the SIL, NCV, conventional mechanical and HE Abrams main battle tanks, BFVs, APCs and other vehicles used to benchmark emerging HEPS for FCS. (U.S. Army photo by SFC Johancharles Van Boers, 55th Sig. Co. (Combat Camera).)

the vehicle system level and will also be developed with an interconnected link to battlefield system-of-systems integration. Future articles will describe progress made in the P&E hardware-in-the-loop SIL program that superseded CHPS.

### Military HE Power Issues

CHPS was the Army's main R&D program that addressed pulsed power requirements as part of a combat HEPS — a system in which pulsed power and continuous power must operate together without interference. Continuous power is necessary to propel the electro-magnetic vehicle, to provide hotel loads and to act as an auxiliary power unit for other electrical loads. In fact, developing CHPSs is much different from developing passenger cars, transit buses or other civilian vehicle hybrid systems. The main influences in civilian vehicle designs are fuel economy, emission control and cost. Keeping these parameters in mind, military vehicle designers must also consider deployability, agility, versatility, lethality, survivability and sustainability.

Consequently, power system architectures typically differ significantly between the two applications. Existing and planned civilian vehicles generally use parallel hybrid technology to minimize power excursions in the prime power system.

Leading military systems under current study primarily use a series hybrid topology to enable higher powers and the need to supply multipurpose loads. For instance, pulsed power for advanced electric weapons and survivability systems is a unique military requirement anticipated for FCS. A classic civilian vehicle would not have this pulsed

power requirement. Figure 1 provides the performance comparisons between commercial and military vehicles.

	Commercial Vehicle	Military Vehicle
Fuel Economy	EPA Standard	30%-50% Improvement
Fuel Type	Gasoline	JP-8 or Diesel
Hybrid Architecture	Parallel	Probable Series
Power Density	3.0 Wheel HP/ft <sup>2</sup>	>5.6 Req'd, 8.0 Desired
Armor	No	Yes
Silent Watch	No	Yes
Silent Mobility	No	Yes
Electrical Energy Storage	<2kW-Hr	30-40 kW-Hr
Grade	<45%	60%
Likely Vehicle Mass	<4 Tons	4-24 Tons
Ancillary Loads	Low Power	High Power
Pulsed Power	No	MW-GW
Suspension	Urban/Highway	Unlimited Terrain
Mobility Load	0.3-0.5 Tractive Effort	0.7 Tractive Effort
Emissions	Environmental	Survivability/Signature

**Figure 1. Military Versus Commercial Performance Characteristics**

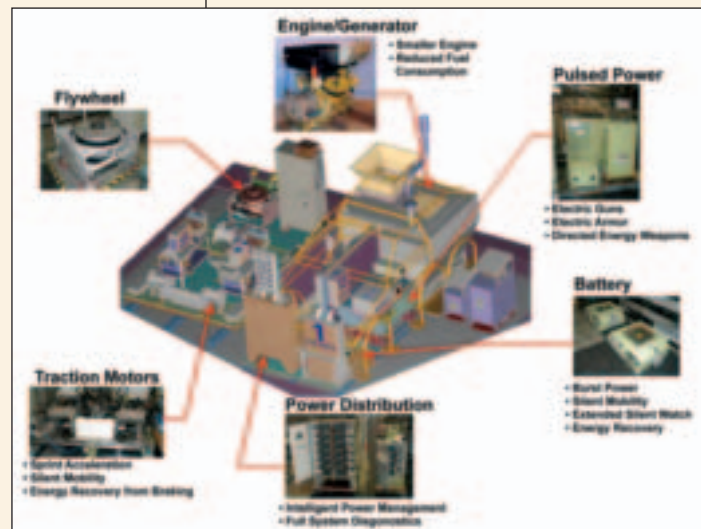
Emerging under the CHPS program, technologies were developed to enable mobile, survivable systems for efficient battle command, mobility, surveillance, targeting and reconnaissance. Warfighters benefit from HE power generation because systems require less fuel, are capable of silent operations and have redundant power systems.

The CHPS' mission was to develop and test a full-scale HEPS for advanced combat vehicles such as FCS. To attain the original goal, the program created under DARPA — with TARDEC collaboration — the hardware-in-the-loop SIL and a sophisticated computational capability for modeling, simulation and virtual prototyping. Additionally, critical component technologies such as lithium-ion batteries, flywheels and silicon carbide switches were brought into the program for further development.

The SIL is a reconfigurable laboratory that poses state-of-the-art hardware and controls to simulate a 15-ton Notional Concept Vehicle (NCV). It provides the relevant environment to functionally evaluate, characterize and completely debug the HEPS. Located in Santa Clara, CA, the SIL is where all the HE power hardware is integrated as a system at the MGV performance level. Configured in a series architecture format, the SIL assumes that all mobility, armor, weapons, communication and vehicles are driven or supplied electronically. This has been the baseline power configuration for the FCS MGV.

Figure 2 presents an overview of the SIL to date, noting the superimposed yellow outline of a combat vehicle envelope. Most components would fit into the vehicle outline, but that would not be practical in the SIL where access to all hardware is needed for diagnostics and modifications.

The CHPS virtual prototyping capability encompasses end-to-end models of the SIL, NCV, conventional mechanical and HE Abrams main battle tanks, Bradley Fighting Vehicles (BFVs), armored personnel carriers (APCs) and other vehicles used to



**Figure 2. CHPS SIL Overview (MGV outline)**

benchmark emerging HEPS for FCS. The SIL provides us with hard data to validate the models. In turn, the models present guidance for SIL experiments and allow optimizing power management algorithms very quickly and efficiently. Combined with technology advances in power electronics, energy storage, electromagnetic interference mitigation, control systems, thermal management and pulsed power, the CHPS SIL and virtual prototyping capabilities are producing priceless design and operational data for FCS and other advanced HE-powered combat vehicles.

Under CHPS, software has been developed that permits a user to evaluate a spectrum of design and trade studies that range from component performance and characteristics to complete power systems performance. The SIL offers the validation and the basis of upgrades and enhancements to the valuable software tool.

A CHPS program primary objective is to significantly reduce the complete HEPS's size and weight to enable FCS transportability. Compact power generation is chief in facilitating the integration of a pulsed power system as a subsystem of the overall HE power package. The ultimate goal is to reduce the MGV HEPS by approximately 50 ft<sup>3</sup>. In the future, we will have to reduce the size an additional 50 ft<sup>3</sup> to fully integrate pulsed power within the HEPS.

This baseline HEPS consists of an engine/alternator sized for average power demand; energy storage and power averaging components (battery modules and flywheel) that provided both continuous and pulsed power, power distribution networks, subsystem controls and power conditioning devices.



Emerging CHPS technologies are being developed to enable mobile, survivable systems for more efficient battle command, maneuverability, surveillance, targeting and reconnaissance. HE power generation will consume less fuel, is capable of silent operations and provides redundant power systems. Here, Soldiers from 1st Battalion, 26th Infantry Regiment, 11D, perform maintenance on their M113 APCs in the motor pool at Forward Observation Base Brassfield-Mora, near Samarra, Iraq. (U.S. Army photo by SPC James Smith, 55th Sig. Co. (Combat Camera).)

Component development of chosen critical HE technologies began in addition to the SIL and virtual prototype

system simulation, analysis and testing previously described. "Work to date consists of advancing the state-of-the-art



technology in high-power flywheel-generators, high-power density inverters, lithium ion batteries, high-current

energy discharge capacitors and silicon carbide switching,” explained Daniel Herrera, TARDEC Associate Director of P&E.

### Technology Highlights

The CHPS program has had many milestones since its formulation in 1996. The SIL has evolved into a fully capable test laboratory for designing and developing HEPS for advanced military vehicles and it supports all of FCS’s mobility requirements. It has operated for roughly 750 hours and more than 5,000 equivalent road miles. The SIL’s complete HEPS incorporates upgraded components essential for designing and testing HE combat vehicles such as the thermal management system, controls, diagnostics and power regulation equipment. The SIL’s support equipment and subsystems provide emulations of the loads because of the vehicle’s interactions with its environment. Fully operational, the SIL is being used for test and analysis studies for HE vehicles and their components.

Future combat vehicles will be required to demonstrate significant increases in mobility, survivability and lethality while reducing logistics burdens. CHPS began the development of the enabling technologies for mobile, survivable systems for efficient battle command, surveillance, targeting and reconnaissance. The hybrid architecture will allow future combat vehicles to provide sufficient electrical power to support continuous mobility loads while concurrently supporting pulsed power loads such as electromagnetic armor and electric weapons or active protection systems. By exploiting HEPS, it may be possible to achieve lethality and survivability in lightweight combat vehicles equivalent to or better than what is currently available in heavier weight classes.

This architecture also supports improved vehicle mobility, reduced acoustic and thermal signatures and enhanced silent watch capabilities.

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# TARDEC Forges Technological Advances in Fuel Cell Auxiliary Power Unit (APU) Development

MAJ Edwin Leathers Jr., Michael Berels, Bill Bradford and Erik Kallio

**A** key challenge facing the U.S. Army today is the ability to provide reliable power for Soldiers and their tactical vehicles. Current military vehicle electrical sources are limited in supplying power for extended periods of time, thus limiting tactical tasks such as command and control, digital communication, silent watch and continuous power generation independent of the main engines.

TARDEC is developing regenerative fuel cell auxiliary power. The program's second phase — begun in early 2005 — will integrate a regenerative fuel cell APU into a Stryker vehicle for demonstration in fall 2005. (Photo by TSGT Mike Buytas, 1st Combat Camera Squadron.)



Electrical power demands for military vehicles will exceed the current capabilities across all platforms because of new advances in technologies being spiraled into these systems. The U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC) has developed a fuel cell program with the objective of enabling a 10-kilowatt

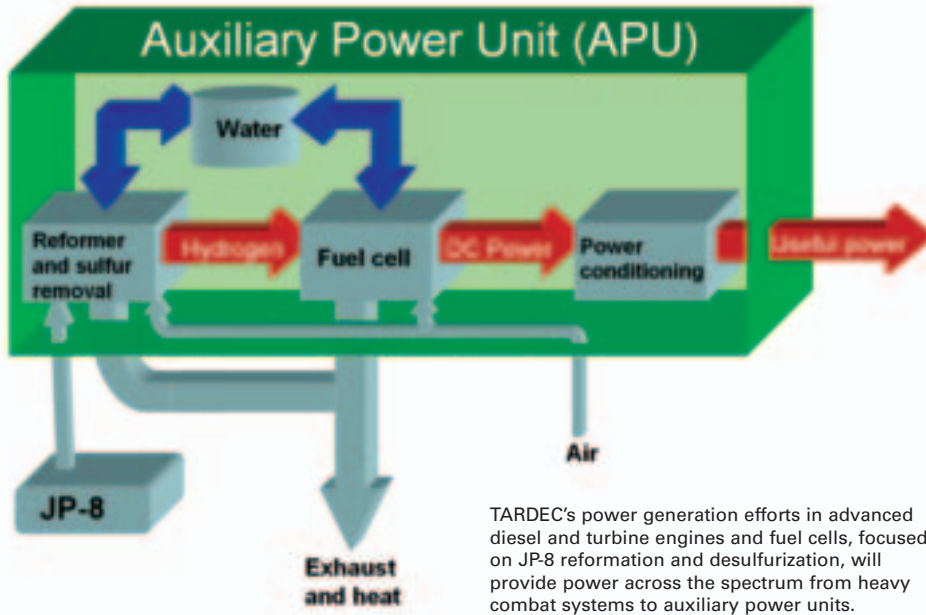
NAC specializes in dual-use technologies — those that have both military and commercial applications.

(kW) fuel cell APU powered by logistic fuel as depicted in the figure on Page 62.

### **Risk Mitigation**

For this program to succeed, TARDEC has worked closely with vehicle program managers (PMs) to solicit their specific needs and requirements. This collaboration has resulted in a clear

definition of Current Force and future Unit of Action power requirements, form, fit and functionality. The program has been designed as a collaborative task among research and development (R&D) efforts and activities within government and industry, with a focus on desulphurization and hydrogen generation via JP-8 reforming. JP-8 is a kerosene-based fuel used in military jets, tanks and other fighting vehicles. The goal is to capture knowledge developed by these partners for



TARDEC's power generation efforts in advanced diesel and turbine engines and fuel cells, focused on JP-8 reformation and desulfurization, will provide power across the spectrum from heavy combat systems to auxiliary power units.

the purpose of risk mitigation and cost savings over time.

TARDEC is developing Memorandums of Agreement (MOAs) with many other DOD and government agencies to leverage their current efforts in fuel cell component development. Additionally, many National Automotive Center (NAC) programs will be enablers to this effort. These MOAs and Joint programs will be the risk mitigators for technology development. This will allow the TARDEC program to focus on fuel reformation and integration issues.

## History

Through January 2004, TARDEC's fuel cell program was centered at the NAC. The NAC specializes in dual-use technologies — those that have both military and commercial applications. The program can be characterized as being fuel-cell neutral and moving incrementally toward JP-8-fueled systems in both component development and system demonstrations.

A significant early demonstration was of the first liquid-fueled, fuel cell APU on a vehicle. This was a

methanol-fueled, proton exchange membrane (PEM) APU on a Freightliner® long-haul tractor. The system was developed and built by Ballard Power Systems and was first demonstrated publicly in March 2003. Collaborative R&D continued with several component development programs that sustained the development of fuel reformers for more complex and "JP-8-like" fuels.

The next major demonstration was a synthetic-jet-fuel-powered PEM APU on a Bradley M2A3 during February



TARDEC features a high-tech fuel and lubricant facility that researches properties and durability of a wide range of fuel, including environmentally friendly diesel and lubricants. (U.S. Army photo.)

2005 at the Association of the United States Army (AUSA) Winter Symposium in Fort Lauderdale, FL. This system was designed and assembled through collaborative efforts between United Defense, Battelle and Pacific Northwest National Laboratory. The PEM APU is significant because it is the first complex hydrocarbon-fueled APU and it is the first one installed in a military combat vehicle.

In addition to reformer-based systems, TARDEC continues to develop regenerative fuel cell auxiliary power. In this type of system, an electrolyzer uses vehicle power to decompose water into hydrogen and oxygen. The hydrogen is stored and is later used in a fuel cell for silent watch or standby electrical power generation. TARDEC has teamed with Hydrogenics to develop this concept, which was first demonstrated as a proof of concept in January 2004. The program's second phase began in early 2005 to integrate a regenerative fuel cell APU into a Stryker vehicle for demonstration in fall 2005.

In January 2004, TARDEC formed an integrated process team (IPT) within the Mobility Division at TARDEC to more effectively leverage the diverse talents across the center. A critical initial IPT task was to develop a program plan to take the APU development program to its next major milestone — the demonstration of a JP-8-fueled brass board, with a follow-on effort to develop, integrate and validate a JP-8 fuel cell APU on board a tactical vehicle.

The current TARDEC JP-8 fuel cell APU effort will integrate the PM's needs and requirements, and aggregate these needs into a form, fit and functionality roadmap that will accelerate the technology readiness level of key technology platforms.





Today, a significant technical and logistical challenge is to produce hydrogen in the theater of operations to produce power via the fuel cell. Ongoing TARDEC R&D initiatives are progressing to leverage fuel cell development for military applications to augment current fuel sources for sustained tactical operations. (U.S. Army photo by SGT Arthur Hamilton, 55th Signal Co. (Combat Camera).)

The TARDEC program strategy for development and technology transition is a phased approach. For starters, the program is developed around a set of requirements for the Abrams, Bradley and Stryker vehicles. Secondly, the program's technology thrusts are being driven to meet these vehicles' operational requirements. By mid-FY06, there will be a determination if these two paths will intersect. The current

program's scope is to develop a laboratory system to overcome the technical challenges of JP-8 reformation. If successful, the next step will integrate a complete fuel cell with JP-8 reformation into a vehicle and perform vehicle test evaluations.

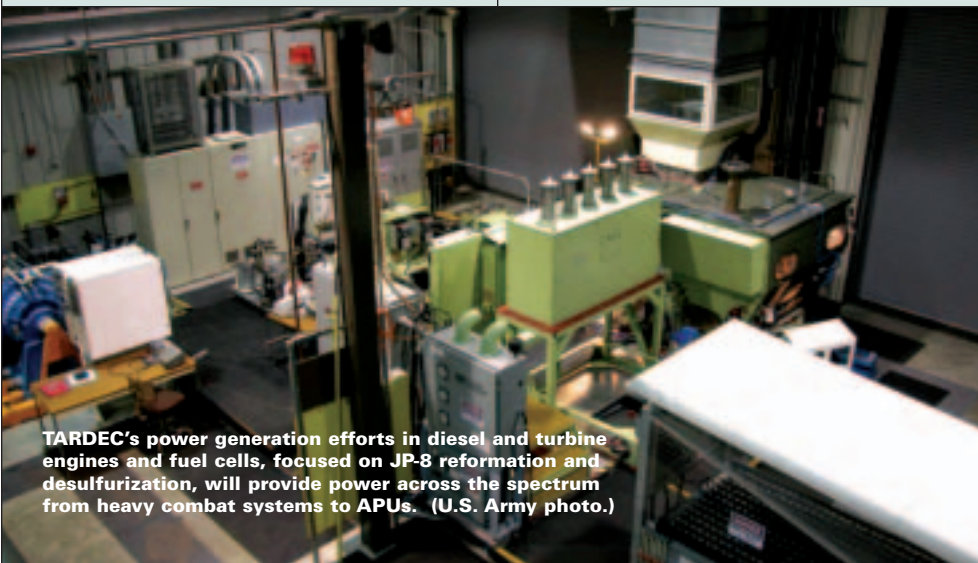
### Potential Solution

The most promising technology to address these power deficiencies is fuel

cell technology. To better understand the technical challenges of this effort, one must understand the basics of how fuel cells work. A fuel cell is an electrochemical energy conversion device that converts hydrogen and oxygen from air into electricity with byproducts of water and heat. Fuel cells can separate the fuel from the energy conversion device, thus allowing continuous power generation, assuming that an endless supply of hydrogen and air is available. Oxygen from air is unlimited, but hydrogen, the other key ingredient, which is used in industrial applications, is not readily available for military applications. Consequently the technical and logistical challenge is to produce hydrogen in the theater of operations to produce power via the fuel cell.

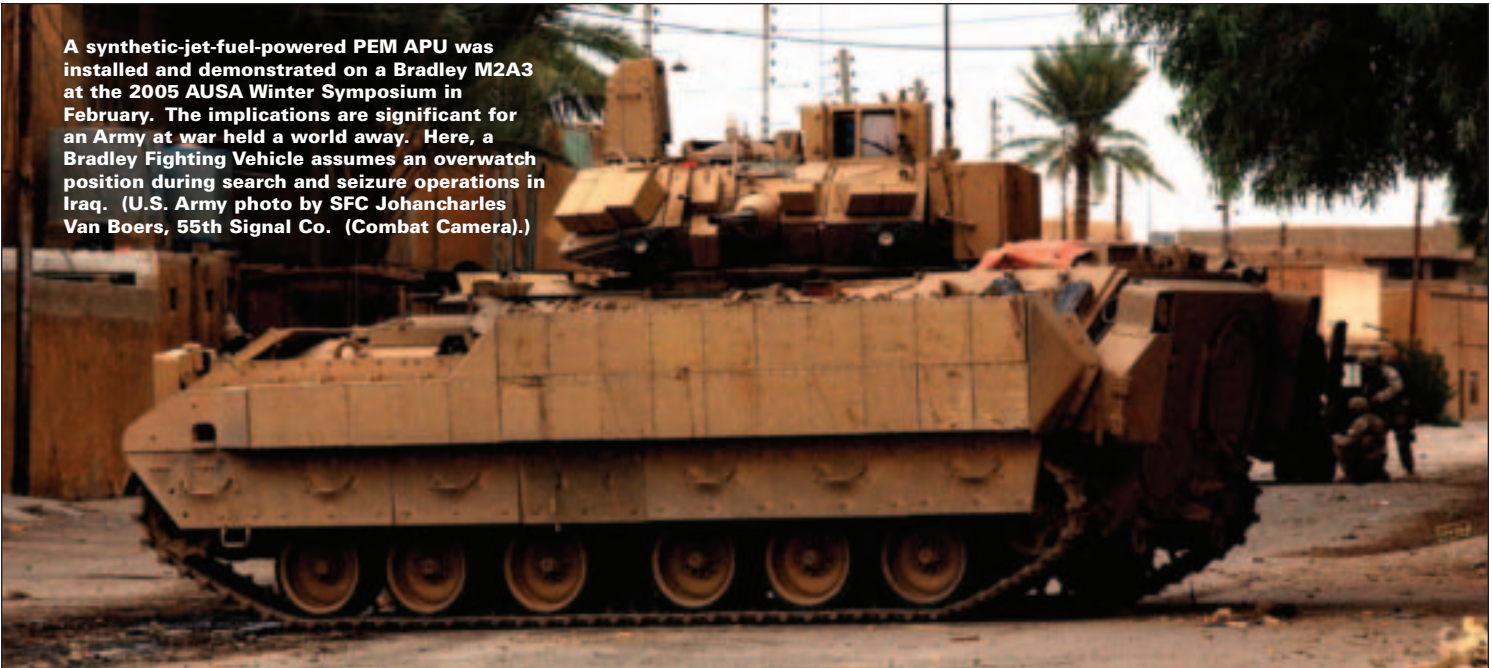
### Fuel Cell Challenges

Over the last decade, significant R&D funding from the government and private sector has been directed toward the emerging fuel cell industry, significantly



TARDEC's power generation efforts in diesel and turbine engines and fuel cells, focused on JP-8 reformation and desulfurization, will provide power across the spectrum from heavy combat systems to APUs. (U.S. Army photo.)

A synthetic-jet-fuel-powered PEM APU was installed and demonstrated on a Bradley M2A3 at the 2005 AUSA Winter Symposium in February. The implications are significant for an Army at war held a world away. Here, a Bradley Fighting Vehicle assumes an overwatch position during search and seizure operations in Iraq. (U.S. Army photo by SFC Johancharles Van Boers, 55th Signal Co. (Combat Camera).)



accelerating technology readiness, reliability and durability. Although no substantial commercial applications have begun, costs of fuel cell components have been decreasing and continuous engineering improvements have drastically advanced fuel cell stack durability and balance of plant (BOP). The BOP is the equipment that surrounds the fuel cell stack — the blowers, humidifiers, valves and controllers, as well as software and electronics that manage the operation of the fuel cell power module. This effort needs to be leveraged on fuel cell development for military applications.

Another major challenge is leveraging developments from the private and public sectors to focus on power requirements for military applications. The key deliverables are technology readiness, affordability, durability and reliability. Furthermore, fuel cell system designs must be focused on military-specific requirements such as performance, ruggedization, reliability and durability.

### Sulfur Removal and Hydrogen Reformation

Hydrogen is the primary fuel for fuel

cells and there are no current plans to add hydrogen to the strategic and tactical operations logistics burden. The challenge is to produce hydrogen on board from the existing JP-8 fuel. Although research activities have advanced over the past several years in reforming methanol, gasoline, diesel and synthetic diesel to hydrogen suitable for fuel cells, significant technical challenges still exist in reforming JP-8 to be fuel cell compatible. JP-8 is produced in refineries worldwide. However, the type and origin of the base crude and refining processes is critical because the fuel produced can contain a wide variance — 30 to 5,000 ppm — of sulfur. For fuel cells, sulfur and carbon monoxide tolerance, fuel vaporization and processes to reduce carbon coking are not widely understood. Although there is significant research activity and 6.1 funding to investigate the sulfur removal and subsequent reforming of JP-8, these technologies are in the early stages of development and

assessment. It is imperative that a broad assessment of the R&D activities be funded and leveraged to assure that the technology develops into a realistic solution for our Soldiers.

Modularity and optimization of components, packaging, synergy and scalability are all essential for the complete fuel system integration as an APU.

Using JP-8 fuel stresses the designs for the conventional fuel processors used to convert the fuel into hydrogen-rich gas. The requirements for an APU also challenge the scalability of conventional fuel processors. JP-8 reformation is the most difficult challenge to overcome to make this technology successful, and this is the core focus of TARDEC's ongoing efforts.

### System Integration

Another significant technical challenge for TARDEC is to ensure that key integration issues for the complete system meet the program objectives. Modularity and optimization of components, packaging, synergy and scalability are all essential for the complete fuel system integration as an APU.

The integration of a fuel cell stack, a fuel processor, sulfur removal process and gas purification process into a functional APU will require close collaboration with the respective PMs to ensure the necessary BOP meets and exceeds the respective overall system requirements regarding form, fit and functionality. Thermal management, and the corresponding issues of thermal integration and management, must be considered because they become increasingly complex as the system size is reduced.

This strategic fuel cell program must address and then correct the critical power deficiencies that exist today in tactical vehicles. It is imperative that the following key metrics be established and measured:

- Risk mitigation through effective and efficient collaboration and knowledge transfer with government and industry participants.
- JP-8 desulfurization and reformation to yield hydrogen acceptable for fuel cell APU.
- Fuel cell design, development and validation that meet or exceed power requirements and are complementary to desulfurization and reformation activities.
- System integration activities that optimize the laboratory system to meet

test and validation goals and demonstrate a technology path that complements follow-on activities.

- Roadmap for cost reductions, reliability, durability and ruggedness.
- Modularity and scalability for adoption across vehicle platforms.

TARDEC is committed to bridging today's power gap for vehicular and mission needs through the development and assessment of a JP-8 fuel cell APU. This is a multiyear development program with a strategic roadmap that delivers a complete functional system based on PM needs and actual vehicle requirements. The opportunity for collaboration with other services, agencies and industry is extremely valuable to ensure successful program execution and system integration. Likewise, TARDEC envisions that these "front-end" project activities will help reduce project costs, accelerate production timelines and reduce program risk over time.

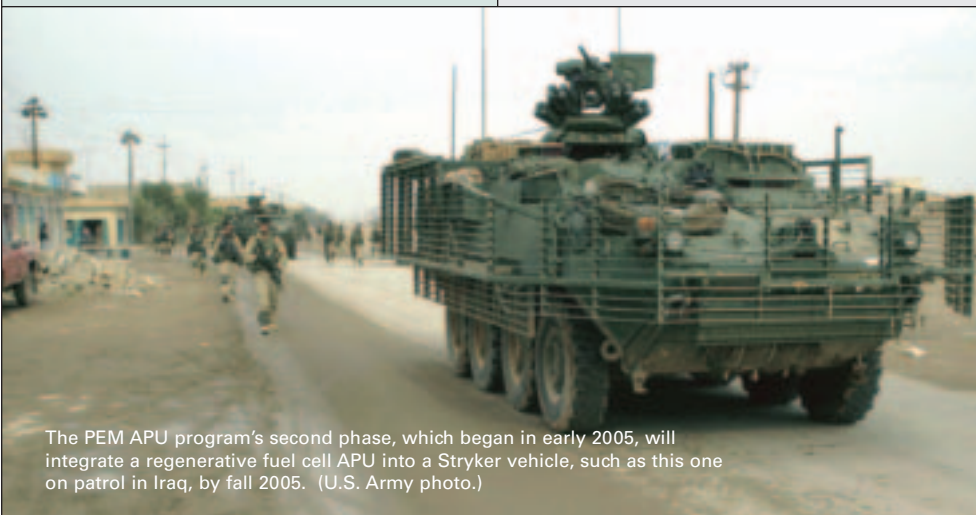
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The PEM APU program's second phase, which began in early 2005, will integrate a regenerative fuel cell APU into a Stryker vehicle, such as this one on patrol in Iraq, by fall 2005. (U.S. Army photo.)

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## Multicell and Dismount Command and Control – Tomorrow’s Battle Command Environment Today

James Barbarello, Maureen A. Molz and Gary Sauer

**S**ince the first experiments at Fort Hood, TX, in the early 1990s, the Army has been steadily moving battle command technology out of the industrial age and toward the information age. But what about the marriage of future battle command technology and its most important aspect – the art of battle command? It’s the human element, not machine, that has and will always apply “art” to making life-and-death decisions involving Soldiers. Commanders can be aided by technology, but until the Multicell and Dismount Command and Control (M&D C2) program, they were never able to experiment with, and objectively measure, how a change to how and what they do affects the outcomes.

The challenges facing battlefield commanders are as dynamic as the world we live in. Diverse operating environments and modes of enemy tactics and weapons, coupled with increased operations tempo, are placing unprecedented demands on the Soldiers at the “tip of the spear.” M&D C2 will better prepare commanders and Soldiers alike in the “art of battle command.” Here, SGT Stephen Edwards and his fellow Alpha Co. troops from the 579th Engineer Battalion conduct cordon search and seizure operations in support of *Operation Grizzly Forced Entry*, August 21, 2004, in Iraq. (DOD photo by TSGT Scott Reed (Combat Camera).)

For decades, being able to try different battle command strategies, tactics, techniques and procedures in an objectively accurate and richly simulated environment has been the C2 community's Holy Grail. As former Secretary of the Army Thomas E. White put it, the fully realized capability stemming from such experimentation represents the "key to the universe" of battle command. That capability has now been realized in the Joint Defense Advanced Research Projects Agency (DARPA) Army M&D C2 program.

**Future Combat Systems (FCS) C2**

Throughout the 1990s, the Army experimented with, and began to implement, force digitization. The Army began applying computer technology and applications to the military decision-making process (MDMP) for the various battlefield functional areas (BFAs), which were brought online one-by-one and eventually interconnected to create the Army Battle Command System (ABCS). Simultaneously, within the Army's science and

technology (S&T) community, work progressed toward ABCS evolution. The S&T community was also looking at how the art of battle command could be enhanced by improved C2 technology.

While all this research and development (R&D) provided significant benefits to the Army, no one was focusing on the post-ABCS environment and how FCS was going to work at lower-echelon commands. The reason was simple — there was no MDMP or C2 experimentation capability.

In fall of 2000, DARPA and the Army joined forces to tackle this problem head-on. The list of participants and advisors reads like a "who's who" of industry and the military. Heavy-hitters like Lockheed Martin, Computer Sciences

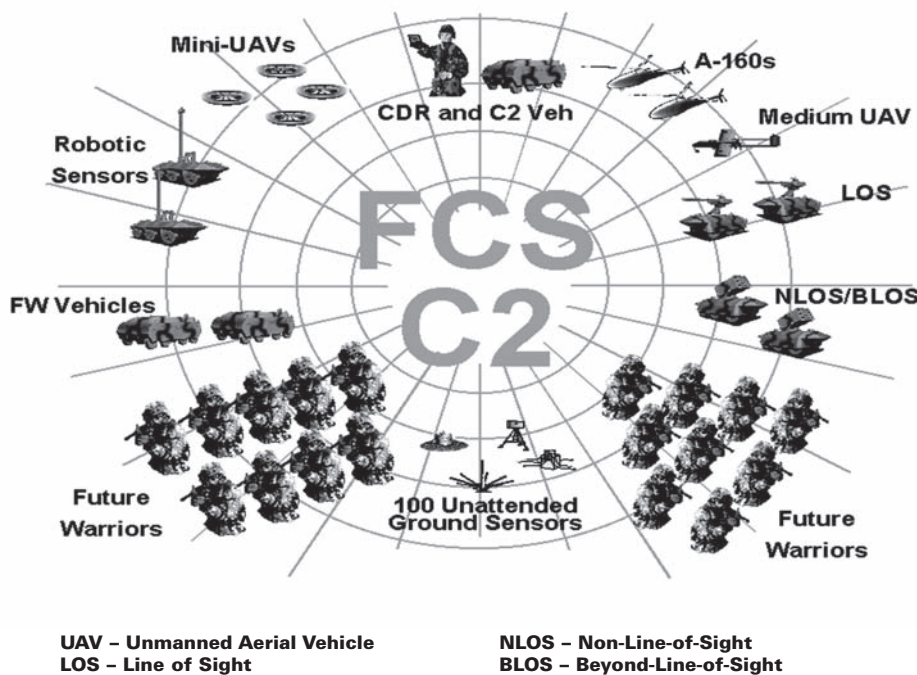
Corp. (CSC), Science Applications International Corp. (SAIC) and MITRE Corp. worked alongside smaller innovative companies like Viecore Federal Systems Division (FSD). Retired general officers and Senior Executive Service members from the program executive offices (PEOs) and S&T communities served as a senior advisory board for Gary Sauer, the DARPA Project Manager (PM), and Maureen Molz, Deputy PM, along with members from the Army's PEO/PM, S&T, U.S. Army Training and Doctrine Command (TRADOC) and R&D communities. The resultant program — FCS C2 — ran from October 2000 through May 2003. As detailed in their *Military Review* article titled "DARPA's Future Combat

Commanders can be aided by technology, but until the Multicell and Dismount Command and Control program, they were never able to experiment with, and objectively measure, how a change to how and what they do affects the outcomes.

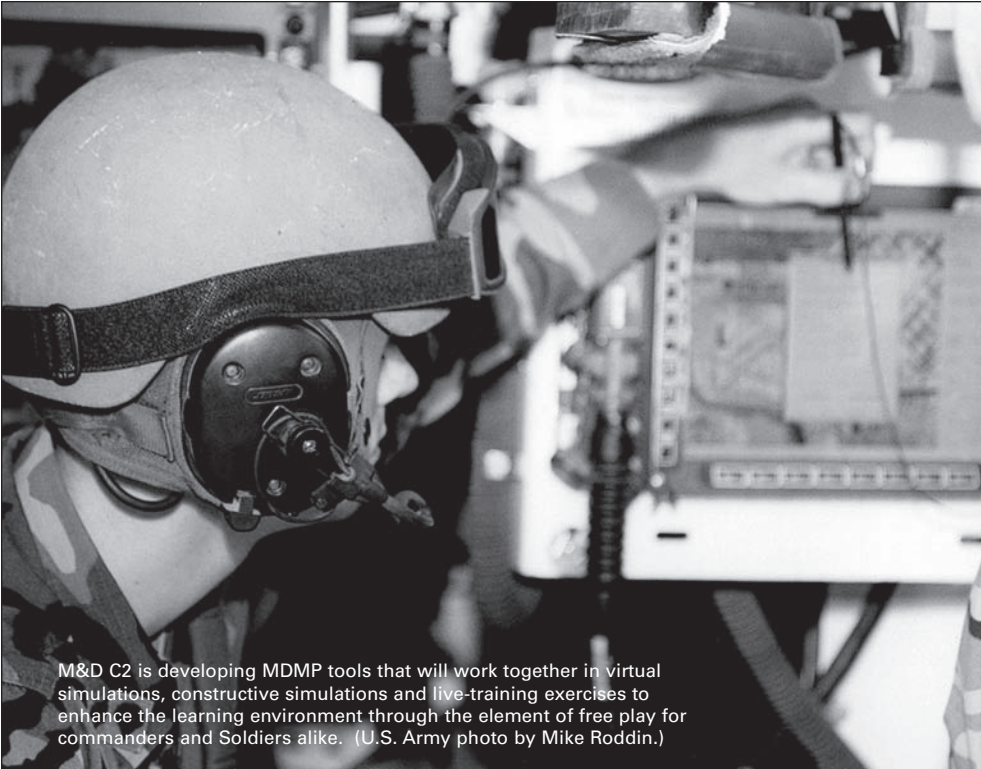
Systems Command and Control" (May-June 2003), authors LTC Jack Gumbert II, LTC Ted C. Cranford, LTC (R) Thomas B. Lyles Jr. and LTC David S. Redding remarked that "no other C2 project has progressed as far on the development pathway to the transformed Army's future needs."

More specifically, the program:

- Created the first execution-based battle command prototype software for the Future Force — Commanders Support Environment (CSE) — with integrated BFA operational instructions and a reduced staff using a microcosm of a combined-arms unit of action.
- Created a laboratory environment that supports battle command software, rapid prototyping and testing.
- Executed five successful experiments



**Figure 1. Organization of the unit cell**



M&D C2 is developing MDMP tools that will work together in virtual simulations, constructive simulations and live-training exercises to enhance the learning environment through the element of free play for commanders and Soldiers alike. (U.S. Army photo by Mike Roddin.)

and control” or “battle command software/simulation” and you’ll get more than 140,000 hits. Among the results you’ll find information about C2 systems for sale from some of the largest information technology companies, Joint C2 and tactical simulations organizations and other government organizations singularly focused on C2 or simulation. So what could the M&D C2 program represent that’s in any way new? From an overview perspective, M&D C2 has developed tools that work together in virtual simulations — real people operating simulated systems — and constructive simulations — simulated people operating simulated systems. Like the real world, these scenarios are not scripted, allowing for the element of free play.

with military officers who fought against a thinking enemy and a tiger team that performed detailed experiment analysis.

- Brought warfighters and technologists together to design solutions for future battle command.

PEO for Simulation, Training and Instrumentation facility in October 2004.

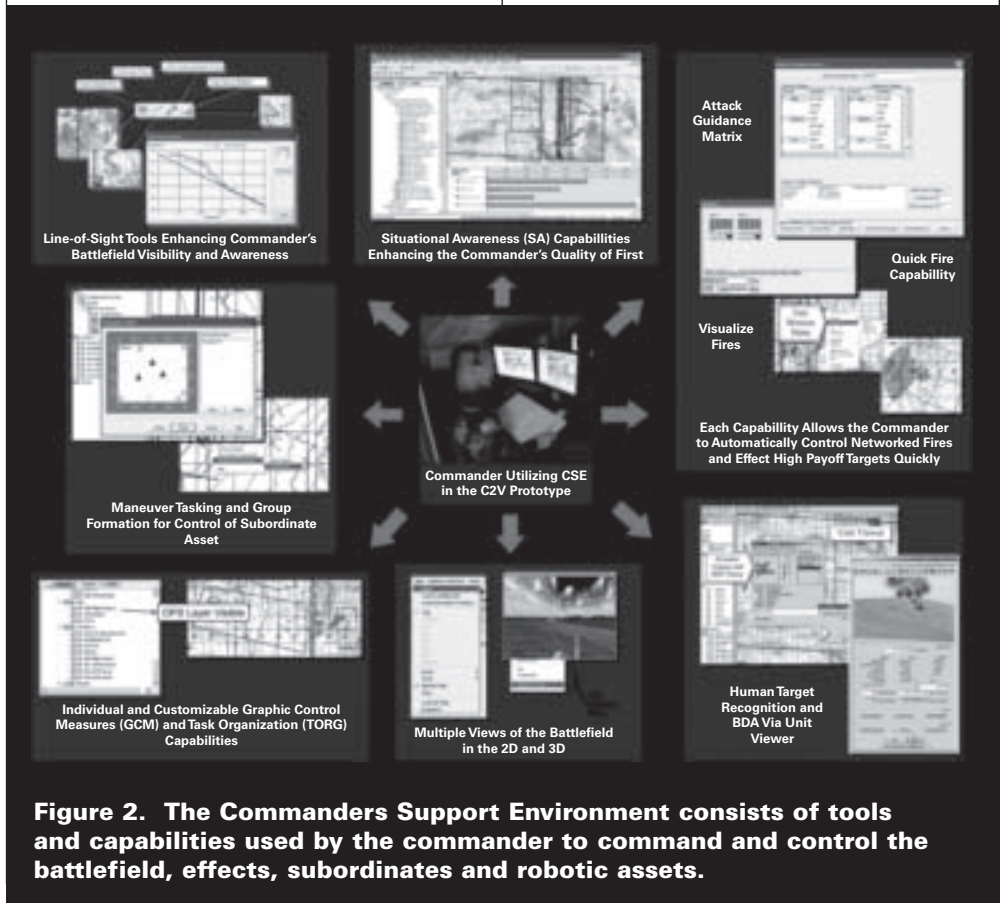
**What’s Different?**

Do a Google™ search on “command

If we peek “under the hood,” the main “engine” is the CSE as illustrated by Figure 2. It allows the people and simulations to interact. The dismounted infantry leader can interact

**M&D C2**

As monumental an accomplishment as it was, the FCS C2 program went only part of the way. FCS C2’s environment was a “unit cell” as depicted in Figure 1 — in DARPA parlance, a combined-arms experimental organizational element not to be confused with any FCS program echelon. To find out how to empower decision makers in a network-centric environment like the FCS program plans to bring to the Army, a multicell or multiechelon experimental environment was needed. Dismounts, their next echelon and the next echelon above them would be ideal. In October 2003, the Army and DARPA again embarked to break new ground with the M&D C2 program. This 30-month program completed its first experiment at its Orlando, FL,



**Figure 2. The Commanders Support Environment consists of tools and capabilities used by the commander to command and control the battlefield, effects, subordinates and robotic assets.**

with the vehicle commander. At the same time, the commander can control robotic vehicles (constructive simulation) and interact with higher headquarters (virtual simulation) all in real time and in a nonscripted environment using C2 decision aids resident in the Collective Intelligence Module (CIM). The CIM is a knowledge base of rule sets that the experiment participants and system designers continually change and enhance as they glean new insights from experiment to experiment.

In the past, the CIM was a single entity. Now the CIM resides in every "cell" of the environment, from the simplest platform to the commander's nerve center. Thus, the CIM integrates a continuum of what's needed across a multicell structure. This construct makes it relatively easy to try out "what ifs" without having to rebuild the system each time. Likewise, it creates an operational environment used by real Army operators with real physics-based sensor models integrated with the OneSAF Testbed Baseline (OTB) in real, unscripted battle play.

### Experiment 5

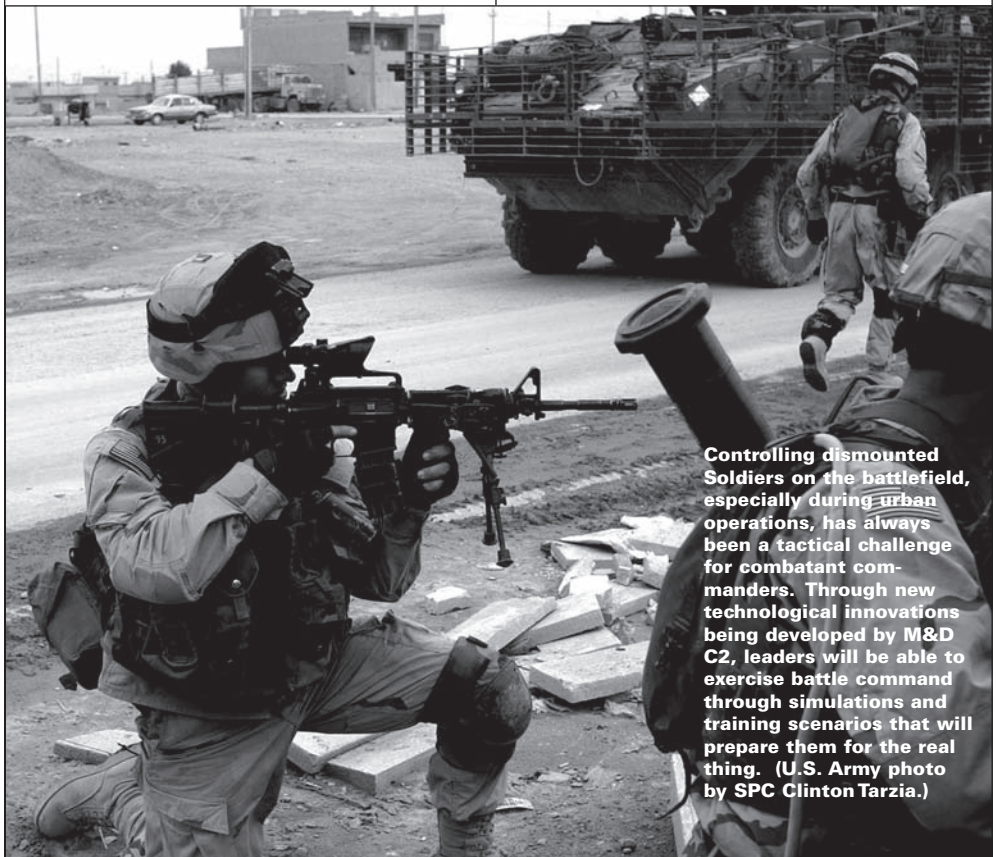
Experiment 5, conducted in Orlando in October 2004, was a significant first step in understanding the challenges that lie ahead for battle command across multiple echelons down to the individual Soldier. It was the first time a constructive and virtual world were linked together with a fully collaborative, expert system-enabled C2 device. Experiment 5 consisted of one run

M&D C2 has developed tools that work together in virtual simulations — real people operating simulated systems — and constructive simulations — simulated people operating simulated systems. Like the real world, these scenarios are not scripted, allowing for the element of free play.

(battle) per day for 8 days. During each run, data were automatically obtained from the CSE, OTB and CIM logs, manually from 10 observers, from videotape footage of the complete battle and from the formal after action reviews (AARs) that were held after every two runs. Each run ran for more than 2 hours with one running more than 3 hours continuously. Fighting against the 21 "blue cell" experiment participants was a "red cell" (opposing force) of seven players. The blue cell consisted of a combined-arms (CA) unit commander and staff (three officers and one noncommissioned officer), a dismounted force with an infantry leader (senior

sergeant) and two squads. One squad contained a squad leader and a virtual squad. The other squad contained a squad leader and future warriors immersed in a virtual environment.

During Run 7, the CA unit had 1 hour to attack and clear an objective of insurgent forces so that follow-on forces could move to the east. During the run, the unit secured an objective to prevent its use by insurgents. The environment contained multiple elements of civilian infrastructure like national monuments, displaced persons camps, cemeteries, mosques and civilian bus routes. This Caspian Sea scenario included the Nagorno Karabakh Internal Liberation Organization (neutral force), Azeri Islamic Brotherhood (insurgent force) and the 44th Azeri Motorized Rifle Battalion. Terrain included an automated maneuver network provided by the Topographic Engineering Center with forested areas, swamps, fordable and non-fordable water obstacles and multiple soil types.



Controlling dismounted Soldiers on the battlefield, especially during urban operations, has always been a tactical challenge for combatant commanders. Through new technological innovations being developed by M&D C2, leaders will be able to exercise battle command through simulations and training scenarios that will prepare them for the real thing. (U.S. Army photo by SPC Clinton Tarzia.)

ABCS interconnected the various BFAs digitally during the 1990s. Today, the S&T community is attempting to enhance the art of battle command through improved C2 technology. (Photo courtesy of DOD.)



The environment was linked to a battalion from the Kura Brigade (subverted regular forces). There were also red cell weapons caches, headquarters and training camps to contend with during the virtual battle run.

### It's Yours for the Asking (Well, Almost)

The Army/DARPA S&T investment of more than \$50 million has resulted in the most robust facility anywhere for conducting virtual and constructive simulation-based multicell battle command experimentation. The M&D C2 facility provides the Army community with an opportunity to participate and influence what will be examined and what will be learned. Experiment 6 will be conducted this summer.

Experiment 7, scheduled to begin in January 2006, has a wide-open agenda

The CIM is a knowledge base of rule sets that the experiment participants and system designers continually change and enhance as they glean new insights from experiment to experiment.

for potential participants. Whether you play or not, the M&D C2 program continually arranges visits to the facility.

Past visitors include the previous Secretary of the Army and Army Chief of Staff, DARPA Director, numerous senior-level Army military and civilian leaders, several strategic and operational players from the Boeing-SAIC FCS program team and key players from other services, academia and industry. For more information, contact authors Maureen Molz at (407) 208-3460 or via e-mail at [Maureen.A.Molz@us.army.mil](mailto:Maureen.A.Molz@us.army.mil) or James Barbarello at

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### DARPA

- The Information Exploitation Office, Washington, DC — Dr. Alex Kott, [akott@darpa.mil](mailto:akott@darpa.mil), (571) 218-4649, <http://www.darpa.mil>.

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- Project Management and Experiment Site:
  - PEO STRI, PM for Future Force (Simulation), Orlando, FL — Maureen A. Molz, [maureen.a.molz@peostri.army.mil](mailto:maureen.a.molz@peostri.army.mil), (407) 208-3460, <http://www.peostri.army.mil/PM-FF/Multicell.jsp>.
- Army Research Institute, Orlando, FL — Barbara Black, [barbara.black@us.army.mil](mailto:barbara.black@us.army.mil), (502) 624-3450, <http://hqda.army.mil/ari>.
- Battle Command Battle Lab, Fort Leavenworth, KS — LTC Frederick Harper, [frederick-harper@us.army.mil](mailto:frederick-harper@us.army.mil), (913) 684-2375, <http://www.leavenworth.army.mil>.
- TRADOC Analysis Center, Fort Leavenworth, KS — Pam Blechinger, [blechinp@trac.army.mil](mailto:blechinp@trac.army.mil), (913) 684-9120, <http://www.trac.army.mil>.
- TRADOC Deputy Chief of Staff for Intelligence, Fort Monroe, VA — COL(R) Greg Fontenot, [gregory.fontenot@leavenworth.army.mil](mailto:gregory.fontenot@leavenworth.army.mil), (913) 684-3860, <http://www-tradoc.army.mil/index.html>.
- U.S. Army Communications-Electronics Command's (CECOM's) Research, Development and Engineering Center (CERDEC), Fort Monmouth, NJ — Steve Oshel, [steven.oshel@us.army.mil](mailto:steven.oshel@us.army.mil), (732) 427-8071, <http://www.monmouth.army.mil/cecom/rdec/about.htm>.
- Simulation, Training and Technology Center, Orlando, FL — Jerry Speer, [jerry.speer@peostri.army.mil](mailto:jerry.speer@peostri.army.mil), (407) 384-3835, <http://www.rdecom.army.mil/STTC/index.htm>.
- Soldier Battle Lab, Fort Benning, GA (Experiment 5) — COL Mike Burns, [burnsm@benning.army.mil](mailto:burnsm@benning.army.mil), (706) 545-7000, <https://www.infantry.army.mil/sbl/index.htm>.
- U.S. Army Corps of Engineers Topographic Engineering Center, Alexandria, VA — Nancy K. Gardner,



**ngardner@tec.army.mil**, (703) 428-3709 or Mike Powers, **michael.w.powers@erdc.usace.army.mil**, (703) 428-7804, <http://www.tec.army.mil/>.

## Industry

- Battle Command Architecture, Design and Software Development:

- Viacore FSD, Eatontown, NJ — Richard Bormann, **rbormann@viacorefsd.com**, (732) 691-1399, <http://www.viacorefsd.com>.

- Hardware and Software Environment Design and Development:

- Atlantic Consulting Services Inc., Eatontown, NJ — John Roberts, **jroberts@acsinc-nj.com**, (732) 460-9416 Ext. 22, <http://acsinc-nj.com>.

- CSC, Eatontown, NJ — Mark Berry, **mberry@csc.com**, (732) 460-2170, <http://csc.com>.

- David H. Pollock Consultants Inc., Westwood, NJ — Jim Seward, **jseward@dhpconsultants.com**, (201) 722-0615, <http://dhpconsultants.com>.

- Johns Hopkins University-Applied Physics Laboratory, Baltimore, MD — James Hillman, **james.hillman@jhuapl.edu**, (240) 228-5000, <http://jhuapl.edu>.

- Lockheed Martin, Camden, NJ, and Bellevue, WA — Dale Miller, **dale.d.miller@atl.lmco.com**, (425) 957-3259, <http://www.atl.lmco.com/>.

- SAIC, Orlando, FL — Ralph Forkenbrock, **ralph.j.forkenbrock@saic.com**, (407) 243-3320, <http://saic.com>.

- Experiment Analysis:

- Applied Research Associates Inc., Eatontown, NJ — Doug Peters, **dpeters@ara.com**, (407) 208-3479, <http://ara.com>.

- The MITRE Corp., Eatontown, NJ — Stephen Kirin, **kirin@mitre.org**, (732) 996-4531, <http://www.mitre.com>.

- Opposing Force:

- Military Professional Resources Inc., Tampa, FL — Al Rose, **al-rose509@aol.com**, (910) 309-4238, <http://mpri.com>.

- AAR Support:

- Carrick Communications Inc., Lawton, OK. Rick Sinnreich, **carrick@sirinet.com**, (580) 248-9400, <http://www.carrickcom.com>.

The Army/DARPA S&T investment of more than \$50 million has resulted in the most robust facility anywhere for conducting virtual and constructive simulation-based multicell battle command experimentation.

**JAMES BARBARELLO** retired from Senior Executive Service in May 2003. Prior to that he served as the Director, C2, at the Research, Development and Engineering Center, Fort Monmouth, NJ. He earned a B.S. in electrical engineering from the City University of New York and an M.S. in industrial engineering from Fairleigh Dickinson University.

**MAUREEN A. MOLZ** is the Assistant Project Manager for the M&D C2 Special Project Office under the Army's PM for Future Force (Simulation), and the M&D C2 program's Army Deputy PM. She

previously served as Associate Director, CERDEC's C2 Directorate, and has a technical background in sensor design and development. She holds a B.S. in electrical engineering from Widener University and an M.S. in electrical engineering from Drexel University.

**GARY SAUER** has more than 22 years of diversified experience in program management, operations, strategic planning and technology transfer implementation for complex systems. Likewise, he has been instrumental in authoring C2 doctrine and assessing its use in operational and Joint environments. While at DARPA he held the position of Special Assistant to the Director, Operational Liaison, Director Office of Management Operations and Program Manager. Sauer holds a B.S. in civil engineering from the U.S. Military Academy, an M.S. in business administration from Central Michigan University Graduate School of Business and an M.M.A.S. in strategic and operational theory from the School of Advanced Military Studies, Fort Leavenworth, KS. He is a senior executive fellow of the John F. Kennedy School of Government, Harvard University, and a national securities fellow at the Massachusetts Institute of Technology. Sauer is also a member of the Military Operations Research Society.



# Modern Image Processing for Heightened Situational Awareness (SA)

Dr. Thomas J. Meitzler and Mary E. Bienkowski

**T**he U.S. Army Research, Development and Engineering Command's (RDECOM's) Tank Automotive Research Development and Engineering Center's Visual Perception Laboratory (VPL) was designed to evaluate camouflaged vehicle detectability in both the visual and infrared spectrums, assess computer simulated renderings of camouflaged vehicles and evaluate electro-optical cameras and systems for homeland defense applications.

The VPL has developed a PIF system for increasing Soldier SA on the battlefield. PMs who have seen the technology in action want it on their tactical vehicles now for in-theater testing/fielding. (U.S. Air Force photo by TSGT Mike Buytas, 1st Combat Camera Squadron.)

Modern image fusion technologies will allow the U.S. military to achieve the surveillance, security and detection applications needed for 21st century warfare and security operations. When combining information extracted from multiple sources, the fused result will provide more details, resulting in superior battlefield SA.

The VPL is actively working with various homeland security liaisons to locate programs to develop and apply these technologies. Potential applications of image fusion and 3-D displays for homeland defense are listed below.

- Concealed weapon and mine detection using sensor fusion and edge enhancement along with passive infrared and/or millimeter-wave (mm-wave) multiband imagery.
- Close-proximity wraparound fusion vision system for airplane passenger terrorist identification.
- Surveillance vehicle with wraparound enhanced vision and concealed weapon detection for peacekeeping operations in urban environments.
- Aerial unmanned robotic surveillance.
- Mm-wave using passive sensors to detect hidden objects — no irradiation of subject.
- Integration of 3-D visual images and mm-wave to increase visibility and image clarity.
- 3-D display technology for use at existing airport search stations, or imbedded in walls. The technology unobtrusively scans passengers and other airport personnel.

The same algorithms that are used for fusion of multiband imagery for mine detection can also be used for concealed

Modern image fusion technologies will allow the U.S. military to achieve the surveillance, security and detection applications needed for 21st century warfare and security operations.

weapon detection. Fuzzy-based image fusion can now be used to segment image areas that may show concealed weapons. The VPL has been working with Wayne State University and Ethereal Technology in Ann Arbor, MI, to apply autostereoscopic technology and image fusion to the problems associated with detecting people carrying weapons, 3-D baggage inspection at airports and crowd surveillance at large public facilities. An important attribute of the VPL autostereoscopic display is that it is not dependent on users wearing goggles or glasses. Likewise, the display renders a high-resolution image. A 3-D image is formed by the brain fusing a left and right image as it does from the left and right eye.

Using image fusion in concert with 3-D displays can potentially improve concealed object detection.

### 3-D Display and Stereoscopic Imagery

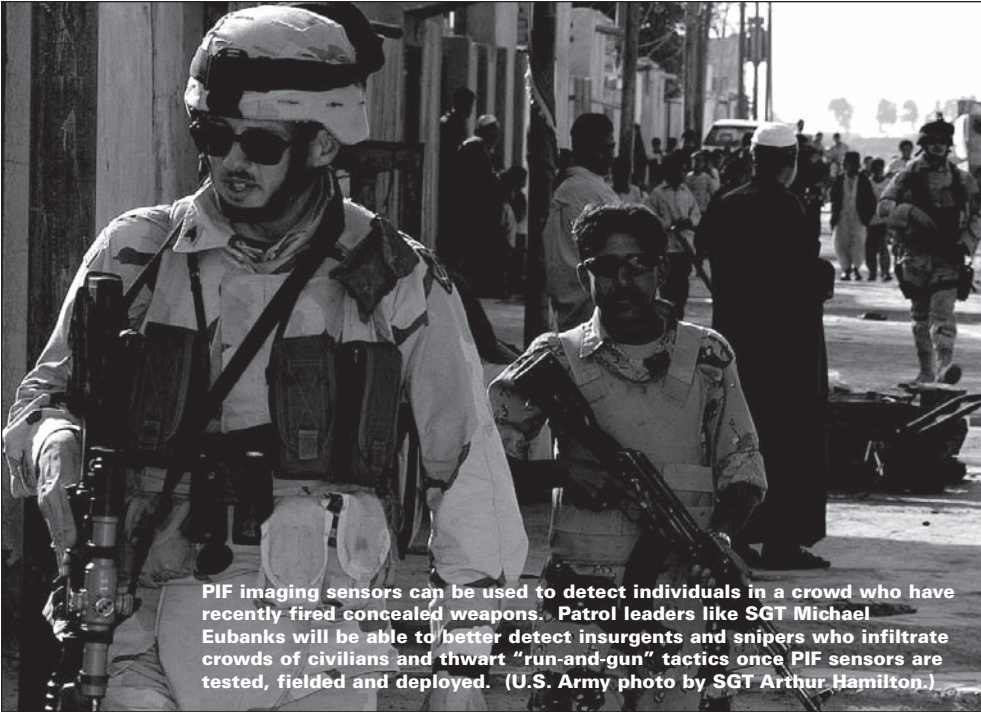
With current elevated security concerns, VPL engineers investigated

using 3-D displays to increase the throughput scanning efficiency and accuracy of detection of concealed explosive devices in packages. A new prototype 3-D display can project 3-D images from a stereoscopic pair of images. A pair of X-ray images are obtained from a conventional X-ray scanner similar to the one used at the Tank-automotive and Armaments Command receiving dock, and can be presented in 3-D to observers without the use of special viewing goggles.

It has been estimated that failures in advanced man-machine systems can be attributed to “human error” and may be as high as 75 percent. Increasingly, operator error is a result of SA loss. Therefore, 3-D displays can increase SA by allowing screeners to see information collected by sensors in a natural environment as opposed to planar images. There are numerous mirror systems that form a real 3-D image in space of an object in a position that is well separated from the object. A major part of the stereoscopic display used in the VPL is the spherical concave mirror. A spherical mirror can magnify the size of the object being displayed.



The VPL team and Ford laboratories are testing and beginning the technology insertion of PIF vision systems for peacekeeping operations and homeland defense. (Photo courtesy of RBG-RDECOM.)



PIF imaging sensors can be used to detect individuals in a crowd who have recently fired concealed weapons. Patrol leaders like SGT Michael Eubanks will be able to better detect insurgents and snipers who infiltrate crowds of civilians and thwart "run-and-gun" tactics once PIF sensors are tested, fielded and deployed. (U.S. Army photo by SGT Arthur Hamilton.)

There is a need for technology to scan packages and use this 3-D system to reduce illegal weapons transport and potential threats on U.S. soil. This display can be applied to crowd surveillance and screening at public access points as well. During times of increased security and the threat of passengers carrying concealed weapons or other harmful items, sensor fusion and 3-D displays could be of benefit in alerting guards to potentially dangerous passengers. Combining sensor fusion with 3-D displays could also improve the recognition rates by

guards using cameras that scan crowds for people who are listed in known terrorist databases. We believe that implementing volumetric visible and infrared (IR) images will improve the recognition rate because it will provide a more detailed 3-D image — or thermal properties — versus a 2-D visible image.

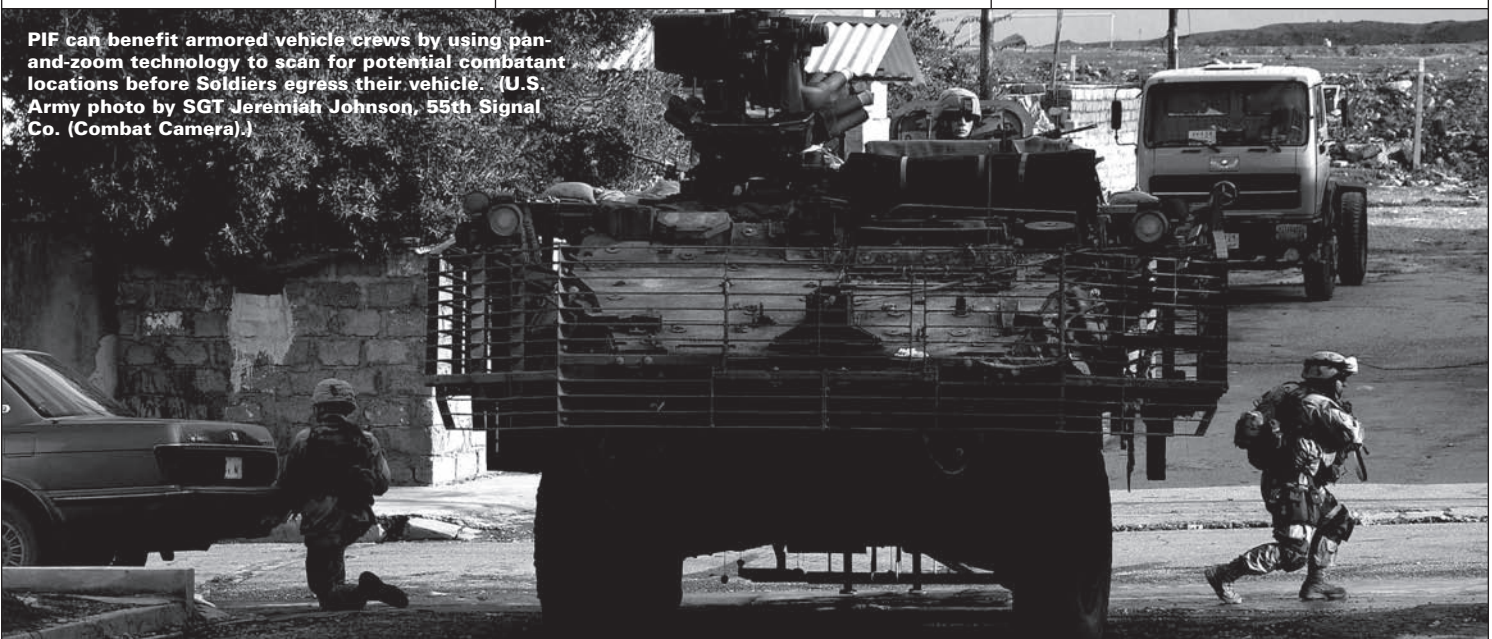
### Panoramic Image Fusion (PIF) System

The VPL team and Ford Laboratories are testing and beginning the technology insertion of a PIF vision system.

This system's applications include peacekeeping operations in Afghanistan and Iraq, homeland defense, border surveillance, early warning passive detection of threats and medical telepresence. The vision system is mounted on the front and rear of the vehicle and provides day and night panoramic imaging by fusing the visible and IR video from multiple cameras in real time. The system uses commercial-off-the-shelf video cameras and imaging boards. By combining imaging sensor fusion capabilities with panoramic vision, the vehicle occupants have 360-degree SA.

Why is more than one type of sensor required? Because IR cameras give increased night-vision capability and visible sensors are of little use at night or in poorly lit areas. Even in well-lit areas, night-vision technology provides a safety benefit by making it easier to detect camouflaged insurgents. In daylight, PIF can be used to detect individuals in a crowd who have recently fired their weapons. This is due to the heat generated by the weapons as seen through clothes by the imaging sensors.

PIF's benefit to an armored vehicle's crew is that it provides SA prior to vehicle egress. Soldiers in a closed vehicle



PIF can benefit armored vehicle crews by using pan-and-zoom technology to scan for potential combatant locations before Soldiers egress their vehicle. (U.S. Army photo by SGT Jeremiah Johnson, 55th Signal Co. (Combat Camera).)

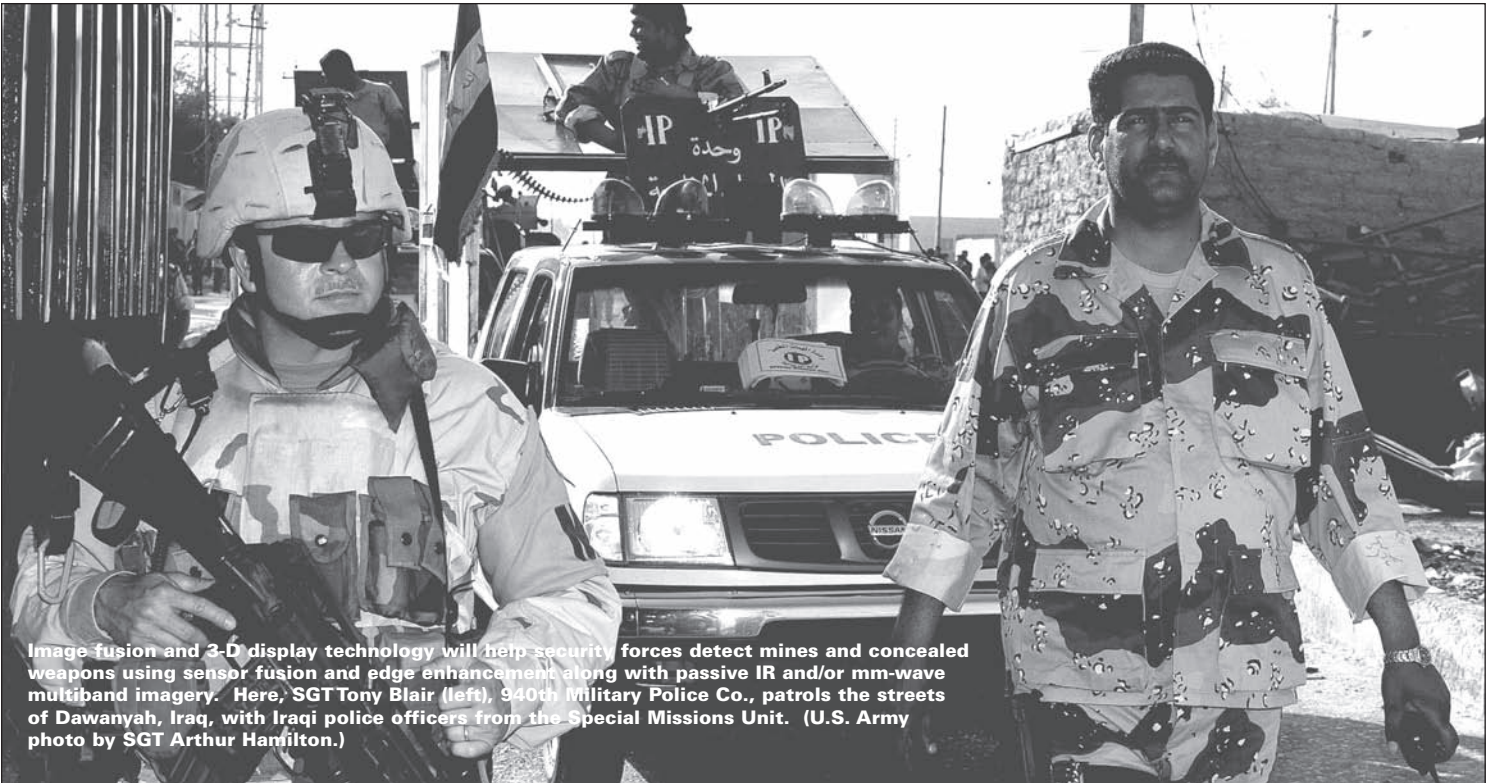


Image fusion and 3-D display technology will help security forces detect mines and concealed weapons using sensor fusion and edge enhancement along with passive IR and/or mm-wave multiband imagery. Here, SGT Tony Blair (left), 940th Military Police Co., patrols the streets of Dawanyah, Iraq, with Iraqi police officers from the Special Missions Unit. (U.S. Army photo by SGT Arthur Hamilton.)

can use this technology to pan and zoom around the vehicle's vicinity and learn of potential combatants' locations. The major advantage is that the scene can be interpreted much more quickly and accurately, thereby increasing Soldier survivability and responsiveness.

### VPL Status

In FY04, VPL geared its research to homeland defense and the global war on terrorism and was featured on a local television broadcast. The segment discussed the PIF system being developed for tactical vehicles, as well as a novel 3-D imaging technology that could be used to scan crowds at entrances to public structures. The VPL was also highlighted on the History Channel's recent "Stealth on Land" series. The use of the lab for camouflage assessment was described and showed how a Soldier takes a camouflaged vehicle perception test in the VPL.

As mentioned in the key research areas above, the VPL has developed a PIF system for increasing the SA of

Soldiers in Iraq and Afghanistan and National Guardsmen and law enforcement officers at home. This technology has been shown to Program Manager (PM) Stryker, PM Light Assault Vehicle, PM Tactical Vehicle and PM Heavy Equipment Transport. Those PMs who have seen the technology want it on their vehicles for in-theater testing. The biggest problem at this time is securing funding to supply our customers fleets of vehicles.

Maintaining SA, dynamic surveillance and target development is important for our Soldiers. In the near future, this task will be accomplished through image sensor acquisition, data fusion and 3-D visualization. The implementation of the integrated image system will support real-time SA for homeland defense by providing images of vehicles with IR signatures.

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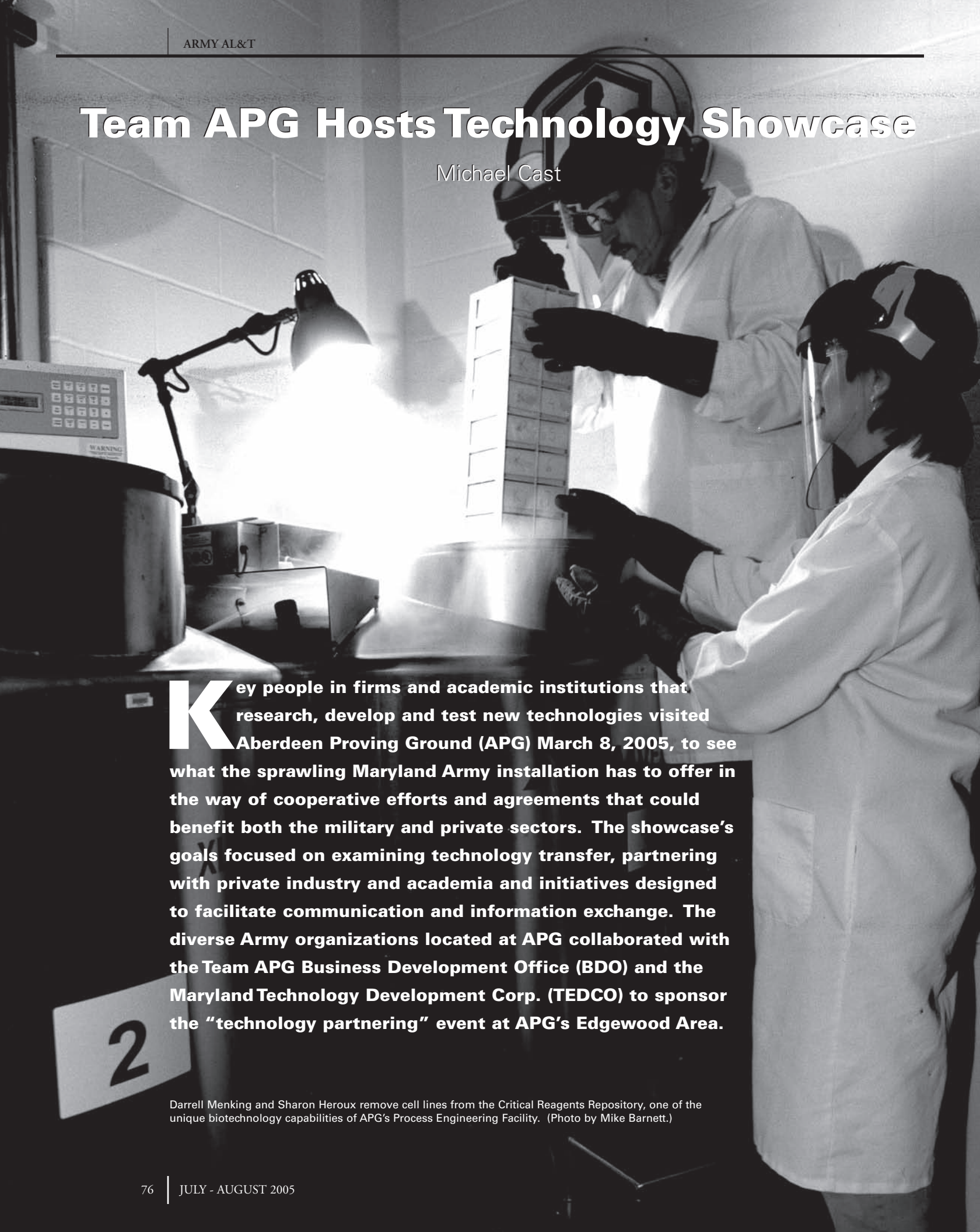
**DR. THOMAS J. MEITZLER** is a Research Engineer for the Survivability Team, Research Business Group (RBG), at RDECOM in Warren, MI. He received

his B.S. and M.S. in physics from Eastern Michigan University and his Ph.D. in electrical engineering from Wayne State University. He has published numerous papers on the application of fuzzy logic, statistical methods to IR and visual detection methods, and has co-written encyclopedia chapters on image processing and IR imaging. Meitzler has applied detection testing and modeling methodologies to military ground vehicles, concealed weapon detection and remote surveillance. He is Level III certified in systems planning, research, development and engineering (SPRDE).

**MARY E. BIENKOWSKI** is a VPL Mechanical Engineer for the RBG Survivability Team, RDECOM. She received her B.S. in mechanical engineering and is pursuing her M.S. in engineering management, both from Oakland University in Rochester, MI. She is Level II certified in SPRDE. Her most recent research development involves image fusion, camera response testing and threat assessment through stereoscopic imagery for ongoing homeland security collaboration.

# Team APG Hosts Technology Showcase

Michael Cast



**K**ey people in firms and academic institutions that research, develop and test new technologies visited Aberdeen Proving Ground (APG) March 8, 2005, to see what the sprawling Maryland Army installation has to offer in the way of cooperative efforts and agreements that could benefit both the military and private sectors. The showcase's goals focused on examining technology transfer, partnering with private industry and academia and initiatives designed to facilitate communication and information exchange. The diverse Army organizations located at APG collaborated with the Team APG Business Development Office (BDO) and the Maryland Technology Development Corp. (TEDCO) to sponsor the "technology partnering" event at APG's Edgewood Area.

Darrell Menking and Sharon Heroux remove cell lines from the Critical Reagents Repository, one of the unique biotechnology capabilities of APG's Process Engineering Facility. (Photo by Mike Barnett.)

The showcase — one of five held at APG to date — focused on personal protective technologies. The Research, Development and Engineering Command is headquartered at the Edgewood Area and has a leading role in developing Soldier protective equipment, including masks and suits designed to shield them from chemical and biological threats.

The event featured presentations from this command's Edgewood Chemical Biological Center, Center for Health Promotion and Preventive Medicine and Medical Research Institute of Chemical Defense Medicine, as well as from the Aberdeen Test Center (ATC) and Army Research Laboratory (ARL), which both have facilities at APG's larger Aberdeen Area. Past showcases have introduced attendees from the private sector and academia to the various laboratories, research facilities, training organizations and array of testing sites located at the Aberdeen and Edgewood Areas.

TEDCO Executive Director Dr. Phillip Singerman told the showcase attendees that the program was designed to "efficiently introduce" them to the resources, facilities and capabilities at APG that focus on protective technologies. "There are 64 organizations on the Proving Ground, spanning the gamut of research, development, testing and engineering," Singerman explained. "The Army's interest in sponsoring a showcase of this type is to develop partnerships that produce enhanced protection for U.S. Soldiers. All of us are in this

The Army's interest in sponsoring a showcase of this type is to develop partnerships that produce enhanced protection for U.S. Soldiers ... to ensure that the men and women overseas [Afghanistan and Iraq] come back safely to their families.

room to ensure that the men and women overseas [Afghanistan and

Iraq] come back safely to their families," he continued.

"While increased security measures at APG in the wake of the Sept. 11 attacks have made it more difficult to get onto the installation, 'community outreach' efforts to promote creative partnerships with academia and industry remain important," Singerman said.

The *Federal Technology Transfer Act of 1986* defines technology transfer as the movement of technical knowledge, data, designs, inventions or trade secrets from one organization to another, or from one application to another. This legislation encourages federal agencies to conduct



Army organizations at APG, such as the Army Medical Research Institute of Chemical Defense, use the latest equipment for chemistry, analytical processes and other research and development efforts. (U.S. Army photo.)

joint research with nonfederal partners while protecting intellectual property that may be developed. It also encourages the formation of cooperative research and development agreements (CRADAs), which are negotiated agreements between specific laboratories and nonfederal partners that outline the terms and conditions under which work will be performed. CRADAs set out the scope of joint efforts and the resources to be provided by each party. They often contain provisions regarding licensing, commercialization and patent development.

TEDCO's Director of Technology Transfer Dr. Steven Fritz described several TEDCO initiatives for funding, including:

- The University Technology Development Fund. This fund aims to increase the commercialization potential of a university's intellectual property. The maximum award is \$50,000.



The Army's Center for Health Promotion and Preventive Medicine (CHPPM) is an APG organization that focuses on protecting Soldiers' health. CHPPM's Lawrence Clark connects a summa canister, used to collect air samples in development locations, to an autocan system that then introduces the samples into an analytical system. (Photo by SSG Kathleen Rhem.)

- The Maryland Technology Transfer Fund. This fund provides a maximum award of \$75,000 to develop technology-based products and services in collaboration with universities and federal laboratories in Maryland. Many Army organizations at APG are certified as federal laboratories by the Federal Laboratory Consortium of the Mid-Atlantic Region.

TEDCO's Technology Insertion Initiatives are new programs that provide "seed-fund" grants to companies to develop technology to meet Army requirements. Among these is the Aberdeen Technology Transfer Initiative (ATTI), a program begun about 3

TEDCO's Technology Insertion Initiatives are new programs that provide "seed-fund" grants to companies to develop technology to meet Army requirements.

years ago. Fritz said \$1 million in seed money for the ATTI, the prime source of funding for Maryland's APG technology transfer programs, resulted from the advocacy of the state's two senators, Paul Sarbanes and Barbara Mikulski, as well as Rep. Dutch Ruppersberger, who represents District 2, where APG is located.

The ATTI supports the development of private-sector "spin-in" commercial technologies to meet the Army's needs and the commercialization "spin-out" of military technologies developed at APG. Funding for the ATTI is provided by Congress through the Army Developmental Test Command (DTC). ATTI

awards, usually \$50,000, may be made to small, for-profit businesses involved with the development of spin-in or spin-out technologies. To be eligible for the award, commercial firms must have a technology transfer agreement with an APG organization.

The showcase highlighted three Maryland companies that received funding through the ATTI — BSCO Inc., of Forest Hill; Elkton-based Phoenix S&T; and QuickSilver Analytics Inc., of Abingdon.

BSCO, a firm that specializes in small fire-suppression systems, developed the Micro Fire Suppression System for testing by the ATC. Though the company's product is still in the research and development (R&D) phase, according to a news release from the Harford County Office of Economic Redevelopment, Northrop Grumman



and Clean Air America have already placed orders for systems that fill a “critical market niche.”

Phoenix S&T, a company whose Web site says it “develops micro-scale, low-cost disposable polymer tools for protein profiling,” is conducting R&D on an “automated nanospray system with nozzles and integrated reservoirs for sample storage” — in essence, a system that will assist in the analysis of molecules for drug discovery and clinical cancer diagnostics.

QuickSilver Analytics, which specializes in various defense-related services and

products, is developing a “permanent injection mold” for BisKit, a state-of-the-art biological sampling kit for large areas. The company operates a DOD-certified mobile laboratory for “onsite environmental analysis of chemical-warfare and chemical warfare-related materiel.”

Harold Barker of ATC’s industrial X-ray facility was the first APG presenter of the day. His X-ray facility has developed technology that is capable of penetrating 24 inches of hardened steel, imaging microfibers and before and after test-event imagery.

He was followed by a long line-up of other presenters describing APG facilities and capabilities, ranging from chemical sampling and analysis to systems for treating victims of chemical and biological attack and the National Center of Excellence for First Responder Technologies, an organization affiliated with the University of Pittsburgh’s Joseph M. Katz Graduate School of Business Institute for Entrepreneurial Excellence. The center is designed to “help meet the technology needs of firefighters, law enforcement and emergency medical personnel in a post-9/11 world.”

Steve Clark, DTC’s proponent for technology transfer and a showcase organizer, emphasized the importance of partnerships between the military and private sectors in meeting America’s technology needs. He encouraged attendees to visit the BDO section of the APG Science and Technology Board Web site at <http://stb.apg.army.mil/BDO>. Those interested in technology transfer programs at APG can also call the BDO at (410) 273-5062. For information about programs sponsored by TEDCO or the State of Maryland, visit [www.marylandtedco.org/home.html](http://www.marylandtedco.org/home.html).

**MICHAEL CAST** is DTC’s Public Affairs Specialist. He is a former Army reporter, editor, photojournalist and Keith L. Ware Award winner. He holds a B.A. in journalism from Arizona State University.

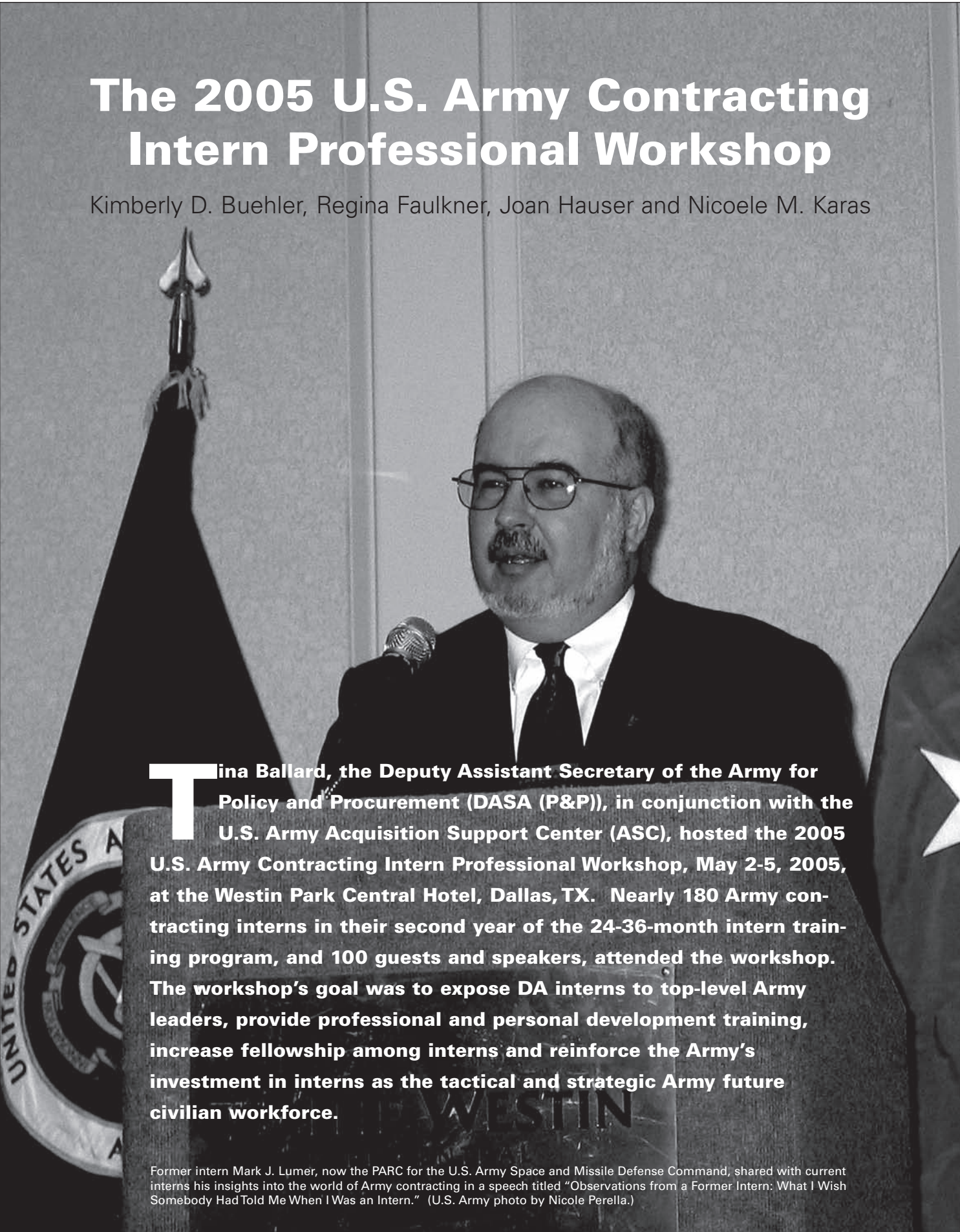


Dr. Erica Valdes and Angela Farenwald check monitors in APG’s Electron Microscopy Laboratory, known on post as “Microland.” (Photo by Conrad Johnson.)



# The 2005 U.S. Army Contracting Intern Professional Workshop

Kimberly D. Buehler, Regina Faulkner, Joan Hauser and Nicoele M. Karas



**T**ina Ballard, the Deputy Assistant Secretary of the Army for Policy and Procurement (DASA (P&P)), in conjunction with the U.S. Army Acquisition Support Center (ASC), hosted the 2005 U.S. Army Contracting Intern Professional Workshop, May 2-5, 2005, at the Westin Park Central Hotel, Dallas, TX. Nearly 180 Army contracting interns in their second year of the 24-36-month intern training program, and 100 guests and speakers, attended the workshop. The workshop's goal was to expose DA interns to top-level Army leaders, provide professional and personal development training, increase fellowship among interns and reinforce the Army's investment in interns as the tactical and strategic Army future civilian workforce.

Former intern Mark J. Lumer, now the PARC for the U.S. Army Space and Missile Defense Command, shared with current interns his insights into the world of Army contracting in a speech titled "Observations from a Former Intern: What I Wish Somebody Had Told Me When I Was an Intern." (U.S. Army photo by Nicole Perella.)

Workshop activities began with a Texas-themed icebreaker and exhibits by professional associations. The interns then participated in 3 days of general session briefings, panel presentations and breakout sessions related to the workshop's overall theme, "Preparing Future Contracting Leaders – Today." Topics included professionalism, ethics, leadership, life-cycle management, contracting in support of the war, postintern professional development, contracting specializations and effective negotiating. Army Acquisition Executive/Assistant Secretary of the Army for Acquisition, Logistics and Technology Claude M. Bolton Jr.; Communications-Electronics Life Cycle Management Command Commander MG Michael Mazzucchi; Program Executive Office for Simulation, Training and Instrumentation Commanding General BG Stephen Seay; Tina Ballard; COL Genaro J. Dellarocco, then ASC Director; COL Kim Leach, Military Deputy, DASA(P&P); and various Army Principal Assistants Responsible for Contracting (PARCs) spoke at the event.

The 2005 U.S. Army Contracting Intern Professional Workshop opened communication between interns and senior leaders, and encouraged continued dialog to ensure that both current and future contracting interns have rewarding experiences and that the ideas derived from this workshop are realized.

### Individual Perspectives

#### ACA-ITEC4 Intern Nicoele Karas.

As a second-year DA Intern at Army Contracting Agency (ACA)-Information Technology E-Commerce and Commercial Contracting Center (ITEC4), I had an opportunity for a 2-month developmental assignment with the ASC CP-14 Office to help plan and execute the 2005 U.S. Army Contracting Intern Professional Workshop. I volunteered — and was accepted — for this assignment.



COL Genaro J. Dellarocco, then ASC Director, and COL Kim Leach, Military Deputy, DASA (P&P), present a Certificate of Appreciation to COL(Ret.) Steven R. Boshears for his conference briefing on professionalism and personal development. (U.S. Army photo by Nicole Perella.)

During my time at CP-14, I helped develop the agenda, tracked registration and hotel reservations, assisted speakers and attendees, researched and wrote briefs, compiled the after action report and completed many other tasks associated with the event. I attended several pre-planning meetings and briefs to ASC and Army leaders and even met and talked with Mr. Bolton. The opportunity to see headquarters-level operations increased my understanding of the Army and how my own contracting organization fits within the Army structure.

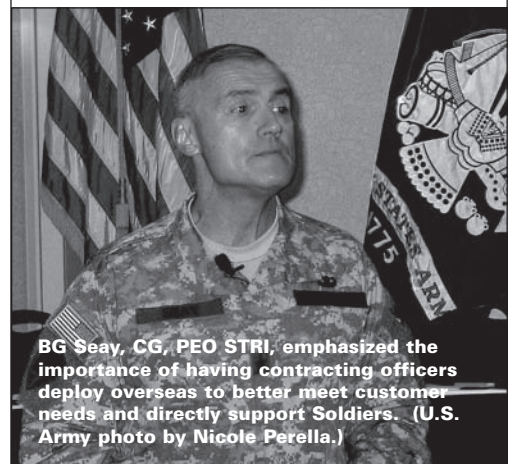
The highlight of my assignment was participating in "The Contracting View" panel at the intern workshop. "The Contracting View," a spinoff of the popular ABC daytime television program *The View*, provided an informal atmosphere for senior Army leaders to discuss their views on leadership, career development and ethics. It provided an outlet for interns and other attendees to ask questions and speak directly to senior leaders. Ms. Ballard developed the concept for "The Contracting View" to expressly set the intern workshop apart by doing something untraditional and unexpected.

The "View Crew" consisted of Ms. Ballard; COL Leach; Sandra Sieber, Director, ACA; Jeff Parsons, Director for Contracting, Headquarters, Army Materiel Command (AMC); Toni

Gaines, Acting Director, ACA-Southern Region; and me.

I was asked to provide my perspective as an intern. Although I had previously met Ms. Ballard during pre-workshop briefings, I had not met the other View Crew members and I was anxious about being with so many senior leaders. However, I quickly realized that these senior leaders are not that much different than I am. They care deeply for their families, they are funny, they are concerned about the decisions they make and how these decisions impact the contracting workforce and they each have personal stories that have affected their careers. Knowing that these senior leaders experienced similar issues that I face now as an intern enabled me to see myself in a leadership position one day. The View Crew's ability to make this same connection with the larger intern audience greatly contributed to the "The Contracting View's" success.

I was honored when Ms. Ballard asked me to participate in "The Contracting View." I believe that my presence on the panel created a more informal atmosphere and encouraged interns to ask the hard questions. My participation conveyed to the audience that Ms. Ballard and the other senior leaders were truly interested in interns' opinions and concerns.



BG Seay, CG, PEO STRI, emphasized the importance of having contracting officers deploy overseas to better meet customer needs and directly support Soldiers. (U.S. Army photo by Nicole Perella.)



Left to right: Craig A. Spisak, new ASC Director, and COL Kim Leach, Military Deputy, DASA (P&P), present a Certificate of Appreciation to Adina B. Peyton of the Defense Acquisition University for hosting a Negotiation Workshop during the conference. (U.S. Army photo by Nicole Perella.)

As the only intern on the View Crew, I was in the unique position to receive honest and instantaneous feedback from the interns. Most interns I spoke with loved “The Contracting View” and appreciated the open and candid answers provided. One intern said it best, “That was awesome! That is why I came to Dallas!”

**Intern Coordinator Joan Hauser.**

When I began as a Contract Specialist Intern in 1995, I entered a workplace filled with acronyms and strict structure, completely unlike my private industry experience. My training focused on technical skills so that I would quickly become effective in my job. The big picture, and my place in it, was rarely part of my workday. It was hard to see how my research and development (R&D) contracts would affect Soldiers’ lives.

As a former intern, I found that the intern workshop provided information I could have used 10 years ago. As an intern coordinator, I appreciated the workshop’s emphasis on professionalism, the acquisition career field’s opportunities and how decisions we make every day can minimize battlefield injuries and save lives.

The workshop presented five main themes: leadership, Army structure and contracting organizations, contracting in support of the war effort, planning for professional and personal development and the future of civilian career development. Although the agenda broke these themes into briefings, they were woven throughout the entire workshop. The realities of career development beyond education and certification, including integrity, leadership, hard work and navigating office politics, were honestly presented and the importance of professionalism in all aspects of one’s career was thoroughly conveyed.

Particularly poignant and relevant to today’s contracting environment, Soldiers and civilians who deployed to Iraq and elsewhere relayed their personal stories, describing how each Army acquisition professional has the potential to improve lives around the world. Another briefing provided



“The Contracting View” was an innovative panel discussion that allowed interns and senior leaders to openly discuss leadership, ethics and career development. The “View Crew,” as panelists were called, included (from left) AMC Director of Contracting Jeffrey P. Parsons, DASA (P&P) Tina Ballard, ACA-Southern Region Deputy Division Chief and Deputy PARC Toni Gaines, ACA Director Sandra Sieber, Military Deputy to the DASA (P&P) COL Kim C. Leach and ITEC4 intern Nicoele Karas. (U.S. Army photo by Nicole Perella.)

excellent information on Army civilian deployment programs. How one contract can affect Soldiers’ lives and their safety was explained in the deployment segment and in briefings on contracting for systems, installation, construction and engineering services and R&D.



Tina Ballard, DASA (P&P), presents Sandra Sieber, ACA Director, with a Certificate of Appreciation for her informative and enlightening contracting presentation during the 2005 Intern Professional Workshop. (U.S. Army photo by Nicole Perella.)

Several career progression options were presented to the interns. The Army’s Competitive Professional Development Program, with its educational and experiential programs and developmental assignments, was thoroughly explained. A Defense Contract Management Agency panel presented challenging career opportunities outside the Army. A briefing on the National Contract Management Association focused on professional certification and leadership opportunities.

The workshop could have been a superficial overview of an Army acquisition career, but it wasn’t. A senior Army acquisition leader panel provided a frank and open discussion of their careers and the challenges facing interns today. Within 45 minutes, the interns got years’ worth of advice and mentoring. This workshop helped interns to chart their careers to better serve Soldiers.

**AMC Intern Regina**

**Faulkner.** As an AMC intern at the U.S. Army Research, Development and Engineering Center (RDECOM), the intern workshop encouraged me and my fellow interns to set high — but realistic — goals, believe that we can achieve anything we put our minds to and strive for success. The

workshop presented interns as the acquisition workforce's future leaders, stressed the significance of continuing training and education on becoming effective leaders and focused on the role acquisition professionals play in supporting Soldiers on the battlefield.

As with any training experience, some lessons really hit home. For example, in his video presentation, Mr. Bolton described the traits leaders should possess and what it takes to become successful, including standing out in a crowd and taking responsibility for your actions. Similarly, in his brief, former intern Mark Lumer encouraged interns to be accountable for their careers and to seize all opportunities



Tina Ballard, DASA (P&P), presents a Certificate of Appreciation to ACA-Southern Region Deputy Division Chief and Deputy PARC Toni Gaines for hosting breakout sessions on installation contracting. (U.S. Army photo by Nicole Perella.)

offered. Other speakers built on these themes, emphasizing the need to maintain an Individual Development Plan, keep a list of short- and long-term goals, follow through on training plans and become more marketable by getting Level I certified in another career field.

I also learned a great deal about the Army itself. The briefing by COL Anthony Bell, ACA-Americas PARC, explained the DOD civilian's role and how important acquisition is to Soldiers' efforts, reinforcing the importance of meeting user requirements and procuring supplies and services that are designed to protect our troops.



Tina Ballard, DASA (P&P), presents a Certificate of Appreciation to John W. Tuttle, lead systems engineer for the Acquisition, Logistics and Technology Enterprise Systems and Services, for his work on the Intern Workshop's audio and visual systems. (U.S. Army photo by Nicole Perella.)

BG Seay discussed deployment and the value of having contracting officers work outside the country to better meet customer needs. Interns considering deployment learned about living conditions and the sacrifices made during deployment. This theme was again explored through a panel of military and civilian acquisition professionals who presented personal testimonies about their experiences working abroad. Panelists discussed their feelings on spending time away from their families, why they volunteered to deploy and how they adapted to the living conditions. These testimonies emphasized the personal sacrifices made to better meet Soldier needs.

The workshop provided an opportunity to network with other interns and key acquisition leaders. As the only intern currently at my training location, I welcomed the chance to learn



Tina Ballard, DASA (P&P), presents a Certificate of Appreciation to Emily Clarke, Director, Procurement Policy and Support, HQDA, for serving as the 2005 U.S. Army Contracting Intern Workshop Master of Ceremonies. (U.S. Army photo by Nicole Perella.)

about other interns' experiences. I had the opportunity to meet and lunch with COL Dellarocco and I spoke directly with Ms. Ballard during a break. Interacting with senior leaders on a personal level was an invaluable experience.

The workshop was worthwhile for all attendees. I have a better understanding of the acquisition workforce mission, and personal insight into the sacrifices senior leaders made to reach their goals. My AMC leaders also have a better understanding of interns — who we are and what we are looking for in career development.

**KIMBERLY D. BUEHLER** is the Recruitment Programs Manager for the ASC Contracting Career Program Office. She has a B.A. in history/secondary education from Trenton State College and an M.A. in art history from Temple University. Buehler is Level III certified in contracting.

**REGINA FAULKNER** is a DA Contract Specialist Intern assigned to the RDECOM Acquisition Center (AC), where she was previously assigned as an Acquisition Career Experience student. Faulkner has a B.A. in accounting from Lincoln University.

**JOAN HAUSER** is the Intern Coordinator for the RDECOM AC. She has a B.S. in finance from Rowan University and an M.B.A. from Loyola College in Maryland. Hauser is Level III certified in contracting and has been certified as a Professional Contracts Manager by the National Contract Management Association.

**NICOELE M. KARAS** is a DA Contract Specialist Intern assigned to ACA-ITEC4. She has a B.A. in history from the University of Florida and an M.B.A. from the University of Hawaii. Karas is Level I certified in contracting.

## From the Acquisition Support Center Director

It's my pleasure to take the time in my first column for *Army AL&T Magazine* to thank COL Genaro J. Dellarocco for his dedication and service to the U.S. Army Acquisition Support Center (ASC) and wish him continued success in his new position as the Chief of the Requirements and Acquisition Division at the Joint Chiefs of Staff (J-8), Office of the Director, Force Structure, Resources and Assessment. COL Dellarocco led ASC during a time of significant organizational change for the Army and the Army Acquisition Corps (AAC). He has moved ASC forward despite a tremendous workload and made a remarkable impact on the success of the Acquisition, Logistics and Technology (AL&T) Workforce and community.



With COL Dellarocco's departure come several other changes in ASC's leadership structure. In addition to a change in directors, we also welcome the new Deputy Director, LTC Fred Mullins, who joins us from the University of Texas-Austin where he just completed the Senior Service College Fellowship Program. Prior to that, he served as the Product Manager, Combat Training Instrumentation Systems at Program Executive Office Simulation, Training and Instrumentation. We also welcome Susian Vickers, the new Acquisition Career Management Division Chief; Dave Duda, the new CP-14 (Contracting) Career Program Division Chief; Tom Evans, the new National Capital Region Director; Wanda Meisner, the new Program Structures Division Chief; Maria Holmes, the Acting Operations Division Chief; and Anna Edmondson, ASC's new Executive Officer. With these numerous personnel changes come new ideas and methodologies for conducting business. I look forward to examining the influx of information, experience and best practices our new managers bring to the organization so that the ASC staff can help me identify ways to further improve our operations and provide world-class service and support to our customers.

I'd like to share a few of the things I told my staff during the Change of Leadership Ceremony on June 16 regarding the change and the pace of today's work environment. These issues are salient to all AL&T Workforce members.

- I urge you to take part in Army transformation and enjoy the change we are experiencing. The pace of change is more radical than any we've previously experienced and it's continually becoming faster and more frequent. Challenge yourself to share your ideas and your enthusiasm as we find new ways to make the Army better.
- Transformation requires that we get more done without more resources. The environment demands it and we can do it. Seek efficiencies in the ways you do your job and share your accomplishments with your colleagues so that they can benefit from your experience as well.
- Renew your curiosity in the mission and in the people you work with daily. Ask your customers how they use the products or services you provide them and find a way to deliver a better, more user-ready product faster. Talk with your colleagues to find out how they meet customer needs and consider trying a new approach to old problems. Challenge yourself to improve processes and create efficiencies organization-wide.
- Know when to ask for help. Your supervisors and Army leaders bring substantial knowledge, training and know-how to the table. When you reach an impasse, ask for direction in solving problems. Challenge yourself to know when to resolve a problem on your own and when to knock on someone's door for assistance.
- Push yourself to exceed your own expectations — personally and professionally. Set high goals for yourself and you will be rewarded with great accomplishments. Challenge yourself to update your individual development plan each quarter and write a recurring reminder to do so in your calendar.
- Remember, have fun while you're doing your job. We spend too much time at our professional employment to not enjoy it. Experiment to find new and enjoyable ways to achieve your goals.

ASC is planning several exciting events over the next few months. We're working with the U.S. Army Materiel Command (AMC) to host the invitation-only Acquisition Senior Leaders and AMC Commanders Conference, Aug. 22-25 in Detroit, MI. Please check the ASC Web site at <http://asc.army.mil> for more information. After the event, briefings and photos will be posted online for anyone who wishes to learn more.

Please mark your calendar for the AAC Annual Awards Ceremony, Oct. 2, 2005, in Crystal City, VA. This is our time to recognize the numerous accomplishments of the acquisition workforce's most extraordinary members and the teams they lead. This event is held prior to the Association of the U.S. Army Annual Meeting and Exposition in Washington, DC, Oct. 3-5.

I look forward to working with all of you during my tenure as ASC Director. I encourage your input, thoughts and suggestions. Let's shape the AAC in a positive way during this transformative period in the U.S. Army's history. Together, we must be pioneers of change and architects of our destiny.



**Craig A. Spisak**  
Director, U.S. Army  
Acquisition Support Center

### ASC Change of Leadership Ceremony Honors Outgoing and Incoming Directors

*Mike Roddin*

The U.S. Army Acquisition Support Center (ASC) held its Change of Leadership Ceremony June 16, 2005, in Scott Hall on the Defense Acquisition University campus at Fort Belvoir, VA. During this ceremony, COL Genaro J. Dellarocco relinquished his directorship to Mr. Craig A. Spisak. Spisak, who has served as ASC's Deputy Director since 2002, took the helm as the organization's first civilian director. Dellarocco departed ASC to assume responsibilities in the Office of the Director, Force Structure, Resources and Assessment (J-8), as the Chief of the Requirements and Acquisition Division.

Military Deputy (MILDEP) to the Assistant Secretary of the Army for Acquisition, Logistics and Technology (AL&T) LTG Joseph L. Yakovac Jr., the presiding official, bid farewell to Dellarocco and thanked him for his outstanding tour of duty as ASC Director. Yakovac then officially handed over responsibility for directing the organization to Spisak during the Exchange of Organizational Colors. "You are hereby delegated the full-line authority of the Army Acquisition Executive for the management of the Acquisition Support Center," Yakovac instructed.

The military change of leadership ceremony and exchange of organizational colors dates back to the beginning of our Nation's history

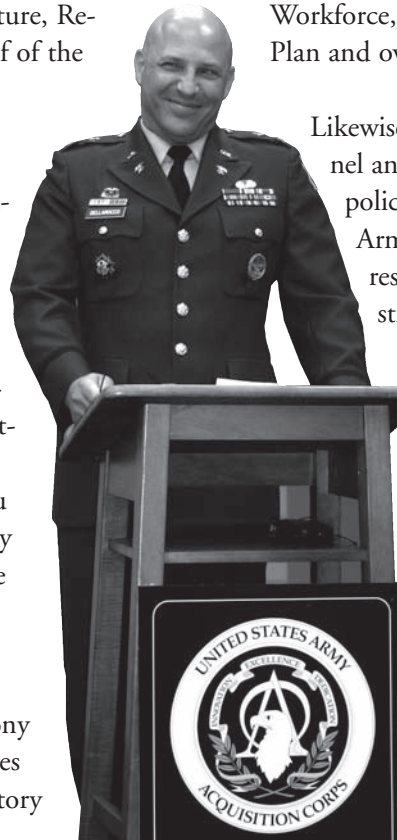
and provides for the orderly transfer of organizational responsibility from one Army leader to another. The passing of the colors is a symbolic act, through which the outgoing leader relinquishes authority to his superior, who in turn passes that authority to the incoming leader. During the ceremony, Yakovac presented Dellarocco with a symbolic Army Acquisition Corps (AAC) flag to recognize his outstanding accomplishments and service as the ASC Director and the Army's Deputy Director of Acquisition Career Management.

In passing the mantle of leadership to Spisak, Yakovac explained the significance of the event to the audience. "As the director of this field operating agency, Mr. Spisak will perform as the major command for the Army Acquisition Corps and the Acquisition Workforce reporting to the Army Acquisition Executive through the Military Deputy. As such, he will serve as the Army's "one face" for Acquisition, Logistics and Technology proponentcy on behalf of the AAE, the MILDEP, the AL&T community, its operating agencies and strategic partners."

In addition to the duties outlined by the MILDEP, Spisak also assumes responsibility for ensuring synchronization of all AAC proponentcy initiatives with supporting career management organizations in concert with MILDEP direction. Additionally, he will formalize AL&T process links to Army and Joint proponentcy systems, ensuring the viability and relevancy of the workforce and its alignment with the AL&T Workforce, Army/AAC transformation, the Army Campaign Plan and overarching DOD strategic objectives.

Likewise, Spisak is charged with managing ASC personnel and fiscal resources in a manner consistent with the policies and principles articulated in DOD directives, Army policy and acquisition reform initiatives. A key responsibility will be maintaining the AAC force structure through proper manpower allocations.

At the ceremony's outset, Spisak presented flowers to his wife Tara A. Scully, thanking her for her continued support and partnership as he moves into his new role as ASC Director. He noted the major role that family plays in all our lives and successful careers and thanked his wife for her untiring support and love. "You're there for me every day and I wouldn't have



COL Genaro J. Dellarocco, outgoing ASC Director, thanks his staff for their excellent support during the Change of Leadership ceremony June 16. Dellarocco joined the Joint Staff (J-8) as the Chief of the Requirements and Acquisition Division. (ASC photo by Debbie Fischer-Belous.)

made it here today through many difficult obstacles without your help.”

Spisak also remarked on his predecessor: “I want to thank COL Dellarocco for his dedication and service to the Acquisition Support Center and wish him continued success in his new position on the Joint staff. COL Dellarocco led ASC during a time of significant organizational change for the Army and Army Acquisition Corps. He has moved ASC forward despite a tremendous workload and made a remarkable impact on the success of the AL&T Workforce and community.”

“As I take on this challenge and step into my new role as the Director, I urge each of you to take part in Army transformation and enjoy the change we are experiencing,” Spisak remarked. “The pace of change is more radical than any we’ve previously experienced and it’s continually becoming faster and more frequent. Challenge yourself to share your ideas and your enthusiasm as we find new ways to make the Army better,” he continued. “Transformation requires that we get more done without more resources. The environment demands it and we can do it. Seek efficiencies in the ways you do your job and share your accomplishments with your colleagues so that they can benefit from your experience as well,” Spisak suggested.

“If I can offer one more piece of advice, push yourself to exceed your own expectations — personally and professionally,” Spisak proposed. “Set high goals for yourself and you will be rewarded with great accomplishments. Remember, have fun while you’re doing your job. We spend too much time at our professional employment to not enjoy it.

Experiment to find new and enjoyable ways to achieve your goals.” Spisak concluded his comments reminding all that Yakovac’s own advice for how to be successful as we toil to support our great Soldiers and ensure they have the best equipment in the world was “Balance. Without balance in our lives, no true successes are possible.”

For more information about ASC go to <http://asc.army.mil>.

*Mike Roddin is the ASC Strategic Communications Director and Army AL&T Magazine Editor-in-Chief.*

### ALMC, Webster University Establish Cooperative Degree Program

The U.S. Army Logistics Management College (ALMC) and Webster University established a cooperative master’s degree program that allows U.S. Army Acquisition Basic Course (AABC) graduates the opportunity to complete a master’s degree with Webster University through shared academic credits. The ALMC/Webster University cooperative degree program was developed in accordance with the American Council on Education’s Joint Statement on the transfer and award of credit.

Approved cooperative programs include master of business administration, master of arts in computer resources and information management, and master of arts in procurement and acquisition management degrees. To be eligible to apply to Webster, AABC graduates must have completed a bachelor’s degree at a regionally accredited institution and must submit an official transcript from that institution. Graduate Management Admission Tests and Graduate Record Exams are not required for admission. If students have already completed a previous graduate degree, they may be eligible to complete a sequential degree in one of the fields mentioned.

This opportunity is beneficial to students and agencies that provide tuition assistance, which may save up to \$3,850 for course credits earned through AABC. For more information or to schedule an interview, contact Kerry Coleman-Proksch at (703) 781-7942 or [belvoir@webster.edu](mailto:belvoir@webster.edu). Webster University’s Fort Belvoir Extension Center is located in Room 143, Barden Education Center.



LTG Joseph L. Yakovac Jr., Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics and Technology presents new ASC Director Craig A. Spisak with the ASC Charter. Spisak is the organization’s first civilian director. (ASC photo by Debbie Fischer-Belous.)



## FY06 Lieutenant Colonel/GS-14 PM/AC Board Results

The U.S. Army Human Resources Command's (AHRC's) Acquisition Management Branch (AMB) recently completed an analysis of the FY06 Product Manager (PM)/Acquisition Command (AC) Board results and overall command opportunity for Army Acquisition Corps (AAC) officers and civilians. The selection board was held Dec. 2-10, 2004, and the selection list was released May 17, 2005.

### Overall Results

Board members reviewed the files of 223 AAC members and selected 65 principals for PM/AC or contracting command. The selectees included 60 acquisition officers, two Medical Service (MS) Corps officers, two Reserve Component (RC) officers and two acquisition civilians. The overall selection rate was 29 percent. The military selection rate was 32 percent (61/192) and the civilian selection rate was 6 percent (2/31). Officer results by year group (YG) are as follows (not inclusive of revalidated or MS Corps officers): YG90 (2), YG89 (10), YG88 (29), YG87 (11), YG86 (4), YG85 (1), YG84 (0) and YG83 (1). This board was the first look for YG88 officers. Officers selected in basic YGs 89 and 90 were previously selected for promotion below the zone.

### Who Was Selected?

The two civilians and more than 90 percent of the selected officers previously served as assistant or deputy PMs or in equivalent functional positions. Additionally, 14 percent of the principal selectees have served in Joint or major headquarters staff positions such as the Office of the Secretary of Defense; Secretary of the Army for Acquisition, Logistics and Technology; Defense Contract Management Agency; and Army Materiel Command. Eleven of the 12 officers (91 percent) selected as contracting commanders had at least 2 years of contracting experience, 96 percent of the principal selectees have master's degrees. In addition, one officer has a Ph.D. and 29 AAC officers did not attend resident Command and Staff College but completed the nonresident course. Five principal selectee officers were female, and seven were minorities.

### General Observations

Strong performance and diversity of acquisition experience were common among selectees. However, exceptionally strong performance overcame lack of experience in some cases. The average number of DA Form 67-9 Officer

Evaluation Reports (OERs) was 6.0 for principal selectees and 6.2 for alternates. The average number of above-center-of-mass OERs under the DA Form 67-9 was approximately 4.32 (71 percent) for principal selectees and 2.84 (46 percent) for alternates. The first look continues to be the best look for PM/AC selection.

Civilians selected as principals and alternates had very strong comments on their performance evaluations and Senior Rater Potential Evaluations (SRPEs). In addition, they had previously been selected for either the Competitive Development Group program or Senior Service College, or had performed duties as deputy PMs.

It is imperative for officers to personally review their Officer Record Brief and Official Military Personnel File (OMPF) online to ensure their information is accurate. Approximately 120 days prior to the board convening, officers should check their OMPF online in the "My Board" file located at <https://isdtrad16.hoffman.army.mil/MyBoardWeb/MainPages/Welcome.jsp>. Officers will need to provide their AKO user name and password to access their board files.

Traditionally, the board meets every December. The automated selection board system is fully operational, and AMB will review files for officers in the zone of consideration approximately 30 days prior to the board convening date. Officers should have electronic official photos in the Department of the Army's Photo Management System and should replace photos that are more than 3 years old. AMB should also have a hard copy of officer photos. Attention to detail in the photos and in the files may make a difference, so review files early to be most competitive.

Though performance is a key factor for selection, captains and majors should seek career-broadening experiences to become competitive for future selection as a PM or AC. Officers should seek those jobs that offer experiences in contracting, program management, combat developments, science and technology and testing. With a limited number of positions in program offices and noncontingency contracting organizations, AHRC will continue to rotate captains and majors to ensure a sufficient pool of experienced, qualified officers for future PM and command positions.

Civilians should ensure their application packages are complete and contain all required documents. Special attention should be given to ensuring the data contained on the Acquisition Career Record Brief (ACRB) is accurate. Assignment dates reflected on the ACRB should match dates

shown on the résumé. Current ACRBs may be obtained from acquisition career managers and submitted with application packages. Discrepancies, such as missing evaluations, should be explained. Remember that the application package reflects your career and defines your training, education and experience to the board.

Civilians who apply for command boards appear to be most successful if career planning begins early. Establishing a track record of development and training, through assignments to staff positions at the program executive and/or PM office level appears to facilitate civilian selection.

It is critical that civilians work with their supervisors and senior raters to ensure that the appropriate comments appear in annual evaluations and SRPEs. For example, individuals who appear to have the skills or talent to assume PM duties should have that information documented and annotated on their evaluations. Senior raters should use SRPEs to identify those individuals who would most likely succeed as PMs.

Congratulations to the following lieutenant colonels, promotable majors and GS-14 PM/AC selectees:

Alexander, Scott Edward LTC	AAC
Alvarez, John Gerard LTC	MS
Amsler, Duane Ellis Jr. LTC	AAC
Armstrong, Scott Charles MAJ(P)	AAC
Balda, John Scott LTC	AAC
Bentley, Joseph Patrick LTC	MS
Blanco, James Allen LTC	AAC
Boruff, William Max LTC	AAC
Bosworth, Brian Eliot LTC	AAC
Brown, Keith Jeffrey MAJ	RC
Brunson, Kerry Patrick LTC	AAC
Burden, Patrick Wesley LTC	AAC
Carlsen, Marlin Jr.	CIV
Carter, Charles Allen LTC	AAC
Clements, Andrew Todd MAJ(P)	AAC
Cook, Thomas Stephen LTC	AAC
Courtney, John Michael LTC	AAC
Creech, Gregory Stuart LTC	AAC
Cunningham, Daniel Jordan LTC	AAC
Donovan, Sharlene Joy MAJ(P)	AAC
Fletcher, Robert Eric LTC	AAC
Garcia, Joseph Glenn LTC	AAC
Gresham, Shawn Patrick MAJ(P)	AAC
Grinsell, Christian Bernard LTC	AAC
Hannah, Robert John LTC	AAC
Hannon, John Patrick LTC	AAC

Harper, Robert Dale LTC	AAC
Heilig, Donald M. Jr. LTC	AAC
Higgs, Carl Barry LTC	AAC
Hill, Paul Marshall LTC	AAC
Keller, Winfield Rosenberry MAJ(P)	AAC
Laase, Gary Lee LTC	AAC
Lewis, John William LTC	AAC
MacDonald, Andrew Jay LTC	AAC
Mentzer, Rodney Allen LTC	AAC
Metts, Mel Mark LTC	AAC
Minus, Joseph Sheppard Jr. MAJ(P)	AAC
Nassar, Michelle MAJ(P)	AAC
Nieto, Anthony James LTC	AAC
Noe, Steven Michael MAJ(P)	AAC
Olsen, Robert Frans LTC	AAC
Raftery, James John Jr. MAJ(P)	AAC
Rasch, Robert Alan Jr. MAJ(P)	AAC
Receniello, Michael Joseph MAJ	RC
Richards, Clyde Ezekiel Jr. MAJ(P)	AAC
Sanders, William Alton LTC	AAC
Shifrin, Scott	CIV
Spear, Ronald Lee LTC	AAC
Statham, Alan Thomas LTC	AAC
Stawowczyk, Edward John LTC	AAC
Strange, Timothy John LTC	AAC
Swanson, Edward John LTC	AAC
Theall, Debora Lynn MAJ(P)	AAC
Theodoss, Michael David LTC	AAC
Todd, Thomas Hiram III MAJ(P)	AAC
Tolson, Todd Fitzgerald LTC	AAC
Tuftie, Bruce James MAJ(P)	AAC
Utroska, William Thomas LTC	AAC
Vogelhut, Jonas MAJ(P)	AAC
Voigt, Jeffrey Ralph LTC	AAC
Washington, Gail Lynn LTC	AAC
Wilson, Veronica Ann MAJ(P)	AAC
Womack, John Shannon LTC	AAC

### 2005 Acquisition Candidate Accession Board Results

The 2005 Acquisition Candidate Accession Board (ACAB) met May 2-5, 2005, to review the records of 248 officers who volunteered for accession into the Army Acquisition Corps (AAC). The Director of Officer Personnel Management approved ACAB's recommendations May 11, 2005.

ACAB recommended 119 officers from year groups (YGs) 96, 97, 98 and 99 to fill valid vacancies within the AAC. Congratulations to the following captains on their selection for accession into the AAC:

Adams, Freddy Lee II	Howell, Ryan Andrew
Alexander, Anree Carte	Hughley, Anthony Emanuel
Armstrong, Reginald Fritzger	Humphrey, Ian Woodin
Baird, Jacqueline Erin	Jackson, Kevin Darrell
Barnes, Ralph Raymond	James, Jeffrey David
Barnhill, Rob William	Jeffery, Jeremy Jay
Beal, Loyd III	Kaul, Michael Dale
Bentley, Donald B. II	Keena, Joshua Monroe
Bigelow, Mark James	Kelly, Frances Corine
Blanche, Ron L.	Kime, Matthew Jon
Bonnette, Freeman Terrill	King, Nathaniel Lee
Brown, Kermit Walter	Koschnik, Andrew Thomas
Brunet, Jeremy	Kovacs, Michael Joseph
Butler, Terry Lawrence	Lee, Jim Anthony
Cavaleri, Ruby Lee	Linz, Christopher Andrew
Christiansen, Michael Jacob	Lopez, Phillip Rey
Cisneros, Christopher A.	Lueders, Ryan Paul
Coburn, Jerry Eugene	Lunoff, Andrew Saul
Coddington, Leo Robert	Lyons, Jeffrey Bernard
Conde, Jason Ray	Maher, John Joseph
Conkle, Richard David	McBride, Marlon
Cornelius, Ashantas Katango	McDonald, Richard Mehran
Courtland, Christopher	McFall, Ben Patrick III
Cundy, William Todd	Mehochko, Daniel A.
Cunningham, William Michael	Mendez, Carlos R.
Damborsky, Matthew Wayne	Meredith, Steven Parker
Dargan, Cleveland Joseph	Merz, Wendy Ann
Denomy, Troy Michael	Miller, Burr Hans
Duus, Andrew John	Moore, Richard Brian
Dye, Mary Elizabeth	Morgan, Raymond Henry III
Ellison, Theresa Latrell	Muller, August IV
Emery, Christopher B.	Nasif, George Goddard
Enderton, Christopher	Niles, Altheria Major Jr.
Galloway, Christopher Todd	Noda, Kyle Anton
Garris, William A.	Palmeter, Daniel Robert
Garrison, Richard Carter	Pfeiffer, Richard Howard Jr.
Gilman, Andrew Luke	Pollard, Gregory Todd
Harper, Curtis Neal	Reiling, Darin Steven
Harrison, Gary Joseph Jr.	Rivera, Johnny
Helmore, Scott Edward	Rosadopadilla, Angel Ramon
Hemingway, Corey Pernell	Ross, Jason Wallace
Hernandez, Russ A.	Rudometkin, David James
	Ruiz, Arturo
	Rumbley, Stephen Paul

Rush, Joseph J. Jr.  
Sawyer, Jay Clifton  
Schow, Ronald D.  
Schrock, Kevin James  
Scooler, David James  
Shepherd, Eric Leroy  
Sims, Shane Derek  
Skrabanek, Bruce Alan  
Smart, Shawanta Depree  
Smith, Brian Jeffrey  
Snipes, Christopher Wayne  
Spencer, Gregory Dinwiddie  
Spurlock, Brian M.  
Stanton, Derrick  
Stubblefield, Lisa Cheryl  
Tam, Jenny Kai Yee  
Tande, Bradley Christian Jr.

Tanglao, Dominic John  
Taylor, David Lee Jr.  
Taylor, Mark Ryan  
Tolbert, Derrick Leon  
Tran, Pon Van  
Troncoso, George  
Vandeweg, Eric Dean  
Vaughan, Brian David  
Venable, William Robert  
Waddy, Josh Lee  
Weakley, Wallace Edward Jr.  
Welcher, Kwane Emenike  
Williams, Archie Larell Jr.  
Williams, Isaac Abayomi  
Williams, Kareem Montigo  
Wilson, Gordon L.

## News Briefs

### Distributed Learning System (DLS) Enhances Soldier Readiness

*COL Sharon Holmes*

Everywhere you look today, managers are emphasizing the importance of advanced technology integration and a decided need for a better-educated workforce. This focus is becoming readily evident in the corporate world, government, military and academia. There is a revolution underway to leverage advanced technology, and training in the U.S. Army is no exception. Faced with funding cuts, tremendous operations tempo, great demands on troop strength and a need to mobilize quickly in response to worldwide situations, the Army is emphasizing more than ever training programs that directly support Soldier readiness.

“The overriding premise is that we will provide forces fully trained and with the best equipment we can provide,” remarked U.S. Army Forces Command Mobilization Director BG Gary A. Quick. “There will be no exception to that rule.” In a similar statement, Army Surgeon General LTG James Peake stated that “it’s all about the readiness of the Soldier.” Peake knows because the Medical Corps has made

it a priority to deliver training when and where it is needed using advanced technology.

Soldier readiness necessitates training on-demand — anywhere, anytime, 24/7. The Army is embarking on a course of action that will revolutionize the way training is done. DLS is breaking old training paradigms by bringing training to Soldiers whenever and wherever needed.

DLS is the infrastructure that delivers distributed learning (DL), providing Soldier, unit and mission-critical training to support both synchronous training where the instructor and student interact while linked via videoconferencing, teleconferencing or the Internet, and asynchronous training where the instructor and student interact via e-mail and the Internet. DL instruction may not even require an instructor's presence. It can involve several types of media, and emphasizes the use of reusable content, networks and learning management systems.

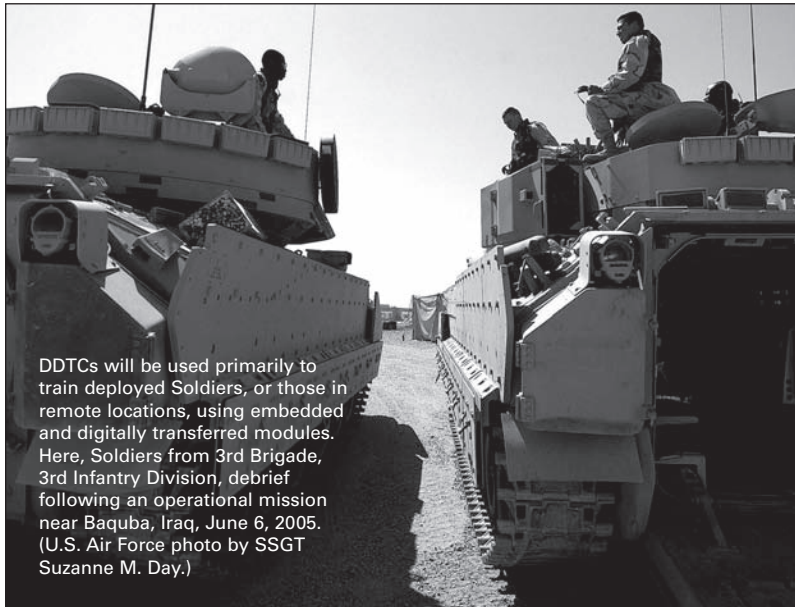
### Background

In 1995, Army Chief of Staff (CSA) GEN Dennis J. Reimer directed the Army to develop a program for training Soldiers and units by leveraging information technology (IT). The U.S. Army Training and Doctrine Command (TRADOC), the Army's training architect, developed a plan and presented it to the CSA for approval, who then directed The Army Distance Learning Program (TADLP) implementation in April 1996. The program has since been renamed The Army Distributed Learning Program, which more accurately describes the program.

The DLS Project Management Office (PMO) is a TADLP component. DLS supports "one-standard-training" provided through The Army School System, U.S. Army Reserve and Army National Guard. DLS's mission is to increase and sustain force and unit readiness through a broad range of training options that meet unit operational needs and individual Soldier and civilian requirements.

### The Army's System for DL

The DL solution the Army has embraced is DLS, which comprises several different components, including Digital



DDTCs will be used primarily to train deployed Soldiers, or those in remote locations, using embedded and digitally transferred modules. Here, Soldiers from 3rd Brigade, 3rd Infantry Division, debrief following an operational mission near Baquba, Iraq, June 6, 2005. (U.S. Air Force photo by SSGT Suzanne M. Day.)

Training Facilities (DTFs), the Army Learning Management System (LMS), Army e-Learning, an Enterprise Management Center and the development of Deployed Digital Training Campuses (DDTCs). DLS provides Army leaders at senior and unit levels and training officers and noncommissioned officers (NCOs) with a powerful tool to manage their Soldiers' careers from one central-

ized location, thereby saving time and money. Additionally, it provides Soldiers access to training at the right place and right time worldwide. Soon, it will provide Soldiers the ability to track their own training history.

DLS is breaking old training paradigms by bringing training to Soldiers whenever and wherever needed.

DTFs provide Soldiers with an on-base location to access Web-based job-related and professional development courses away from the workplace and distractions of home. So far, 274 DTFs are operational in the United States, Germany, Belgium, Italy, Korea and Japan. In addition to training at DTFs, Army personnel can access training from anywhere they have computer and Internet access.

PMO DLS has also developed the exciting new Army LMS, which is currently being fielded.

This powerful technology provides 24/7 access to content management and collaboration with other students and instructors. From the office, home or DTF, Soldiers can meet their DL needs, including access to content, course catalogs and schedules, collaborative resources and training history. The combined capabilities of DLS and the Army LMS will make training more efficient, delivery more flexible and provide Soldiers the ability to track their own training histories. Army LMS has the potential to touch every Soldier and civilian workforce member. The Army LMS will be the single source for Soldiers and their leaders to see training deficiencies, and to address and direct their Soldiers to take the training they need to correct those deficiencies.

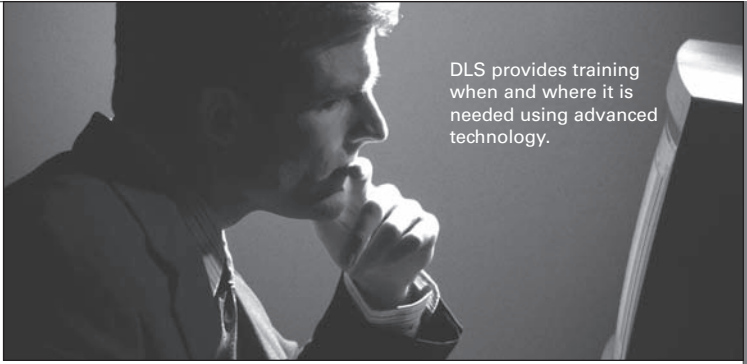
DLS is officially moving forward with DDTCs, the fourth component of its acquisition strategy. Each DDTC is a mobile, networked system of 20 notebook computers, a server, printer and equipment to transfer digital information to and from satellites. DDTCs will be used primarily to train Soldiers on foreign soil or in remote areas that are not accessible to the DLS DTFs. DDTCs will also be used to mitigate training demands and equipment shortages brought about by surge conditions on Army force projection installations. Two DDTCs will be built for each active Army division (approximately 20 systems) and 10 DDTCs will be built for surge support. The surge support systems will be maintained and deployed by TRADOC. Final DDTC design approval is scheduled for October 2005 with prototype production to be completed by February 2006.

### Army e-Learning

The latest Army DLS component is Army e-Learning. The Army e-Learning Program provides every Active Duty Soldier, National Guardsman, Reservist, ROTC Cadet and Army civilian access to more than 1,500 Web-based IT, business, leadership and personal development courses. These courses are free to individuals and their organizations and are Internet-accessible 24/7. Army e-Learning benefits include:

- Opportunities for promotion points.
- Certification programs.
- Continuous learning points.
- Some college course accreditation.

DL affords Soldiers many benefits, including increased training flexibility and opportunities and less time away



from their duty stations and families. Benefits also include improved training coordination and information access for Soldiers, leaders, training officers and NCOs in determining training requirements and status.

DLS provides the ability to distribute standardized training to individual Soldiers and units through IT application.

For more information about DL training opportunities and course content, links to your nearest DTF and the Army LMS, visit DLS at [www.dls.army.mil](http://www.dls.army.mil). To access Army e-Learning go to <http://usarmy.skillport.com>.

*COL Sharon Holmes is the Project Manager DLS, Newport News, VA.*

### New Fort Detrick Office Assists Small and Disadvantaged Businesses

*Karen Fleming-Michael*

Business, elected and military leaders huddled in the lobby of the new Fort Detrick, MD, Business Development Office (BDO) March 22 to celebrate its official opening. Located off post at 201 Thomas Johnson Drive, the office will serve as a bridge for businesses, nonprofit groups, academic institutions, local government and community organizations that want to work with Fort Detrick organizations.

“The important thing for us is that Fort Detrick and all its tenants are opening up doors for businesses based here,” explained Frederick Mayor Jennifer Dougherty at the ceremony. “I think it’s great that everybody opened up their ears and minds, then opened up the gates, in a figurative way, by setting up this office.”



Soldier readiness necessitates training on-demand — anywhere, anytime — and DLS delivers. Here, 2nd Battalion, 69th Armor Regiment, 3rd Infantry Division, Soldiers search for insurgents on the banks of the Diyala River near Baquba, Iraq, June 3, 2005. (U.S. Army photo by SPC Gul A. Alisan.)



Grand Opening/Ribbon Cutting with Sen. Barbara Mikulski; Rep. Roscoe Bartlett; Tracey Pinson, Director, Army Office of Small and Disadvantaged Business Utilization; MG Martinez-Lopez, then Commanding General, U.S. Army Medical Research and Materiel Command and Fort Detrick; along with local political and business leaders.

The BDO offers a “streamlined way to help guide businesses through the process of selling items and services to the government — and also assists those who can transfer our basic research and technology to private industry,” remarked MG Lester Martinez-Lopez, then Commanding General, U.S. Army Medical Research and Materiel Command (MRMC) and Fort Detrick. “The professionals who work at this beautiful facility are going to be able to explain every step, so no business loses out on an opportunity to work with Fort Detrick simply because they got lost or overwhelmed by all the requirements and processes,” he continued.

Detrick personnel — including Office of Small and Disadvantaged Business Utilization members — will staff the BDO. The Maryland Technology Development Corp., Frederick County Office of Economic Development and Maryland Department of Economic Development will also provide support.

At the ceremony, Rep. Roscoe Bartlett recalled his contracting experiences with “red tape” in the years before taking public office. “We envisioned a facility just outside the gate where government and small business representatives could get together,” he said. “The government genuinely wants to access small businesses because we know there’s a lot of creativity and entrepreneurship that taxpayers are not able to

take advantage of because people are intimidated by the [perceived] red tape and the impersonal approach [of doing business with the government],” Bartlett explained.

Jerome Maultsby, Associate Director for Small and Disadvantaged Business Utilization, MRMC, Fort Detrick, plans to work at the office at least one day a week.

“We understand the required security at the front gate represents a barrier and sometimes limits how firms can market to the installation,” Maultsby admitted in a 2004 interview. “Hopefully this initiative will demonstrate to the small business community in Frederick that we’re reaching out and they can learn more about business opportunities within Fort Detrick and vice versa.”

The office’s staff will offer free advisory services, training on government contracting and a database of projected procurement opportunities for all units at Fort Detrick.

Martinez-Lopez thanked Sen. Barbara Mikulski, Sen. Paul Sarbanes and Bartlett for their help in creating the office and assistance in getting funding

to help transfer technology “so the great products we create can find homes with companies that want to carry them forward to help our military and our Nation,” he said.



William Askinazi, Assistant Secretary for the Maryland Department of Economic Development, presents MG Lester Martinez-Lopez a citation recognizing him and the Fort Detrick BDO for their “spirit of enterprise and initiative in bringing innumerable benefits” to the people of Fort Detrick and the community. (U.S. Army photo by Larry Sorcher.)

Technology transfer was a cause Mikulski championed on Capitol Hill. “I was interested in the innovation economy,” Mikulski offered. “What were the smart, new ideas coming out of our military research, particularly in biotechnology, that could be transferred to the civilian economy without giving up important national security secrets? We [Bartlett, Sarbanes and Mikulski] were able to come up with the federal funds to do it.”

On behalf of Maryland Gov. Robert Ehrlich, Assistant Secretary for the Maryland Department of Economic Development William Askinazi presented Martinez-Lopez with a citation recognizing him and the office for their “spirit of enterprise and initiative in bringing innumerable benefits” to the people of Fort Detrick and the community.

Following the speakers’ remarks, the center officially opened with a ribbon-cutting ceremony to symbolize the end of contracting bureaucracy. Then about 75 business community representatives toured the new office.

“I just hope it’s always this crowded,” said Fort Detrick Principal Assistant Responsible for Contracting Paul Michaels.

*Karen Fleming-Michael is a Staff Writer with the Fort Detrick, MD, Public Affairs Office.*

## Wells to Lead DCS-E

*Bob Fowler*

LTC Charles A. Wells accepted the charter for Product Manager, Defense Communications Systems–Europe (DCS-E), from Deputy Program Executive Officer (PEO) for PEO Enterprise Information Systems (EIS) COL Tom Hogan and outgoing Program Manager (PM) for DCS-E LTC Simon Holzman in a ceremony held in Mannheim, Germany, May 26, 2005. Wells, a University of Illinois and Webster University graduate, formerly served as Operations Chief at the U.S. Army Acquisition Support Center, Fort Belvoir, VA.

Also participating in the ceremony were BG Carroll F. Pollett, Commanding General, 5th Signal Command, U.S. Army Europe G-6, and Dolores Mancini, Acting PM Defense Communications and Army Switched Systems (DCASS) — PM DCS-E’s parent organization.



Deputy PEO EIS COL Tom Hogan (right) presents the PM DCS-E charter to LTC Charles A. Wells, the incoming PM DCS-E. (U.S. Army photo by Bob Fowler.)

PM DCS-E provides a robust and scalable networked information infrastructure in support of Army installations, other support activities and deployed combat forces in the European theater. DA is the lead military department for the voice portion of Installation Information Infrastructure Modernization Program and PM DCS-E is the in-theater PM.

*Bob Fowler, a Sytex Inc. employee, serves as staff photographer for PM DCASS and the Fort Monmouth PEO EIS Strategic Communications and Outreach Directorate.*

## LTC Kilgallon Becomes New PM AHRS Leader

LTC John Kilgallon was named Product Manager, Army Human Resource System (PM AHRS), during a Change of Charter Ceremony held June 17, 2005, at Fort Belvoir, VA. The ceremony was held at Headquarters, Program Executive Office for Enterprise Information Systems (PEO EIS) and was officiated by Lee Harvey, Deputy Program Executive Officer, PEO EIS.

Kilgallon is a 1986 Distinguished Military Graduate of Johns Hopkins University and has been an Army Acquisition Corps (AAC) member since 1995. He replaces LTC Joseph Klumpp, who has been at AHRS’s helm for the last 3 years.

During his tenure, Klumpp’s AHRS team replaced Standard Installation/Division Personnel System-3 (SIDPERS-3) with a Web-based Electronic Military Personnel Office



LTC Joseph Klumpp (left), former PM AHRS, relinquishes his charter to LTC John Kilgallon (right). Deputy PEO EIS Lee Harvey officiates during the ceremony held at Fort Belvoir, June 17, 2005. (U.S. Army photo by Richard Mattox, PEO EIS.)

(e-MILPO) system. The e-MILPO system won a Government Computer News Agency Award in October 2004. The AHRS team developed the myERB Web site, which has produced more than 3 million Enlisted Record Briefs in 18 months. The AHRS team also completed the migration of personnel tempo functionality to eMILPO. And most recently, the team developed, tested and fielded Deployed Theater Accountability Software, which the U.S. Marine Corps has adopted. This has saved the Corps millions in research and development dollars.

*Klumpp is retiring after 21 years of active service. He received a regular Army commission upon graduation from James Madison University in 1984 and has been an AAC member since 1992.*

## ALTESS News

### Army Acquisition Business Enterprise Architecture (AABEA)

*MAJ Steven Lundy*

The Product Manager for Acquisition, Logistics and Technology Enterprise Systems and Services' (ALTESS') AABEA team recently celebrated a milestone. Less than a year ago, the Assistant Secretary of the Army for Acquisition, Logistics

and Technology's (ASAALT's) Requirements Management Office (SAAL-RB) charged ALTESS with the responsibility of documenting the acquisition community's business systems architecture. The primary and most immediate purpose was to meet an HQDA directive to reduce the number of information technology (IT) systems the acquisition community was using to conduct business. It was generally accepted that the community managed and used more than 200 IT systems and the goal was to develop a plan to significantly reduce that number.

The AABEA team was formed to take on this challenge. The project was structured with the goal of responding to the SAAL-RB objective. Using a 6-month deliverable schedule, ALTESS and Northrop Grumman planned the delivery of architecture products focused on answering the questions SAAL-RB had concerning the hundreds of systems it managed.

On April 3, the AABEA team delivered to SAAL-RB the first version of Acquisition Domain Artifacts, based on the Department of Defense Architecture Framework. They are also referred to by ALTESS as AABEA v1.0. The Acquisition Domain Governance Team (ADGT) accepted artifact management control April 13, 2005. The AABEA team is now designing the upgrades for Architecture v2.0, to be delivered in October 2005. To view AABEA v1.0:

- Log into the Army Knowledge Online Home Page at [www.us.army.mil](http://www.us.army.mil).
- Click on the Files icon in the yellow upper right box.
- Click on **U.S. Army Organizations** in the far left box highlighted in white.
- Click on **Acquisition**.
- Under Knowledge Centers, click on **BMMP Acquisition Domain**.
- Click on **ADGT**.
- Click on **AABEA v1.0**.

Questions concerning AABEA v1.0 can be directed to LTC Patrick Burden at (703) 604-7444 or [patrick.burden@hqda.army.mil](mailto:patrick.burden@hqda.army.mil). Questions or comments concerning AABEA v2.0 can be directed to MAJ Steven Lundy at (703) 601-4720 or [jacques.lundy@asc.belvoir.army.mil](mailto:jacques.lundy@asc.belvoir.army.mil).





## Web Services and Service-Oriented Architectures

Raymond S. Soroka

*"[We must] leverage information technology and innovative network-centric concepts of operations to develop increasingly capable Joint forces. Our ability to leverage the power of information and networks will be key to our success."*

— Deputy Secretary of Defense Paul Wolfowitz

*"The overarching objective of the GIG [Global Information Grid] vision is to provide the National Command Authority [NCA], warfighters, DOD personnel, intelligence community, business, policymakers and non-DOD users with information superiority, decision superiority and full-spectrum dominance."*

— National Security Agency Web Site

These statements point out why DOD has a new concept of operations for achieving information superiority. This concept revolves around Network-Centric Enterprise Services (NCES). NCES dictates that all data and services will be built and componentized as Web services in the GIG's Service-Oriented Architecture (SOA) environment. Specifically, NCES provides the guidance for engineering and managing four primary layers of the information grid: data, services, information assurance/security and transport.

There are many definitions for the term Web service. In his *Federal Computer Week* article "Clearing the view ahead ..." Brian Robinson wrote that, "A Web service is a software-based, open-standards method for enabling two or more software applications to communicate across the public Internet or a private network, no matter what programming language the applications are written in or what hardware platforms they run on."

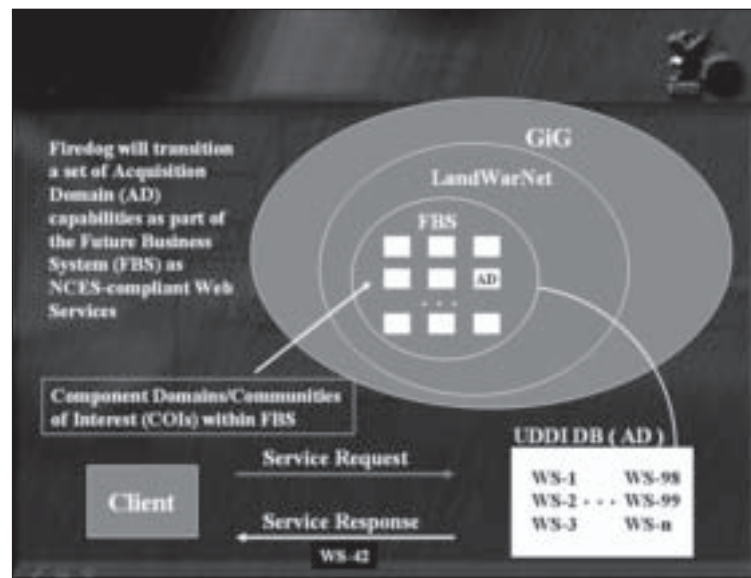
An architecture composed of Web services is an SOA. The Acquisition Information Management (AIM) system is in transition to correlate with these initiatives. The overarching plan for achieving this AIM transformation is called Operation Firedog. Firedog's mission statement centers on the following two main points:

- Transition mission-essential AIM capabilities and the acquisition database into an NCES-compliant function and knowledge repository.
- Position these capabilities and data as interim, evolutionary components with the Future Business System (FBS).

Firedog will transition three acquisition domain (AD) capability types — data, functional and commercial-off-the-shelf — as part of the FBS as NCES-compliant Web services. A draft operational architecture is depicted in Figures 1 and 2.

Five primary objectives have been identified for Operation Firedog as follows:

- Create an online AD portal component.
- Create an SOA for interoperable product manager (PM) services.
- Transform AIM into a data-centric, globally interoperable system.
- Create the AD repository for published and discoverable acquisition Web services.
- Define and publish the AD rules of interoperability for the AIM services.



**Figure 1. Operation Firedog Operational Architecture (Draft v1.0)**

Methods for achieving these objectives include the following:

- Build the Acquisition Domain Universal Description, Discovery and Integration (UDDI) directory of services.
- Define the AD data Web services.
- Define the AD functional Web services.
- Integrate and interoperate with existing AD components.
- Create the AD portal.
- Transform existing AIM applications into globally accessible and discoverable Web services.
- Align with Office of the Secretary of Defense objectives.

A key aspect of this transformation includes extending the current PM for Acquisition, Logistics and Technology

Enterprise Systems and Services (ALTESS) data strategy — Common Organizational Database Infrastructure For everyOne (CODIFY) — including NCES goals and objectives. This is called NCES-CODIFY and covers three broad mission areas:

**NCES-CODIFY Mission Area 1 — Data Strategy**

- Align with NCES data strategy.
- Align with Army Knowledge Management goals and objectives.
- Standardize data elements per DOD and Defense Information Systems Agency Standards.
- Align with the DOD Extensible Markup Language Data Registry.
- Maintain the acquisition data dictionary.
- Eliminate data redundancy.
- Enable single sign-on and common access card capability.

**NCES-CODIFY Mission Area 2 — Process Strategy**

- Pre-CODIFY assessment.
- Standardize the data.
- Create control layer.
- Create view layer.
- Migrate data.
- Create Web service to expose data.
- Register with UDDI.
- Post-CODIFY maintenance.

**NCES-CODIFY Mission Area 3 — Architecture Strategy**

- Align with DOD architecture foundations.
- Implement via standards.
- Define and publish interfaces.

- Integrate with other DOD SOA components.

The Assistant Secretary of the Army for Acquisition, Logistics and Technology and Program Executive Office for Enterprise Information Systems sponsor this project.

*Raymond S. Soroka is an Applications Integration Supervisor and the AIM Group leader. He joined PM ALTESS in 1988 and has served in both the Engineering and Applications Divisions. Soroka has a B.S. degree in mathematics and computer science from Wilkes University, Wilkes-Barre, PA.*

**Contracting Community Highlights**



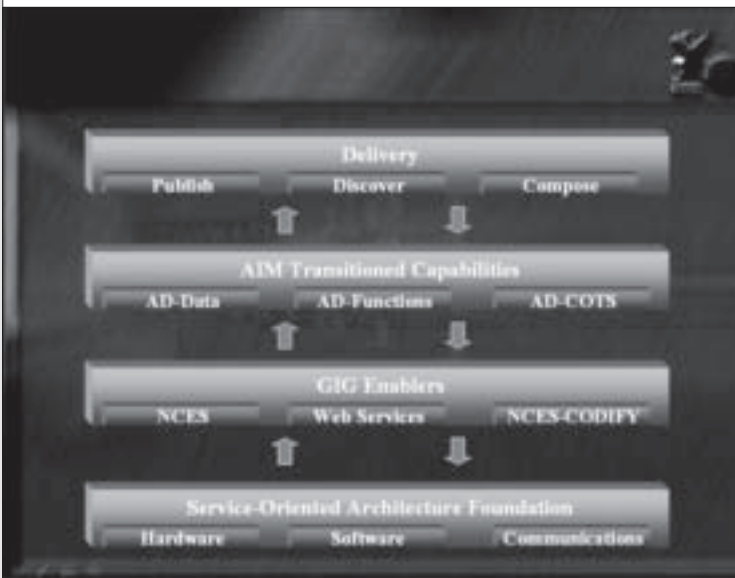
**C**ontingency contracting is an important element of Soldier support. In *Army AL&T Magazine's* November-December 2004 feature contracting article, we detailed the training contingency contracting officers (CCOs) receive at the National Training Center Acquisition Command at Fort Irwin, CA. This issue's feature article provides an enlightening perspective on CCOs, presents the background and current working environment surrounding CCO development and provides personal insight for future CCO development.

In addition to this section's feature article and the regular "DAR Council Corner," we have news of note from a number of our contracting organizations. We are also pleased to recognize CP-14 personnel who recently graduated from the Sustaining Base Leadership and Management program.

We appreciate the continued support from the field in providing material for publication, and we hope you find the submissions informative and interesting. If you need more information on any of the topics presented, contact Emily Clarke at (703) 604-7102 or [emily.clarke@hqda.army.mil](mailto:emily.clarke@hqda.army.mil).

**Ms. Tina Ballard**

Deputy Assistant Secretary of the Army (Policy and Procurement)



**Figure 2. Operation Firedog Operational Architecture (Draft v1.0)**

## Contracting Commanders and Installation DOCs—Advocates and Mentors for Contingency Contracting Soldiers

*LTC Jaimy Rand, MAJ Derrick A. Mellberg and MSG Christopher Chapple*

Installation contracting offices, particularly those at Army power projection platforms, serve as training grounds for a bulk of today's CCOs. CCOs are both officers (51C) and noncommissioned officers (NCOs) — primarily military occupational specialty (MOS) 92A/Y with a G1 identifier of contracting agent — who deploy and perform purchasing and contracting functions during contingency operations. For many reasons, contracting commanders (CCs)/directors of contracting (DOCs) at installations with CCOs must be mentors and advocates to their CCOs.

CCs and DOCs serve as the only means for a CCO to obtain on-the-job training (OJT). While conducting OJT, they approve CCO requests to obtain/attend Defense Acquisition University contracting courses. Fulfilling both of these requirements enables CCOs to become certified in the contracting career field. Certification leads to warranting by a Principle Assistant Responsible for Contracting (PARC), providing CCOs with full authority to perform contracting functions. Without this authority and training, CCOs can't add value to their warfighting customers.

Current policy requires Soldiers transitioning into acquisition to be educated and trained per *Defense Acquisition Workforce Improvement Act* standards and to be used in an acquisition role. This applies to officers as they are accessed from all Army branches into the acquisition community. Conversely, because NCOs are fairly new to Army contracting, the Army contracting community must compete with the Quartermaster Branch (primarily) to recruit and retain quality NCOs in contracting positions. Until contracting becomes an MOS, this will continue to be an issue.

### Meeting Surge Requirements

CCOs have typically been assigned as division and corps assets and have trained and performed duties at local installation contracting offices. In the past, CCO deployment tasks originated at DA or major command level, arrived at the installation and were filled through a coordination process between the CC/DOC and the CCO's parent unit commander. This process was handled with relative ease until the beginning of *Operations Enduring Freedom* and

*Iraqi Freedom (OEF/OIF)*, and the subsequent impact of modular conversion.

*OEF/OIF* generated a great need for CCOs — more than the Army could handle. This was nothing new, because the Army's recent experience in the Balkans also dictated a requirement larger than the Army acquisition community was prepared to handle. Without the able, steadfast support of our sister services, the Army's CCO mission could not be adequately performed, especially because contingency contracting fulfilled much of the G-4 role in the wartime theater.

Additionally, new modular organizational designs increased the requirement for CCOs. Combatant commanders, realizing the true value of CCOs in a deployment situation, demand hands-on control of their CCO assets and are reluctant to release CCOs to the control of a warfighting PARC. It is critical to inform combatant commanders that CCOs cannot perform outside a warfighting PARC's authority. These commanders must also realize that even if performing operational control to the PARC, their CCOs will not be able to devote all their efforts to their unit's contracting requirements. Given CCO shortages and varying levels of experience in this high-demand environment, the theater PARC is best suited to decide how and where to allocate CCOs.

Contracting Soldiers must work at the installation contracting office to fulfill certification requirements. Consequently, they don't get as much visibility from their parent unit commanders as their counterparts who work daily in unit offices. Therefore, combatant commanders are often completely unaware of CCOs' contributions and potential.



CCOs in Tikrit, Iraq (left to right, standing): CPT Patrick Nelson, U.S. Air Force (USAF); MAJ Bill Hall, deployed from Fort Hood Contracting Command (CCMD); LTC Richard Roberts, Office Chief; LTC Jaimy Rand, visiting from Fort Hood CCMD; COL David Glowacki, USAF, PARC Forces, Joint Contracting Command-Iraq; and (kneeling) MSG Ben Fernandez, visiting from Fort Hood CCMD.



(From right) Iraqi support contractors in Kirkuk, Iraq, work with U.S. Navy CDR Barbara Tucker (second from right) and SGT David Acevedo (far right) from the Fort Hood CCMD.

Given these facts, when CCOs are evaluated, many of them cannot compete with their captain/major and NCO counterparts who are performing company commander, S3, executive officer, supply sergeant, S4/G-4 NCO in charge (NCOIC) and first sergeant duties. This often results in CCOs receiving lower ratings than deserved. Additionally, even if there were enough CCOs to allow each one to fulfill only his or her assigned unit's contracting requirements and gain needed visibility, working directly for the warfighting chain of command, unfortunately, create a conflict of interest or a condition that connotes undue command influence. For these reasons, CCs/DOCs and the contracting hierarchy, including the PARC, must serve as the CCO's rating chain.

### Planning for the Future

With the Army's modular conversion, an acquisition modified table of organization and equipment (MTOE) is planned. The days of CCOs being assigned to nonacquisition commands will be over. Instead, CCOs will be assigned to a warfighting CC. Given this imminent change, it makes sense for CCs/DOCs to become actively involved now to ensure a smooth transition and the well-being of Army CCOs.

Finally, given the high operations tempo of Army CCOs and the demand for them in theater, it is critical that this low-density specialty be centrally managed. This is perhaps the most critical reason why CCs/DOCs must be the CCOs' advocate. In many cases, CCs/DOCs are the senior acquisition officials on an installation. In that role, they should oversee CCO training, education and employment. In a garrison environment, they are solely responsible for making this happen. For deployment requirements, CCs/DOCs, in conjunction with the warfighting PARCs,

are best qualified to determine which CCOs deploy and when. Allowing combatant commanders to make those decisions can create situations where CCOs are put in harm's way for the wrong reasons.

Many warfighting commanders insist on deploying CCOs whose positions are on the commanders' MTOEs. This may lead to a CCO working in a unit location away from the contracting office. Such a deployment causes an inexperienced CCO to fall behind in learning the contracting function and attending the mandatory courses required for certification. Ultimately, this places CCOs behind their peers in professional development and experience. In such a situation, experienced CCOs are often overqualified and unable to contribute to the contracting mission in theater, while other CCOs — who are properly employed — work short-handed for the warfighting PARC to get the job done. These two examples illustrate why CCs/DOCs must stay actively involved with their CCOs, quelling the many misperceptions regarding CCO utilization. If CCs/DOCs don't stay engaged and manage CCOs appropriately, the contracting Soldier pays the price professionally and customers don't get the support they need.

What return on investment do CCs/DOCs get for CCO advocacy? As uniformed contracting professionals, CCs don't necessarily have the technical contracting experience that DOCs have, but they have the leadership responsibilities to prepare for and lead contracting operations in theater. Additionally, they must train and mentor all contracting personnel — military and civilian — in a garrison environment to become senior contracting professionals and managers. They must focus the entire workforce on ensuring individual development plans are established and executed for all contracting professionals.

Conversely, DOCs usually have years of contracting experience and wouldn't feel the need to prepare contracting Soldiers for wartime contracting missions, or stay engaged in their professional development. In many cases, as soon as CCOs receive a minimal amount of OJT, they deploy and the installation contracting office receives no direct contribution for the OJT provided. Some civilians feel the OJT responsibility for CCOs is an added burden they don't need, given their overflowing plate of critical contracting requirements.

The reality is that OJT can be a burden. Contracting professionals — the majority of whom are civilians — must find ways to leverage the training they provide while maintaining focus on the bigger goal of providing customer

service, both directly and indirectly. By training CCOs, experienced contracting professionals are indirectly serving customers by providing seasoned military contracting professionals to work under warfighting PARCs. Even though these benefits are not visible immediately, these contributions will be recognized upon CCO redeployment and when the new acquisition structure is implemented. With a stronger foundation, trained CCOs can better assist with mentoring and training new contracting Soldiers. Supporting this additional duty minimizes the need to train and deploy larger quantities of emergency-essential civilians.

CCs/DOCs must assume senior acquisition professional roles and ensure the well-being of contracting Soldiers. Combatant commanders, despite their best intentions, generally don't understand the contracting process and the associated authoritative hierarchy to make the correct decisions regarding CCO use. This concept is being implemented at Fort Hood, TX, and, thus far, results have been positive. Fort Hood CCOs are recognized as true force multipliers.

*LTC Jaimy Rand is the Commander, Army Contracting Agency Fort Hood Contracting Command.*

*MAJ Derrick A. Mellberg is the Chief of Contingency Contracting for Fort Hood's Contracting Command.*

*MSG Christopher Chapple is the NCOIC of the Fort Hood Contracting Command (CCMD) and the senior enlisted advisor to the commander Fort Hood CCMD.*

## USACCE Presents Contracting Excellence Awards

On May 3, 2005, the U.S. Army Contracting Command-Europe (USACCE) presented its 2004 Awards for Contracting Excellence during the Contracting Command's Annual Conference (EURCON) in Bassano del Grappa, Italy. The awards ceremony was attended by 110 contracting professionals and several distinguished guests, including Tina Ballard, Deputy Assistant Secretary of the Army for Policy and Procurement, Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology; Levator Norsworthy Jr., Deputy General Counsel (Army Acquisition); Tracey Pinson, Director, Office of Small and Disadvantaged Business Utilization, Office of the Secretary of the Army; and Sandra Sieber, Director, U.S. Army Contracting Agency.



Sandra Sieber (right) and COL Victoria Diego-Allard (front, left) present an Outstanding Contracting Support Award to personnel from RCO Wuerzburg. (U.S. Army photo by ACA EURCON.)

COL Victoria Diego-Allard, USACCE Commander, hosted the event and presented the awards.

The 14 awards presented for outstanding achievement and mission accomplishment during FY04 follow.

### Recognition for Outstanding Contracting Support

Contracting Officer's Representative:

- Silvano Rizzo, Construction Inspector, 22nd Area Support Group (ASG), Vicenza, Italy.

Outstanding Customers:

- Government Purchase Card Program: James R. Buerer, HQ American Forces Network-Europe, Mannheim, Germany.
- Installation Management Agency-Europe: Greg Vallery, Environmental Division, 22nd ASG, Vicenza.
- Army in Europe: 1LT William Phillips, 12th Aviation Brigade, Giebelstadt, Germany.

### Outstanding Support to Contingency Contracting

Emergency Essential Civilian: Thomas Copeland, Wiesbaden (Germany) Contracting Center (WCC).

Military Officer: MAJ Keith Taylor, WCC.

### Outstanding Contribution to Contracting Excellence

Procurement Analyst: Joanna Rodriguez, WCC.

Contract Specialist: Patrizia Meloni, Regional Contracting Office (RCO), Vicenza.

### Contracting Professional of the Year

Civilian: Eileen Hipe, RCO Wuerzburg, Germany.



Sandra Sieber (front, left) presents an Outstanding Contracting Support Award to personnel from RCO Vicenza. (U.S. Army photo by ACA EURCON.)

Military Noncommissioned Officer: MSG Daryl Gonzales, RCO Vicenza.

Military Officer: MAJ William Bailey, RCO Vicenza.

**Outstanding Contracting Team or Division**

Team A, Division B, WCC.

**Best Contracting Office**

Tie: RCOs at Vicenza and Wuerzburg. (Note: This is the fourth year in a row that RCO Vicenza was recognized as the “Best Office.”)

**Army Management Staff College (AMSC) Contracting and Acquisition Career Program (CP-14) Students Graduate**

AMSC prepares military and civilian sustaining base leaders to support our Soldiers’ mission in times of conflict and peace. One available course of study to achieve this goal is the Sustaining Base Leadership and Management (SBLM) program. The SBLM program provides graduate-level professional development across all Army functional areas. Students learn Army business and develop key skills including leadership, communication and problem solving. The next generation of leaders is preparing to guide the Army’s sustaining base operations and programs, including getting Soldiers, supplies and equipment to the battlefield; sustaining the Soldiers while they are there; returning them home after the conflict ends; and ensuring the self-sufficiency of their families while they are away.

Congratulations to the following SBLM Class #05-01 CP-14 graduates.

- Achord, Kathleen A.      Lead Contract Specialist  
Savannah, GA
- Eldien, Billie J.      Contracting Officer  
Fort McCoy, WI
- Evans, Christopher A.      Contract Specialist  
Redstone Arsenal, AL
- Gillies, Kim L.      Contract Specialist  
Redstone Arsenal
- Gurney, Raynette H.      Procurement Analyst  
Seckenheim, Germany
- Hayes, Stephen E.      Deputy Product Manager  
Redstone Arsenal
- Kennedy, Bonnie S.      Procurement Analyst  
Fort McPherson, GA
- Lee, Jo-Ann      Lead Contract Specialist  
Fort Monmouth, NJ
- O’Brien, John J.      Contracting Officer  
Fort Monmouth
- Syms, Laura Paskman      Contract Specialist  
Alexandria, VA
- Tucker, Chun S.      Contract Specialist  
Seoul, Korea

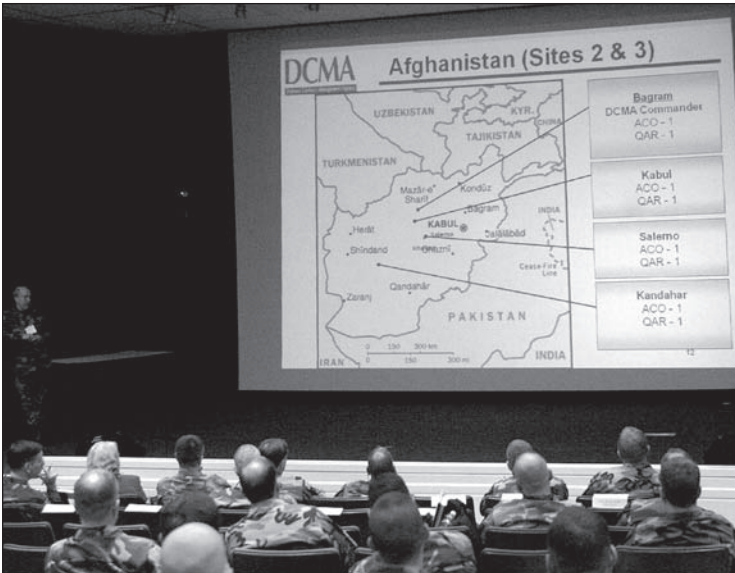
**9th Theater Support Command (TSC) Hosts Army Reserve Contracting Conference**

*SGT James E. Martin*

Army Reserve and National Guard contracting officials discussed the current high operations tempo and the future of their career field during the second annual Reserve Component (RC) Contracting Conference, hosted by the 9th TSC at Defense Logistics Agency (DLA) Headquarters, Fort Belvoir, VA, March 5-6, 2005.

“The conference was designed to bring together those in the Reserve Components to discuss issues affecting the contracting community,” explained LTC Joseph F. Thompson, 9th TSC Contracting Director. The unit has an Active Duty headquarters at Camp Zama, Japan, and an RC element at Fort Belvoir.

More than 100 contracting personnel attended the conference from various U.S. Army installations and overseas posts, including Japan, Korea, Germany and Puerto Rico.



MG Handy addresses conferees at the second annual RC Contracting Conference held at DLA, Fort Belvoir, March 5-6, 2005. Handy highlighted DCMA's support to ongoing operations in Afghanistan. (U.S. Army photo by PFC Thaddeus G. Harrington, 9th TSC Public Affairs Office.)

The conference emphasized how to expedite contract processing to procure materiel and support services needed by deployed Soldiers. The conference also discussed the skills Army Reservists and National Guardsmen gain by working in the civilian sector. With so many citizen Soldiers currently serving in operational environments, these skill sets can be a great asset and benefit to the Army.

As the Army moves to a modular force, Army contracting will be changing as well. According to Thompson, communication between Active, Reserve and National Guard contracting units is also being improved.

“New Army structure designs, currently in the draft phase, would allow contracting personnel to be better trained and prepared for when they would have to perform a mission,” remarked MG Robert M. Carrothers, Assistant Military Deputy (Individual Mobilization Augmentee) for the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology.

Air National Guard MG John B. Handy, Mobilization Assistant to the Defense Contract Management Agency (DCMA) Director, pointed out that “Effective structure changes and contracting efficiency save funds that can be reinvested to help all service members. DCMA is constantly challenged by the Office of the Secretary of Defense and the services to spend our money wisely.”

## Contracting Successes

**William McElven, Joint Contracting Command (JCC)-Iraq.** On April 5, 2005, on behalf of Tina Ballard, Deputy Assistant Secretary of the Army (Policy and Procurement) (DASA(P&P)), Lee Thompson, Assistant DASA(P&P)-Iraq, presented the Joint Civilian Service Commendation Award and Medal to William McElven for his outstanding service and performance as Principal Assistant Responsible for Contracting (PARC) for Reconstruction, JCC-Iraq. McElven served in Iraq from Sept. 24, 2004 to March 15, 2005. During his tenure, the contracting activity awarded more than 2,500 contract actions valued at almost \$5 billion in critical transportation, electrical, security and other infrastructure projects supporting the Iraq reconstruction and relief program.



The Joint Civilian Service Commendation Award and Medal is presented by Assistant DASA(P&P)-Iraq Lee Thompson (right) to William McElven for his outstanding performance as PARC Reconstruction, Iraq. (Photo by Katie Wall, Army Project and Contracting Office.)

**Tina M. Grove, Army Field Support Command, Rock Island, IL.** Grove received the Department of the Army Commander's Award for Civilian Service, April 19, 2005, in recognition of her outstanding performance while serving in the Office of the DASA(P&P) as a developmental procurement analyst from May 2004 to April 2005. COL Kim C. Leach, Military Deputy, DASA(P&P), presented the award on behalf of Tina Ballard, DASA (P&P). Particularly noteworthy is Grove's key role in supporting the Chemical Demilitarization Program and coordinating articles for *Army AL&T* Magazine's Contracting Community Highlights section.

**Barbara J. Trujillo, ACA-ITEC4.** Trujillo, assigned to the Army Contracting Agency's Information Technology,

e-Commerce and Commercial Contracting Center (ITEC4), was selected as one of *Federal Computer Week's* 2005 Federal Top 100 for her outstanding work as the Contracting Officer for the Information Technology Enterprise Solutions (ITES) acquisition. ITES is the Army's first wide-scale performance-based IT contract. ITES allows customers to rely on contractors to deliver IT solutions so they can focus on their core missions.

### News From the Field

**USACCK Conducts EXEVAL 2005.** As directed by the 8th U.S. Army — and with the assistance of the Korea Battle Simulation Center (KBSC) — the U.S. Army Contracting Command Korea (USACCK) conducted an external evaluation (EXEVAL), Feb. 16-19, 2005. A master scenario events list (MSEL) drove the exercise emphasizing mission essential task lists (METLs) and training objectives selected by the USACCK Commander.

The USACCK HQ deployed and operated from the KBSC exercise control facility, simulating wartime deployment. Detachments at Gunsan Air Base (AB), Osan AB, Camp Henry and Camp Red Cloud operated from their armistice/wartime locations. Teams for Gwangju AB and Daegu AB operated from locations at Camp Coiner, while the Suwon AB team deployed to its actual wartime location at Suwon AB. Approximately 75 individuals participated in the EXEVAL from all the sites, covering an area of 200 square miles on the Korean Peninsula.



MAJ Eva Branham, Chief USACCK Osan AB, performs contracting activities in a simulated nuclear, biological and chemical environment. (Photo courtesy of USACCK.)

Training objectives included transitioning to war and operating under wartime conditions. Corresponding METL tasks included alerting and assembling units, relocating and establishing detachments and teams, performing contingency operations, providing command and control and integrating augmentees into USACCK. The METL tasks were further subdivided into 24 battle tasks. Overall, the exercise was highly successful in identifying the command's strengths and weaknesses. The commander's exercise goals and objectives were achieved and a significant improvement in the command's operation from the previous EXEVAL was noted as the exercise progressed.

Throughout the exercise, USACCK personnel demonstrated professionalism and dedication necessary to accomplish their wartime missions. They quickly put into practice the feedback they received from the observers, resulting in marked improvement. USACCK personnel also conducted their contracting operations in an exceptional manner. MSEL-driven market research operations were performed outstandingly. Telephone and Internet research occurred simultaneously and aided in executing quick procurement decisions based on query results. In addition to market research, the detachments and teams maintained an extensive vendor list. As a result, the teams demonstrated maximum responsiveness to warfighter requirements.

The EXEVAL was an outstanding training event in which all training objectives and goals were achieved and core contracting challenges were accomplished.

### Army Contracting Agency-Southern Region (ACA-SR) Awards IDIQ Contracts for CONUS Support Base Services.

The tragic events of Sept. 11, 2001, required the U.S. Army to activate Reserve Component Garrison Support Units (GSUs) or CONUS Support Base Units (CSBUs) to assist the Army in mobilizing and demobilizing other Reserve and National Guard units to support the resulting global war on terrorism. To permit these Soldiers to return home, the Army Installation Management Agency (IMA) and the ACA-SR Contracting Center-East (SRCC-E) teamed up to craft an acquisition strategy that would allow these critical services to continue using contract-provided support. This acquisition strategy resulted in the award of seven indefinite-delivery/indefinite-quantity (IDIQ) contracts to provide CONUS Support Base Services (CSBS). These contracts replace GSUs and CSBUs that have or will be released from Active Duty.

The CSBS contracts will ensure maximum flexibility in supporting current and future mobilization at the Army's 16





U.S. and Filipino Soldiers conducted engineering and civil military operations during *JCS Exercise Balikatan* to improve local area schools and roads. (ACA-Pacific Region Photos.)

garrison power projection and power support platforms. Any other Army garrison that is supporting the mobilization and/or demobilization of Reserve and National Guard units can also use the CSBS contracts. The contracts will support numerous mobilization task areas including plans, training, mobilization, security and human resources, finance, materiel management and supply. ACA-SRCC-E will administer the basic IDIQ contracts, but the individual installation Directorate of Contracting Offices will issue task orders. The CSBS contracts will be centrally funded by IMA, and the task orders will be competed and awarded locally by the supporting Army Installation Contracting Office.

All seven CSBS contractors are small businesses and the awardees include 8(a), woman-owned and service-disabled veteran-owned small businesses. The CSBS IDIQ contractors are Automation Precision Technology LLC, Eagle Systems and Services Inc., Eagle Support Services Corp., Logistics Solutions Group Inc., Omega Training Group Inc., Strategic Resources Inc. and The Logistics Co. The contracts were awarded for a 1-year base period plus four additional 1-year option periods. The program ceiling for the multiple IDIQ contracts is an estimated \$1.3 billion.

For additional information on this effort, contact Heven Ford Jr., Contracting Officer, at (404) 464-2779 or [fordh@forscom.army.mil](mailto:fordh@forscom.army.mil).

**ACA-Pacific Region (PR) Assists Disabled Vietnamese Schoolchildren.** The U.S. Army, Pacific (USARPAC) Web page recently highlighted humanitarian assistance contracting efforts in Vietnam. As a humanitarian assistance mission, which is part of Pacific Command's Theater Security Cooperation Program, USARPAC personnel worked with local construction and support contractors to build two new wheelchair-accessible school campuses in Quang Binh Province. The article and associated photos are available online at <http://www.usarpac.army.mil/news/qbinh-schools.asp>.



Soldiers provided medical support during *JCS Exercise Balikatan*. (ACA-Pacific Region Photos.)



Soldiers provided dental services during *JCS Exercise Balikatan*. (ACA-Pacific Region Photos.)

**ACA-PR Supports *Joint Chiefs of Staff (JCS) Exercise Balikatan*.** *JCS Exercise Balikatan* is a Pacific Command (PACOM)-sponsored bilateral exercise intended to improve the interoperability of the U.S. military and the Armed Forces of the Philippines. This year's exercise primarily focused on civil military operations including engineer (two schools and a road improvement project) and medical civic action projects (3 missions in Quezon province and 11 missions in Laguna province). While the mission focus was on the engineer and medical projects, the numerous contract

requirements included using five different appropriations. The Joint Contracting Cell contracted for approximately \$670,000 in supplies and services such as medical supplies, construction supplies, van and bus rentals, construction equipment rentals, inland trucking, port handling services at both the aerial and sea ports of debarkation and lodging and food services. All projects were completed on schedule and the overall mission was an overwhelming success.

#### **RDECOM AC-Natick, MA — Personnel Strategies.**

The U.S. Army Research, Development and Engineering Command (RDECOM) Acquisition Center (AC) Natick Contracting Division has been plagued by numerous road-blocks to effectively developing a professional acquisition workforce, including being located in a high-cost area and competing with commercial opportunities that abound in and around Boston. To attack this problem head-on, the AC developed various personnel strategies that capitalize on in-house talent, provide career opportunities and target local college and university graduates.

First, the AC had to rethink its assigned personnel positions and grade structures, realizing that some in-house talent could not take full advantage of career opportunities in the 1102 contracting field. Instead, the AC developed the GS-1105-7 Purchasing Agent career ladder position — with a GS-10 target grade — as a cost-effective alternative to the 1102 positions. By doing this, the AC was able to provide



The medical services provided by U.S. and Filipino Soldiers during *JCS Exercise Balikatan* were well received by the communities. (ACA-Pacific Region Photos.)



JCS Exercise Balikatan focused on improving the interoperability of the U.S. and Filipino forces. (ACA-Pacific Region Photos.)

successful career advantages for deserving and highly motivated procurement technicians and purchasing agents who would otherwise not qualify for GS-1102 entry positions. Once employees are on-board as purchasing agents, they can fully develop their on-the-job experience, apply for educational and job-enhancing training and enter the 1102 contracting series as a full team participant.

**RDECOM AC Aberdeen, MD — Defense Base Act (DBA) Information.** As overseas contracting continues to increase in our community, contracting officials must be cognizant of the *DBA* and its requirements. The *DBA* provides workers' compensation protection to civilian employees working outside the United States under contract with the U.S. government. The *DBA* covers the following employees and employment activities:

- Private contractor employees working OCONUS on U.S. military bases or on any lands used by the United States for military purposes, including those in U.S. territories.
- Public works contracts with any U.S. government agency, including construction and services in connection with national defense or with war activities OCONUS.
- Contracts approved and funded by the United States under the *Mutual Security Act of 1954*, as amended, providing for cash sale of military equipment, materials and services to its allies, if the work is to be performed outside the United States.
- Employees of American companies providing welfare or similar services OCONUS for the benefit of the Armed Forces.

The *DBA* is applicable to all employees regardless of nationality. In some cases, the Department of Labor (DOL) can issue

a waiver based on the fact that foreign workers are covered by alternative workers' compensation benefits — pursuant to applicable foreign national/local law.

*DBA* insurance must be purchased through a DOL-approved insurance provider. This insurance is allowable and reimbursable under government contracts. If a contractor proposes to buy additional insurance coverage, DOL should be contacted to review the request. Contractors must fully disclose *DBA* and any other insurance costs (above basic benefits) in their contract proposals.

It is imperative that prime contractors flow down the *DBA* requirements to every subcontractor, regardless of nationality. Failure by the company to acquire this insurance and to secure payment of compensation will result in fines, imprisonment and potential civil liability for the corporation and its senior officers. Detailed *DBA* guidance is available online at <http://www.dol.gov/esa/owcp/dlhwc/lbdba.htm>.

### Contracting and Acquisition Career Program (CP-14) Developmental Opportunities

The Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology is offering 1-year developmental assignments to all DA employees at the GS-12 level (or acquisition demonstration broadband equivalent) for CP-14. The Contracting Career Program Office funds travel and temporary duty costs. For details, see the June 29, 2004, memorandum titled *FY2005 Competitive Professional Development (CPD) Announcement for the Contracting and Acquisition Career Program (CP-14)*.

The U.S. Army Acquisition Support Center at Fort Belvoir, VA, can provide additional information about this opportunity. Please contact Christine Rimestad at (703) 805-1246/DSN 655-1246 or at [christine.rimestad@us.army.mil](mailto:christine.rimestad@us.army.mil) for details. Online information can be found at <http://asc.army.mil/programs/cp/opportunities.cfm>.

**DAR Council Corner**

**Levy on Payments to Contractors.** *Defense Federal Acquisition Supplement (DFARS) Case 2004-D033, Levy on Payments to Contractors*, implements Section 887 of the *American Jobs Creation Act of 2004*. Section 887 provides for up to a 100-percent levy against contract payments for taxes owed by contractors. *The Debt Collection Improvement Act of 1996* authorized a centralized program for the offset of federal payments, including contract payments to collect delinquent nontax debts owed to the federal government.

To implement this authority, the Department of the Treasury (DOT) created the Treasury Offset Program (TOP). *The Taxpayer Relief Act of 1997* authorized the Internal Revenue Service (IRS) to continuously levy up to 15 percent of certain federal payments, including contract payments. To implement this authority, the Federal Payment Levy Program (FPLP) was created. The FPLP is an automated process that uses the TOP system to match delinquent tax debts with federal payments. When a match occurs, the payment is levied and applied to the tax debt. DOD and the IRS plan to implement an enhanced automated system to assess the levies.

What this means to contractors who owe back taxes to the U.S. government is that the Defense Finance and Accounting Service will coordinate with the IRS and levy up to 100 percent of contract payments. These payments will be made to the DOT. Prior to this law, only levies up to 15 percent could be imposed.

Look for the interim rule in the *Federal Register* implementing this levy in *DFARS* Part 231 – Contract Financing Subpart 232.71 – Levies on Contract Payments. The interim rule will allow procedures for a contractor to request temporary adjustment to the levy process through the contracting officer with approval by the Director, Defense Procurement and Acquisition Policy.

**Requiring Activity Responsibilities for Proper use of Non-DOD Contracts Seminar.** Keep an eye out for the Requiring Activity Responsibilities for Proper Use of Non-DOD Contracts seminar to be presented by the Office of the Secretary of Defense at multiple locations. This 4-hour seminar will increase the awareness of all DOD users of non-DOD contracts on how to properly execute acquisitions to meet DOD missions. The target audience is program managers,

financial managers, requirement officials, item managers and budget/financial officers. Contracting officials and legal personnel may also attend. The seminar will cover DOD policy and guidance, requiring activity responsibilities, available acquisition training tools and General Services Administration and other non-DOD purchasing vehicles. Continuous learning points may be earned.

General seminar information is available at <http://www.acq.osd.mil/dpap/index.htm> under **Proper Use of Non-DOD Contracts**. Seminar point of contact is Michael Canales, [Michael.Canales@osd.mil](mailto:Michael.Canales@osd.mil) or (703) 695-8571.

*This information is provided by Army DAR Policy Member Barbara Binney, (703) 604-7113.*

**Did You Know?**

- The Confederation Congress made the Board of Treasury responsible for procuring and purchasing all military stores, including food and clothing.
- Abraham Lincoln was the only U.S. president to have a “hands-on” approach when participating in Army acquisition while in office. Lincoln observed the test firing of ordnance (from what is now Fort McNair), personally test-fired new rifles and occasionally directed the Army to procure certain weapons.
- Abraham Lincoln commonly ordered various Army officials to form boards to report on the effectiveness of new weapons, which he found out about because inventors wrote to him or visited him in the White House.



## U.S. ARMY ACQUISITION CORPS *Annual Awards Ceremony*

### Celebrating the Acquisition Community's Finest

The 2005 U.S. Army Acquisition Corps Annual Awards Ceremony is quickly approaching. This event, which honors the acquisition community's most extraordinary members and the teams they lead, is scheduled for Sunday, October 2, at the Crystal Gateway Marriott in Arlington, VA. Army Acquisition Executive/Assistant Secretary of the Army for Acquisition, Logistics and Technology Claude M. Bolton Jr. will host the event and pay tribute to the uniformed and civilian professionals who work tirelessly behind the scenes to provide combatant commanders and their Soldiers the weapons and equipment they need to execute decisive, full-spectrum operations in support of the global war on terrorism.

In addition to the Army Research and Development Laboratory Awards, the Secretary of the Army Awards for Acquisition Commander, Project and Product Managers of the Year and the Army Contracting and Life Cycle Logistician of the Year Awards, Bolton will present the first annual Army Acquisition Excellence Award. This award will recognize both an Army-acquisition workforce individual and team whose performance and contributions set them apart from their peers.

This is an important event for the acquisition community to recognize and thank its workforce members who put their best efforts forward and made great strides in more effectively protecting our Soldiers over the past year. To learn more about the 2005 Army Acquisition Corps Awards Ceremony, visit: [http://asc.army.mil/events/aac\\_awards](http://asc.army.mil/events/aac_awards).

## We Need Your Articles and Photographs

*Army AL&T* Magazine instructs Army Acquisition, Logistics and Technology (AL&T) Workforce members relative to AL&T processes, procedures, techniques and management philosophy and disseminates information pertinent to professional development. As such, we need your feature articles, news briefs, success stories, career development announcements and book reviews. Publishing an article in the award-winning *Army AL&T* Magazine not only promotes your organization's hard work and accomplishments, it is an excellent addition to your own career development and list of accomplishments.



### Accompanying Photography

When you send *Army AL&T* any written piece, be sure to include high-resolution photographs — with captions that tell the "Five Ws" — who, what, when, where and why. We are especially looking for any high-resolution action photography of Soldiers and civilians performing their duties — and we will give you and your command photo credit whenever your pictures are used.

### Digital Photography

Many of you are taking great pictures with digital cameras — but at low resolution. Unfortunately, the photo quality is not good enough for print publication and cannot be corrected. So please shoot pictures intended for publication using the high-resolution feature on your digital camera.

Please send articles and artwork to the Executive Editor at [cynthia.hermes@us.army.mil](mailto:cynthia.hermes@us.army.mil). A copy of our Writers Guidelines is available at <http://asc.army.mil/pubs/alt/default.cfm>. Scroll down the left side and click on **Writers Guidelines**.

## eCYBERMISSION COMPETITION ANNOUNCES 2004-2005 NATIONAL WINNERS

Four national winners were announced June 9, 2005, in the U.S. Army's 2004-2005 eCYBERMISSION competition, a Web-based science, math and technology competition that encourages students in grades six through nine to compete for regional and national awards, while working to solve problems in their community.

The four national winners from grades six through nine are:

Scienceteers from Whiteface Elementary School in Whiteface, TX; WB LifeSavers from West Branch Middle School in West Branch, IA; Ocean Raves from St. Dominic School in Brick, NJ; and CO2 Crew from Byng Junior High School in Ada, OK. The four national first place winners receive a \$5,000 EE Savings Bond, in addition to the \$3,000 EE Savings Bond received for selection as a regional winner. All 16 finalist teams also earned an all-expense paid trip to Washington, DC, for the National Judging and Educational Event, a series of educational enrichment activities and events.

The national winners presented diverse projects. The Scienceteers set out to inspire a passion for learning among youth by developing and implementing a science education series for elementary school students. The WB LifeSavers initiated a comprehensive effort to increase education, training and awareness about the hazards of driving on rural roads in an effort to reduce the number of teenage driving accidents in their community. The Ocean Raves performed water quality tests on a local river, presented their findings to local city officials and created a brochure to educate the community about keeping the river clean. The CO2 Crew tested the air quality in their school, identified elevated carbon dioxide levels and presented recommendations to adjust

the ventilation rates to better account for the number of students in each classroom.

"We are extremely proud of all of our regional and national winners," remarked Kelly Stratchko, eCYBERMISSION Program Manager. "The Army recognizes the importance of science, math and technology to the welfare and national security of our Nation. eCYBERMISSION supports our

Nation's commitment to education and inspires future leaders in these fields," Stratchko continued.

eCYBERMISSION enables the Army to return something to America's communities for the service of their sons and daughters to the Nation. It supports the Nation's commitment to education and the achievement of excellence in math and science. Army personnel

serve as eCYBERMISSION ambassadors who promote the competition in schools, academic forums and educational events. A pool of Army scientists and engineers (military and civilian) serve as CyberGuides, or online coaches, to competing teams.

This year, 1,151 teams submitted projects to the 2004-2005 eCYBERMISSION competition, totaling 4,184 students from across the country and in DOD Education Activity schools worldwide. After being selected as one of 96 regional winning teams in April, the 16 finalist teams traveled to the National Judging and Educational Event in Washington, DC, to compete for National First Place titles in each grade.

For additional information on eCYBERMISSION, go to [www.ecybermission.com](http://www.ecybermission.com) or email [missioncontrol@ecybermission.com](mailto:missioncontrol@ecybermission.com).



Zachary Wilbanks (from left), J.R. Long, Keaton Thomas and Ben Donnell — also known as the Scienceteers — created a program to inspire a passion for learning in primary-school students by having middle-school students teach them through an interactive science program. (Photo by David Nations.)

## NEW JERSEY'S FALLEN SERVICE MEMBERS HONORED

*Stephen E. Hayes*



(From left to right) Rep. Frelinghuysen, Picatinny Arsenal Commanding General BG Paul S. Izzo and Sen. Lautenberg dedicate the memorial honoring New Jersey's service members killed in action during the GWOT, during Picatinny's May 21st Armed Forces Day celebration. (Photo by Todd Mozes.)

Picatinny Arsenal Commanding General BG Paul S. Izzo hosted a solemn dedication ceremony honoring New Jersey service members who made the ultimate sacrifice in the global war on terrorism (GWOT). The observance was the

highlight of Picatinny Arsenal's May 21st Armed Forces Day celebration. The ceremony began with a reception that included the fallen heroes' families. Army Materiel Command Commander GEN Benjamin S. Griffin and Principal Deputy to the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) and Director of Iraq Reconstruction and Program Management Dean G. Popp attended.

Others present included New Jersey State Sen. Anthony Bucco, Civilian Aide to the Secretary of the Army William Donnelly, local dignitaries and elected officials and key Picatinny military personnel and civilians. Izzo, U.S. Sen. Frank R. Lautenberg and U.S. Rep. Rodney Frelinghuysen each spoke, reflecting on the honorees' sacrifices. Then they together unveiled a bronze memorial plaque reading "In Memory of the Service Members from New Jersey who made the Ultimate Sacrifice During the Global War on Terror, Dedicated Armed Forces Day 2005." As the black cloth covering the plaque was removed, each service member's name was read aloud. The ceremony concluded with a New Jersey Air National Guard military aircraft flyover and parade.

*Stephen E. Hayes is the Assistant Executive Officer to the Principal Deputy to the ASAALT at the Pentagon, Arlington, VA.*



U.S. Rep. Rodney Frelinghuysen (left) and U.S. Sen. Frank R. Lautenberg unveil a memorial plaque honoring New Jersey's fallen service members who gave their lives in fighting the GWOT. (Photo by Todd Mozes.)

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## **In This Issue**

### **Science and Technology Innovations**



**ASC** ACQUISITION SUPPORT CENTER

**PREPARING FOR THE FUTURE**