

THE

LINK



SPRING 2014



CECOM ACTING DIRECTOR ADDRESSES RETROGRADE | CSM TALK CECOM FWD
AMC LAR OF THE YEAR STREAMLINING NETT WARRIOR PROCESS
NEW LAB, SYNERGIZE TACTICAL RADIO SUPPORT SEC ENTRANCE FIREFINDER
RADAR PROTECTING ARMY WEB SERVICES



Official Publication of the U.S. Army Communications - Electronics Command





U.S. ARMY COMMUNICATIONS-ELECTRONICS COMMAND



“I am truly amazed at what ISEC can and does accomplish for the Army. We are unique in the Army. There is no other command like ISEC where we are chartered to do the strategic IT engineering and integration for the entire Army. What we do in ISEC is so crucial to the success in the Army.”

~ Troy Roberts, ESED Director, US Army Information Systems Engineering Command

CECOM PROVIDES 1ST CLASS C4ISR SUPPORT

“I have had experience with several Defense Department depots and none, absolutely none, compare to Tobyhanna Army Depot. The level of professionalism is unparalleled. Depot employees focus on customer needs, making sure things are done correctly the first time and keeping you abreast of the situation so there are no surprises. They are all truly remarkable.”

~Donald Meckley, Joint Surveillance and Target Attack Radar System Project Team lead, Integrated Team Solutions Facility, Fort Bliss, Texas

“Many of the systems we work get more than their fair share of visibility, or command ‘air time’; almost every system we support is required in the battle space and deserves our utmost attention. We work toward these command priorities, and strive to maintain realistic schedules according to our customers’ requirements.”

~Patrick Esposito, director, Production Management, Tobyhanna Army Depot

“Information Systems Engineering Command doesn’t do Cox Cable or Qwest type communication systems. We do warfighter communication systems. When Cox or Qwest fail, you don’t get to watch your favorite TV show or call for a pizza; when we fail, the lives of our warfighters are at risk. Therefore, failure is not an option.”

~ Robert Lorentsen, ISEC Transmission Systems director, Fort Huachuca, Ariz.

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DISCLAIMER: The Link is an authorized CECOM publication for members of the Department of Defense and interested entities. Contents of The Link are not necessarily the official views of, or endorsed by, the U.S. Government, the Department of the Army, or CECOM. This publication aims to raise awareness about CECOM's services available to the warfighter by informing readers about the CECOM mission; why our services are relevant and essential in today's transforming Army; communicate CECOM's impact made on the warfighter; and update readers on the command's priorities and foci. The editorial, content of this publication is the responsibility of the U.S. Army CECOM Chief of Public Affairs, Robert DiMichele. The magazine is published three times a year and distributed electronically and in print. Electronic versions of the publication are posted to the CECOM homepage at:

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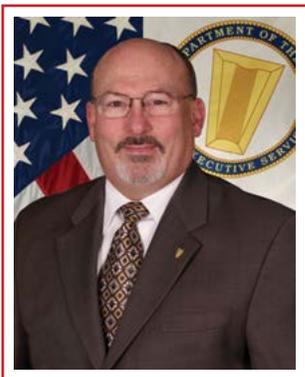
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Quick response keeps Black Hawk fleet airborne

On the Cover



U.S. Army Sgt. Zechariah Smith with 6th Squadron, 8th Cavalry Regiment, 4th Infantry Brigade Combat Team, 3rd Infantry Division, calls for casualty evacuation near Panagazeen village, Logar province, Afghanistan, Aug. 23, 2013. The Soldiers patrolled the area to engage the local populace and conduct counter indirect fire. (U.S. Army photo by Spc. Amber Stephens/Released) Photo by Maj. Kamil Sztalkoper



CECOM Continues to Serve as Critical Link in Afghan Retrograde

By Gary P. Martin, CECOM Deputy to the Commanding General

CECOM and its Team C4ISR partners have been able to maintain operational readiness rates of 96% or higher while retrograding approximately 17,000 systems in support of combat power regeneration.

As operations wind down in Afghanistan there remains 2 critical functions for CECOM and its Team C4ISR partners. The first critical function is maintaining readiness of our C4ISR equipment in support of combat operations. The second critical function is to responsibly drawdown our efforts in Afghanistan. Inherent in this drawdown is the ability to retrograde C4ISR equipment out of Afghanistan in order to regenerate combat power for the Army in support of Army Contingency Forces and the Global Response Force.

We, as an Army, recently redeployed out of Iraq and one would think that what worked well in Iraq should also work well in Afghanistan. However, the operations couldn't be more different. In Iraq we utilized Kuwait as a "catcher's mitt" to retrograde equipment allowing us to leverage standardized sea and air lines of communication. You could walk the terrain of Kuwait and see centralized receiving points for equipment, bay type operations for wash racks and distribution hubs that linked up with strategic aerial and sea ports. As you look at Afghanistan, you have to remember that it is a land-locked country the size of Texas but with only two percent of the roads paved.

Combat power regeneration – that is what we as a community do best. Even though Afghanistan proposes significantly different challenges, CECOM and its Team C4ISR partners have been able to maintain operational readiness rates of 96% or higher while retrograding approximately 17,000 systems in support of combat power regeneration. It is this combat power regeneration where CECOM and its many partners support the Army's industrial base through reset, overhaul and repair programs.

CECOM and its Team C4ISR partners cannot do this alone. This is where you see the full force of the Army Materiel Command (AMC). Within the AMC family we partner very closely with two other AMC Major Subordinate Commands: Army Sustainment Command (ASC) and the Surface Deployment and Distribution Command (SDDC). Through ASC, we leverage AMC's single face to the field – the 401st Army Field Support Brigade (AFSB). We embed our team within the 401st AFSB's Redistribution Property Assistance Teams to enable identification, classification and disposition of C4ISR equipment. We then leverage our partners at SDDC in order to move our equipment back through strategic sea and ground lines of communication to our industrial base activities. But the partnership doesn't stop there. We also work very closely with our Air Force partners in leveraging opportune air lift to retrograde C4ISR equipment.

As the Army executes Phase III of Operation Drumbeat (the responsible drawdown of operations and forces), Team C4ISR continues to lead the way. Even though our C4ISR personnel will be some of the last to leave Afghanistan due to support requirements for force protection assets we as a community are still ahead of our drawdown plans. We are only able to do this because of the great teamwork across the C4ISR community.

At the end of the day this is about people – their commitment and support to our Soldiers, Sailors, Airmen and Marines. The CECOM Forward Element, led by our senior command representative and made up of professional logisticians from across the command, provide an invaluable capability in logistics and sustainment services in support of operational readiness and retrograde operations. Team C4ISR provides this support to the Combined Joint Operations Area – Afghanistan to include the Afghan National Army, U.S. forces and our coalition partners.

I want to personally thank each and every one of you for all the hard work you have done and continue to do in support of our deployed forces. You truly are **'THE CRITICAL LINK'**.



THE CRITICAL LINK

ARMY SOLDIER'S CREED

I am an American Soldier.

I am a Warrior and a member of a team.
I serve the people of the United States
and **live the Army Values.**

I will always place the mission first.

I will never accept defeat.

I will never quit.

I will never leave a fallen comrade.

**I am disciplined, physically and mentally
tough, trained and proficient in my warrior
tasks and drills. I always maintain my
arms, my equipment and myself.**

I am an expert and I am a professional.

**I stand ready to deploy, engage, and
destroy the enemies of the United States
of America in close combat.**

**I am a guardian of freedom and the
American way of life.**

I am an American Soldier.



ARMY CIVILIAN CORPS' CREED

**I am an Army Civilian—a
member of the Army team.**

**I am dedicated to our Army,
our Soldiers and civilians.**

**I will always support the
mission.**

**I provide stability and
continuity during war and
peace.**

**I support and defend the
Constitution of the United
States and consider it an
honor to **serve** our nation and
our Army.**

**I live the Army values of
loyalty, duty, respect, selfless
service, honor, integrity, and
personal courage.**

I am an Army Civilian.

Regionally Aligned, Globally Engaged... Strengthening The Critical Link



By Command Sgt. Maj. Kennis J. Dent, CECOM

Sequestration and budgetary cuts have sparked fierce urgency for the Department of Defense and the nation's Army to take a closer look at how to maximize resources without detriment to the mission. And although these times call for drastic cuts, we must remain ready and capable to provide Joint and

Combined Forces with top-notch Command, Control, Communications, Computers, Intelligence, Surveillance & Reconnaissance sustainment support.

As the Army downsizes and continues to transition to sustainment, here at Communications-Electronics Command (CECOM), we continue to renovate our global support structure so that it aligns with combatant commands across the globe. The future Army is one that shall be scalable, agile and responsive to threats all over the world. CECOM's presence across the globe supports our Soldiers, joint forces, combatant commanders, allies and interagency partners.

The men and women of our command are essential to the joint forces who require who requires critical enablers like aviation, intelligence, engineering expertise, logistics services, signal among other key missions to remain ready and relevant in today's expeditionary environment. Whether it's providing a software update to a Blackhawk helicopter; providing the systems engineering expertise to upgrade Army's network infrastructure on installations all over the world; or coordinating seamless logistics services to ensure our military has what they need, where and when they need it, CECOM's team of experts are there to ensure the Army's global responsiveness from a communications-electronics perspective.

We've worked with our C4ISR partners to realign our field support strategy on the logistics and software support side of the house. In an effort to preserve resources, we've streamlined our processes so we approach field support from a regional tiered concept, eliminating much

of the need for our personnel to be on-site by troubleshooting issues remotely before requiring an on-site assessment. Our field support services will be regionally aligned to best support combatant commanders in the most effective and efficient way possible through our new CECOM-Forward regional service hubs.

But field support isn't the only place we're making process improvements. Our Logistics and Readiness Center has made great strides in evaluating and improving processes through the development of training packages, tools and professional development opportunities to streamline processes and even provide common operating pictures of operations, such as foreign military sales and security assistance programs. They continue to do this while leading the C4ISR retrograde efforts in Afghanistan.

We're implementing training programs to ensure our workforce is multi-functional and possesses an understanding of the global expeditionary environment as they support the nation's Unified Action partners. Our Software Engineering Center is plugged in to a national and global environment as it participates in and supports military-to-military and domestic emergency training exercises with our coalition and interagency partners. SEC is leading the charge with the Defense Health Services System Program Executive Office to improve the quality and reduce time, cost and risks associated with software development process by exploring new software methodology called Agile Scrum.

And our award winning depot in Tobyhanna, Pa., continues to uphold the value of continuous improvement, evident by their success in providing expert, cost-effective, depot support to not only the Army, but other services as well.

As the Army evolves, so will CECOM, and we've started the planning to anticipate the needs of the future Army by improving our processes, professional development opportunities and collaborative efforts across the command and with our partners so CECOM will remain, **The Critical Link** in C4ISR sustainment support services.

LRC DIRECTOR HIGHLIGHTS

CURRENT PRIORITIES AND STRATEGIC OPPORTUNITIES

By the CECOM Public Affairs and Media Communications Office

Lane Collie, director of the U.S. Army Communications-Electronics Command's Logistics and Readiness Center (LRC), addressed the membership of the Aberdeen Chapter of the Association of the U.S. Army at its monthly professional development forum and general meeting March 18.

Collie discussed current logistics and sustainment issues, priorities and opportunities and described the LRC role within the C4ISR Center of Excellence.

The LRC provides global logistics support for C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) systems and equipment through rapid acquisition, maintenance, production, fielding, new equipment training, operations and sustainment in support of the Army, the joint warfighter and coalition partners. To accomplish this mission, the LRC works closely with the acquisition community to include seven Program Executive Offices (PEOs): Intelligence, Electronic Warfare and

Sensors (IEW&S); Command, Control and Communications-Tactical (C3T); Enterprise Information Systems (EIS); Aviation; Missiles & Space; Soldier; and Combat Support and Combat Service Support (CS&CSS).

In describing the LRC's interaction with PEOs, Collie shared that, "PEO Aviation drives the LRC's working capital demand in terms of funding, while PEO Soldier generates the highest working capital demand in terms of quantities across the major capabilities." These major capabilities include aviation, battle space awareness, battle command transport networks and field logistics.

In addition to working with PEO partners, the LRC also has an industrial base responsibility. Collie said he wants to ensure and sustain the health of the commercial and organic industrial base markets and infrastructures in direct support of C4ISR programs. He said that the legislatively-required, fifty-fifty split of organic and commercial sustainment capabilities means a meshing of commercial and industrial base strategies. "It's a tough balancing act that will get harder and harder as money goes down," he explained. The LRC supports the Tobyhanna Army Depot, the organic industrial base for



US Army Photo

Staff from the U.S. Army Communications-
Electronics Command's
Logistics and Readiness
Center process equipment
to leave the theater
of operations through
the retrograde yard in
Kandahar, Afghanistan.

C4ISR, as well as five commercial industrial base sectors: sensors, tactical communications, electro-optics, power sources and information technology. He cited the example of the Firefinder radar system that, through modernization, will replace the Q36 and Q37 radars with the Q53 radar. This modernization will decrease the Tobyhanna's workload by 55,000 direct labor hours annually starting in 2020.

Collie also described one of the LRC's most pressing priorities -- C4ISR Field Support Rightsizing. In support of the initiative to "rightsize" field support, Collie and the LRC have collaborated with the partners of the C4ISR Center of Excellence in support of the Army's "Reinvesting in Soldiers" approach in which Soldiers are the primary operators and maintainers of C4ISR equipment at the unit level.

Rather than relying on support personnel for all C4ISR equipment issues, the C4ISR Center of Excellence has designed a four-tiered support structure that will handle different levels of complexity for Soldiers at the unit level.

Tier 0 is simply having Soldiers operate and maintain their own equipment.

Tier 1 still includes multifunctional support personnel located with the units at installations. This tier is characterized by today's Logistics Assistance Representatives.

Tier 2 support is system-specific and is designed to escalate issues or problems beyond the knowledge at the field level. Experts based at regional hubs cover a designated geographic area minimizing response time.

Tier 3 provides the most involved level of service because issues must be addressed by the original equipment manufacturer in order to be resolved.

The Field Support team tested this structure at the Joint Readiness Training Center (JRTC) and the National Training Center (NTC), and the results have been dramatic he said. "In the pilot exercises with JRTC and NTC, analysis of trouble ticket resolution data showed that 79 percent of all issues were training-related and 95 percent of tickets were Soldier-level tasks (Tier 0-1). This data-driven approach will ensure that we are making sound decisions, said Collie.

As responsibilities are turned over to the individual Soldier, there is a corresponding effort to reduce the number of Field Support Personnel. In keeping with the collaborative nature of this initiative, the C4ISR Center of

Excellence has coordinated closely with U.S. Forces Command for a phased approach through Fiscal Year (FY)16. To date, there has been a reduction of 361 C4ISR field support personnel and units have not experienced any drops in unit readiness or weapon system availability due to this effort, according to Collie.

He also presented three strategic opportunities for contractor support that will be released during FY14. The first was a \$20 million award for quick reaction capability sustainment support for Joint Personnel Identification Systems. This contract will provide worldwide support for currently deployed biometric tactical collection equipment from the Program Manager



US Army Photo

Staff at Tobyhanna Army Depot, Pa., provide maintenance on the TPQ-36 Firefinder Radar System. The Firefinder is a system that through modernization will decrease the amount of labor performed by the depot.

for Joint Personnel Identification. Second, he described an \$8-12 million contract for life cycle logistics strategic initiatives support, requiring improvements and optimization for a wide range of business processes, procedures and sustainment strategies, including risk assessments, cost analysis, supply chain and maintenance planning.

The third contract, for Tactical Power Supplies, is a five-year, firm-fixed price, indefinite delivery, indefinite quantity contract to procure PP-6224D/U and PP2953E/U tactical power supplies and an associated electronic technical/repair manual. The award is projected from a minimum of \$250,000 to a ceiling of \$66 million and would be a 100 percent small business set-a-side.

In closing, Collie shared three other “Hot Topics” that the LRC is focused on in

addition to the Field Support Rightsizing initiative: Operation Enduring Freedom drawdown, workforce reshaping, and reinvesting in civilian personnel. In reference to the drawdown, Collie said “Team C4ISR will be among the last to leave Afghanistan because we support the sensors systems that provide force protection, systems like BETSS-C and RAID.”

As for the workforce, Collie is working both reshaping and professional development initiatives to increase efficiency and build a bench to face the challenges of the future.

“We have a generation of a workforce who only knows supplemental funding. We are returning to an era where availability of resources will be a challenge all unto itself.”

Did you know?

CECOM’s Tobyhanna Army Depot is supporting Tank-Automotive Command’s Red River Army Depot with the identification and turn in of C4ISR Equipment previously removed from vehicle platforms retrograded from Southwest Asia. Twenty staff will support this mission through the end of the fiscal year. The team will inventory and identify C4ISR equipment for reclamation and disposal.



CECOM logistician named **AMC LAR** of the **Year**

By Marissa Anderson, CECOM

Gregory J. Garduno was presented the 2012 U.S. Army Materiel Command's Robertson J. Short Logistics Assistance Representative (LAR) of the Year Award, Jan. 7, 2014, at Fort Hood in Texas for his outstanding achievement, dedication, and performance as a LAR.

A former Army radar repairer, Garduno has been serving as a Communications-Electronics Command (CECOM) Sensor LAR supporting Intelligence Electronic Warfare and Radar Systems for the 4TH Brigade Combat Team of the 1ST Calvary Division at Fort Hood, Texas, since 2010.



Did you know?

Marine Sgt. Victor Marinez hones his skills as a digital wideband technician who maintains satellite communications and terrestrial communications equipment during annual training at Tobyhanna Army Depot, Pa. Reserve Marines are equipped and trained to the same standards as active Marine forces.



Steve Grzedzinski

"I am very honored to receive this distinguished award," said Garduno upon receiving the commendation. "I strive to support the warfighter because they are the real heroes."

The award recognizes an individual for outstanding achievement and support in the Logistics Assistance Program (LAP). LAR technicians embed with deployed units to provide guidance on weapons systems, equipment, and logistics problems.

Lloyd D. Hayslip, regional technical assistance manager for CECOM at Fort Hood, Texas spoke highly of Garduno as an employee.

"Garduno is an exceptional LAR who goes above and beyond the call [of duty] every day, supporting Soldiers and keeping supported equipment at near 100 percent readiness," said Hayslip. "He is extremely dedicated, possesses a solid work ethic and has earned the highest levels of respect from his supervisors and peers. Garduno is a model team player who totally supports all aspects of the LAP."

Garduno deployed to Kuwait in support of Operation Spartan Shield. During his deployment, he provided technical expertise in support of radar systems for the Kuwait area of operations, as well as assisting the Jordanian Armed Forces through an Acquisition and Cross-Servicing Agreement to repair their radars. "These radars were non-mission capable for nearly 10 years and through Greg's expertise they are now able to acquire live artillery fire," said Hayslip.

He has also been deployed to Kandahar, Afghanistan and Baghdad, Iraq, during his service at CECOM.

"After working with a LAR during a deployment, I realized this is the job for me. I enjoy my job and get a sense of accomplishment every time I can help a Soldier accomplish their mission," said Garduno.



US Army Photo

Hayslip went on to discuss Garduno's commitment to the warfighter.

"Mr. Garduno continuously provides superb logistical and technical support to the Soldiers who maintain the complex systems under his skill set. His knowledge of employing radars was sought out by commanders and his technical skills at training Soldiers to repair them were sought out by technical warrant officers. Mr. Garduno was very successful at supporting his units at all times resulting in no time loss to missions and exercises."

AMC initiated this award in 1985 to recognize and reward LAR excellence in the field. In 1988, AMC named the award in honor of former Army Missile Command LAR Robertson J. Short, for his meritorious contributions to the LAP. Short embodied the characteristics of dedication, commitment, selfless service, and honor.

Criteria for being eligible to receive the award includes outstanding logistics and technical support with favorably impacted Army readiness; successfully contributing improvements to Army operations such as cost avoidance and savings initiatives; support during contingencies and training exercises; and participation in self-improvement activities.

CECOM team makes an impact: SEC ISR Intelligence Fusion Systems Division, Mission Support Branch



Software experts support DoD network, updates security system

*A report by Adam Burchett, Software Engineering Center (SEC) and
Luella Emmons on behalf of Defense Information Systems Agency (DISA)*

The Host Based Security System (HBSS), mandated by the Department of Defense (DoD) to be installed on every host station, like laptops, servers and workstations, ensures enterprise-wide protection and the Software Engineering Center (SEC) does its part to provide post-production software support to keep the system operating at peak performance to protect the DoD's network.

The HBSS, a collection of elements that combine to create a wall of protection for DoD information systems, is an essential element of the Army's Cybersecurity strategy to provide layers of protection on enterprise networks. The system is designed to block incoming traffic to computers on the enterprise network. This is based on predetermined policies that instruct it to make exceptions based on approved sources. This ensures legitimate communication is allowed while denying access to cyber attacks.

Software engineers at the Communications-Electronics Command (CECOM) SEC at Fort Huachuca, Ariz., provide post-production software support for the HBSS to keep the system operating at peak performance and in compliance with DoD mandates.

SEC engineers remain persistent in finding ways to strengthen the systems efficient operations. As a result, the defense in-depth strategy secures systems down to the host level providing protection to the systems that Soldiers use on the ground to accomplish the mission.

In addition to sustainment operations, SEC engineers strive to expand the performance and scope of HBSS capabilities and operations. They most recently developed procedures to successfully install and run the VirusScan Enterprise HBSS component on Linux services, a feat which had not been accomplished before. These procedures enable units in the theater environment on a variety of systems, strengthening the system's security posture.

SEC engineers also developed methods to apply HBSS to stand-alone systems. They expanded support to the DoD mandate to implement HBSS on all Program of Record systems; a new development since the system was only previously applied to network systems.

The stand-alone capability provides a measure of continued security for systems used on the move. Stand-alone operations are crucial for systems, like those supporting counter and human intelligence operations, that are readily disconnected from the network and transported to off-network sites.

The HBSS Cycle of Protection

The HBSS provides network administrators and security personnel with mechanisms to prevent, detect, track, report, and repair malicious computer-related incidents across all DoD networks and information systems. The HBSS conducts an endless cycle of protection that can be broadly described as four stages: finding, evaluating, enforcing and protecting, and fixing and complying.

Finding

The first stage consists of establishing policies, discovering assets, and prioritizing assets. In this stage, HBSS engineers determine what policies need to be written to allow traffic through to a particular system. At the same time, they are ascertaining precisely what components are assigned to a particular enclave, and what type of traffic should be allowed at each echelon of that enclave.

Evaluating

The second stage moves on to assessing vulnerabilities, viewing threats, and determining risk. Once the policies have been applied, the HBSS engineers continue to review the system and the policies that are applied to it. They work to maintain a careful balance of allowing legitimate traffic through, while assigning the highest level of protection possible. Engineers

assess possible vulnerabilities on the system, observe any threats, and determine whether the system is at risk, and if so, how much.

Enforcing and Protecting

Once the threats and risks have been determined, HBSS engineers move to the third stage, which is where the HBSS becomes active: blocking interactions and enforcing policies. The system's protections and policies work to allow or block traffic as needed.

Fixing and Complying

The fourth stage prepares the HBSS to start the cycle again by conducting remediation and reviewing for compliance. HBSS engineers ensure that the policies are working, and make adjustments as necessary to increase the reliability and accessibility of the system. Based on the results of their reviews, HBSS engineers start the cycle again, determining what new policies need to be written, and identifying any new components that have been added to a particular network during the cycle.

Adam Burchett is a computer scientist and currently serves as the lead for the CECOM Software Engineering Center's Intelligence, Surveillance and Reconnaissance Intelligence Fusion Systems Division, Host Based Software System Host-Based Security System.

Luella Emmons is an operations specialist working for a contract company in support of the CECOM Software Engineering Center's Intelligence Fusion Systems Division.

PROVIDING THE

CRITICAL LINK



Support to ASA(ALT)

Central Technical Support Facility (CTSF) began disciplined, long-term support to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)) program and product managers for their Title 10 Integration and Interoperability Event for Common Operational Environment 1.0 software development; the first major LandWarNet software evolution in over two years. This cooperative engagement with ASA(ALT) has enabled ASA(ALT) to integrate its multiple family of systems into a system of systems framework in a discovery learning, non-attribution environment prior to formal Title 40 Army Interoperability Certification testing to be conducted by the CTSF on behalf of the Department of the Army Chief Information Office/G6.

82nd Airborne Division HQ

Information Systems Engineering Command” (ISEC) officially completed the engineering and installation of the Audio/Visual systems in the 82nd Airborne Division’s new facility in December 2013. ISEC’s support began in late 2010 during initial planning and included the implementation of their auditorium, two operations centers, and 19 conference rooms.

Main Communication Facility Support in Kuwait

In support of the product manager, Power Projection Enablers ISEC provided on-site engineering support for Camp Arifjan’s new Main Communication Facility (MCF) support. ISEC’s primary responsibilities included engineering reviews, providing expert opinion, and quality assurance on the integration contractor’s system design and implementation. This facility is critical to the consolidation, internet protocol convergence, and modernization of the C4I infrastructure and network throughout Southwest Asia. The MCF incorporates several joint information environments enabling design features and will allow expanded reach-back capability and integration with the worldwide Defense Information Systems Network. This project was completed in December 2013.

Field Support

During fiscal year 13, Field Support Directorate personnel participated in two Integrated Product Teams (IPT) charged with developing a field support strategy to meet the needs of the post conflict Army. One of the IPTs focused on evaluating the system of delivering field support, eliminating unnecessary efforts and redundant spending. This resulted in the establishment of a consolidated Field Support Directorate at CECOM and a management structure in the field based on the function being performed (training, fielding, maintenance, technical assistance, and engineering and installation). The second IPT addressed delivery of technical

assistance with an environment shaped by budgetary constraints, the impending drawdown of forces in Operation Enduring Freedom, and the Army's desire to go "back to basics." The IPT evaluated field support staffing levels across the C4ISR fleet of systems and conducted three pilot programs during rotations at Fort Irwin, Calif. and Fort Polk, La. to test a tiered structure for delivering support. As a result of the pilot programs, the IPT recommended reducing the number of contracted field service representatives and field service engineers by approximately 50 percent during the period fiscal years 14-17.

Drawdown from Afghanistan

The Field Management Operations Branch (FMOB) OCONUS Unit Integration team led the effort for Communications-Electronics Command (CECOM) with tracking, monitoring, and reporting on the drawdown plan of all CECOM personnel and equipment from Afghanistan aka: Operation Drumbeat. Intensive coordination has been, and continues to be, conducted between all CECOM entities to include; Tobyhanna Army Depot, Information Systems Engineering Command, Software Engineering Center, and Logistics and Readiness Center (LRC) headquarters to ensure that all Department of the Army civilians, contractors and Command, Control, Communications, Computers, Intelligence, Surveillance & Reconnaissance (C4ISR) equipment are appropriately counted and reported as CECOM plans its withdrawal from theatre. The FMOB will remain the primary CECOM development entity for this effort

throughout the duration. In conjunction with Operation Drumbeat, the OCONUS team has the added role of monitoring the operational readiness and trends of all major C4ISR systems during the drawdown to monitor and track impact of personnel drawdown on C4ISR system readiness rates. This is accomplished through close coordination with both the LRC Weapon System Directorates and Program Manager communities. Regional Readiness is reported at both the CECOM and Army Materiel Command General Officer level on a regular basis.

Post Production Software Support

Software Engineering Center's (SEC) Post Production Software Support program enables Army and Department of Defense systems to remain current, relevant, and effective on the battlefield. During 2013, SEC developed and fielded 248 software releases addressing 7,127 requirements for critical C4ISR and logistical systems including emergency releases addressing warfighter immediate critical needs.

Force Protection Systems

As the Army Executive Agent for Force Protection Systems, the Software Engineering Center (SEC) developed and distributed 28 critical combatant command specific force protection system mission software releases for both air and ground systems. The software releases protect aircraft and crews against both radar and laser guided anti-aircraft threats, and ground

forces from remote controlled improvised explosive devices. These critical, rapid response updates ensure force protection for our Soldiers against newly emerging threats in ongoing operations in U.S. Central Command and across the globe.

Distributed Common Ground System

Software Engineering Center (SEC) and Program Manager Distributed Common Ground System-Army (DCGS-A) are working together with Army Training and Doctrine Command to leverage new ideas and initiatives for increasing the Army's ability to become a more self sustaining force. Training 35T Soldiers to maintain the DCGS-A system helps the Army reduce system sustainment costs while providing responsive, agile support. It also builds confidence in both the units and Soldiers who depend on them for critical intelligence. The system familiarization program has proven successful during key, high visibility training exercises including the U.S. Army Europe Saber Strike interoperability training exercise in Lithuania; the Army's Network Integration Evaluation event; and unit deployments to Afghanistan in support of Operation Enduring Freedom. To date, over 150 35T Soldiers have gone through the familiarization training, providing a responsive organic sustainment capability for their unit equipment.

Expeditionary Logistics Support in Afghanistan

Tobyhanna Army Depot (TYAD) Expeditionary Logistics Support in Afghanistan includes both electronics and non-electronics related positions. Currently, there are 18 funded Operation Enduring Freedom programs supported by TYAD personnel such as Standard Army Management Information Systems, Redistribution Property Accountability Team, Communications Security, Command Post Systems and Integration, Ground Station, Tactical Intelligence, Program Manager Ground Sensor, Vehicle Optic Sensor Systems, Wolfhound, Lightweight Counter Mortar Radar, MX-20, STARLite, Base Expeditionary Targeting and Surveillance Systems Combined, Counter Bomber, Persistent Surveillance Dissemination System of Systems, Counter Radio Controlled Improvised Explosive Device Electronic Warfare/Warlock, Ground Auto-Targeting Observation/Reactive Jammer, Ground/Air task Oriented Radar, Boomerang, Common Remotely Operated Weapons Station, and Electronic Sustainment Support Center-Retro Sort. Support is provided in a multitude of locations including major Forward Operating Bases as well as unit location support.

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CECOM. THE CRITICAL LINK

U.S. ARMY COMMUNICATIONS-
ELECTRONICS COMMAND



Security First... Protecting the Army's web services

*By Carol Smith, Communications-Electronics Center of the
Research, Development and Engineering Command*

Web developers from all over the Department of Defense (DoD) can access the Tactical Services Security System, or TS3, an Army Government off-the-shelf software security toolkit that can be used to secure web services, like SOAP/REST, and web applications, including those hosted in the Ozone Widget Framework.

The toolkit, developed by the U.S. Army Communications-Electronics Command's Software Engineering Center's —in partnership with the U.S. Army Communications-Electronics Research, Development and Engineering Center's Software Engineering Directorate—provides solutions for Access Management for Department of Defense software applications, authentication and authorization of users of users acquiring access to DoD resources in support of the mission. TS3 provides the standards based façade to support Joint Single Sign-On

Programs currently using the TS3 solutions to secure their web clients, web services and/or web applications include:

- The Army's Data Dissemination Services (DDS)
- Army Common Software services
- Global Command & Control System-Army (GCCS-A) v4.3 widgets and services

(SSO) and shared security services for Policy Enforcement Point and Policy Decision Point per the Joint C2 reference architecture, according to Dr. John Andrew Landmesser, chief engineer for Product Manager Strategic Mission Command.

TS3 solutions support DoD initiatives: DoD Identity and Access Management Strategy v0.6; Defense Information Systems Agency Attribute Based Access Control Engineering Blueprint; and the Federal Identify Credential and Access Management (FICAM) Roadmap and Implementation Guidance.

The team provides subject matter expertise to the Tactical Infrastructure Enterprise Services (TIES) Coalition Warfare Program aimed to improve and demonstrate interoperability between U.S., and French Tactical Command and Control System information technology services leveraging FICAM implementation guidance and use cases. The team also participates in the TIES Joint Capability Technology Demonstration effort to address the challenges and unique constraints of providing Joint SSO and shared security services when operating in a tactical, denied-disconnected, intermittent, low bandwidth environment across all four U.S. military services.

-
- Army Health Promotion Risk Reduction Services
 - Software Engineering Center Common Data Services Framework
 - Army Data Center – Fairfield, Navy SPAWAR Systems Center

Did you know?

The CECOM Software Engineering Center (SEC) is the Agent of the Certification Authority for critical Command, Control, Communications, Computers, Intelligence, Surveillance & Reconnaissance Systems. SEC performs validation testing and analysis and prepares the Agent of the Certification Authority input for the Regional Hub Node (RHN) - Satellite Communication (SATCOM) system's operational authorization update, as required, to maintain uninterrupted global access to satellite communications for warfighters. SEC prepares input for inclusion in the Department of Defense Information Assurance Certification and Accreditation Process package for the RHN reaccreditation and submitting it to the Army Certification Authority Representative. In doing so, SEC ensures the Designated Approval Authority has what they need to make informed decisions on the net-worthiness of the RHN before issuing an Authorization to Operate. The five RHNs located around the globe provide command and control to the Wideband Global Satellite formation and global SATCOM access to our warfighters.

NEW MANAGEMENT APPROACH SUITS 'PROJECT CENTRIC' ORGANIZATION

By Jacqueline Boucher,
Tobyhanna Army Depot

Participants of a recent discussion shed some light on Tobyhanna Army Depot's newest strategy for managing its joint C4ISR, Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance, programs and products.

A handful of pioneering employees spoke about what Project Management is and how this organic industrial base maintenance facility plans to use the systematic and standardized approach to manage business.

"What we do won't change too much, but how we do it is going to change," said Will Ramey, chief of the Production Management Directorate's Manufacturing Support Division. "Project Management is a proven system that has worked in government and private industry," he added, pointing out that the system principles are suited to Tobyhanna's "project centric" organization.

Members of the Engineering Design, Development and Manufacturing Division started using Project Management a short time ago as a way to keep the moving pieces of ongoing projects visible at all stages of production.

Success at the division level has led depot officials to promote expanding into other areas of production.

System processes are sorted into four phases — initiation, planning, monitor and control, and closing — and standard tools are available to guide users throughout the lifecycle of any program. Project Management tools can be adjusted to fit large or small projects.

"The tools will help keep everything on track," Ramey said. "There are thresholds built into the process that requires managers to report out on the status of different programs."

Tobyhanna, the U.S. Army Communication – Electronics Command's Depot, is still in the early stages of implementation, but participants in the New Workload Project Management Value Stream Analysis, VSA, are confident the new system will make it easier for employees to push products from the induction phase, through the repair process and back to the customer.

Personnel here are developing standard documents, checklists, and briefing slides that will outline job performance and make it easier for others to follow the progress of each program or product. According to Ramey, it's a proven standardized approach that if followed will increase an organization's success rate.

“For instance, how long should it take for a cost estimate to come back, or how do you know how long it should take to establish data?” said Keith Hoffman, Engineering Design Development and Manufacturing Division chief.

“The final intent is to make everything so standard that it becomes easier,” said Ed Farrell, chief of Production Management Directorate’s Product Support Division. He also mentioned devising standardized meeting slides and charts across all programs to alleviate confusion among managers and workers.

Assisting in the transformation is a small group of Project Management professionals who have completed the requisite training. Some have participated in a six-month course offered at Tobyhanna, while others were certified through other means.

“We envision more people being trained in the system’s methods,” Ramey said, adding that senior leadership has agreed to continue investing in Project Management training on the depot.

“This thought process, this culture change, is important enough to invest in a specific training type so personnel engaged in this management approach will be able to use the tools. That way we have smooth transitions from organization to organization and a smooth project from start to finish.”

In addition to the VSA, depot personnel have also conducted four rapid improvement events.

INITIATION PHASE: Organize project requests through a standard process to make an effective business decision, minimize risks to the organization and meet customer’s scope, cost and schedule. Initiation phase is about clearly defining your target so you’ll know when the objectives have been met.

PLANNING PHASE: Develop a set of plans to guide the team through the execution phases of the project. Plans created during this phase will manage time, cost, quality, change, risk and resources to ensure that the project is delivered on time and within budget.

MONITOR AND CONTROL PHASE: Establish standard methods to ensure project is meeting planned cost, schedule, and performance criteria. Tools created during this phase will communicate health of a project to ensure that the project is delivered on time and within budget.

CLOSING PHASE: Confirm completion of project deliverables to the satisfaction of the customer. Identify and capture of lessons learned and best practices. Archive project deliverables for reference, organizational learning and reuse.

Beyond Misery.....

"To be learning something new is the chief pleasure of mankind."
- Aristotle

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Steve Grzedzinski

Lean experts share wealth of knowledge during workshop

By Justin Eimers, Tobyhanna Army Depot

More than 80 people participated in a Lean Learning Workshop, LLW, at Tobyhanna Army Depot. The event was held to give depot employees the opportunity to learn more about Lean from world-class teachers and practitioners.

Representatives from more than 10 regional corporations, ranging from the Defense industry to healthcare, presented at the event. The president of the Middle Atlantic Chapter of the Association for Manufacturing Excellence discussed how to overcome barriers, leading to personal and process improvement.

The LLW included several other briefings: Lycoming Engines discussed their Shingo prize-winning continuous improvement journey; Benco Dental, the nation's third-largest dental supplier, discussed improvements in equipment logistics; Geisinger Health System presented "Getting Better at Getting Better."

Kris Tompkins, chief of the Communications Systems Directorate's Communications Security Division, also presented a brief that showcased Tobyhanna's 2012 Silver Shingo Medallion, Lean Management System and Tier Meeting philosophy.

In years past, Tobyhanna sent personnel to various Lean conferences to bring fresh ideas and process improvement solutions back to the depot. Due to recent budget constraints the Productivity Improvement and Innovation Directorate decided to host its own event.

One goal of the workshop was to learn more about how Tobyhanna's Lean practices differ from those used by other organizations.

"There are always opportunities for improvement," said Brian Regan, chief of the Process Improvement Division. "Depot personnel who attended

the workshop have already begun brainstorming how they can apply the concepts they learned."

Depot personnel described the workshop as a success and a source of inspiration for improving their jobs and lives.

"The Lean workshop confirmed for me that what our command teaches and practices every day is exactly in line with what these successful leaders practice on a daily basis," said Pat Connolly, chief of the Depot's Communications Systems Directorate-Antenna Systems Branch.

Greg Stanton, corporate representative from Gentex, said the workshop highlighted Tobyhanna's successful Lean efforts.

"The Tobyhanna Lean Learning Workshop offered a great cross section of Lean applications in diverse industries. It was an oasis for operational excellence practitioners."

Did you know?



Steve Grzedzinski

Local reservists practiced the art of their craft while wading ankle deep in concrete, laying a new floor in one of Tobyhanna Army Depot's storage buildings during their annual Extended Combat Training. The training plan was designed to improve the unit's focus on individual training in several military occupational specialty codes; however, the plumbers, carpenters, masons and electricians that converged on Tobyhanna did so much more.

Technical sustainment team designs innovative tool, develops training package and sustainment services

By Andricka Thomas, Communications-Electronics Command Headquarters

U.S. Army Communications–Electronics Command (CECOM) personnel teamed to develop an extensive classroom training package designed to guide personnel in the Information, Electronic Warfare and Sensors (IEW&S) community on how to properly complete the annual Sustainment Systems Technical Support Program Objective Memorandum (SSTS POM) submission.

Last fiscal year, new guidance emerged that added Product Support Manager (PSM) requirements in fiscal years 2016-2020 SSTS POM Submission. The changes required the team to devise a plan to capture all requirements for qualified weapons systems designated by the Assistant Secretary of the Army for Acquisition Logistics and Technology, currently ACAT I, II programs.

In response, the CECOM Logistics and Readiness Center (LRC) SSTS submission team, comprised of Brett Bowers, Juanere Chambers, Shamika Fleuranges, Karen Koskie and Safari King, put together a training package that includes a presentation illustrating,

step-by-step, the method for developing a comprehensive SSTS POM submission with an in-class tutorial that provides additional guidance and instruction.

SSTS is an annual budgeting forecast drill designed to capture funding requirements for support of post-production weapons systems in sustainment. SSTS directly impacts the ability of the Army to maintain and preserve these weapon systems' legal, safety and capability requirements, according to LRC's Intelligence, Electronic Warfare and Sensors.

The training presentation identifies, explains and illustrates a multitude of elements involved with the submission process, including Weapon System Teams requirements developers; planning factors; priority codes; rates per fiscal year; amount unfunded calculations; work production codes; and man-hour calculations for organic/contractor support, explained Chambers, LRC IEW&S technical writer.

“We teamed with the PSMs and PEO IEW&S (Program Executive Office for

Did you know?

The CECOM Logistics and Readiness Center Packaging Support Team visited five storage sites while participating in a two-year project overseen by the Logistics Support Activity Packaging, Storage and Containerization Center gathering weights, dimensions and packaging data for 2,345 CECOM-managed items with missing or suspicious information in Logistics Modernization Program. This information is critical for processing requisitions and turn-ins, and aiding in the determination of transportation and storage costs.

Intelligence, Electronic Warfare and Sensors), to strategize a plan of execution to ensure all necessary sustainment requirements were captured,” said Fleuranges, LRC IEW&S provisioner. The collaborative effort addresses issues, concerns or uncertainties to ultimately devise mutually beneficial approach to capture the SSTS PSM requirement.

The training sessions introduced PSMs to their weapon production codes designated for their systems that covers personnel and support actions needed for each system.

“The Product Support Manager initiates program requirements that drive supportability, plans, budgets and actions put in place to develop, field, and sustain weapon system equipment. The visibility of key sustainment planning factors helps to ensure the PM’s sustainment strategy is meeting material readiness objectives,” said Brett Bowers, LRC IEW&S provisioner.

In order to simplify the mathematical portion of the SSTS POM Submission, the team designed the SSTS Planning Calculation and Conversion Tool, called PCACT, to alleviate users from having to calculate each fiscal year’s amount unfunded for organic/contractor support, explained Safari King, LRC IEW&S provisioner. The new tool reflects new labor rates, man hours and populates the DMOPS spreadsheet and appropriate briefing charts.

“We plan to continue to simplify the SSTS POM Submission package through the utilizing the Resource Formulation Guide,” said James Tiggs, chief RADARS Branch, LRC IEW&S. “Finding better ways to get our jobs done is imperative as the Army transitions to sustainment. That’s what this effort was all about...to better streamline our processes to ultimately provide better, faster service to the IEW&S communities...and ultimately the warfighter.”

C4ISR TEAMS TO CREATE LAB, SYNERGIZE TACTICAL RADIO LIFE CYCLE SUPPORT EFFORTS

By Argie Sarantinos-Perrin, PEO C3T

Three Army organizations have united to form the new Unified Lab for Tactical Radios – Army, combining research, development, sustainment and acquisition efforts for the Army’s radio portfolio in a single location.

The new facility opened Jan. 7 during a ribbon-cutting ceremony and combines personnel and resources from the Army Communications-Electronics Command (CECOM), Program Executive Office Command, Control, Communications-Tactical (PEO C3T) and Communications-Electronics Research, Development and Engineering Center (CERDEC) in order to provide economies of scale and better coordination of radio technologies throughout their lifecycle.

“Teamwork is the key in this endeavor,” said Larry Muzzelo, director of CECOM Software Engineering Center about the new lab. “Ultimately, through our ability to synergize our resources and technical skills, we’ll be able to seamlessly transition systems like tactical HMS [Handheld, Manpack and Small Form Fit] radios into sustainment thereby ensuring the readiness of the Army’s software driven systems.”

The new ULTRA facility is located on the Command, Control, Communications, Computers, Intelligence Surveillance and Reconnaissance (C4ISR) campus at

Aberdeen Proving Ground, Md. The facility will support the full lifecycle of Army radios, from research and development; to procurement and management; to sustainment. Radios represented in the lab include a variety of current program of record and commercial products managed by PEO C3T’s Project Manager Tactical Radios, as well as legacy and future systems.

“The synergies that can exist on this campus are amazing for the Army,” said Brig. Gen. Daniel P. Hughes, program executive officer for C3T. “This lab will enable a future for Army communications for our radio procurements and for the expansion and enhancement of the technology that we have in the field today.”

In order to provide the best and easiest to use radios for Soldiers, the ULTRA facility will perform testing, integration, capability upgrades and troubleshooting of various tactical radios. The Army’s latest software-defined radios – currently used in Afghanistan by two Brigade Combat Teams from the 10th Mountain Division – enable Soldiers to communicate and maintain situational awareness beyond line of sight, by using advanced waveforms that create mobile, ad-hoc networks.

Before radios are sent to Afghanistan and other locations, they must go through rigorous testing both individually and as part of the holistic Army network. The

ULTRA team will perform some of these evaluations to ensure interoperability between current and future radio systems, as well as conduct realistic risk reduction activities prior to additional external test events and fielding.

With each new evolution, the Army's tactical radios deliver more capabilities; however, they also become more complex to oversee and maintain. By pooling resources and expertise, the ULTRA team will not only ensure that current and future radios are properly maintained and integrated into the network, but also provide evolving support throughout their lifecycle.

"One of the big benefits of this laboratory is that we're going to be able to collect up those people that we have with those technical talents and use them to train other people so that we can grow our workforce right in this lab," said Dr. Paul Zablocky, director of the CERDEC Space and Terrestrial Communications Directorate (S&TCD). "ULTRA goes that next step and we start sharing human resources and human capital and grow them together."

The CSISR campus is also home to other network laboratories and integration facilities, including the C4ISR Systems Integration Laboratory (CSIL) and the Tactical Systems Integration Facility. The facilities' interoperability, connectivity and close proximity will enable the information gathered in ULTRA to feed other activities and vice versa, eliminating duplicative efforts and redundancies.

"We're going to leverage the investment that we made in the CSIL," said Scott Newman, ULTRA lab manager and program director for Systems Engineering and Integration, CERDEC S&TCD. "We're going to work hand-in-hand to make sure this new lab is a success."

The ULTRA facility is positioned to support the Army's new acquisition strategy for tactical radios that promotes full and open competition among all industry partners. By serving in a dual capacity as the Soldier Radio Waveform (SRW) Reference Implementation Lab, the ULTRA facility will ensure interoperability of SRW among multiple vendors' hardware platforms. Additionally, the ULTRA team will be able to collect and analyze data on numerous vendors' systems in a single location.

When the lab is completed, it will be dedicated to Paul Angelini and Wayne Hugo, who made significant contributions to the Army's tactical radio programs. Angelini, who began his career at CERDEC in 1999, researched and developed small disposable radios and also supported the development of the SRW that is used by sensors, munitions, tactical missiles and Soldiers.

Hugo, who began his government career in 1984, was also instrumental in developing the SRW. His work on the Soldier Level Integrated Communications Environment project was used to develop the SRW that is used for integration and porting onto joint tactical radio systems platforms.

At the ribbon-cutting ceremony, senior leaders said ULTRA serves as an example of the synergies achieved on the C4ISR campus.

"The idea of being able to share on the capital investments for laboratories, minimizing the investments from each of the organizations and then growing a workforce collectively that can work across the lifecycle will benefit us all," said Gary Martin, acting director, CECOM.



US Army Photo

CECOM Army Reprogramming Analysis Team – Bridging Support Between EW and CEMA

*A commentary by Michael Crapanzano,
Communications-Electronics Command*

Cyber as a Threat

Few doubt the threat of cyber attack. What is striking is the scope of this rapidly developing and migrating threat and the damage that it can create as a tool of warfare. America, more so than any other country or entity, has become a haven of virtual interaction. Computers and networking open us up to

attack, requiring us to consider cyberspace as a new domain of warfare. Perhaps the most insidious aspect is that the threat can be from adversary nation states with considerable cyber-war talent and resources, insiders, or from a single hacker with malicious intent.

The Operational Environment

The Army recognizes that its' operational environment has changed dramatically from the largely kinetic and linear battlefields of past centuries. The convergence of wired, wireless, and optical technologies has led to the merging of computer and telecommunication networks. Handheld computing devices continue to grow in number and capability. Next generation systems are beginning to emerge, forming a global, hybrid, and adaptive network that combines wired, wireless, optical, satellite communications, supervisory control, and data acquisition, and other systems. Soon networks will provide ubiquitous access to users and enable them to collaborate when needed in near real time.

The Concept of CEMA

In response to increasing global challenges, the Army introduced the concept of Cyber Electromagnetic Activities, known as CEMA, which involves “activities leveraged to seize, retain and exploit an advantage over adversaries and enemies in both cyberspace and the electromagnetic spectrum, or EMS, while simultaneously denying and degrading adversary and enemy use of the same and protecting the mission command system.” CEMA is implemented via synchronization and integration of three lines of effort: cyberspace operations, electronic warfare and electromagnetic spectrum operations, referred to as EMSO. The effects of Cyber Network Attack and Electronic Attack, in particular, require Cyber and EW to communicate particularly at the different tactical echelons Corps to Battalion. “CEMA provides the commander with capabilities that can be employed to deceive, degrade, disrupt, deny, destroy or manipulate across the continuum, and CEMA can exploit enemy and adversary cyberspace and EW functions or create first order effects in cyberspace and the EMS to create cascading effects into natural domains to affect weapon systems, command and control processes, and critical infrastructure and key resources.” Although none of these mission areas are new, the ability for technology to bridge them increased dramatically around the globe, enabling cyber network attacks to be delivered via the EMS, and turning EMS dominance into a force multiplier.

ARAT-PO Mission

For over twenty years, the CECOM Software Engineering Center’s Army Reprogramming Analysis Team – Program Office, ARAT-PO, has been active in the EW and EMSO parts of CEMA. This experience places ARAT in a unique position since effects in the cyber domain may cause effects in EW through

the EMS. This interrelationship shows the importance of Electronic Attack, or EA, Electronic Protect, or EP, and Electronic Support, or ES, critical capability in the cyber domain. See Figure 1.

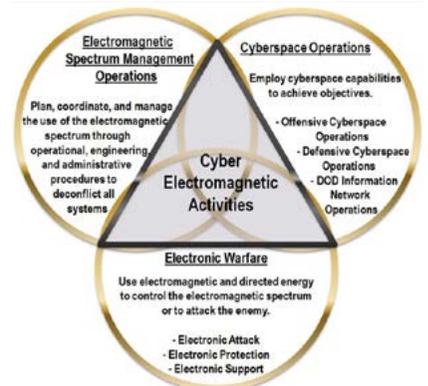


Figure 1: Concept of Integration of EW, EMSO, and Cyber into CEMA in draft FM 3-39, CEMA

Fighting within the EMS is not a new mission for CECOM. Chartered by the Commander, Army Materiel Command, to support the EW reprogramming mission, ARAT is a rapid reprogramming infrastructure that develops, delivers, and sustains software for Electronic Warfare systems and other Electromagnetic Spectrum capabilities to support Commanders across the full range of military operations. ARAT has expertise in two of the three elements of CEMA: EW and EMSO and is active with the Cyber community, providing suggestions for the closer integration of EW and Cyber. ARAT’s Wayne Field states: We can sustain any relevant Army ground or air EW system through mission software reprogramming, and provide the ideal bridge for CEMA versus EW effects. Currently, we support Counter- Radio-Controlled Improvised Explosive Devices, or RCIED, Electronic

Warfare systems, commonly referred to as CREW systems, and aircraft survivability equipment, or ASE.

During the Iraq and Afghanistan conflicts, we were busy ensuring Army forces were protected from EMS-related threats, including Radio-Controlled Improvised Explosive Devices, or RCIEDs, continued Field. Our highly sophisticated EW laboratories at CECOM's Aberdeen Proving Ground facilities allow ARAT to analyze thousands of EMS-related threats to ground and airborne forces annually and develop mission software threat loads, which we field over SIPRNET using our secure portal. Our ability to rapidly create mission software to defend against current threats while maintaining an awareness of constant newly emerging threats literally saved thousands of Soldiers' lives and ensured mission accomplishment for U.S. forces around the globe.

Looking Ahead

Recognizing the importance of CEMA, SEC participated in the initial efforts to create a Cyber Capabilities Based Analysis under the Mission Command portfolio. We worked with the Cyber Community in every aspect of the CBA, including the warfighting scenarios and the Leader Development, Training, and Education support studies notes Field. We were involved during the requirements process representing the needs for EW, particularly Electronic Attack related to Offensive Cyber Operations beyond the specific needs for reprogramming programs of record. By supporting discussion and debate during the entire process we were positive advocates for the EW reprogramming processes for both air and land EW systems. By exploiting their ability to reprogram software and adjust firmware in existing systems, ARAT provides rapid

and inexpensive adaptation to new threats instead of expensive throw-away hardware, proprietary software, and short life cycles.

A Logical Conclusion

CECOM's SEC is particularly capable of being leveraged now to support our looming battles in Cyberspace. From highly trained software engineers to multi-million dollar facilities and state of the art simulations technology and software/firmware engineering expertise, SEC ARAT-PO provide an existing rapid software development and reprogramming capability, providing tremendous value to ARCYBER's missions of planning, coordinating, integrating, synchronizing, directing, and conducting network attack and defense of all Army networks, and when directed, conducting CEMA operations in support of full spectrum operations.

As the Army embraces emerging CEMA doctrine and continues to wage war across Cyberspace, our core competencies in rapid software design, reach-out to industry, academia, intra-service partners, and cross-domain flexibility will ensure an enduring relevancy during a time of transitioning global conflict, concludes Field.

Mike Crapanzano serves as the Deputy Director, Intel Surveillance and Recon Program Officer, Army Reprogramming Analysis Team at the CECOM Software Engineering Center.



AN/AAR-57 Common Missile Warning Set



CECOM, INTEGRATED TO PROVIDE

1ST CLASS C4ISR SUPPORT WORLDWIDE

Tobyhanna Army Depot:

Providing maintenance, fabrication, manufacturing, integration, overhaul and field repair services of C4ISR systems for our Joint Forces.

- Depot-Level Manufacturing, Repair and Overhaul

Logistics and Readiness Center:

Providing timely, cost-effective, integrated global C4ISR logistics and field support to our Joint Forces.

- Foreign Military Assistance
- Logistics, Sustainment Planning and Execution
- Supply Chain Management
- Field Support

Software Engineering Center:

Providing software, hardware, business applications and enterprise life cycle solutions for C4ISR systems.

- Software Sustainment

U.S. Army Information Systems Engineering Command:

Providing systems engineering services, installation, integration, implementation and evaluation support to communications, information technology systems and infrastructure, while supporting the modernization of the network.

- IT Systems Engineering and Integration

Central Technical Support Facility:

Providing integration and certification testing for the Army LandWarNet/mission command and information technology systems.

- Interoperability Testing and Certification



THE CRITICAL LINK

U.S. ARMY COMMUNICATIONS-ELECTRONICS COMMAND

SEC delivers software solutions supporting Navy ballistic missile defense mission

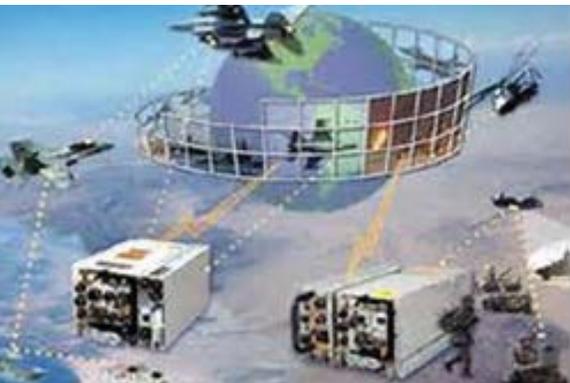
By Morgan Hansen, Software Engineering Center

The Software Engineering Center (SEC) experts delivered an interoperability software solution at the request of the U.S. Navy's Program Executive Office for Command, Control, Communications, Computers and Intelligence, C4I, in support of their ballistic missile defense mission this past year.'

The SEC Ground Station Branch Joint Tactical Terminal-Common Integrated Broadcast Service-Module, or JTT-CIBS/M, team developed a Block 6 Version 3.3 software release patch to resolve translation issues uncovered during Integrate, Test and Evaluation interoperability testing of the Navy AEGIS missile defense platform.

The JTT System is a family of special application UHF tactical intelligence terminals that provide capability to disseminate time sensitive C4I and battlefield targeting information. The platform allows for the detection of critical early warning target information to support the ballistic missile defense mission. The JTT software solution was delivered last August and was delivered two weeks ahead of schedule, according to Pina Patel, SEC JTT-CIBSM project lead and computer engineer.

"We needed to correct the errors in message translation soonest, to prevent interoperability issues that would have significant impact on Navy systems



The Joint Tactical Terminal System is a family of special application UHF tactical intelligence terminals which provides the capability to disseminate time sensitive C4I, and battlefield targeting information.

supporting national defense missions,” said Patel. She explained that the effort enables defense agencies to meet integration requirements for key Integrated Broadcast System data updates with AEGIS and other elements of the ballistic missile defense architecture.

Patel and her team followed a ‘test-fix-test-fix’ scheme, bypassing the dual-testing cycle, to deliver the update release two weeks ahead of schedule at the requirements of Navy integrators. She credits the rapid delivery to the close coordination and synchronization the team had between services, original equipment manufacturer engineers, test agencies, PEO C4I and Army JTT Joint Program Office Program Manager Distributed Common Ground System – Army’s senior leadership involvement.

“The collaborative effort and close communication between all parties involved enabled quick development and effective testing cycles, specifically throughout requirements generation, design and software development, particularly during testing,” said Patel.

The Navy PEO C4I customer spoke highly of the team’s results.

“I want to thank the SEC [Software Engineering Center]...and the whole JTT development and test community on the tremendous teamwork and effort expended to get this critical capability built and tested,” said Capt. Jeff Myers, U.S. Navy PEO C4I, PMW-120 assistant program manager.

Myers spoke favorably of the technical discussions and feedback between team members to meet tight fielding plans early this year.

“This experience could serve as a model to be emulated in many Program Offices in the future,” said Patel. “This effort provided our joint warfighters with the most up-to-date software to enable their success in.”

Did you know?

Personnel are fabricating miles of cable as part of a program to update the Army’s tactical ambulance fleet. Tobyhanna Army Depot, Pa., joined forces with Rock Island Arsenal, Ill., to produce 72 new M997A3 Humvee Ambulances for the National Guard. Employees are fabricating 22 different cable assemblies, which are packaged and sent to Rock Island for installation. The first 45 units were scheduled for fielding in March 2014.

Quick response keeps Black Hawk fleet airborne



Steve Grzezdinski

Electronics Mechanic Pam Eisenhauer joins a cadre of depot technicians who are rebuilding and overhauling hundreds of legacy gyroscopes as part of a short-notice, short-term project for CECOM. Eisenhauer works in the Airborne Communications/Instrument Branch.

By Jacqueline Boucher, Tobyhanna Army Depot

The Army aviation community turned to Tobyhanna Army Depot, Pa., for help when a piece of faulty equipment grounded a number of UH-60 Black Hawk helicopters.

To keep the fleet airborne, 20 depot technicians were tasked with rebuilding and overhauling hundreds of legacy CN-1314 Vertical Displacement Gyroscopes to replace the modern Fiber Optic Gyroscopes, or FOG, that weren't functioning properly. The Communications-Electronics Command's (CECOM) Enterprise Soldier Aviation Directorate, at Aberdeen Proving Ground, Md., funded the short-notice, high-priority project last June.

Less than 100 gyros remain of the 426 increase the depot received just a few months ago, according to Sam Capizzi, Airborne Communications/Instrument Branch chief. The team is scheduled to finish the job by the end of November.

A Black Hawk Safety of Flight memo was issued by the Aviation and Missile Command, headquartered at Redstone Arsenal, Ala., restricting all Instrument Meteorological Conditions (IMC) flights for the helicopters with the FOG system installed.

"By acting quickly and being proactive, Tobyhanna Army Depot has helped reduce the Safety of Flight impact not only for CECOM, but most importantly the Soldiers



Spc. Creighton Holub, Combat Aviation Brigade PAO, 4th Infantry Division

A trio of Blackhawk helicopter crews land at Forward Operating Base Kalsu for hot refueling and to drop off and pick up personnel.

who need to fly in IMC conditions,” said John Watson, inventory management specialist, CECOM Logistics and Readiness Center Enterprise Soldier Aviation. “The success of this project is a true testament to teamwork.” Watson is the item manager for the CN-1314 gyroscope.

What makes this situation unique is that the CN-1314 is an older asset that is being phased out [but still in the inventory] and replaced by the fiber optic gyroscopes, Capizzi explained. Tobyhanna works on both models of the legacy gyroscope.

To meet customer requirements, the branch needed to overcome a few obstacles. CECOM worked with Tobyhanna controllers and promptly came up with solutions to handle the increased workload with additional manpower and by starting a new production line, according to Watson.

“These employees have surpassed all expectations,” said George Bellas, director of the Command, Control, Computers (C3)/Avionics Directorate. “I’m extremely proud of the quality and quantity of work they’ve accomplished in such a short period of time.”

On average, nine employees complete about 60 vertical displacement gyros a month for CECOM. This short-term increase in fiscal year 2013 operations

necessitated a third shift and required training new employees to support the workload.

“Volunteers from other avionics shops stepped up to help with this project,” Capizzi said. “It took about a month to get everyone trained and up to speed. Steadily and surely, they started to produce gyros.” Employees are sorted into four areas — builders, calibrators, rotor buildup and banders/debanders.

Bellas mentioned that the gyro work is “micro-mechanical” and requires highly-skilled technicians with a steady hand, patience and good eyesight. The two shifts have a mix of experienced and inexperienced employees working together, he said.

It takes nearly 30 hours to disassemble, overhaul and rebuild, then test the asset, according to Electronics Mechanic Pam Eisenhower, who has worked on gyros for about seven years.

“Different people have different responsibilities,” Eisenhower noted. “It’s been a lot of hard work and we’re getting the job done — as a team.”

EFFIC

SOLAR CARPORT POWERS UP

Constructing a solar carport has proved more than Tobyhanna Army Depot, Pa., bargained for in its quest to save energy. Since coming online in June, the solar carport is producing an average of 9,963 kilowatt-hours a month, exceeding initial predictions. At this rate the array's annual electricity production would be enough to power roughly 11 single family homes. The carport features a solar photovoltaic array that supplements or provides power completely to the Mack Fitness and Recreation Center depending on the amount of electricity it generates. The carport also provides 27 covered parking spaces. This construction, as well as the modernization and energy efficiency improvement of 10 paint booths was done under the Army Corps of Engineers Energy Savings Performance Contract.



EFFICIENCIES

COLLABORATION RESULTS IN STREAMLINING COMSEC STORAGE

The Army will save \$3.1 million in shipping and storage costs over the next five years thanks to a collaborative effort between Tobyhanna Army Depot, Pa., and the Program Executive Office Command Control Communications-Tactical Project Director, Communications Security.

To protect sensitive or classified data, Communications Security (COMSEC) controlled inventory items must be stored in secure areas. However, customers were occasionally shipping non-secure items on pallets carrying secure items, requiring the entire pallet to be securely stored when received at Tobyhanna.

A Lean Six Sigma event uncovered 118 pallets of various types of misdirected equipment being stored in a secure area on the depot with an average cycle time of 702 days.

By streamlining the misdirected shipment process, storage space consumed by the equipment decreased 70 percent, processing time reduced 94 percent and costs were cut 87 percent.

The improved process lets original senders know when the COMSEC facility receives the assets and sets a hard deadline for its removal to ensure that the items don't sit in limbo, taking up warehouse space.

SEC provides software enhancements to Firefinder radar, cuts cost, extends life of system

By Neil Patterson, Software Engineering Center

The Software Engineering Center provides software enhancements and integration support to the AN/TPQ-37 Firefinder Radar to support to recently integrated hardware upgrades that replaced obsolete and unsupported analog technology portions of the radar with more recent digital technology.

The radar is highly mobile and is designed for automatic first-round location of indirect fire. The currently fielded system uses analog technology to perform the mission it was originally designed for, according to Roland Leatherman, project lead at SEC. The radar constructs an electronic fence of pencil-shaped radar beams that are adjustable to terrain and electronically steered to search a horizon several times a second to create a secure perimeter with tracking capability, according to Leatherman.

“FSED (Full Scale Engineering Development) has been an integral part of this process of providing software enhancements and integration to accommodate the hardware upgrades,” said Leatherman. “This enhancement extends the life of the system in the field, as well as helped the PM (Project Manager) reduce costs from a maintenance perspective.”

The Software Engineering Center is a U.S. Army Communications-Electronics Command, subordinate to the Army Materiel Command.

Did you know?

After months working with the Department of Army Headquarters G-1, the CECOM Software Engineering Center fielded the Commander's Risk Reduction Dashboard (CRRD) Proof of Concept to the battalion and company level commanders of the 3/319th Regiment, 82nd Airborne Division for evaluation of the dashboard in a real-world environment. The dashboard is designed to recognize 24 high risk factors or behaviors, predetermined by health subject matter experts, reported to be associated with persons contemplating suicide. The project is a result of the Army's focus on suicide prevention and looking at innovative approaches to address, and ultimately prevent, suicide among the Army's ranks, by recognizing the early warning signs so commanders can get Soldiers the preventive services they may need. The CRRD is a Vice Chief of Staff of the Army tasking under the Army Ready and Resilient Campaign to develop a management information systems to provide commanders the ability to detect, measure and track unit-level at-risk behavior.



SEC SIMPLIFIES PATCH MANAGEMENT PROCESS, IMPROVES EFFICIENCY

By Jim Hayes, Software Engineering Center

Two Software Engineering Center engineers designed a software application for the existing commercial product, Microsoft System Center Configuration Manager to expedite the process to secure tactical servers and workstations.

The application, called System Center Configuration Manager (SCCM) Master, automates and streamlines the patch management system process to secure tactical servers and workstations. In support of Program Executive Offices Command, Control, Computers-Tactical; Project Manager Mission Command; and Product Manager Strategic Mission Command, “this new SEC-developed technology and process, provides for a much more agile and efficient patching of tactical systems, that were previously very time consuming and cumbersome,” said Jay Wodka, information technology specialist at the Communications-Electronics Command SEC.

Daily, military networks are subject to cyber attacks from hackers all over the world who work to identify any known vulnerability in our network systems. To combat the nation’s cyber adversaries, Army units used to manually install patches to its servers and workstations using a DVD, which, in an environment with potentially hundreds of workstations and dozens of servers, is a time consuming process.

Now, the SEC-engineered application pushes patches to all of its systems in less than one hour and five mouse clicks, according to Wodka.

This patch management system is part of a larger overarching project called Installation as a Docking Station, or IADS. IADS is a program that allows units to maintain their tactical secret network systems at their respective installation’s Network Enterprise Center (NEC). This allows the systems to stay online for upgrades, sustainment, and security, said Wodka.

“The idea is that when the unit leaves for the field, they ‘un-dock’ from the NEC and ‘re-dock’ when they return,” Wodka explained. “Since the systems are part of the overall NEC network they are subject to more stringent Information Assurance policies which the SCCM Master Patch Management System fulfills.”

After a successful test pilot with the 43rd Sustainment Brigade in Fort Carson, Colo., the SCCM Master Patch Management system is now being used at dozens of units at several locations including Fort Bliss, Texas; Fort Drum, N.Y.; Fort Hood, Texas; Fort Riley, Kan.; Joint Base Lewis-McChord, Wash.; Fort Gordon, Ga.; Fort Sill, Okla.; Fort Stewart, Ga.; and Fort Bragg, N.C., with plans to expand into the Army National Guard and OCONUS units abroad, Wodka said.

Lean Six Sigma project leads to improved cycle times, acquisition requirements package process

By Allison Waltsak, Logistics and Readiness Center

In an effort to identify the root cause of long cycle times within the Acquisition Requirements Package (ARP) process, the Logistics and Readiness Center teamed with the U.S. Army Communications-Electronics Command (CECOM) Legal Office and Army Contracting Command to assess current workflow efficiency, conduct quantitative analyses of more than six years of data on the Contracting Opportunities Online and Engineering Support Tools, or COOLEST, and ultimately improve cycle times.

COOLEST is an ARP system of record and is used to workflow ARPs through creation until acceptance by the Army Contracting Center. Additional LSS problem-solving techniques were used to evaluate the source of these long cycle times and identify the best possible solutions.

The LRC took the lead in tackling the challenge of improving the ARP process cycle times, which had risen to an unacceptable level of 400 days, due in part to loss of experienced personnel during Base Realignment and Closure in 2005. The team's goal was to reduce the time to 150 days, an improvement of 62.5 percent.

The findings showed that the rework loops which were initiated downstream in the ARP process were caused by problems in the

upstream steps of the ARP process.

A key takeaway is that poor acquisition strategy upstream leads to problems and rework downstream. Through discussion with these experts, critical factors like people, policies and procedures impacting the ARP process were identified and prioritized.

Key elements of the overall improvement were the development of a reengineered Collaborative Acquisition Strategy Session and an ARP Document Review Session. Personnel from the Acquisition Support Branch were key contributors to the development of the improved strategy and ARP review session. A new SharePoint 2010-based solution, the Acquisition Requirements Management System (ARMS), will replace the COOLEST system to facilitate the reengineered ARP workflow.

A pilot conducted in the second quarter of fiscal year 2013 showed an improved cycle time of 195 days with the ARMS still going through a proof-of-concept demo and extensive user testing. Cycle time is expected to improve further upon rollout and user training.

Allison Waltsak currently serves as the LRC Lean Six Sigma project lead and Black Belt candidate.

Leveraging SharePoint to Right Size Supply Chain

By Andricka Thomas, Communications-Electronics Command Headquarters

Over the past year, the Logistics and Readiness Center incorporated SharePoint into its daily processes to streamline everyday tasks and share information between personnel within the Intelligence, Electronic Warfare and Sensors Supply Chain Management Division.

Information shared includes Quarterly Budget stratification signature sheets; supply action signature sheets; and weapon system team information.

For example, each quarter, the directorate is required to work more than 100 stratification signature sheets to accurately reflect requirements and stock posture.

“Putting the signature sheets on SharePoint and using Workflow has improved the staffing and signing efficiency, and enabled us to create an historical repository of budget stratifications ‘strats’ worked,” said Nicholaus Saacks, chief, LRC IEWS Directorate.

Another example, individual supply teams, like Firefinder, leverage SharePoint to post centralized backorder and supply status reports, ensuring all team members and supervisors have the latest information and eliminates the need to consolidate and email those reports.

“The Division is looking to expanding its use of SharePoint in other areas,” said Saacks. “This fiscal year, the division is moving to complete suspense dates on SharePoint instead of emailing spreadsheets back-and-forth to ultimately consolidate the reports at the end.”

He expects this decision will save email bandwidth, eliminate the need to consolidate multiple reports and suspense dates and ensure the latest information is available to everyone.

The Logistics and Readiness Center is a U.S. Army Communications-Electronics Command organization. CECOM’s headquarters is the Army Materiel Command.

LRC leverages existing process, creates efficiencies for security software upgrades

By Andricka Thomas, CECOM HQ

A Logistics and Readiness Center's (LRC) communications security expert leveraged an existing modification work order process to eliminate unnecessary costs of a new application to track software security upgrade compliances.

Faced with no system of record to support configuration management for software upgrades of Communications Security (COMSEC) equipment, Eric Walters, logistics management specialist with the LRC's Communications Security Logistics Activity, found a way to use an existing Army system of record to track National Security Agency mandated software upgrades.

Walters worked with Army G-4 Staff, the U.S. Army Communications Electronics Command Modification Work Order, MWO, Coordination Office, and Project Director Communications Security, PD COMSEC, to—for the first time—establish and apply existing MWO process to notification and tracking processes to save time.

The first MWO for COMSEC equipment was completed Sept. 10 for the TACLANE GigE Encryptor, KG-175A, and version 3.5v5 software upgrade, according to Walters.

“By implementing an MWO, CSLA will be able to track upgrades using an established Army system of record – Modification Management Information System, MMIS,” Walters explained. “MWOs provide field notification and the resulting MMIS completion response enables tracking of software upgrade compliance.”

The use of MWOs for software include identifying required, reportable identification information for MMIS, said Walters. CSLA continues to coordinate with Army G-6 and PD COMSEC to create All Army Activities messages to notify the field of required software upgrades. However, ALARACTs did not provide systematic reporting for compliance, according to Walters.

While the MWO process allows Army to track mandatory upgrades, CSLA is working to create configuration management fields in the ongoing Global Combat Support System-Army effort. These fields will provide instant accessibility to software, firmware, and hardware versions of all Army COMSEC equipment, Walters said.

Security Management Assistance Division uses new system, streamlines operations

By Tanya Reed-Norwood, Logistics and Readiness Command



The U.S. Army Communications-Electronics Command Logistics and Readiness Center (LRC) employed new system that provides a common operating picture to enhance the execution of security assistance programs and Foreign Military Sales (FMS).

In 2011, the U.S. Security Assistance Command (USA SAC) partnered with the Army Contracting command to develop a database system that would connect the contracting process with the supply process, allowing for a total enterprise picture of FMS sales, from pre-award through case closure. Since then, the LRC Security Management Assistance Division (SMAD) has served as a beta-tester for the program, working the system daily to identify problem areas and present process improvement.

“The idea was to create a program that would allow everyone to work and track critical metric data for the entirety of a case in real-time,” said Kellie Roth, a program integrator for the LRC.

The Common Operating Picture, or COP, coordinates and tracks a multitude of actions required throughout the case’s life cycle process, to include development, contracting, finance, logistics, supply discrepancy reporting and case closure, all functional areas which work closely together, according to Roth.

The execution of Security Assistance programs and FMS cases requires a team effort with the gaining country; USASAC,



US Army Photo

program managers, Army Contracting Centers, LRC Item Managers, other federal agencies, life cycle management commands and other services.

The COP provides a unified representation of several contracting, financial and supply database systems, bridging the gaps often created by multiple independent systems. By linking systems such as the Centralized Integrated System-International Logistics, Defense Security Assistance Management System, Case Development Analyzer, Case Execution Analyzer and Virtual Contracting Enterprise, all of which bring a unique piece of the puzzle to the COP. With the COP maximizing transparency, the FMS and acquisition communities now have access to an enterprise-wide picture for the entire life cycle of the case, thus eliminating organizational boundaries and allows every user to track case milestones

down to the requisition level, said Roth.

On any given day, the CECOM SMAD tracks more than 600 cases, comprised of more than 6,000 open requisitions, according to James Meredith, SMAD director. More than 125 different contracting actions are disbursed among different agencies. By leveraging the system, leadership monitored and tracked more than \$835 million in fiscal year 2013 sales.

“As the program develops it will allow for more accurate performance metric tracking by pin-pointing problem areas and identifies areas of responsibility for the issue,” said Roth.

Ms. Reed-Norwood currently serves as the Chief, Mission Support Division Security Assistance Management Directorate, CECOM LRC.

CECOM SEC and DHA Partner to Improve Medical Readiness through Software Process Innovation

A report by Dale Hughes, Software Engineering Center

In an effort to improve the quality and reduce the time, cost and risk associated with the software development process, the U.S. Army Communications Electronics Command Software Engineering Center (CECOM SEC) and the Defense Health Services System Program Executive Office (DHSS PEO), are leading the charge on a new software methodology called Agile Scrum.

To ensure our Soldiers stay “Army Strong” on the battlefield, they must receive the very best medical care and support. Through the DHSS PEO and CECOM SEC partnership to implement this methodology resulted in a time to market improvement and reduced Help Desk

tickets for the Defense Medical Human Resources System-internet (DMHRSi) application by 87 percent, according to research and tracking records.

The systems managed by CECOM SEC personnel at the DHSS PEO directly support all aspects of military health care. In theater, these systems ensure the availability of medical supplies, protect Soldiers from industrial and environmental hazards, and manage the biomedical equipment used during medical evacuations. These systems also support “brick and mortar” capabilities including medical billing, prescription refills and access to personal health data through the DoD Blue Button. The DoD Blue



ANALYZE

PLAN

DESIGN

Button provides eligible beneficiaries, who regularly receive treatment at a military hospital or clinic, the ability to view, download, print and/or share their personal health data.

Today, DHSS PEO project teams are using Agile Scrum to enhance software that will optimize the delivery of medical supplies, improve human resource management and enrich the health care experience of DHA patients around the globe. Software Development Methodology: Agile Scrum vs. Waterfall Model Agile Scrum represents a fundamental shift from the traditional “Waterfall” software development model, in use today by most DoD teams.

In the traditional Waterfall software development model [Figure 1], projects follow a set of linear steps to design, build and deliver the requested customer changes. While there are feedback loops, these loops can be very time and cost intensive, as major components of the solution may need to be reworked over and over. These linear steps also require multiple customer reviews and

approvals (overhead) to make sure the final product is in line with the customer request. As Waterfall projects are planned out at the beginning, based on initial requirements / assumptions, an inherent flaw of this approach is the belief the customer and the delivery teams know everything up front, and that there will be little to no changes during the execution of the project. As it is common that changes will occur; requirements, priority, customer, stakeholder, etc., changes usually impact the execution of the project, and the delivery of the final solution.

In contrast, the Agile Scrum software development model welcomes and supports change. Agile Scrum, [Figure 2] incorporates short, repeating software development cycles called Sprints. During Sprints, customers and the software development teams work closely together to prioritize and complete the work. This allows Sprint teams to deliver software releases early and often, which allows the customers and Sprint teams to learn and improve as they go.



Figure 1 - Traditional Waterfall Software Development Model

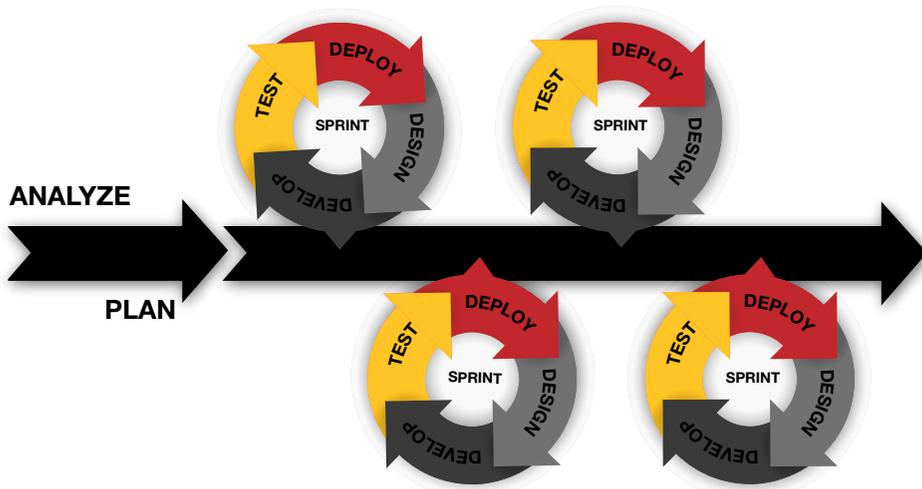


Figure 2 – Agile Scrum

Benefits to the Army

The adoption of the Agile Scrum methodology improves the delivery of software to Army customers and allows them to perform new medical functions quicker, with fewer errors. Most recently, Army representatives used the method for enhancing the DMHRSi, a system that helps the Army to manage their current and future medical human resources needs.

Since implementing Agile Scrum, the DMHRSi project has reduced the average number of days required to deliver a new software release from 419 days down to 58 days [Figure 3]. This represents a time to market improvement of almost 87 percent.

The Agile Scrum methodology allows DMHRSi customers to reprioritize requirements as their missions and needs change, which the Sprint teams then act on and deliver. This collaborative and responsive framework has led to increased customer satisfaction and a reduction in Help Desk tickets for the DMHRSi application by 87 percent. [Figure 4].

“The Agile Scrum process allows our customers to prioritize the capabilities they need immediately and the Sprint teams to deliver new software in a timely manner” said Chris Harrington, CECOM civilian and deputy program manager for the DHSS PEO. “The continuous feedback in Agile Scrum allows us to make course adjustment as needed in tandem with our customers and to deliver a better product.”

The CECOM SEC and the DHSS PEO are pleased with the success of the Agile Scrum implementation. The Agile Scrum methodology creates a culture of collaboration that allows the DHSS PEO to be responsive to Army customers. These innovative efforts will continue to support the medical care provided to Army service members, their families and military retirees worldwide.

Dales Hughes is a software program manager who serves as the Chief of the Medical Systems Division of the Enterprise Solutions Directorate at the CECOM Software Engineering Center.

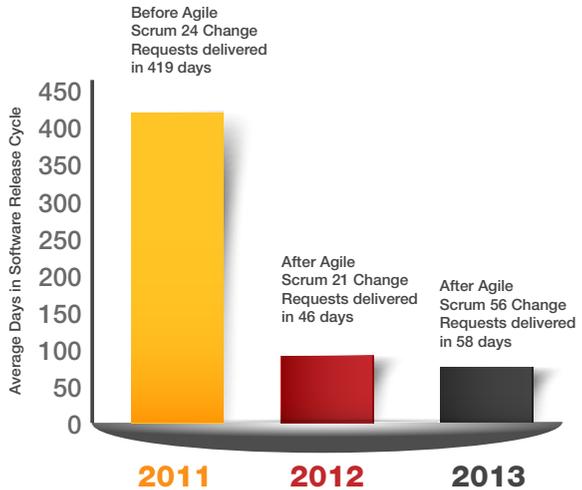


Figure 3 – DMHRSi Improves Time to Market with Agile Scrum

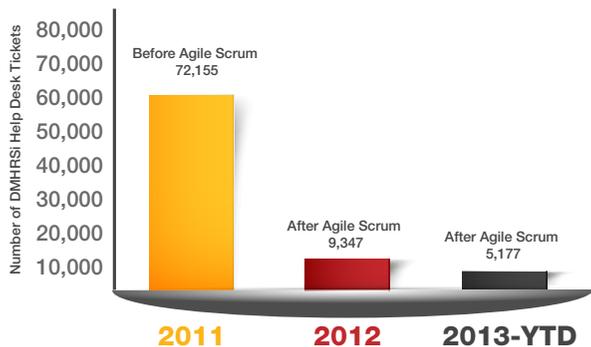


Figure 4

Did you know?

Tobyhanna Army Depot’s Reserve Component Training Program offers joint warfighters hands-on training in several military occupational specialties. Military units that train at the depot validate the facilities, the cost savings and the benefits demonstrated in a relationship between the users of the equipment and the civilians who repair it. One student said his “training evolution” was one more servicemembers should have the opportunity to realize.

Team Tobyhanna streamlines *Nett Warrior* fielding process

By Jacqueline Boucher, Tobyhanna Army Depot

Team Tobyhanna connects Soldiers to cutting-edge technology, which gives leaders the ability to soundlessly maneuver and track a unit's movements on the battlefield using a handheld device.

Several shops here are supporting the U.S. Army's Nett Warrior, or NW, system that provides warfighters secure and mobile voice, video and data communications capabilities. With this system leaders can send information using services such as e-mail, text messages and icons that signify different threat levels.

Depot personnel are streamlining the fielding process by performing tasks that until recently were handled by multiple vendors. In addition, tens of thousands of cables are being produced to meet customer needs.

While Tobyhanna engineers are involved with the design of cables, it's the employees in the System Integration and Support and Communications Systems directorates who actually have hands-on tasks with the product, according to William Ramey, chief of the Production Management Directorate's Manufacturing Support Division.

The Nett Warrior program is pairing commercial off-the-shelf smart phones with the AN/PRC-154 Rifleman Radio transmitter/receiver to display maps, troop positions and operational updates previously restricted to vehicles or hard-wired command posts.

"We pull everything together for testing, and then assemble the kits for fielding," said Sean Namlick, Communications Systems Directorate's



Steve Grzedzinski

Robert Wydro, rubber products fabricator and repairer, molds the ends on some of the cables fabricated in the Systems Integration and Support Directorate's Machining Branch.

Communications Security Logistics Management Branch chief. "Soldiers are getting everything they need to train or conduct missions in one partially assembled package." To date, more than 900 kits containing items such as radios, ancillary items, smart phones, cables and chest mount pouches have been fielded.

One program official remarked that after conducting a survey of several depots, Tobyhanna proved to be the one stop shop they were looking for.

Tobyhanna Army Depot, Pa., supports Nett Warrior from cable manufacturing, Field Service Representatives to communications systems, according to Chad Speight, Integrated Logistics Support Manager, Nett Warrior Program, PEO Soldier — PM Soldier Warrior, Fort Belvoir, Va.

Employees in the depot's communications shop integrate boxes and organize components into company sets and ship them to our fielding locations, he explained. They also helped start the lateral transfer process by loading information into the unit's property books.

"Tobyhanna offered the most capability for our program," Speight said. "In addition to the kitting operation, we have cables manufactured and in the future we will replicate software loads on mission planning computers and end user devices." Speight oversees all aspects of logistics, property accountability, supply, depot repair and supportability for the Nett Warrior and related products.

So far, Nett Warrior has fielded/issued equipment to two Infantry Brigade Combat Teams using Tobyhanna support; both have "gone off without a hitch," according to Speight. "We are extremely satisfied with the service Team Tobyhanna has provided. We're looking forward to the continued partnership as the program moves forward."

Nett Warrior is connected to a combat network through a radio [AN/PRC-154 Rifleman Radio] that acts like a computer

modem, sending and receiving information from one system to another.

The radio delivers networking connectivity to the frontline Soldier in a lightweight, ruggedized, body-worn device, according to Frank Babarsky, project officer for the Rifleman Radio and Nett Warrior.

"The Army's Rifleman Radio is relatively new workload — since 2012," said Babarsky. "We're upgrading some software and screening assets."

The radio is the "modem" that makes the Nett Warrior smart technology work, according to Stephen Holiday. He explained that the cables made here are used to connect the radio to the handheld device.

In 2010, the Ground Soldier System was renamed Nett Warrior Program. The Army intends to use Nett Warrior to provide mission command and position location information down to the team leader level.

"It's exciting to be part of this program," said Troy Morgan, electronics worker. "This is the latest and greatest thing for the Soldiers to have in the field."



Steve Grzezdziński



Steve Grzezdziński

Peter Ankner, electronics worker, configures a smart phone with the radio's secure network. Ankner works in the Communications Systems Directorate's Communication Security Division.

Nett Warrior pairs the AN/PRC-154 Rifleman Radio with commercial off-the-shelf smart phones.

ISEC engineers work together to improve quality and risk management

By Sandra Rosario, Information Systems Engineering Command

For the past year, the engineers in the U.S. Army Information Systems Engineering Command at Fort Huachuca, Ariz., have been enhancing the way ISEC does business to meet internationally recognized standards.

ISEC, a U.S. Army Communications-Electronics Command organization, has been revising engineering processes to develop controlled procedures that achieve predictable results to reduce risk and create standardized, high quality engineering products and services, as part of a technical working group. This improvement effort is based on the Systems Engineering model in the “Defense Acquisition Guidebook.” As part of this effort, ISEC used the Capability Maturity Model Integration, CMMI, method created by the Software Engineering Institute at Carnegie Mellon University to assess the organizational maturity level. One of the objectives of this standardization is to raise ISEC’s CMMI assessment from Level 1 to Level 2. Robert Wellborn, ISEC’s technical working group integrated product team lead, explained this improvement effort consists of two main elements.

“The first is the standardization of the ISEC Systems Engineering Process,” he said. “The goal is to develop repeatable processes that can be followed by all ISEC personnel. The second key part to standardization is the

development of uniform templates for all ISEC standard deliverable products.”

Wellborn said he believes employing controlled engineering standards is the most critical factor of this effort. He explained that consistent engineering procedures provide ISEC with the advantage of better risk management through error reduction, while simultaneously creating a workflow coherency across directorates that does not rely on a few workplace “heroes” to manage the majority of the risk involved in each engineering project.

“This [coherency] is a significant enabler to the ISEC matrix support workforce concept that allows ISEC engineers to seamlessly transition between projects and project teams, as all projects utilize the same systems engineering processes,” said Wellborn.

Dyanna Waters, ISEC’s lean six sigma black belt, said she thinks the most important aspect of this implementation is meeting the customers’ needs with standardized tools, such as templates. She said using templates ensures ISEC’s customers receive products developed within adhered-to guidelines, which reduce errors and redundancy. Waters explained the main benefit the customers gain from a uniform product.

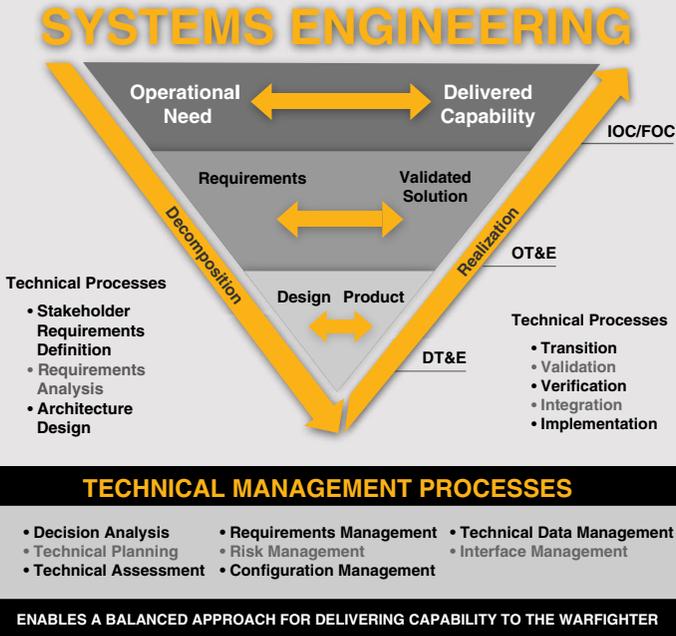
“Standards produce quality by enabling a consistent way of doing things,” she said.

Memorandums and Engineering Installation Packages.

In an effort to create high quality products and services while minimizing risk, the Technical Working Group has completed two major tasks involved in improving ISEC’s engineering processes. The first accomplishment was the standardization of the Functional Support Agreement process, which the directorates use to develop the FSAs with their customers for fiscal year 2014. The second achievement was the development of a standard template and an instructional guide for the ISEC System Design Plans, Project Concurrence

Waters explained this is a detail-oriented, long-term project entailing the support of ISEC’s leading engineers to complete successfully.

“The people... are working their jobs as well as contributing here, so hats off to them that they’re able to make all these contributions and do all this work in addition to their regular jobs,” said Waters. “It just talks to their drive to get this done as well.”



This chart illustrates the processes encompassing systems engineering, which serve as the basis for ISEC’s process improvements. Source: “Defense Acquisition Guidebook”

Tobyhanna overhauls Air Force *tactical training system*

By Jacqueline Boucher, Tobyhanna Army Depot



Sean Bovier

Members of Team Tobyhanna worked in frigid temperature at a remote location in the Alaska wilderness while completing the final phase of the first overhaul of the Air Force UMTE training system.

It was 20 degrees below zero when personnel fielded Tobyhanna Army Depot's first overhauled Unmanned Threat Emitter, or UMTE, training system at Eielson Air Force Base, Alaska.

Overhaul work on the U.S. Air Force UMTE systems began in November 2011, with the first system being completed in February. Personnel are working on three more systems, each at different phases of the repair process.

The UMTE is an Air Force aircrew training system capable of radiating

threat signals that simulate surface-to-air missiles and anti-aircraft artillery radar. There are 35 systems in the inventory, 16 of which reside on the Joint Pacific Alaska Range Complex.

The UMTE and other systems overhauled by Tobyhanna are an important part of providing realistic Electronic Warfare training to all branches of the U.S. military and our allies, according to John Karish, range engineer assigned to Eielson's 353rd Combat Training Squadron.

Overhaul has two main components – electrical and mechanical.

Electrical repairs include diagnosing equipment failures and replacing defective components.

Mechanical repairs include full restoration to like-new condition. The repair process includes sandblasting, cleaning, priming and repainting of an asset. Employees also remove all the system components and test and repair all internal wiring and cable harnesses.

“Everyone provided excellent support during the entire process,” said Sean Bovier, an electronics technician in the Production Engineering Directorate’s Surveillance/Range Systems Engineering Branch. “The system performed flawlessly and the Air Force was very happy with the results of our work.”

The UMTE joins Tobyhanna’s growing mission of radar support.

Tobyhanna Army Depot is a U.S. Army Communications–Electronics Command organization, subordinate to the Army Materiel Command.



Steve Grzedzinski

Left, Electronics Mechanics Anthony Dennis and Robert Slater conduct a system performance check on an Air Force Unmanned Threat Emitter (UMTE) training system after it was overhauled and reassembled. Site acceptance testing for the first overhaul was performed at a remote training range in the Alaska wilderness.



CECOM, THE CRITICAL LINK

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Tobyhanna Army Depot

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