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ARMY COMMUNICATOR

Voice of the Signal Regiment PB 11-13-1 2013 Vol. 38 No. 1

Implementation of the **UNIVERSITY MODEL**



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- *Remaking the Captains Career Course*

THE ARMY PROFESSION

By Randall K. Faulkner

For decades Army leaders have been looking at the state of the Army and the profession of Arms. A post-Vietnam report showed an Army, “close to losing its pride, heart, and soul.” Even so, the Soldiers that emerged from Vietnam won the Cold War. We emerged victorious in Operation Desert Storm and defeated Saddam Hussein’s Army in Iraq. We actively participated and prosecuted operations that separated three warring factions in the Balkans allowing for stabilization processes. We are currently demonstrating continued high performance through constant conflict in Iraq and Afghanistan for over 10 years.

Throughout the decade of combat operations where our Soldiers have had to adapt to unpredictable challenges and influences, leaders of all ranks have adapted exceptionally well. We have remained a professional and disciplined force. Even as we acknowledge some degradation of our professional ideas and the need to once again reflect and take action to correct these shortcomings, we would do a disservice by not also acknowledging the dedication to duty our Soldiers and leaders have shown during many deployments.

GEN Robert W. Cone, commanding general, U.S. Army Training and Doctrine Command stated in 2012, “The Army Profession Campaign is as much about dialog and reflection as it is about research and analysis. But most importantly, this campaign is about the actions we will take to improve our profession. The campaign is designed to inspire and engage our Soldiers and Civilians; to renew our collective commitment to the Army, its ideals, traditions and ethos, as well as to the American people.”

The Army Profession has two complementary components--the Profession of Arms, comprised of the informed members of the Profession, those skilled in the art of warfare and the Army civilian Corps, comprised of those non-uniformed members working for the Department of the Army. “Army professionals

are responsible for the developing and maintaining the highest standards of moral character and competence while pursuing a personal calling to serve the nation.”

As national strategies change, the force will likely lose tens of thousands of Soldiers, and this at a time when political leaders are in serious discussion to reduce or otherwise limit

benefits and pensions. Soldiers and Army civilians are concerned about the “pact” that we made with the nation when we volunteered. In order for trust to remain high, Soldiers and Army civilians must be shown proof that the Army leadership is fighting for them and keeping them informed of events that could affect them.

The Army creates its own expert knowledge for the defense of the nation through land combat. Military expertise is unique and is not generally held outside the Army Profession. “The Army’s expertise is the ethical and effective design, generation, support and application of expert land combat power by certified individuals and units in the support and defense of the America people.” As former General of the Army Omar N. Bradley stated, “The American Soldier expects his sergeant to be able to teach him how to do his job. And he expects even more from his officers.”

Winning in combat is the only acceptable out-

come. Whether or not we win is not just a function of being better equipped than our



The Army Profession includes both Soldiers and the civilians in the Department of Defense who are “responsible for developing and maintaining the highest standards of moral character and competence while pursuing a personal calling to serve the nation.”

(Continued on page 49)

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ARMY COMMUNICATOR

Voice of the Signal Regiment

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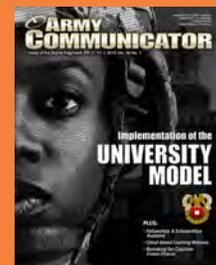
THE ARMY PROFESSION

Randall K. Faulkner

Join the Discussion

At the end of articles where you see this icon,  you can weigh in and comment on-line.

Cover: This edition of the *Army Communicator* focuses on the strategies in place to deliver relevant and evolving training to Signal Soldiers wherever they are in the world. Fellowships, scholarships and programs placing Soldiers in leading private companies to train assures that the most up-to-date technologies and techniques are moving quickly to the field of operations.



Cover by Billy Cheney

Look forward to innovative training

Signaleers,

We are now halfway through fiscal year 2013 and I could not be prouder to be the Chief of Signal.

Here at the Signal Center of Excellence we continue working to implement the Army Learning Model and University System initiatives in order to provide the most effective and efficient learning solutions for our Regiment. I took my Regimental Command Sergeant Major and Chief Warrant Officer with me to Joint Base Lewis-McChord earlier this year to observe how the Military Intelligence community is leveraging technology to address their training requirements. With what we already have underway here at the SIGCoE and with lessons learned on that trip we are refining our Signal vision on how to best utilize training technologies.

This edition of the *Army Communicator* touches on some of our current efforts that fall under the purview of the ALM and University

System Army initiatives.

The U.S. Army Training and Doctrine Command University System provides us a flexible and adaptive form of training tailored to meet specific Signal Center of Excellence needs today. At the same time TRADOC enables the framework for us to shape the Soldiers we will need in the Army of 2020. We must develop adaptive leaders fully capable of operating within a full range of scenarios through realistic live, virtual and constructive training, depending on the demands and needs of the environment and workplace.

One of the primary goals of the University System construct is to implement a more efficient center of excellence system based on processes that align and consolidate functions and resources across many schools/colleges within the centers of excellence.

In this edition of the *Army Communicator* you will be introduced to some of the great opportunities provided to our Soldiers such as Training with Industry. The agile acquisition process is putting the latest technology on the market into the field at unprecedented rates and it takes knowledgeable operators to make it work. That means you have unparalleled opportunities to train on the cutting edge of information technology development and implementation.

We also have great relations with our allies around the world. In this edition, we are featuring a

look at how our German partners are implementing their IT resources.

We cannot ignore the realities of this period of declining budgets and our current efforts align with this reality. You'll see that we are creating greater training opportunities with reduced costs.

In the midst of some challenging fiscal concerns we must press on. There will be no decline in our professionalism. The Army Learning Model and the Army Profession remain resounding priorities under TRADOC Commander GEN Cone. To effectively and efficiently meet the expected outcomes of these models, we must refocus our many learning programs and efforts into an integrated and synchronized initiative that enables our adaptive and agile Signaleers to be and do their best.

I have always said that the business of the Army is about people and not things. Finances will impact our ability to have things but should not affect our will to maintain excellence.

I hear stories almost daily of how you are rising to the occasion and rather than succumbing to the chant of trying to do more with less, you are making more of exactly what you have.

Our Soldiers continue performing extraordinary feats, trusting that each of us will give our utmost. I am delighted at how you continue 'getting the messages through.'

For the Country!

Pro Patria Vigilans!



A handwritten signature of LaWarren V. Patterson in black ink.

Training today for future events

Signaleers,

As I write this note we have just crossed over into the dark domain known as sequestration and are pondering some pretty significant questions.

What will our future look like?

I am not convinced that anyone can accurately answer this bellwether question. There are just too many unknowns.

Will we see a national budget and recover the estimated \$6 billion shortfall during this fiscal year? What, if any of the \$5-7 billion shortfall in overseas contingency operations, better known as OCO, funding will be recovered? Will the FY13 \$5.3 billion sequester extend for the full course of 10 years?

There is not one individual today who can honestly provide an accurate answer to any of these questions.

Even with the best outcomes, it is generally believed that the growth in defense spending we have witnessed over the last decade will not continue in the future.

What we can confidently state, however, is that our future holds more unknowns than ever before. This extends well beyond

fiscal unknowns. While there are some really great minds looking into and working to shape our future, unanticipated breakthroughs in technology along with a whole host of other factors will lead to the continuance of what is known today as Amara's Law. Roy Amara was a research scientist and past president of the Institute for the Future. Today he is remembered best for his statement, "We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run."

We will continue to see things that we have never seen or experienced in operational environments. Therefore, because we are confident that our Signaleers will operate under such conditions of obscurity, we must ensure that they are suitably prepared.

This edition of the *Army Communicator* touches several areas that Signal Center of Excellence leaders are considering as a part of our next step to better actualize education and training for our Signal personnel. A recent trip to Joint Base Lewis-McChord has reenergized our progress toward the Army of 2020 and beyond that includes: (1) organizational changes to the SIGCoE under the University Model, (2) the scheduling and execution of training and education under the Army Learning Model, (3) the leveraging of the enterprise instructional training platform known as the LandWarNet e-University, and (4) the expectation of the attainment and maintenance of expert knowledge, both theoretical and practical, for the defense of the nation through land combat power under the Army Profession.



While some might look ahead through the lens of fiscal uncertainty and claim that we cannot afford to develop our people, my view is that we cannot afford the foreseeable calamities arising from fielding poorly trained Soldiers.

As always, thank you for your dedication and service in being ever Watchful for Our Country.

Pro Patria Vigilans!

University model providing Army all training/education



By David Kintner

In the wake of drawing down from 11 years of war, U.S. Army leaders are looking toward the University Model for training the leaner but fully capable future force.

The Secretary of the Army, the Honorable John M. McHugh, in March 2012 published a memo entitled "Institutional Education and Training Reform" tasking the commander of the U.S. Army Training and Doctrine Command to develop a strategy for training the Army of 2020.

In order to properly respond, GEN Robert Cone, TRADOC commanding general, commissioned a study that has become known as the Braverman Study. This study resulted in three "Big Ideas" and 16 specific recommendations for TRADOC to reform institutional education and training. The results of the study were sent to the Secretary of the Army in August 2012, and became the basis for what is now referred to as the University Model or the University System. Subsequent to this report, TRADOC has issued a series of Operations Orders, Task Orders, and other directives designed to achieve the Big Ideas and recommendations.

Three Big Ideas

Invest in a Center of Excellence-based university model

This big idea combines like functions at centers of excellence where there are multiple TRADOC schools.

One example commonly given is the registrar function. Rather than each school having an organization to in-process students, maintain academic records, and publish diplomas, it is more cost effective to combine the separate registrars into

a single registrar at the center level to support all schools.

The resulting manpower savings can then be reinvested into other areas like emerging training technologies. The challenge at a single school center, such as the Signal Center of Excellence is to find opportunities to "flatten" the organization as this big idea suggests.

Drive precision in the Army's training and education systems designed to determine individual training resource requirements

The big idea here is to review all of the resource models, such as the instructor model, which determines how a TRADOC course, school, or center earns the resource authorizations to conduct training. The current models were originally developed in the 1960's and were adjusted periodically to account for changes in factors affecting the models.

However, the basic structure of the models, or how the calculations are performed has not had any major changes. By starting over and considering the changes in training technologies, instructor experience, and even the training audiences, we can develop the resource models with even greater precision.

This is a task that is being worked by TRADOC G8, with the help and assistance of all of the centers and schools.

Reinvest military personnel into TRADOC

Despite a 64 percent increase in training load, and the addition of many new courses required to support the war efforts of the past 11 years, TRA-

DOC has given up over 6000 military personnel positions to support the war effort. Some have been replaced by civilian positions, others by contractor positions, and some were not replaced at all. Some of the functions now performed by civilians and contractors require current operational experience only possessed by Soldiers. The big idea here is reverse the trend implemented during the war years, by replacing some civilians and contractors with military personnel. In fact, this year, six such changes were made at the Signal Center of Excellence, and more are anticipated. TRADOC is examining this as part of the first big idea above - the University Model.

16 Recommendations

The study made 16 specific recommendations to get after these three Big Ideas. Most apply to the first idea, but there are some in each area.

Big Idea: Invest in the University System to increase synchronization and effectiveness in the COEs

Centers of Excellence University System
The Braverman Study recommends that TRADOC conduct a study of business practices, efficiencies, roles, responsibilities and relationships to operationalize the University Model. Some of this has already happened. The decision to consolidate training development functions at the center level is in direct support of the University Model, as is the decision to consolidate instructors and training support personnel into the brigade. The model recommends that NCO academies remain as separate institutions. The size of each battalion and brigade staff has been studied, and the results are expected to be approved soon.

NCOES Training Time Reductions

This has been a joint effort between DA G3/5/7, TRADOC, the Sergeants Major Academy and all of the schools and centers. Over the past several years we have adjusted, and usually reduced the amount of time NCOs spend in NCOES courses.

Conduct Warrant Officer Continuum of Learning Study

This effort looks at how we train warrant officers over their entire careers. It looks at redundancies in the level of training, methods and means of delivery, all with an eye at making their professional development meaningful, efficient, and effective.

Assessment of Company Grade Officer Gaps

TRADOC should complete a study to determine gaps and solutions and conduct pilot training to remedy the gaps. Then, design, develop and implement this Middle-grade Learning Continuum Army-wide.

Institutionalize Optimized Intermediate Level Education

DA G1, in conjunction with GA G-3/5/7 reestablishes the requirement for MEL 4 by linking to promotion to lieutenant colonel. DA accomplishes this task by executing Optimized ILE. Attendees will be selected by a HQDA centralized selection board.

Civilian Workforce Transformation

DA G-1 and DA G-3/5/7 lead this effort to update regulations and policies that affect the civilian workforce. This affects all career programs, includes the Army civilian workforce in the defined Army profession, and provides for opportunities for civilian training, education, and development.

Army Career Tracker

The Assistant Secretary of the Army for Manpower and Reserve Affairs, along with DA G1 and DA G-3/5/7 work to expand this program to all career programs, and to fully integrate ACT to be a single source for all training for all cohorts: officer, warrant officer, enlisted and civilians.

Army Learning Model Implementation

DA CIO/G6, DA G3/5/7 and TRADOC partner to implement new ways to conduct training, especially through the expanded use of technologies, such as mobile devices. Recognizing that learners today learn differently than previous generations, TRADOC uses the tag-line, "moving from the sage-on-the-stage to the guide-on-the-side." This really means a movement from traditional classroom based instruction to more facilitation, student-centered learning, and guided experiential learning.

Implementing the Army Training Information System

The Assistant Secretary of the Army for Ac-

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quisition, Logistics, and Technology will expedite the assignment of a program manager for this program designed to implement a linkage amongst the various disparate training records systems the Army operates today, creating a single source for all information on training availability, training requirements, resources for training, and academic record keeping, both for the institutional Army and the operational forces.

Using Doctrine 2015 to disseminate doctrine and TTP throughout the Army

TRADOC leads this effort to update all doctrinal publications, first by simplifying the structure, reducing the number of publications, and then by making them available through a wide variety of media, such as mobile devices, and finally by streamlining the update and publishing processes.

Developing Leader Development Processes with a Standardized Program Management Capability

TRADOC, along with DA G1 and DA G3/5/7 will update the administrative publications on leader development, specifically AR 350-1 and DA Pam 350-58. A key element in this revision process will be the establishment of the TRADOC CG as the senior responsible official for leader development.

Total Army Analysis

DA G3/5/7 will update AR 71-11, the regulation governing the Total Army Analysis process to provide the latest information on support forces required for combat force success, and the use of institutional training costs to better inform the process.

Automated Program of Instruction Review

TRADOC will investigate the feasibility of linking the current training development program, known as Training Development Capability, to other existing automated systems to improve the review of POIs and the automated transfer of resource requirements directly from TDC to Army resourcing programs.

Structure and Manning Decision Review

U.S. Army Audit Agency will study the Army's force structure process leading to the SMDR.

Big Idea: Reinvest military personnel into TRADOC

Military in TRADOC

DA G1 will increase the priority to fill TRADOC's military authorizations, and will examine the possibility of increasing military authorizations to close the current gap between requirements and authorization.

Right Sizing TRADOC Brigades and Battalions

TRADOC will conduct a study to determine the right number of personnel required

and authorized in a standard TRADOC training brigade and a standard TRADOC training battalion. The model will consider additives for special circumstances. For example, a school with a high number of security clearances required for courses will likely need an additive to the brigade/battalion S2 sections. Any saving garnered from the study through efficiencies would be reinvested in the critical training and education areas in TRADOC.

Summary

The Braveman Study is recommending some sweeping changes to TRADOC's organizations and processes. These are, however, well considered changes, designed to consider changes in the technologies we use, the population we are training, and changes in the world around us. But further, there are recommendations for changing programs and processes at the DA level which affect, and in some cases dictate how TRADOC operates. It is one of the most comprehensive studies of training and education in the Army since the formation of TRADOC itself. Successful implementation of these Big Ideas and the 16 recommendations is expected to produce a more effective and efficient training institution for the future.

Mr. David Kintner serves as the Deputy Director of Training at the SIGCoE. He is a retired military officer who has worked for three different U.S. Army Training and Doctrine Command schools over his combined 35 years of military and civilian service. He has worked as an instructor, course chief, training developer, training development chief, and as an operations officer within TRADOC.

Army Learning Model provides key component of university system

By Kimberly M. Burr

The Army Learning Model is an initiative affecting all training across the Army.

It was conceived from the belief that the rapid change of technology and the global learning environment could adversely affect the Army's advantage over adversaries if action was not taken to prepare Soldiers appropriately. The purpose is to ensure the Army is meeting the need to develop adaptive, thinking Soldiers and leaders capable of meeting the challenges of operational adaptability in an era of persistent conflict.

Implementing the Army Learning Model has not been easy. There have been huge hur-

dles since its inception in 2008, as the Army Learning Concept, and further analysis in the 2012 report of Institutional Education and Training Reform Study (also known as the Braverman Study). The first hurdle was conveying exactly what ALM meant and how it impacts training. Some educators felt ALM was no more than a "buzz word" and it would soon be replaced by something new. Now, most realize the TRADOC Strategic Plan highlights ALM as one of the top priorities for GEN Robert Cone, TRADOC commanding general. ALM has high visibility and is not going away.

None-the-less, there is still some anxiety concerning ALM implementation. There is hesita-

tion due to budget cuts plus a lack of new course resource models and ALM training.

Army Learning Model Training Impact

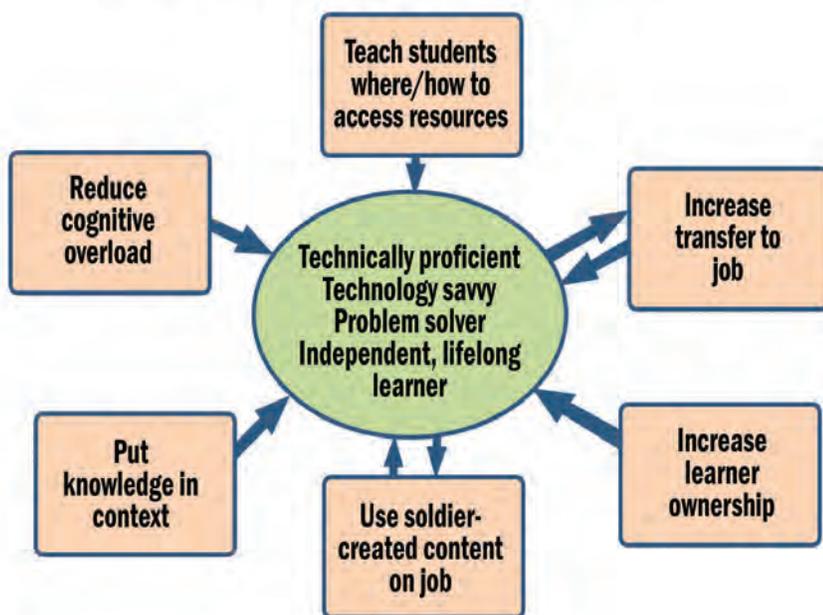
TRADOC Pamphlet 525-8-2 outlines ALM as being based on the Continuous Adaptive Learning Model. Training is learner-centric, more engaging, relevant, rigorous, and accessible for a generation of Soldiers and leaders who have grown up in a digital world. It also focuses on bolstering seasoned Army professionals with repeated deployments who bring a wealth of experience to learning.

ALM has two main themes. The first theme seeks to increase the quality, relevance, and effectiveness of face-to-face learning experiences. The second theme seeks to extend learning beyond schoolhouse (resident) training to deliver learning at the point of need. ALM supports the integration of technology for instructional delivery. It does not focus on any particular technology, but rather focuses on the opportunities presented by dynamic virtual environments, online gaming, and mobile learning as learning enablers, where appropriate.

ALM is more than just reducing PowerPoint slides, asking more questions during the check on learning, or simply integrating a new technology. ALM promotes the use of several learning approaches such as: problem-

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Analysis of Army Learning Model



(Continued from page 7)

based learning, outcome-based learning, case studies, and discussion with reflective thinking. An example of redesign is when developers eliminate outdated content and if necessary, re-sequence lessons and learning activities to ensure they promote collaborative, context-based problem-solving exercises. Additionally, the facilitator must be able to engage the students in a way that requires them to collaborate and teach each other when possible.

GLOs have been drafted from the 21st Soldier Competencies to support the concept of lifelong learning that links each level of training for Soldiers and leaders. The GLOs begin in IMT where they build the foundation of lifelong learning. Combining the GLOs with each corresponding level of critical tasks serves as the basis for designing a holistic curriculum that includes learning activities in the institution, unit and self development domains. The goal of lifelong learning curricula are to help Soldiers and leaders see what they need to learn, where they can learn it, and when they

should receive training during the course of their careers.

The Army Learning Model and SIGCoE

Aspects of ALM are already integrated into SIGCoE courses. In 2011, the Signal Captains Career Course started implementing the use of the ELM for the Combined Arms Center common core subjects. Instructors learn how to transition to facilitators in the SIGCoE FDP. Training developers will learn how to develop lesson plans using ELM when the third phase of FDP is implemented. Others courses are also scheduled to begin this year that will support ALM and ELM training.

Soldiers can also reach signal training at any time during their career through the LandWarNet eUniversity and S-6 Community of Purpose. The information on these websites for CBT, SIMs, Quick Reference Videos and other information is ensuring the right information is reaching Soldiers regardless of where they are stationed. To further support training at the point of need, LWNe-U is mobile device capable to match any device being used. LWNe-U also supports

blended learning though the use of unit universities which can be tailored to a unit's training requirements.

There are also over 30 CBTs, SIMs and other training products that are used throughout Fort Gordon signal courses. In addition, General Dynamics integrated quick reference codes into the signal training they provide on Fort Gordon, as well as utilizing SIMs and mobile training devices during classroom instruction.

Ultimately, ALM is providing the opportunity to transform training and assist in building career paths for Army Soldiers and leaders that are challenging; providing relevant learning experiences while also developing the knowledge and skills they require to perform duties on a complex, full-spectrum battlefield.

Kimberly M. Burr has served as the Lead Training Specialist in the Directorate of Training, Learning Innovation Office since its inception July 2012. She retired from the Army in 2006 after serving in MOS 25U. Currently she is pursuing a doctorate in Educational Philosophy, Curriculum and Design with Northcentral University.

ACRONYM QuickScan

ALM - Army Learning Model
ALC - Army Learning Concept
SIGCoE - Signal Center of Excellence
TRADOC - U.S. Army Training and Doctrine Command
SCCC - Signal Captains Career Course
FDP - Faculty Development Program
GLO - General Learning Objectives

ELM - Experiential Learning Model
CAC - U. S. Army Combined Arms Center
CBT - Computer Based Training
SIM - Simulator
TASKORD - Tasking Order
QRV - Quick Reference Video
LWNe-U - LandWarNet e-University
IMT - Initial Military Training

Leveraging Technology for Maximum Training Effectiveness

By CW5 Todd M. Boudreau

Earlier this year, during a trip to Joint Base Lewis-McChord senior Signal Regiment leaders learned how Military Intelligence operators are developing the U.S. Army Intelligence and Security Command Foundry Program.

The Army Foundry Intelligence Training Program is covered under Army Regulation 350-32 which states, "The foundry program provides commanders with the means to achieve their priority intelligence training. The purpose of the Foundry Intelligence Training Program is to provide Soldiers with focused intelligence training to meet their commander's training and readiness requirements. Soldiers participating in the foundry program receive training that builds on institutional, unit, and individual training; reflects the current and changing operating environment; and increases functional and regional expertise while developing and expanding contacts within the greater intelligence community. Additionally, the foundry program develops and implements longer-term sustainment training capabilities through home station training sites."

During the tour, we learned how Foundry maintains and improves the intelligence-related skills of Army personnel who conduct, supervise, or support authorized Army intelligence activities.

Most important we gained insight to how an enterprise instructional training and education platform could be leveraged to provide cost-effective training skills and "train-the-trainer" programs across the Signal Regiment.

While the classification level of Foundry limits it to specific Foundry sites, much of our training is at the unclassified or secret level at most. This would make it possible to conduct immersion training or live-environment training "hands

on" both in a unit classroom as well as globally dispersed through the creation of virtual Signal operations centers. While we expect to run a full article on the Foundry Intelligence Training Program written by the Intelligence Community in the near future, to better understand these concepts, a Foundry primer is in order.

Foundry's Beginnings

In January 2006, the commanding general of U.S. Army Intelligence and Security Command was tasked "to determine the ways and means to enhance and sustain tactical force intelligence skills and capabilities." Project Foundry was INSCOM's solution. Foundry established single point from which to coordinate training and live environment opportunities for advanced intelligence skills across the Army's tactical MI force. Since that time, Project Foundry has transitioned to an Army base program.

Foundry's Niche

Foundry does not take the place of institutional training provided by the U.S. Army Intelligence Center of Excellence under the U.S. Army Training and Doctrine Command or the U.S. Army Forces Command mission to provide a sustained flow of trained and ready land power to Combat Commanders. Instead, Foundry focuses on improving advanced intelligence skills by providing real world experience and technical training for MI Soldiers and teams at the tactical level.

Recognizing that military intelligence skills are highly perishable and that our adversaries continue to change their methods, Foundry enables commanders with frequent and relevant training opportunities required to learn and maintain the associated technical skills and equipment of the new techniques developed to meet the continuous

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evolution of ever-changing challenges, intelligence tactics, and techniques. Foundry takes the individual Soldier skills taught by the MICoE and builds upon them to ensure FORSCOM has skilled and relevant MI Soldiers required to meet their mission.

Foundry's Methodology

Foundry conducts training in four separate but interrelated methods. First are more than 100 formal classroom training programs covering all of the intelligence disciplines. Second are 33 immersion training events that are typically 30-60 days in length. Third are unit-sponsored training events. And fourth are Foundry sponsored Mobile Training Teams.

Technology Education Leveraging Technology – The Vision TRADOC defines training as “an organized, structured, continuous, and progressive process based on sound principles of learning designed to increase the capability of individuals, units, and organizations to perform specified tasks or skills.” Key words are “to perform specified tasks or skills.”

Education, on the other hand, “is the continuous and progressive instruction and other programmed activity designed to develop and reinforce knowledge, skills, and abilities... Education includes instruction and learning designed to increase knowledge ... [and] improves cognitive, communication, interpersonal, and social ability. Education also improves leader

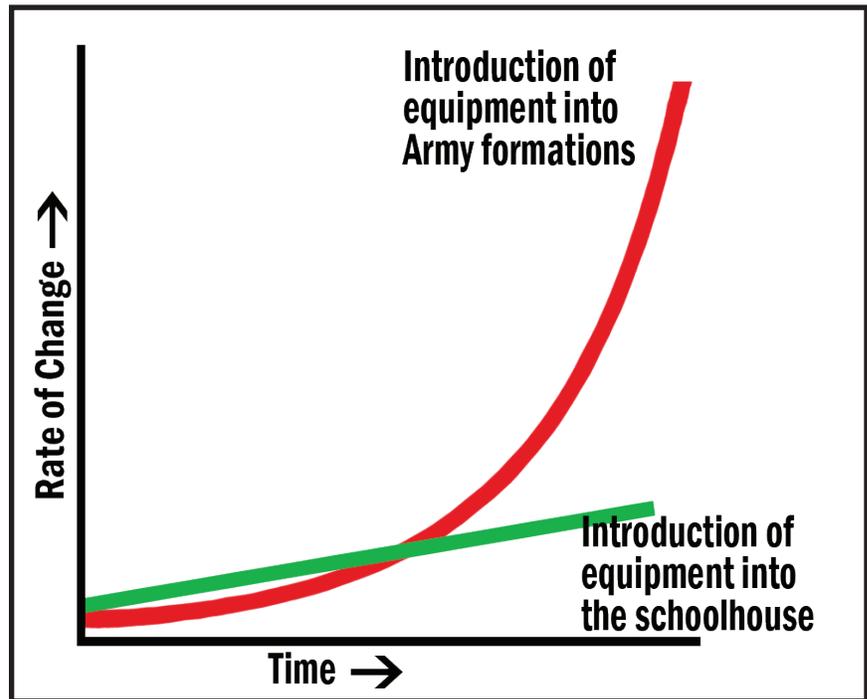


Figure 1

attributes associated with habits of mind and ethical aspects of character.”

While there is definitely some overlap, training focuses more on tasks and skills while education focuses more on knowledge and cognition. I offer this example to better frame my use of the words training and education for this article.

Educational instruction focuses more on theory and concepts. In my earliest days in the Army, I studied basic electronics theory and concepts that included the study of electrons, atoms, voltage, resistance, power, current, Ohm’s law, Kirchhoff’s laws, etc. While I did several practical exercises such as “bread boarding” electronic components to better understand how a super heterodyne receiver works, it was still cognitive in nature.

My training instruction was more hands on used to teach

and reinforce the skills necessary to operate and maintain the R-390A/URR general coverage HF receiver that uses super heterodyne principles (for example). While one may get by with operating a device without understanding the concepts and theory behind it, the maintenance requirements to repair such a device mandates educational instruction focused on the technologies within.

An equal balance of education and training, and even one that favored training, worked well in the Signal schoolhouse for many years. While there are numerous reasons why this was so, one of the most significant has been the slow and protracted rate of the introduction of new equipment into Army formations; the schoolhouse was well able to keep pace and enter new equipment into the respective Program of Instruction relatively

soon after its fielding. Even when the schoolhouse lagged behind, major equipment sets remained in the Army inventory for many years allowing the schoolhouse to eventually catch up.

However, as figure 1 (to the left on page 10) depicts, we have moved to the right of the axis of time to where the rate of the introduction of new equipment into Army formations has, and is expected to continue to, surpassed the rate of the introduction of new equipment into the schoolhouse. Under this scenario, training takes on a whole new purpose.

Training is still required to teach and reinforce skills; however, where, when, and how we train our Signaleers must coincide with the reality illustrated above. The thesis behind this vision is: because the rate of the introduction of new equipment into Army formations will continue to surpass the rate of the introduction of new equipment into the schoolhouse, the Signal Regiment should establish and exploit an enterprise methodology to educate and train Signaleers from their inception to retirement.

Technology Education Leveraging Technology - The Basics

One thing I began to do over the last several months of my travels when given the opportunity to speak to our young Soldiers in the field was to ask them to raise their hand if they had graduated from their Advanced individual Training in the last 12 months. I then asked them to keep their hands in the air if they had used Google to find a technical solution to an information technology problem in the last 3 months; most hands remained in the air. I then asked them to keep their hands in the air if they had used the LandWarNet eUniversity in the last 3 months to find a technical solution to an IT problem; sadly, most hands went down.

The Signal Regiment's enterprise instructional training and education platform is LWN-eU. And if this statement is true, then we need to introduce and inculcate our young Soldiers on the benefits and use of LWN-eU as an integral part of their experience in the schoolhouse during AIT. Familiarity with and confidence in LWN-eU will grow allowing this enterprise instructional training and

education platform to develop into the tether by which new equipment theory and training is provided to individuals and units at the point of need to meet the rate of the introduction of new equipment into Army formations.

Initial units to receive new equipment sets can adjust and comment on new equipment training placed on the LWN-eU in order to produce the greatest learning experiences for others within the Regiment; Fort Gordon does not claim sole ownership of the best and brightest minds in the Regiment. Sharing, cross leveling, and personalizing modules for individual and unit use is encouraged. Unlike the classification requirement of the Army Foundry Intelligence Training Program, we see a day where the LWN-eU can connect Soldiers around the world into a virtualized Tactical Operations Center where live and simulated people interoperate as if they were all sitting at the same coordinates improving both individual and collective skills and abilities.

Technology Education Leveraging Technology - The Plan

So, where do we go from here? The Signal Center of Excellence is currently identifying, analyzing, and categorizing the plethora of websites, SharePoint portals, and Communities of Interest currently used as repositories of information or collaboration tools in order to converge and streamline a more effective and efficient methodology under the principles of Knowledge Management and the newest proven learner techniques. Whether the result is one single point of access or multiple entrance points, we must leverage the best products and practices to ensure every Signaleer is provided the best access to the information needed based upon position, MOS, grade, and specific need.

If our Signal Personnel Developers review the nominal career paths of each Signal MOS, AOC, and FA and determine what categories of education and training are most applicable across each career timeline, LWN-eU can both graphically and intuitively link these career paths to appropriate instructional training and education modules that

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can be used and commented on by you, our experts in the field. This is one major strategy to rapidly adjust our education and training methodologies to meet the demands of iterative introductions of new technologies and equipment sets. Notifications could then be generated by LWN-eU linked to appropriate personnel when a new technology and/or equipment set instructional module has been added so our Signaleers know of its availability. Advances made by Unit Universities must be known across our organizations so we can all benefit from the hard work and expertise done at the unit level. And gaming and multi-user simulations must be developed to allow both individual and collective training as described above.

Work is currently being done to identifying a .com or .edu-like network architecture that better supports distributive learning content and mobile user needs. We are also closely watching the Defense Information Systems Agency Enterprise Mobile Device Manager and Mobile Application Store efforts so we can posture DL sensitive and non-sensitive content to be managed and accessed accordingly.

And we are also watching work progressing toward a commercial blackboard .com effort. This would be the time to establish a timely plan to link Blackboard and the Army Training and Certification Tracking System seamlessly and holistically to the appropriate courses on LWN-eU for an integrated and synchronized life-long approach to

learning. As these initiatives achieve more granularity, leaders at the SIGCoE look to establish a Fort Gordon campus area network for use by students when they attend institutional training classes.

To achieve full implementation of the Army Learning Model and Doctrine 2015 initiative, future courses must include both in-depth educational modules and immediate quick reference guides that allow for the ability to immediately insert new training and education that can be accessed, manipulated, and validated by our entire Regiment; this includes access from personal mobile computing platforms.

The LWN-eU has the capacity and the capability to become this enterprise instructional training and education platform. As live, constructive, gaming, and virtual components become more of a reality, the LWN-eU must become the conduit that personnel and training developers can use to push training and education out to the Regiment. As iterative updates to equipment within the confines of capability set fielding causes our Army to exponentially increase the amount and types of equipment found across our formations, the LWN-eU must become the conduit that Signaleers can use to pull information necessary at the point of need. It is time for the Regiment to leverage technology for technology training.

CW5 Todd Boudreau serves as the Signal Regiment Chief Warrant Officer.

Join the Discussion
<https://signallink.army.mil>

ACRONYM QuickScan

AIT - Advanced individual Training
DL - Distributive learning
NET - New Equipment Training
ICOE - U.S. Army Intelligence Center of Excellence
INSCOM - U.S. Army Intelli-

gence and Security Command
IT - Information Technology
LWN-eU - LandWarNet eUniversity
MAS - Mobile Application Store

MTTs - Mobile Training Teams
MI - Military intelligence
MDM - Mobile Device Manager
POI - Program of Instruction
TRADOC - U.S. Army Training and Doctrine Command
FORSCOM - U.S. Army Forces Command

Transition to enterprise cloud-based learning

By Patrick Baker

The U.S. Army Signal Center of Excellence is leading the way as an enterprise cloud-based training institution with the development and integration of LandWarNet eUniversity across all training domains.

LWNeU provides the enterprise on-line training capability for all Signal proponent training, C4 sustainment training and new equipment training for Soldiers, units and the joint community. LWNeU and its hosted services and communities combine to make the largest and most agile digital learning community in the Army.

Moving to the Cloud

E-learning as a cloud service is a natural progression and an essential capability the Army must embrace to train the force. While the Army's transition to an e-learning supported training architecture has recently accelerated as an answer to reduce costs in our emerging fiscal environment, the real result of this transition will be an increase in Soldier and unit training capabilities.

The SIGCoE development of LWNeU as a cloud training service creates a virtual training

(Continued on page 14)

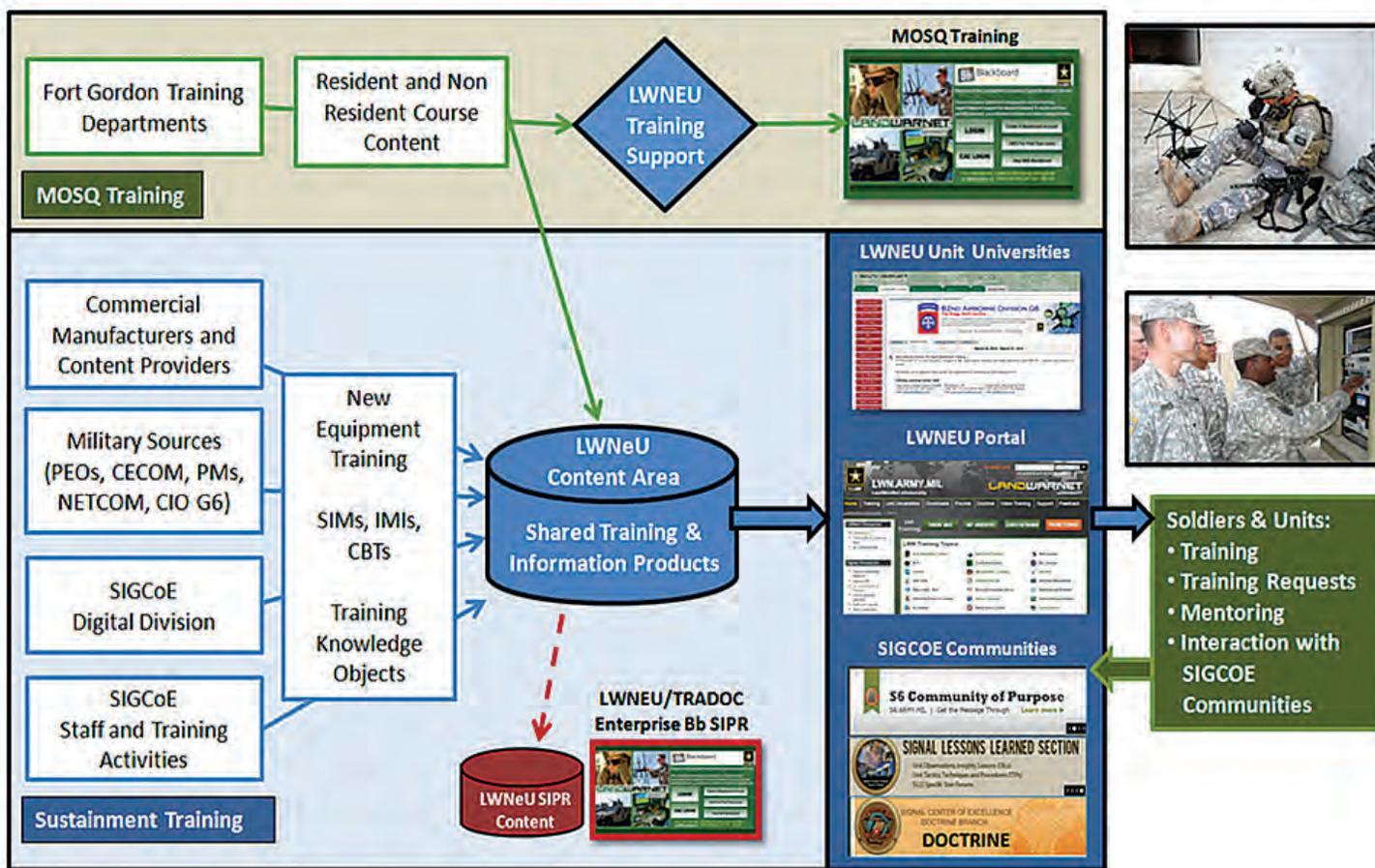


Figure 1: LWNeU Training Flow - Management and delivery of consolidated training and knowledge objects



Figure 2: LWNu Portal - New training announcements and categorized training interface

(Continued from page 13)

environment capability providing Soldiers and units with formal and situational training regardless of the location of the user (See Figure #1).

LandWarNet eUniversity

LWNu hosts and manages

on-line SIGCoE proponent training, C4 training products and Information Technology educational content for Soldiers, leaders, and DA civilians.

LWNu resident and non-resident training operations: LWNu uses Blackboard as the e-Learning delivery platform to host, manage and deliver formal, MOS producing content,

testing and course/student management for both resident and non-resident MOSQ training.

LWNu unit, sustainment and self-development learning operations: The SIGCOE developed the LWNu Portal as a robust e-learning and web portal that contains over 15,000 training and information products. The LWNu portal provides

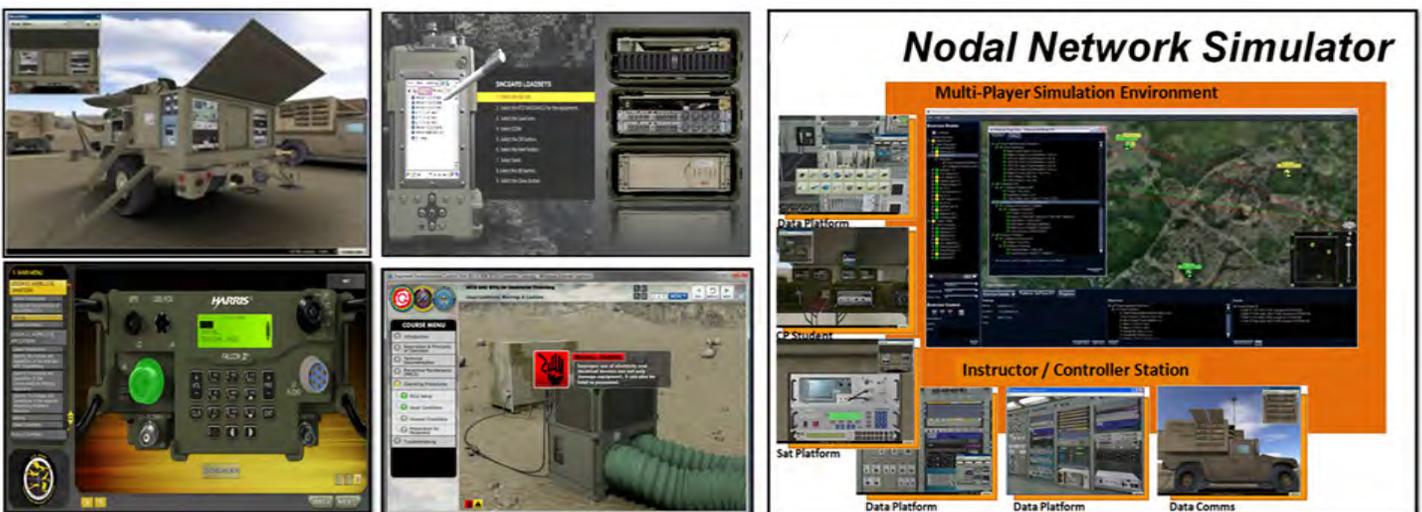


Figure 3: LWNu Interactive on-line and downloadable computer-based training products

access to C4, IT and many other types of sustainment training.

LWNeU is the Enterprise capability used to host and manage on-line virtual training, interactive multimedia instruction, computer based trainers and simulator products for the Army communications community.

These virtual training products provide crews, leaders, and units with realistic training experiences when equipment for hands-on training is not available or in situations when it is not practical to use actual systems to train. These products are available for use on-line and as downloads for laptop and desktop computers (See Figure #4).

Virtual Training products are notably useful for:

- Reinforcing training and learned skills at the end of an on-line course
- As part of a NET event where the actual equipment is not available
- During missions and for tasks that cannot be trained because the equipment is in use supporting the Unit's mission

LWNeU managers collaborate with equipment manufacturers, training developers, course providers and other trusted entities to obtain products and host formal and sustainment training for systems that interact with the LandWarNet. The LWNeU system hosts products for many other schools and organizations (e.g. Infantry Center, PM Mission Command, PM COMSEC, CECOM, MilWiki, etc.) and is a primary aggregator for the majority of Army C4 digitized

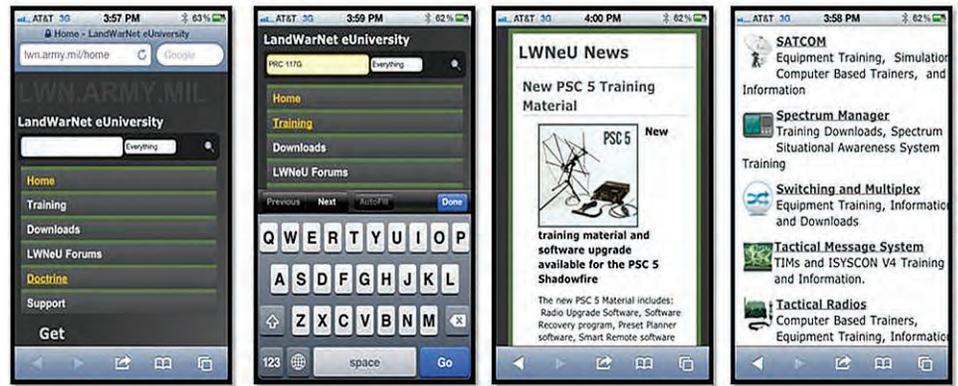


Figure 4: LWNeU Mobile Device Layout – Interface adjusts to work with any mobile device

training products. LWNeU supports on-line training for multiple commands, units and Army entities.

All products and information on LWNeU are vetted by subject matter experts, meta-tagged and fully searchable. The LWNeU Content System indexes all training content to include content and information contained within the products; providing a quick and robust search capability for the user. LWNeU manages training content with business processes that support many diverse applications and missions. LWNeU provides versioning and knowledge management of training ob-

jects, Proponent School training courses and external sourced equipment information.

LWNeU Mobile Learning Capabilities

The LWNeU Portal is capable of multiple configurations and provides access for mobile devices capable of accessing the internet using a mobile web-browser. LWNeU can be accessed using any mobile web-capable device using AKO username/password. The Portal identifies the mobile device accessing the portal and automatically applies a style sheet

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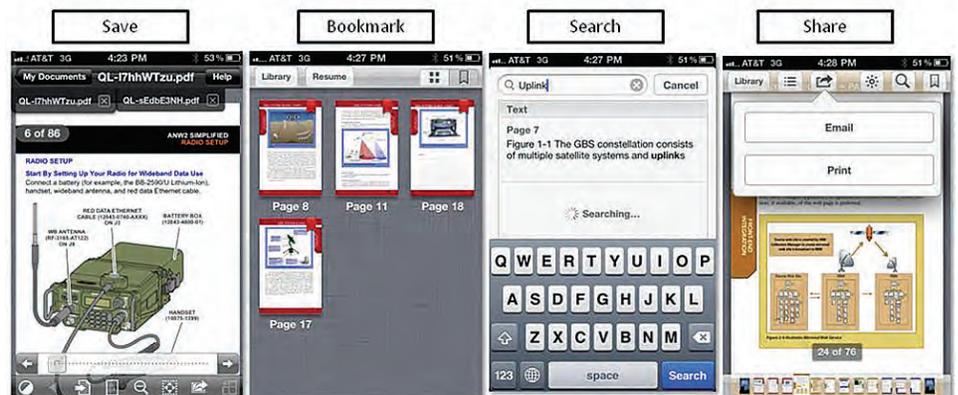


Figure 5: LWNeU Mobile – Users are able to download/save training to mobile devices



Figure 6: LWNu unit universities – Tailored training and support for units

(Continued from page 15)

based on that device to simplify the user's access to training. Style sheets simplify the user interface so they can see what's new and search and access LWNu Training (See graphic # 5).

Users can choose to view the majority of LWNu training directly on their mobile device on-line or save them directly to their mobile device based on the capabilities of each individual device. Most mobile devices and 3rd party apps provide the capability to

save, search, index, bookmark, print, e-mail, and share knowledge objects (See Figure #6).

LWNu Unit Universities

The SIGCoE's enterprise unit web-training capabilities are called Unit Universities. These are on-line training instances that contain all LWNu sustainment training, simulations, and web-based training for Army/Joint units and NECs. LWNu unit universities also contain requested courses and training products that can be tailored to each unit's training requirements.

Unit universities provide:

- Training products and support for Units in Theaters of Operation NIPR/SIPR
- Training products and support for Home Station Training and ARFORGEN
- Immediate training response to units for mission training requirements
- Support to Mobile Training Teams.

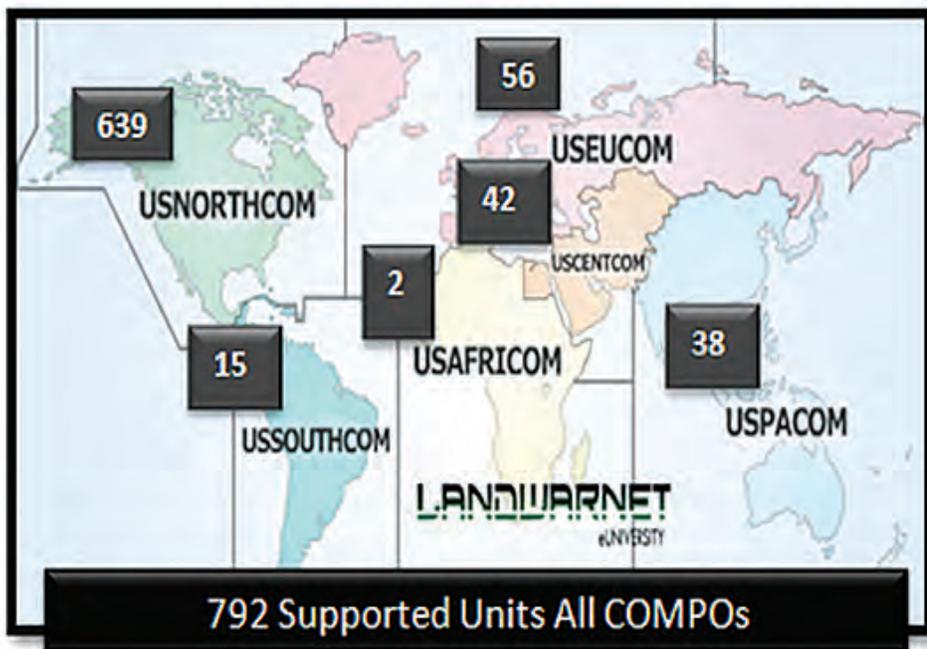


Figure 7: LWNu Unit universities – Worldwide support and access

Unit university training content is web-based and accessible 24 hours, 7 days per week to Soldiers (Active, Reserve, and National Guard) and DA civilians with an AKO account. Unit training staffs have full control of their university and can also load training created by their unit onto their University. Incorporated into every Unit University are tools for leaders to manage and monitor the progress of their Unit's training. LWNeU unit universities provide an on-line capability that improves a Unit's capability to adapt to changing missions in support of the commander's training vision.

Blended Training for the Reserve Component

LWNeU pioneered the SIGCOE's on-line blended learning solution for Army RC Signal MOS Transition. This solution uses POIs and training content created specifically for on-line MOS courses. Soldiers transitioning to a Signal MOS can now take the majority of an MOS course on-line. To qualify in the MOS, the

Soldier attends a resident Capstone validation portion that is completed at their nearest Reserve Component Regional Training Institute. LWNeU supports MOS-T courses for 18 USAR Regional Training Institutes and High Tech Reserve Schools across the U.S. and Puerto Rico.

Currently Soldiers can register for these courses in ATRRS to transition to MOS 25B, 25U, and 25L. On-line courses are available for MOSs 25Q and 25C, however these courses do not lead to certification. are currently in development. This training initiative saves \$30M per year in unit training costs used to activate and send Soldiers to the SIGCOE for MOS training (See Figure #8).

Additional benefits for MOS-T Blended on-line learning:

- Provides a path to address RC critical MOS shortage issue
- Soldiers continue to train/drill with unit
- Soldiers can reinforce training and skills with NCOs at unit
- Positive factors for Soldier retention

(Continued on page 18)

Ft Gordon LLC MOS Transition Program Metrics FY09 thru FY12			
FY/MOS	Graduates	Savings per Student	Yearly Savings
FY09			
25B	335	\$23,500	\$7,872,500
25U	482	\$19,700	\$9,495,400
Total	817	Savings for FY09	\$17,367,900
2010			
25B	1170	\$23,500	\$27,495,000
25U	540	\$19,700	\$10,638,000
Total	1710	Savings for FY10	\$38,133,000
2011			
25B	643	\$23,500	\$15,110,500
25L	63	\$14,850	\$935,550
25U	396	\$19,700	\$7,801,200
Total	1102	Savings for FY11	\$23,847,250
2012			
25B	270	\$23,500	\$6,345,000
25L	29	\$14,850	\$430,650
25U	186	\$19,700	\$3,664,200
Total	485	Savings 1 & 2 QTR FY12	\$10,439,850
Total Savings FY09 thru 2nd Qtr FY12			\$89,788,000

Participating HRTS and RTIs	
25B10-MOS-T <ul style="list-style-type: none"> • Sacramento (HTRTS) • Tobyhanna (HTRTS) • PEC/233rd RTI (Arkansas) • 122nd RTI (Georgia) • 124th RTI (Vermont) • 218th RTI (South Carolina) • 421st RTI (Nevada) • 640th RTI (Utah) 	25U10-MOS-T <ul style="list-style-type: none"> • PEC/233rd RTI (Arkansas) • Sacramento (HTRTS) • Tobyhanna (HTRTS) • 122nd RTI (Georgia) • 129th RTI (Illinois) • 136th RTI (Texas) • 193rd RTI (Delaware) • 218th RTI (South Carolina) • 421st RTI (Nevada) • 640th RTI (Utah)
25L10-MOS-T <ul style="list-style-type: none"> • 3/80th (West Virginia) • 3/95th (Oklahoma) 	<ul style="list-style-type: none"> • 3/100th (Indiana) • 3/108th (Georgia)

Figure 8: LWNeU MOS-Transition training program savings

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- Soldiers stay at home during dwell time
- Soldiers can train without losing time at civilian job

TRADOC Enterprise Training on SIPR

LWNeU operates the TRADOC enterprise training capability on SIPR for all TRADOC proponent schools and unit or organization requiring training using the SIPR network. LWNeU has the capability to host any training or information product on SIPR by integrating the product into the LWNeU SIPR portal or by creating a SIPR web-capability to be used and managed specifically by any TRADOC Proponent School, Unit or Organization. The majority of training currently hosted on LWNeU SIPR is unclassified training used to support training for Soldiers that work in classified areas that only have access to the SIPR network. LWNeU also creates SIPR unit universities for Units that need to track and manage their unit training on SIPR.

LWNeU SIPR currently supports content hosting, training support and applications for:

- 5 Major commands (Army/joint)
- 5 TRADOC proponent schools
- PEO and mission organizations (e.g. PD COMSEC, PM Tactical Mission Command)
- CECOM
- 14 units (joint, divisions, brigades, NEC, secure organizational enclaves)

Mr. Patrick Baker serves as chief, Digital Training and doctrine Branch in the Directorate of Training at the U.S. Army Signal Center of Excellence. He entered civil service in September, 1998. He is a graduate of the Department of the Army Training Development Intern Program. After completing the intern program, Mr. Baker was assigned as a Training Developer in the Regimental Officers' Academy. He then moved to the U.S. Army Computer Science School where he also worked as a training developer for Warrant Officers Professional Military Education. This was followed by assignments in the 15th Signal Brigade as the 25Q Training developer and chief of the Area Communication Training Development Branch. He has served in his current assignment since 2007. Mr. Baker holds degrees in Education, History, European History and Political Science.

ACRONYM QuickScan

AKO - Army Knowledge Online

Bb LMS - Blackboard Learning Management System

C4 -Command, Control, Communications, and Computers

CECOM - Communications Electronics Command

CIO G6 - Army Chief Information Officer

COMPO - Component

IT - Information Technology

LWNEU -LandWarNet eUniversity

MOSQ - Military Operational Specialty Qualification

NEC - Network Enterprise Center

NET - New Equipment Training

NETCOM - Network Enterprise Command

NIPR - Non-Classified Internet

Protocol Router Network

PEO - Program Executive Office

PM - Program Manager

POI - Program of Instruction

SIGCOE - U. S. Army Signal Center of Excellence

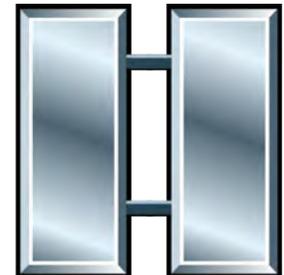
SIPR - Secure Internet Protocol Router Network

SME - Subject Matter Expert

TRADOC - U. S. Army Training and Doctrine Command



Officers work at their own pace on training modules in the restructured Signal Captains Career Course.



Remaking the Signal Captain

A NEW TRAINING EQUATION FOR SUCCESS



By CPT Kristen M. Johnson

When LTC Tyrone Abero took command of the 442nd Signal Battalion in the summer of 2011, he quickly became aware that the Signal Captains Career Course under his responsibility was in trouble.

The Combined Arms Center wanted to know what Abero and the Signal Corps in general were doing to improve the SCCC's TRADOC ranking of third from the bottom of all branch CCCs. Evaluations of the course from 2009 and 2010 had raised concerns about how the course was run, the quality of instruction, and the manner in which course materials were being presented. LTC Abero stated, "We had to quickly ask ourselves, 'What does it take to get a better product out of the schoolhouse?'"

When MAJ Robert Collins joined the 442nd team, Abero as-

signed him the challenging position of chief of professional leadership division, overseeing not only the SCCC, but also the Signal Basic Officer Leaders Course, Brigade and Battalion S6 Courses, and Intermediate Level Education for Signal Officers at Fort Leavenworth, among others.

"During the wars, senior leaders noticed a concerning reduction in overall officer skills, including briefing and writing, from captains, particularly those from certain branches including the Signal Corps," MAJ Collins said. "Part of the problem was that the common core was all scattered when Captains came to Fort Gordon for training - there was no real connection throughout the SCCC material."

Attempts to refocus the SCCC curriculum on common

officer competencies began in 2006 and 2007 but were still missing the mark overall.

MAJ Collins and LTC Abero did not have to address these core deficiencies alone, however, because the School of Advanced Leadership and Tactics - a branch of the CAC at Fort Leavenworth - had issued all branch CCC units specific guidance through the Mid-Grade Learning Continuum Common Core model.

The MLC-CC provides an 8-week (240 hour) course model to develop competent battalion and brigade staff officers, challenging CCC students with a higher level of learning than in previous approaches and developing officers as critical thinkers and self-aware leaders who can

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effectively communicate.

A key leader at SALT, MAJ William Woodard oversees this common core guidance for all branch CCCs and says he noticed the Signal community taking immediate action based upon his directives, which were to become effective as of 01 October 2012.

MAJ Collins was on board immediately with the new changes. "The intent of the new common core is to develop captains like the Combined Arms and Services Staff School used to before it was discontinued in 2004," he said.

Back then, all Army captains attended their branch-specific CCCs and then spent six weeks on ground at Fort Leavenworth for battle staff training, much like a captain's version of the Command and General Staff College, working on mission analysis, briefings, and critical thinking.

The CAS3 course was suspended when Army



Officers in the SCCC team up to address an assignment.

units' operations tempo became so intense that commanders needed their captains in the operational force immediately after CCC completion.

LTC Abero noted, "The new common core is tougher and involves more writing and more reading. Our SCCC implemented all the CAC recommendations. Our pilot program was originally implemented in 2012 but all SCCC classes beginning with Class 01-13 have been fully integrated."

Students now participate in staff exercises throughout the course that are based on the Georgia, Armenia, Azerbaijan, Turkey scenarios used by majors at the Command and General Staff College. MAJ Collins said, "the 2012 MLC-CC guidance from SALT required every branch to at least conduct one pilot class per Fiscal Year, but we ensured the Signal Corps completely integrated this into all SCCC classes."

MAJ Woodard said the CAC has been pleased and stated, "I don't know of any other Center of Excellence that has adopted our new common core more fully than Fort Gordon."

The next major issue that LTC Abero and MAJ Collins needed to tackle was the shortage of quality small group leaders to facilitate the SCCC Common Core classes and provide leadership to students throughout their entire 20 weeks of training.

In recent years, the SCCC has been understaffed by 60% and SGLs were required to cover multiple classes, severely limiting their time mentoring students. When MG LaWarren Patterson became the Chief of Signal in July 2012, he informed COL Stephen Elle, 15th Regimental Signal Brigade commander, whose organization oversees the 442nd's SCCC efforts, that he wanted to be personally involved with the SGL selection process.

"MG Patterson was interested in ensuring we had the best officers available to teach our future Signal leaders, much like the priority had been in the early nineties," COL Elle stated. MG Patterson now personally approves the assignment of all SCCC SGLs.

Picking the best Signal officers, typically those with both S6 and command experience, to serve as SGLs has ensured an immediate improvement in student mentorship and depth to the SCCC program.

Additionally, resources were granted to align the SGL-to-student ratio with the CAC-authorized

limit of 1:16 (down from the SCCC ratio that had reached 1:40).

MAJ Woodard said the changes at Fort Gordon have been dramatic and noted, "Last year, the SCCC was executing with bare-bones staffing of SGLs. But MG Patterson and COL Elle are both completely committed to getting the staffing up. And the quality of the small group leaders there is now second to none."

CPT Michael Martin, a former SCCC SGL who is now the SCCC Course Manager, said the course has fully implemented the Experiential Learning Model into all blocks of instruction. Through this approach, SGLs do not simply present course content but challenge students to apply their own experiences and discuss class material in a forum with their peers.

The SGLs are facilitators instead of presenters, and this concept continues with those experts who provide instruction on the technical signal coursework as well. SCCC students extensively train for 80 hours focusing on each block of the Signal Common Core, including Combat Net Radio, Army Battle Command Systems, and Warfighter Signal Support.

Each module includes a written exam and hands on, scenario driven practical exercises, all of which tie into the GAAT scenario for continuity throughout the course.

CPT Martin said the intensity of SCCC coursework has certainly increased with the new curriculum changes. "Instead of there being a short quiz for each Common Core area, there is now one comprehensive, four-hour

exam for those eight weeks of instruction," he said. The SCCC managers have adopted the same grading scale as CGSC leaders, with a minimum requirement of 80 percent on each assignment (up from 70 percent). Students also receive course points based on the SGLs' observations of students as leaders and professionals within the categories of leads, develops and achieves. The SGLs pay close attention to each student's performance in such areas as student leadership, punctuality, professional behavior, peer interactions, oral presentations, PT performance, and community service.

CPT Martin said there are many more student writing requirements and homework assignments as well. Instead of sending students "cold" into their technical Signal blocks of instruction, they are given read-ahead assignments and are quizzed on the first day of each block. He said this process has greatly helped instructors to gauge the overall abilities and experience levels of each class.

All Signal blocks now include practical planning exercises. "The whole course is planning-centric instead of treating captains like operator-maintainers. They learn how to plan a WIN-T architecture and how to design a combat radio network, not just to regurgitate facts about equipment capabilities. There is an emphasis on critical thinking, and even the test questions they receive are scenario based instead of just fact oriented," CPT Martin said.

The final critical change to the SCCC curriculum lies in the course's capstone exercise. All core competency and techni-

cal SCCC coursework leads up to this Digital Live Fire Range, in which students manage full-blown WIN-T architecture through actual equipment for five full days in real time with support from the General Dynamics staff at Brant Hall. Once SGLs issue the GAAT-based OPORD, students are assigned roles within teams at Coalition Forces Land Component Command, DIV, BDE, and BN echelons and are given five days to plan prior to working in their TOC environments.

The General Dynamics TOC includes actual equipment used for these specific echelons of command. The NETOPS-focused capstone exercise is designed to be extremely realistic, and it begins by emulating a Relief in Place/Transfer of Authority process, with several Captains assigned as the ADVON team to conduct a Pre-Deployment Site Survey at the General Dynamics lab during the preparation week.

The students then plan and build their networks on the first of their five days in the TOC. They create user accounts and phone books, establish a battle rhythm, and continue planning through SharePoint and Adobe Connect systems.

During days two through five, the officers serve in their SGL-assigned battle staff positions, including Information Assurance Officer, help desk, plans, NETOPS, chief of operations, G6, BN or BDE S6. As the SGLs steer and observe the flow of the exercise, they also determine what "Mission Event Synchronization

(Continued on page 22)



Officers matriculating through the Signal Captains Career Course are exposed to a variety of virtual training environments that mimic the actual scenarios they will find in follow-on assignments.

(Continued from page 21)

List injects” to introduce into the networks for the students to troubleshoot. The SGLs assess the students’ abilities to develop products and to quickly troubleshoot their network problems.

Each day of the capstone exercise ends in a Battle Update Brief with a field grade or general officer present to receive the brief and provide feedback. These senior leaders expect the students to brief them with professionalism and a thorough knowledge of their systems, and they do not hesitate to hold students accountable for sub-standard briefings or leadership.

Jim Stanton, GD Project Manager of Senior Leader Training, noted, “The Digital Live Fire Range incorporates a simulated, real-time network. This is a living, breathing lab, and it’s the only lab I know of – anywhere - where actual WIN-T equipment provides the backbone of the network.” The tactical hub nodes, SSS, JNN s, CPNs, and STTs are all real and architecturally correct. And Stanton noted, “Because this is a closed network, cadre can send notional classified documents through the network to see how students react to problems,

including cyber attacks.

The SGLs can show students their vulnerabilities in real time, which is a huge advantage over other capstone setups.”

When available, enlisted and Warrant Officer students also contribute to the capstone exercise, performing the roles they would have in a real TOC operational environment. The SCCC student’s role is not to actually change the network configurations themselves, according to Stanton. “The intent for the Captains is to recognize the specific problem, identify its cause, raise the issue appropriately, and – most importantly –brief their chain of command on the potential operational impact on the mission.”

Because the FY 13 SCCC graduates are just beginning to re-enter the operational force, the 442nd leadership has not yet gathered extensive feedback about students’ professional performance after the course. LTC Abero said he encourages all commanders and G6 officers to share their comments with the battalion through the S6 Community of Purpose website (s6.army.mil), the collaborative site that connects the generating force with the operational force and tactical community.

Also, when Signal Pre-Command Course field grade officers tour the General Dynamics lab and are briefed on the Captain's Capstone exercise, the resounding response is, "This should be the standard for all officers," and "I wish I had gone through this when I was a captain," notes Stanton.

CPT Martin said it has been exciting to be actively involved in revamping the SCCC standards and to see the benefit to students. "The course builds and ties together. We have worked very hard to keep it from being disjointed. This is a living model that will be self-sustaining. It makes sense. Technology and equipment will change, but the way we are teaching the course now will remain effective" he said.

Modifications to the SBOLC curriculum also tie the courses together. "It's a building block. Students who have been through

"The Signal Center is doing an excellent job producing better officers because of these adaptations."

our Signal BOLC will come back for SCCC, which is more like 'ILE-light.' When Signal officers become majors, they are already well-prepared for CGSC - it won't be a shock or a slap in the face," CPT Martin said.

SCCC leaders are also bringing in 2nd Information Operations BN world-class cyber OPFOR small teams to become regular participants during the SCCC Capstone exercise. These cyber experts will ensure Signal Captains are focusing on basic IA procedures and detecting, reporting, and mitigating cyber threats. Reflecting on the improvements and higher standards now implemented in the new SCCC cur-

riculum, MAJ Collins noted, "I think the changes we've made are really making a difference - for these Captains and for the Regiment." MAJ Woodard and the CAC agree - "The Signal Center is doing an excellent job producing better officers because of these adaptations."

CPT Kristen Johnson, a 25A, recently completed company command within the 447th Signal Battalion at Fort Gordon. She will begin work on her MA in English through Advanced Civil Schooling this summer in preparation for her next duty assignment as an Instructor of English at the U.S. Military Academy in 2015.

ACRONYM QuickScan

ADVON - Advanced Echelon
ABCS - Army Battle Command Systems
BUB - Battle Update Brief
CCC - Captains Career Course
CFLCC - Coalition Forces Land Component Command
CNR - Combat Net Radio
CAC - Combined Arms Center
CAS3 - Combined Arms and Services Staff School
CGSC - Command and General Staff College
CPN - Command Post Node
COP - Community of Purpose
GD - General Dynamics
GAAT - Georgia Armenia Azerbaijan Turkey
FY - Fiscal Year
FA - Functional Area
IO - Information Operations
ILE - Intermediate Leaders Course
JNN - Joint Network Node

MLC-CC - Mid-Grade Learning Continuum Common Core
MEL-F - Military Education Level-F
PDSS - Pre-Deployment Site Survey
RIP/TOA - Relief in Place/Transfer of Authority
TOC - Tactical Operations Center
COP - S6 Community of Purpose
STT - Satellite Transportable Terminal
SALT - School of Advanced Leadership and Tactics
SBOLC - Signal Basic Officer Leaders Course
SCCC - Signal Captains Career Course
SSS - Single Shelter Switch
SGL - Small Group Leader
WIN-T - Warfighter Information Network-Tactical
WSS - Warfighter Signal Support

SIGNAL UNIVERSITY PREPARING SOLDIERS FOR FUTURE BATTLEFIELDS

By John Fry

Leaders of brigade combat teams, as well as divisional G6/S6 and G3/S3 shops, are often forced to make difficult decisions about scheduling and funding of sustainment training.

To assist Warfighters, CECOM Logistics Readiness Center Directorate of Readiness Training Support Division developed the "Face to the Field" Unit University Program to provide a sustained, flexible, on-demand training program. Through the Unit University system, units can

effectively schedule additional C4ISR training around the Unit's ARFORGEN Cycle thus meeting both long and short term training requirements. As well as providing a flexible training schedule, the University Program guarantees the highest quality of training by ensuring each course is developed and trained by a true subject matter expert with standardized lesson plans that integrate PM, TRADOC, and FORSCOM curriculum.

The design and intent of the University Program is to provide a direct response to the unique

training requirements of units while still facilitating the high standard of quality that has come to be expected from CECOM Training and Logistical support. Applicable training is tracked in the Army Training Requirements and Resource System.

LTC Eulys Bert Shell, 11th Signal Brigade liaison, attributes the success of the unit's prompt and precise deployment to the ease of access to CECOM's training at Thunderbird University in Fort Huachuca, Ariz. "(The training) resulted in our ability to quickly deploy and have the training necessary to extend and conduct network operations of the LandWarNet in support of Combatant Commanders and forward deployed headquarters at all echelons within the full spectrum of military operations," LTC Shell said.

The structure of each university is dictated by the supported unit. Typically, each university consists of one training coordinator who directly works with the supported unit to establish training schedules and requirements, and three instructors.

These instructors not only conduct training, they also develop lessons that are specific to each unit's including emerging technologies that are not yet implemented in TRADOC courses.

For example, if a unit needs a highly specialized SharePoint 2010 or a tactical radio course on a newly deployed radio, such as the AN/PRC-117G, then the on-site instructor will create the



SPC Rene Mendez, a 25B assigned to HHC, 11th SIG BDE, studying for his upcoming NET+ certification test. This is the last requirement he needs to become TCP Silver-certified

C4 SKILLS TRAINING FACILITIES

course and present the training on-demand, while also sharing the knowledge with CECOM instructors located at other universities.

Since the Universities are a part of the larger CECOM C4ISR Team, the training coordinator at each university has the ability to pull in outside resources to conduct training on the newest deployed technology that may be outside the scope of the local staff's competencies. They also have the ability to pull in more instructors to accommodate a heavy training schedule. By virtually creating a limitless training schedule for each supported unit, the university program ensures more Warfighters are properly trained for deployment.

"C4I Skills Training Team was crucial in preparing multiple battalions in our brigade for their deployments. Not only were they able to put together top-notch training in a rapidly decreasing window of time, but was able to supply equipment and training for communication requirements that were outside our Unit's normal mission set," said MAJ Craig Benke, military liaison for CECOM's C4I Training Facility in support of 1st Infantry Division at Fort Riley, Kan.

It's this type of personalized instruction that has been most recognized by currently supported Units. "The CECOM staff is highly professional and highly flexible in meeting our short-notice requirements to support operational missions and Brigade priorities," said LTC Shell. "Truly outstanding performance in delivering the right training at the right time to empower our Soldiers with the technical skillsets required in today's operational environments," he continued.

Another key to the successful training produced by CECOM at these universities is the ability for instructors to relate to the Warfighter. "The biggest benefit to us is having experienced and knowledgeable instructors available. Many of the instructors are retired Signal Soldiers with combat experience.

They can relate to our students and are often able to use examples from their lives to help show the importance of everyone learning the equipment," said CPT Carol Smith, military liaison for

162nd Infantry Brigade's Tactical Training Team. Currently, the "Face to the Field" unit university program has experienced success at eight TSD Unit Universities located at:

- Fort Campbell, Ky. - 101st Airborne Division's Screaming Eagle Network University
- Fort Riley, Kan. - 1st Infantry Division's C4 Training Facility
- Fort Carson, Colo. - 4th Infantry Division's Ironhorse University
- Fort Huachuca, Ariz. - 11th Signal Brigade's Thunderbird University
- Fort Polk, La. - JRTC Warrior Signal University
- Fort Hood, Texas - III Corps' Fort Hood Signal University
- Joint-Base Lewis-McChord, Wash. - I Corps' Courage University
- Fort Bliss, Texas - 1AD's Team Bliss Signal Center of Excellence

This success is achieved by not only delivering the highest quality of instruction, it has also been attained by working side-by-side with each unit to develop operating procedures and training focus

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SSG Michel Smith (left), SFC Matthew Long (middle) and SSG James Vasquez assemble the SIPR NIPR Access Point during training at Team Bliss Signal Center of Excellence.



SGT Jerome Crawford (left), SGT Bobby Bays (middle) and SSG Bart Deisch of the 1st Armored Division compare notes to troubleshoot the Global Broadcast Service at Team Bliss Signal Center of Excellence.

(Continued from page 27)

that is specific to their requirements. This partnership between the unit and CECOM DRE begins with a one year trial period. Every supported unit has extended its operating agreement with CECOM DRE for three years. The main reason: Soldiers access to quality training.

In FY12 Screaming Eagle Network University conducted 163 courses, trained 2028 Soldiers and awarded 104 various certifications while the Team Bliss Signal Center of Excellence conducted 74 courses and trained 1745 Soldiers in their first year under CECOM FSD. In FY 12 the entire program trained 11,724 soldiers and awarded 3,334 commercial certifications in various technologies such as Cisco and Microsoft.

Initially the universities have focused most of its training on the following: The full suite of fielded tactical radios, systems training such as WIN-T/JNN/CPN, or Global Broadcast Systems; the newest Microsoft Software such as Office, SharePoint, Server, and Active Directory; and finally certification training such as CompTIA, Cisco, CISSP and TFOCA Fiber 3M/ETA. However, new courses will be developed depending on the needs of the participating units.

Each university has the capability to train Soldiers and DA civilians on CompTIA and Cisco Certifications. The University program has assisted each supported unit with their goal of 100 percent compliance of DoD Directive 8570.01, which requires IMO's to receive a certain certification level.

MAJ Craig Benke, military liaison for CECOM's C4I Training Facility in support of 1st Infantry Division, credits the training received at university for not only providing the Warfighters with the ability to review some topics, but it also opens new opportunity for education on the newest equipment being offered.

"Training included not only the PRC-117 Single Channel TACSAT equipment that our Soldiers had zero experience with, but also multiple Security+ classes in an effort to ensure not only our brigade, but 1st Infantry Division as a whole, was trained and properly compliant with FORSCOM guidance regarding information assurance requirements. It would have been impossible for our Brigade to resource this dynamically different training from within, and we are sincerely grateful for the C4I Skills Training Team's support," MAJ Benke said.

The university's certification capabilities also allow Units to reward their Soldiers by scheduling them for a civilian certification courses such as Cisco Certified Network Associate. The universities have had great success with these programs reaching an average 85 percent pass rates on all certification courses. This success is due to on-site instructors being able to spend more time working with Soldiers on their certifications. Each university is also equipped with a commercial testing center so soldiers can test immediately after the training and not worry about scheduling a test off-post.

The overall success of the university program is being noticed by not only by the partnering units, but also other major commands such as FORSCOM and CIO G6, which funds mobile training teams as a branch of the program.

Mr. John Fry is CECOM DAC GS-13 Lead for Training Support Division's Signal University Program. He received his B.S. in Management from Southern Illinois University and M.S. in Telecommunications Management from University of Maryland University College while stationed at Fort Gordon, Ga. He enlisted in the Navy in 1998 and served as Satellite Communications Lead aboard the USS Enterprise from 2000 - 2005 serving in Operation Enduring Freedom and Operation Iraqi Freedom. He transferred to the Center for Information Dominance at Fort Gordon in 2005 and served as a 25S AIT Instructor. He joined CECOM Training Support Division in 2008 and currently works at Fort Campbell, Ky.

THUNDERBIRD CERTIFICATION PROGRAM PROVIDES JOINT OPPORTUNITIES

By 1LT Steven Baer
and
2LT Ari Merdler

The Thunderbird Certification Program provides a wealth of Signal-oriented courses, training, industry certifications, and incentives for the Soldiers of the 11th Signal Brigade. Soldiers assigned to the 86th Signal Battalion at Fort Bliss, Texas; the 57th and 62nd Signal Battalions at Fort Hood, Texas; and the 40th SIG BN and Headquarters and Headquarters Company, 11th Signal Brigade assigned to Fort Huachuca, Ariz., participate in this rewarding program.

The program was developed in 2011 by the Thunderbird Commander, COL Patrick C. Dedham, and has gone on to certify over 800 Soldiers.

The intent of the Thunderbird Certification Program is two-fold: first, the program serves to incentivize self-training by rewarding and recognizing Soldiers who take the time to further their Signal education; second, the TCP works to improve the overall mission-readiness and knowledge base of the 11th SIG Bde, supporting the unit charter to remain the Army's premier unified land operations Signal brigade.

The TCP is structured as a four-tiered model, with the intent that Soldiers progress through



the program in sequential order, from bottom to top. The base level, "Green Certified," requires Soldiers to satisfy a number of basic Army-level requirements, to include: Army Warrior Tasks, the Army Physical Fitness Test, mandatory training, and weapons qualification.

The next level, "Bronze Certified," pushes the Soldier to meet Signal Corps-level requirements, covering knowledge every good Signaleer should have, to include: Information Technology Essentials, IT Networking and Cisco Routing, tactical radios, and an understanding of communications security key management and fill devices.

The third level, "Silver Certified," drills down into the Military Occupational Specialty level and, for example, a 25B: Information Technology Specialist, would have to meet the following course requirements: Voice Over Internet Protocol, Ad-

vanced Routing, Network Management, Security+, Network+, A+, and Active Directory.

Finally, "Gold Certification," further emphasizes MOS-level tasks and knowledge, challenging the Soldier to push the limits of his/her knowledge within their given career field. For a 25N: Nodal Network Systems Operator/Maintainer, this would include: Advanced Network Nodal Management, A+, NET+, and Cisco Certified Network Associate.

Upon completing the bronze, silver, and gold-level certifications, unit commanders may recognize the Soldier with an Army Achievement Medal for bronze/silver and/or an Army Commendation Medal for gold. Additionally, the 11th SIG BDE further recognizes Soldiers by awarding them green, bronze, silver, or gold ID tags engraved with their name, date of certification, and the Thunderbird insignia.

SGT Christopher Collins, a 25L: Cable Systems Installer/Maintainer, from Charlie Company, 40th SIG BN distinguished himself as the first Soldier in his battalion to complete all four certifications (green, bronze, silver, and gold) for his MOS.

SGT Collins first arrived at Fort Huachuca in 2000 and has taken his success into his

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own hands ever since. SGT Collins completed all of the requirements for Gold-level certification in 2013 by completing Basic Splicer School, Advanced Routing, Basic Network Nodal Management, and the Basic Installer Course. He attributes his accomplishment to simply being self-motivated and keeping a positive attitude: "I really love what I do. I want to know as much as I can and keep learning. This was something I really wanted to accomplish and made the time to get it done and self-studied."

His company commander, CPT Larry Baca, and 1SG Billy Atkinson said SGT Collins produced outstanding results.

"SGT Collins is very self-motivated and took the initiative and time to accomplish his goal. The Cobras and Team 40th are all very proud of his accomplishment," said 1SG Atkinson. CPT Baca echoed 1SG Atkinson's comments, "This was an outstanding achievement and we are all very proud of SGT Collins. He has set a new standard and he has shown everyone in the Battalion that if you set a goal for yourself, it is achievable. SGT Collins really set a new standard for his Soldiers, peers and superiors to look up to and achieve themselves."

Thunderbird Certification Program courses and training modules are offered via three sources: the Army Communications-Electronics Command Data Universities; Army Skillport distance learning modules; and the Fort Gordon LandWarNet Blackboard courses. Available courses include: IT and Cisco Routing, Network Management, Information Assurance, and Joint Network Node System Operator Training. Industry certifications offered by Cisco, Microsoft, and CompTIA are also available, to include: A+, NET +, SEC +, CCNA, CCNA Security, CCNA Voice, Active Directory 2008, SharePoint Server 2007, and Windows 7.

Soldiers may enroll and schedule courses by speaking with their company training office. Further coordination is then pushed through to the BN-level and finally to the BDE training section. 11th Signal Brigade works directly with the CECOM Data University office to arrange for requested courses to be scheduled. A mobile training team, typically comprised of one CECOM civilian instructor, will travel to Fort Bliss and Fort Hood on a semi-monthly basis to teach courses to Soldiers stationed outside of Fort Huachuca.

Although the Thunderbird Certification Program focuses primarily on Signal-related training, the TCP LWN website is open to non-Signal Soldiers in Maintenance, Logistics, Human Resources, Ministry, Intelligence, and Food Services. Soldiers are encouraged to cross-train into other branches in order to widen their skill sets and strengthen their abilities to adapt in an ever-changing operational environment. The key to shaping a well-rounded and proficient Soldier is education and the TCP is the 11th SIG BDE's key to remaining the most knowledgeable and capable Signal brigade in the U. S. Army.

1LT Steven Baer commissioned as a U.S. Army Signal Officer in 2009 from the University of North Carolina – Chapel Hill, Reserve Officers' Training Corps and has spent his last three years assigned to Fort Huachuca, Ariz. He deployed to Afghanistan in 2012 with HHC, 11th SIG BDE and was assigned to Camp Marmal, supporting the Regional Network Operations Control Center – North as a battle captain. He is currently serving as the training officer in charge for the 11th Signal Brigade.

2LT Ari Merdler commissioned as a U.S. Army Signal Officer in 2012 from Seton Hall University ROTC, and is assigned to Fort Huachuca, Ariz. He is originally from Baltimore, Md. and is currently serving as the training officer in charge and public affairs officer for the 40th Signal Battalion.

ACRONYM QuickScan

BDE – Brigade

BN – Battalion

CCNA - Cisco Certified Network Associate

CECOM - Communications-Electronics Command

HHC – Headquarters/Headquar-

ters Company

IT – Information Technology

LWN - LandWarNet

MOS – Military Occupational

Specialty

NET+ - Network Plus

ROTC – Reserve Officers' Training Corps

SEC+ - Security Plus

SIG – Signal

TCP – Thunderbird Certification Program

Unique career experiences available

Fellowships and scholarships



By CPT Crystal D. Ernst

Signal Branch leaders encourage officers to seek diverse and broadening opportunities in order to gain a more thorough understanding of how the Army works

and to create a deeper breadth of experience within the regiment as a whole. The knowledge gained from broadening assignments better prepares officers for future opportunities and challenges. As has been widely communicated,

the Army has cut funding for the traditional advanced education degrees: Tuition Assistance and Advanced Civil Schooling. Despite budgetary constraints, there are still available several fellowships and scholarships which provide valuable skills and knowledge to Signal officers.

This article describes opportunities available to all branches of the Army.

Please visit the HRC website at <https://www.hrc.army.mil/Officer/Officer%20Advanced%20Education%20Programs> for additional information.

Opportunities in brief

I want to get the word out to junior and mid-level officers about broadening opportunities.

All Branch 25, Functional Area 24, and FA 53 officers and warrant officers who have successfully completed at least one key developmental assignment are encouraged to seek out broadening assignment opportunities. These include the: Arroyo Center Fellowship, Chief of Staff-Strategic Studies Group, Army Congressional Fellowship, Cooperative Degree Program, Army Cyber Command Scholarship Program, Defense Advanced Research Projects Agency and Service Chiefs' Fellows Program, General Wayne A. Downing Scholarship, Information Assurance Scholarship Program, Joint Chief of Staff, Office of the Secretary of Defense, Department of Army Staff Intern Program, Olmsted Scholars Program, Regional Fellowship Program - lieutenant colonel level, HQDA, Harvard Strategist Program, Training With Industry Program, and White House Fellowship. Other opportunities include Advanced Civilian Schooling for MS/PhD degrees in information technology/cyber related disciplines at civilian institutions and the Air Force Institute of Technology.

Interested officers and warrant officers should contact their branch representative and can obtain more information about these programs at the following web link: <https://www.hrc.army.mil/Officer/Officer%20Advanced%20Education%20Programs>.

Phil Sines
Officer Branch Chief

Congressional Fellowship

Educates Officers on the importance of the strategic relationship between the Army and Congress. Fellows pursue a master's degree in legislative affairs at George Washington University and serve on the staff of a congressperson.

Once they complete the one-year degree program and one-year staff program, fellows serve two years on the Army or joint staff in a legislative liaison duty position. Sixteen AC, three USAR-AGR, three Army Reserve National Guard and one Department of the Army civilian are selected each year. This fellowship is open to senior captains and junior majors.

(Continued on page 30)

Federal Communications Commission Fellowship

This program will expose recipients to wireless policy and technology development. The FCC Fellowship will produce the unique skills required by Signal leaders serving in key positions where they will have to plan and coordinate spectrum management.

Fellows will acquire an in-depth working knowledge of the FCC organizational culture, leadership, and competencies. It is a one-year fellowship at the FCC headquarters in Washington, D.C., followed by a utilization assignment at the Army/ACOM level working with spectrum management. The FCC Fellowship is open to AC officers in the grade of chief warrant officer three-chief warrant officer four, captain-major.

Information Assurance Scholarship Program

Established to bring in and retain highly skilled Information Assurance/Information Technology professionals. Scholars pursue a two-year master's or three-year PhD degree in an IA/IT discipline through the Air Force Institute of Technology.

When funding permits, scholars are also able to pursue degrees at the Naval Postgraduate School and the National Intelligence University. AFIT is open to Soldiers E6-E9, warrant officer one-four, and captain/ lieutenant colonel. HRC submits a slate of qualified candidates to the Army CIO/G6 for selection.

FY 2012			
MOS	RANK	INDUSTRY	LOCATION
25A	LTC	Lincoln Laboratory	Research Triangle Park, NC
25A	MAJ	Lockheed Martin	Gaithersburg, MD
25A	MAJ	Cisco Systems	Research Triangle Park, NC
25A	CPT	General Dynamics	Taunton, MA
53A	LTC	Microsoft	Redmond, WA
53A	LTC	Raytheon	Melbourne, FL
53A	MAJ	Hewlett Packard	Plano, TX
53A	MAJ	AT&T	Middleton, NJ
24A	MAJ	Northrop Corp	Annapolis, MD
24A	MAJ	Cisco Systems	Research Triangle Park, NC
250N	CW4	Cisco Systems	Research Triangle Park, NC
251/4	CW3	Microsoft	Redmond, WA
251/4	CW3	Microsoft	Redmond, WA
250N	CW2	General Dynamics	Taunton, MA
250N	CW2	INTELSAT	Ellenwood, GA

JCS/OSD/ARSTAF Internship

This is a three-year program. During the first year, interns pursue a master of policy management degree at Georgetown University. The second year, interns are assigned to either a position within the joint staff or Office of the Secretary of Defense to broaden their perspective of operations within the military and our government. The third and final year, interns are assigned to demanding roles as lead action officers within the Army staff using the experience they've obtained during the first two years. HRC convenes a selection board, which selects up to twenty interns. This internship is open to AC captains and junior majors.

George & Carol Olmstead Scholarship

This scholarship immerses officers and their families in a foreign culture of choice while

the officer pursues a master's degree in a liberal arts discipline. Scholars are expected to become familiar with the institutions, characteristics, customs, history, culture and people of the host nation. They are expected to travel extensively and acquire a familiarity with the host country and region. This is open to AC captains and junior majors with no less than three years of active federal commissioned service and no more than 11 years of active federal service. Officers will receive an operational assignment following the completion of this program.

Arroyo Center Fellowship

This is a research and study fellowship at the Rand Arroyo Center. Fellows research issues that are important to the Army. This Fellowship is open to majors and lieutenant colonels. Three Active Component and one U. S. Army - Active Guard Reserve officers are selected by the G8 an-

nually. Following the one-year program, officers will serve a three-year utilization tour within the Army G8.

G3/5/7 Regional Fellowship

Includes three distinct opportunities, the Asia-Pacific Center, the George C. Marshall European Center for Security Studies, and the Department of State Strategic Policy Planning. This fellowship is open to AC majors and lieutenant colonels. The programs will take up to a year to complete and are followed by a two-year utilization tour within the Army G3. One Fellow is selected annually for each program.

Asia-Pacific Center

Provides a focal point where leaders can gather to exchange ideas, explore pressing issues, and achieve greater understanding of the challenges that shape the regional security environment. Officers attend the APC College of Security Studies 12-week study program, and then are assigned to the research divi-

sion to develop and coordinate a program for the remainder of the year.

George C. Marshall European Center for Security Studies

Supports newly democratic nations transitioning into free market economies by providing defense education for Eastern and Central Europe's senior policy makers and sponsoring activities that promote defense cooperation. It lays the groundwork for closer military ties and greater openness between the armed forces of NATO and its cooperation partners. Fellows attend a 15-week defense and security studies program with the remainder of the year spent as faculty members conducting research or participating in other activities related to the Center's mission.

Great odds of selection! Nine officers applied to IASP in 2013; seven were selected.

DoS Strategic Policy Planning

Designed to expand the officer's executive level skills in preparation for senior military positions across Army, Joint, and Interagency assignments. The Fellow serves as an ambassador of the Chief of Staff of the Army in order to obtain views and perspectives on prominent national and international issues not normally dealt with within the Department of the Army. Fellows conduct research, information gathering and other liaison activities in order to ensure the Army's position is understood and appropriately factored within the DoS policy development and decision-making.

HQDA Harvard Strategist Program

Selected Officers will pursue a one-year master's degree in public administration at Harvard, followed by a mandatory two-year utilization assignment within the Deputy Chief of Staff, G3/5; USAR Officers will serve within the Strategy & Integration Directorate, Office Chief Army Reserve followed by an assignment within the DCS, G3/5. Scholars will regularly interact at the general officer level within the Army, joint staff, and OSD. Officers who successfully complete this program will be awarded a skill identifier of 6Z, which

(Continued on page 32)

FY 2013			
MOS	RANK	INDUSTRY	LOCATION
25A	MAJ	Lincoln Laboratory	Lexington, MA
25A	MAJ	Lockheed Martin	Gaithersburg, MD
25A	MAJ	General Dynamics	Taunton, MA
53A	LTC	Raytheon Cyber Security	Melbourne, FL
53A	LTC	Microsoft Corp	Redmond, WA
53A	MAJ	Google Inc	Mountain View, CA
53A	MAJ	AT&T	Bedminster, NJ
24A	MAJ	McAfee Inc	Reston, VA
24A	MAJ	Northrop Grumman Corp	Annapolis, MD
24A	MAJ	Cisco Systems	Research Triangle Park, NC
255N	CW4	Cisco Systems	Research Triangle Park, NC
255A	CW4	Microsoft	Redmond, WA
255A	CW4	Microsoft	Redmond, WA
255S	CW4	General Dynamics	Taunton, MA
250N	CW4	INTELSAT	Ellenwood, GA

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may qualify them to transfer from their basic branch to FA59 (Army Strategist). This program is open to AC and USAR-AGR captains and junior majors.

White House Fellowship

The White House Fellowship offers selected members first-hand experience working at the highest levels of the federal government. Fellows typically spend a year working as a full time staff member to senior White House staff, cabinet secretaries, and other top-ranking government officials. Fellows also participate in an education program consisting of roundtable discussions with renowned leaders from private and public sectors and travel extensively to study U.S. policy in action both domestically and internationally. This fellowship is open to AC and USAR-AGR members of all grades.

Defense Advanced Research Projects Agency

This opportunity exposes rising military officers to a unique organization whose mission is to rapidly develop imaginative, innovative, and often high-risk research ideas, offering significant technological impact that goes well beyond the normal evolutionary approach. The members will, as a team, plan and execute a project of significance during their tenure at DARPA. The purpose of the internship is to expose the members to the "DARPA method," provide them with insight into a specific cutting-edge technology, and potentially aid in developing a future DARPA technology. Participants will also have the opportunity for self-study in areas of interest to

them and the Army, as well as for an understanding of the breadth of DARPA research across the spectrum of technology development. The program is open to AC and USAR-AGR majors and lieutenant colonels.

Cyber Command Scholarship

This is a two-year program in which selected officers will pursue a master's degree in Cyber Security at the University of Maryland, followed by a mandatory three-year utilization assignment within the U.S. Army Cyber Command. The program consists of 33 credit hours and a major capstone paper/project. Additional credit hours may be required if the undergraduate degree is in a major other than computer science. Three scholarships are awarded annually. This scholarship is offered to AC captains and majors.

CSA Strategic Studies Group Fellowship

Fellows are assigned to the CSA's office with duty at the SSG for one year. The SSG's mission is to conduct independent, unconventional, and revolutionary research analysis to generate innovative strategic and operational concepts for land forces in support of a governing theme provided by the CSA. The fellowship is open to AC and USAR-AGR captains through colonel.

Training with Industry Program

Selected members are placed in Fortune 500 companies for up to 12 months. The main objective is to develop Soldiers who are experienced in higher level managerial techniques and who have

an understanding of the relationship of their assigned commercial company as it relates to specific functions of the Army, improving the Army's ability to interact and conduct business. Participants are exposed to innovative industrial management practices, techniques and procedures which have applicability to the Army. This program is open to AC service members staff sergeant through lieutenant colonel. Specific opportunities open to Signal officers in Fiscal Years 12 and 13 are shown in the charts on the previous pages (See pages 30 and 31).

Each of the scholarships and fellowships described in this article presents a tremendous opportunity for Officers and Warrant Officers whose professional timelines support the programs' requirements. Signal officers who applied for the programs in FY12 were very successful when compared to other branches. In FY12, two Signal officers were selected for the Congressional Fellowship and one officer for the CYBER Command scholarship. Also notable, of the nine officers who applied for the IASP, seven were selected based on their skills and qualifications. These are tremendous opportunities and our Signaleers have a great track record of success.

Good Luck Competing!

CPT Crystal D. Ernst served as a platoon leader in the 67th Signal Battalion at Fort Gordon, Ga. and a company commander in the 59th Signal Battalion at Joint Base Elmendorf-Richardson, Alaska. She is currently working as the future readiness officer at Signal Branch, Human Resources Command, in Fort Knox, Ky.



CW3 John Allen works along his mentor at the Intelsat Secure Operations Center in Ellenwood, Ga., outside of Atlanta where operators conduct continuous monitoring of satellite transponders, managed terminals, and confidence video feeds for the American Forces Radio and Television Service.

Training With Industry

Soldiers stretching the envelope

By CW3 John Allen

Training with Industry is one of those rare opportunities that a lot of people hear about, but only a few actually get to do. I used to think TWI was some kind of myth. That was until I was selected for the program at Intelsat General.

Intelsat General is a satellite communications provider with a fleet of over 50 satellites and many teleports around the globe. Intelsat also provides managed network services and real-time spacecraft monitoring.

As one can imagine keeping track of thousands of carriers on spacecraft's, thousands of circuits, and thousands of customers can be a daunting task, but it is one taken on by Intelsat's Secure Operations Center and a job that I have been learning to handle over the past eight months.

The ISOC is a 24 hour facility located in Ellenwood, Georgia just outside of Atlanta. The first thing I thought when I entered the ISOC was "wow." The whole front wall is covered by two rows of 55 inch televisions with each row being 14 televisions wide. In addition to the wall of monitors each person's work station has four 19 inch monitors.

All of these monitors allow the ISOC to conduct day to day monitoring of satellite transponders, managed terminals, and confidence video feeds for the American Forces Radio and Television Service. The monitors provide the display we

need, but we use several different tools to acquire data.

With so much data being displayed I wondered if I would ever know what it all was. Thankfully the highly trained ISOC staff and my warrant officer predecessor were there to guide me through it all. Before I could get to work with the ISOCs tools and systems the team ensured I was fundamentally sound. I had to go over satellite communications 101 and complete the Global Very Small Aperture Terminal Forums core skills for installer's course. We do not do physical installs here, but it is good to know what someone on the other end of the phone is talking about when they call in. After knocking out these prerequisites I started training on several core systems that the ISOC functions with. Two of the first programs I learned were for remotely monitoring the satellites. Crystal Network Management System and Glowlink's Global Monitoring System both connect to remote spectrum analyzers or digital signal processors located at teleports around the world providing near 100 percent visibility of Intelsat's transponders. Each system does the same thing, but they each have different feature sets and capabilities and I've learned which one works better for certain tasks. We use these systems to check and maintain carriers at nominal power levels and for isolating/troubleshooting interference

(Continued on page 34)



An aerial view shows the Intelsat Secure Operations Center in Ellenwood, Ga., where select Army personnel gain experience with state-of-the-art modems, converters, routers, switches, satellite systems and solutions in a civilian industrial setting.

(Continued from page 33)

problems. Another tool we use hand in hand with crystal and GMS is the Operational Frequency Plan System. The OFPS is a detailed database that contains every Intelsat satellite with its transponders and all of the carriers that are planned or active on those transponders. The information in OFPS is used to determine whether or not a specific carrier or a lease space on a satellite is within its contract limits. This database is maintained by corporate headquarters and not the ISOC. After learning to work these core tools I was slowly integrated into working with and troubleshooting services that the ISOC manages.

Some of the ISOC's responsibilities include providing services to the Navy's Commercial Broadband Satellite Program, managing transport components for AFRTS and many iDirect networks for different companies and government agencies. Each of these services is vastly different and presents multiple opportunities to learn about new modems, converters, routers, switches, satellite systems and solutions. I know I will not leave here

an expert in any one of these areas, but I will have a better sense of what's available to tackle different scenarios.

At this point in my training cycle I am a fully functioning member of the ISOC. I take trouble calls, work on trouble tickets and help manage many of our services. Working as an ISOC technician is how the Army gives back to Intelsat General for the training opportunity. My training here will never be fully complete since there are so many components to what goes on here, but right now I am allowed to focus on the aspects that I want in order to gain the most from this Training With Industry and bring back to the Army to improve our processes.

CW3 John Allen joined the Army in 1995. He was selected for Warrant Officer in 2006 and is now a 255N Network Management Technician. Over his career he has held a variety of assignments as a Network Management Technician to include the 44th Signal Battalion, 52nd Signal Battalion, and as the officer-in-charge of the U.S. Africa Command Commanders Communications Team. CW3 Allen has deployed twice to Iraq in support of Operation Iraqi Freedom.

ACRONYM QuickScan

AFRTS - Armed Forces Radio and Television Service

GMS - Global Monitoring System
OFPS - Operational Frequency

Plan System
TWI - Training With Industry

Training With Industry

Continuing Education for cyberspace professionals

By CW4 Scott Broten

This article focuses on some of the efforts that U. S. Air Force educators and trainers are taking to develop their cyber force and how Army personnel, can benefit from their education programs.

Leaders throughout the Department of Defense have made the development of a dominant cyberspace workforce a top priority.

Across all branches of the U.S. Armed Forces a competent cyber savvy force is critical in defending our nation against cyber attacks and exploitation from state and non-state actors who seek to do harm against our defense and financial networks, as well as our infrastructure.

Background

The USAF has developed two Cyberspace focused courses

to aid in the development and education of their Cyberspace workforce. The courses, the Cyber 200 and Cyber 300, are run by the USAF Center for Cyber Research which is part of the Air Force Institute of Technology located at Wright-Patterson Air Force Base in Dayton, Ohio. The development of these courses covered a period of several years prior meeting Initial Operational Capability in 2010. To further add to the benefit of these two courses, AFIT pursued joint certification and the Army formally recognized the certification in 2011.

The best definition or summary for both of these courses comes from AFIT's Cyberspace Professional Continuing Education Catalog: "Cyberspace 200 Professional Continuing Education course is presented at the classified level for the deliber-

ate development of cyberspace professionals at the six to eight year point of their careers."

This course is covered in two phases. Phase one is Advanced Distributed Learning and Phase Two is a three-week resident phase. The students of Cyber 200 are educated in subjects to include cyber system acquisition, capabilities, limitations and vulnerabilities to help them plan, direct and execute defensive and offensive cyberspace operations. Completion of the Cyber 200 awards 2.0 points towards joint qualified officers.

"Cyberspace 300 Professional Continuing Education course is presented at the classified level for the deliberate development of Cyberspace professionals in the second half of their careers."

(Continued on page 36)



LTC John Bommer, instructs students in the Cyber 300 course at the Air Force Institute of Technology.

(Continued from page 35)

This course is also conducted in two phases. Phase one is ADL and Phase Two is a two-week resident phase. The students of Cyber 300 are educated in subjects to develop strategic focus for the integration and application of cyberspace capabilities in a joint environment. Completion of the Cyber 300 awards 1.5 points towards JFOs.

The graphic at right (See Figure 1) is the current USAF cyberspace professional development approach that depicts where the Cyber 200 and 300 courses fit.

Prerequisites

Army officers and NCOs are eligible to attend the Cyber 200 and 300. The basic prerequisites must first be met and then those interested officers and NCOs can contact the Office, Chief of Signal at the Signal Center of Excellence and Fort Gordon to request attendance. OCOS coordinated directly with the cadre at AFIT for possible reservations. The primary point of contact at OCOS is Mr. James Busler (e-mail: james.n.busler.civ@mail.mil).

The qualifying prerequisites to attend either course follows:

Cyber 200 Prerequisites

- U. S. Citizen
- Secret Security Clearance
- O3, W2 with 6-8 years of service, E5/E6 with 9-11 years of service, and GS-11 through GS-13 in cyberspace operations and Acquisition positions
- Minimum of 24 months of cyber experience (includes our Signal experience)

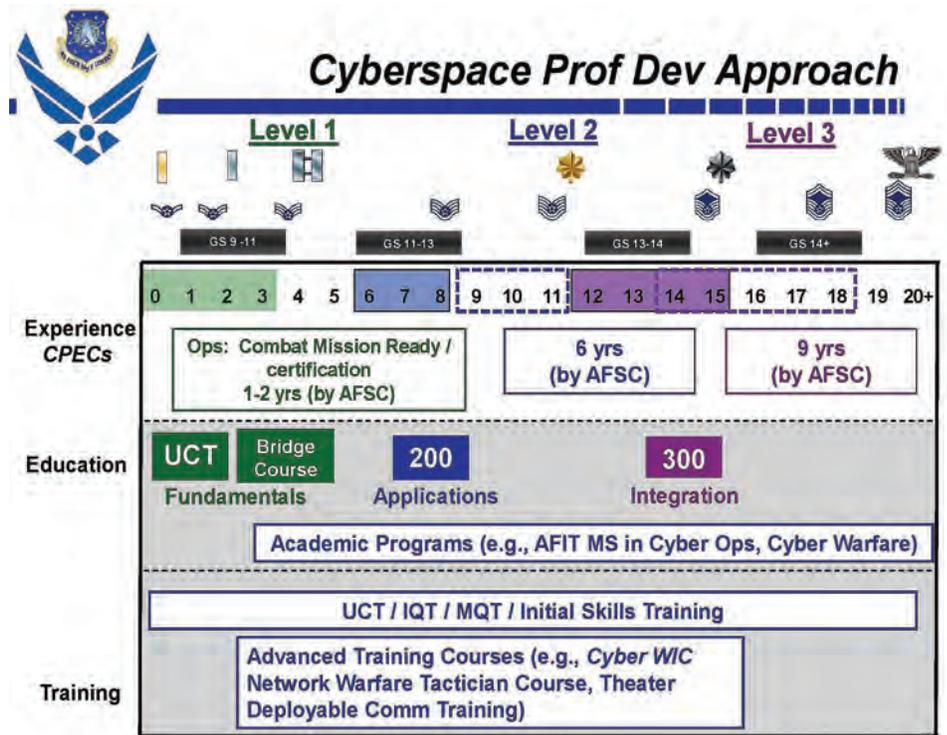


Figure 1: U.S. Air Force Cyberspace Professional Development Approach and Model

Cyber 300 Prerequisites

- U. S. citizen
- Top Secret/SCI Security Clearance
- O4/O5, W3/W4 with 12-15 years of service, E7/E8 with 9-11 years of service, and GS-13/GS-14 in cyberspace operations and acquisition positions
- Minimum of 72 months of cyber experience (includes our Signal experience)

My Experience at Cyber 300

I recently had the privilege to attend the Cyber 300 course. Phase one (the ADL phase) began in January and spanned a period of several weeks. The ADL served as mental preparation to

attend the resident phase, which I attended from 4-15 March 2013. The ADL requirements are ideal and in no way interfered with the demanding day to day functions we normally have at home station. Requirements consisted of student introductions, a myriad of cyber related readings, topic selection for an information/research paper, and submission of the paper abstract and outline. For those that enjoy reading, the ADL documents ranged from USAF cyberspace operations to joint, interagency, intergovernmental, and multinational subjects.

First impressions are critical and from the first day of the course it was evident that the Cy-

ber 300 is professional continuing education at its best. Led by Dr. Harold J. Arata III and LTC John Bommer, the cadre at AFIT consists of USAF cyber professionals that come from a wide range of backgrounds. Those backgrounds provide relevant, real world experiences and perspectives on cyberspace operations in the DoD. I also found the inprocessing and subsequent administrative activities smooth and easy thanks to AFIT's Ms Jane White.

Over the course of two weeks, students are provided unclassified and classified (up to top secret/SCI classes and briefings. Under the current curriculum, some topics of note were "why cyber," network operations as it pertains to cyberspace operations, supervisory control and data acquisition, cyber intelligence, surveillance and reconnaissance, and cyberspace doctrine. The course also provides a great opportunity for briefings from guest speakers from agencies such as the National Security Agency. My course was able to have an interactive brief with MG Earl Matthews, director of Cyber Operations from the Chief Information Officer, A6 of the Air Force Staff.

The Cyber 300 offers a great

deal of interaction between student and instructor/briefer. The interaction, along with the course content provides an outstanding "big picture" view on cyberspace operations that most of us do not have. To enhance the exchanging of information, opinions and ideas students, the Cyber 300 requires students to complete a research paper on a selected topic and then provide a brief to the class on their position. I personally found the interaction throughout the course to be enlightening and I no longer view cyberspace the way I viewed it prior to attending.

The education being provided at AFIT is a tremendous asset to the DoD. The content is relevant to the Army and if able to attend, the student will find that the course is joint focused yet a feel for the Air Force perspective on cyberspace operations is also provided. Cyberspace operations is joint in nature and our nation will only be completely secure by working together and sharing best practices for educating all our forces.

Our Army and Signaleers can greatly benefit from attending and leaders of the Signal Center of Excellence obviously understand and support this. Efforts are under way to assign a chief

warrant officer four, 255S Information Protection technician to AFIT to be an instructor for the Cyber 200 and 300 courses.

In the end, this joint effort will enable the Army to send more personnel to these courses to improve our education and understanding as well as bring a bit of an Army perspective to the USAF Cyberspace Professional Continuing Education.

If you have an opportunity to attend either course, go!

CW4 Scott Broten is the Signal warrant officer personnel developer at the U.S. Army Signal Center of Excellence and Fort Gordon. CW4 Broten enlisted in the Army in 1992 and served with the 7th and 11th Signal Brigades before becoming a warrant officer in 1998. His warrant officer assignments include the Southern European Task Force, 35th Signal Brigade (Airborne), 52nd Signal Battalion, 1st Cavalry Division, and 1st Corps. CW4 Broten has served in four combat deployments, two in support of Operation Iraqi Freedom and two in support of Operation Enduring Freedom. CW4 Broten has completed all levels of warrant officer Professional Military Education and holds a Bachelor's Degree in Information Technology.

ACRONYM QuickScan

ADL - Advanced Distance Learning
AFIT - Air Force Institute of Technology
DoD - Department of Defense
JFO - Joint Qualified Officer
JIIM - Joint Interagency Intergovernmental Multinational

NCO - Non-Commissioned Officer
NSA - National Security Agency
OCOS - Office Chief of Signal
SCADA - Supervisory Control and Data Acquisition
USAF - United States Air Force



Training With Industry

Microsoft® offers 'keys to the castle' experience

By LTC Michael Fazen

Training With Industry is a tremendous opportunity for the Army, the Soldier and the industry partner. According to the AR 621-1, the Army sends TWI Fellows out to corporations to acquire training, and/or skills in best business procedures and practices that are "not available through the military service school system nor through civilian colleges or universities."

After being selected for the TWI Program at Microsoft, my family and I moved up to the Redmond, Wash., area, and I began work last summer in 2012.

The staff at Microsoft have essentially given me "the keys to the castle" with respect to access to their senior leadership and their strategic processes. At the same time, I've been working on different projects such as their internal deployment/upgrades of enterprise IT services and helping to develop a services analysis process similar to the Department of Defense's Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities analysis used for acquisition.

One of the challenges that I initially faced was that the Army has been sending highly technical warrant officers to work on very specific products and services (SharePoint, Security, etc.) for several years, but the framework, scope, and goals for field grade officers are significantly different.

My focus is understanding the strategic and operational processes and planning instead of being technically focused on Microsoft products. Fortunately, several Microsoft World Wide Services senior leaders pulled me into their organization and have given me complete freedom of maneuver



LTC Michael Fazen (standing), reviews a project with Joe Wallis, one of his mentors at Microsoft.

to observe and interact with leaders and their staffs across the entire company.

In addition to the AR 621-1 and the Human Resources Command TWI Handbook, here are five snippets of advice that might be helpful for officers selected for, or at least considering, a TWI assignment.

Make contact early

Gain and maintain contact as early as possible. As soon as you get your request for orders with the industry point of contact, grab on to them and don't let go.

Take the approach that you are simply an additional duty for them, and if you aren't meeting with them once a week, you will probably fall off

their radar. For example, my replacement arrives in June, but he is already in weekly meetings with the new Microsoft TWI POC and is actually interviewing with vice presidents to refine his placement and duties.

Ensure everyone you talk to understands what you (and your follow-on organization if you know it) want to get out of the experience, while at the same time emphasizing the value that you will bring to their organization. This should be viewed by all as a symbiotic relationship, and it will help open doors and create additional opportunities.

Quickly learn the culture and protocol

The one thing I can guarantee is that your TWI company culture will be different than the Army culture...and different is not bad. They will have their own language, their own set of acronyms, and their own idiosyncrasies that you will need to understand before you can operate effectively and add value. The key to gaining the most out of the experience is how fast you can learn their way of doing business ranging from day-to-day processes all the way up to strategic planning and the business cycle.

Create (don't wait) for opportunities

Meet with every vice president (or higher) that you can. A good metric for a large company is a meeting with a different VP every two weeks. But don't expect them to seek you out, as they are busy and have a significant amount of responsibility. And when you meet with them, ask to be included in their processes and routines. Toward the beginning of my assignment during an office call with the Microsoft chief information officer, I simply asked if I could attend his monthly business reviews to better understand their success metrics. Not only did he have me invited to every one of the MBRs, but he also introduced me to several of his VPs and senior general managers who have subsequently included me in their planning sessions. As a result, I now have a firm grasp of Microsoft's internal IT processes which will be quite useful in my next assignment.

Be flexible and patient

Not only does it take time to understand your

new environment, but it also takes time for your new environment to understand you. The full time employees at your TWI corporation are probably very supportive of the military, but they likely have not been living and breathing Army for the past couple of decades like you have. Initially, do not expect to fully understand everything they say even though you may be an expert in your field. At the same time, do not get frustrated that you need to explain your ideas their language. Again, different is not bad – it just takes some “getting used to.”

Act decisively

If something doesn't seem right, fire the red star cluster ASAP! You are not an intern or a student or an entry level employee! Ensure that everyone from the CEO down to the parking lot security guard understands that. Never assume that there will be a “syllabus” for you to follow and don't blindly accept the training plan that they've developed for you. You must apply critical thinking, specifically at the beginning of the assignment, because no one knows your goals and expectations better than you do. A key indicator that something isn't right is if you're not having fun.

The Microsoft TWI slot is sponsored by the Secretary of the Army Office of Business Transformation where I will conduct a three year utilization tour when I leave this summer. In the spirit of the AR621-1, this assignment is giving me a much broader perspective that I could not have acquired from an educational institution. Microsoft has some of the most talented people in the IT industry, and working with them on a daily basis for a year has been an invaluable experience.

LTC Michael Fazen most recently served as the Strategic Plans Division chief for the 106th Strategic Signal Brigade at Fort Sam Houston in San Antonio, Texas. His education includes a Bachelor of Science in Industrial Engineering from Texas A&M University, a Master's degree in Military Arts and Science from Air University (Air Command and Staff College), a Master's degree in Management Information Systems from Texas A&M University (Mays Business School), the Combined Arms Service and Staff School, U.S. Army Airborne School and Field Artillery Officer Basic and Advanced Courses.

NCO gains civilian experience



By SSG (P) Jasmin R. Harvey

My time within the TWI program at Cisco Systems, Inc. has been a very fulfilling and rewarding experience that cannot be duplicated at any duty position in the Army.

I have had the opportunity to participate in Cisco Systems corporate structure and industry level best practices. By being exposed to the ever changing and growing information technology market, I have had the pleasure to practice critical skills necessary to any organization that has associations in IT.

There are many positions at Cisco that a TWI candidate could be assigned, depending on professional and personal goals, as well as what will be best suited to the operational needs of the next duty assignment.

Since working at Cisco, I have been assigned to the classified network support team as a customer support engineer. The CNS team handles public-sector U.S. government agency cases involving mission-critical Cisco networks with a wide range of technologies, devices, software, and hardware platforms.

As a CSE on the CNS team, I take ownership and troubleshoot different aspects of unclassified, secret, and top secret customer networks until a resolution is reached and the case is closed. In

some cases, a network bug may be discovered and filed for a Development Engineer to write code for fixes, or a portion of a customer network may be recreated in one of the many Cisco labs to mimic the issue that the customer may be facing in order to trouble shoot in a mirrored environment.

Having worked with many different customers, including the FBI, Army, and Air Force, has opened up my technical skills and broadened my understanding of the many technologies and resources used in resolving network faults.

The CNS team has welcomed CPT Walter Gibbons, another TWI candidate, and myself to work with them as if we were actual customer support engineers in the IT civilian workforce.

The TWI program for Signal Corps is relevant for those who work in Signal positions in the Army to correspond and collaborate on industry level corporation best practices and procedures.

Those who are selected as a TWI candidate have the opportunity to expand their IT knowledge to the civilian side and use that knowledge to reflect on the operational Army, once they are finished with their TWI experience.

TWI candidates can give insight to those who work at the Signal Center of Excellence and other Signal Regiment positions on strategies and techniques that are

used in the civilian IT spectrum that may not have been in practice before. These insights may provide improvements to the Army's IT spectrum and network infrastructure and a much better vision of where the Signal Regiment is heading in the future.

As I move forward through the TWI program and finish my last few months working for Cisco, I can reflect on what will be one of the most IT intensive experiences a Signal Soldier could ask for, and I will continue to challenge myself during this assignment as I am exposed to the ever-expanding IT Cisco environment. Being chosen as the first enlisted Signal Soldier in the Training with Industry program is an honor. I am thankful for this opportunity, and will continue to grow, learn, and bring this increased knowledge to the operational Army environment upon arrival to my next duty assignment.

SSG (P) Jasmin R. Harvey graduated Advanced Individual Training as a 25Q, Multichannel Transmission Systems Operator-Maintainer, from Fort Gordon. In 2007, she reclassified as a 25B, Information Technology Specialist. She served as a Senior 25B instructor/writer, and is presently on a Training with Industry assignment with Cisco Systems, Inc. as a customer support engineer at Research Triangle Park, N.C.

ACRONYM QuickScan

CNS - Classified Network Support
CSE - Customer Support Engineer

IT - Information Technology
TWI - Training with Industry

German Armed Forces' IT System at turning point

Editor's Note

This article comes from the office of the German Signal Allied Liaison at the Signal Center of Excellence. The Canadian Forces, German Army and French Army are represented at the Signal Center with liaison officers. The British liaison Officer is based in Washington, D.C., but visits Fort Gordon regularly. Their mission is to update their countries' armed forces about current and future developments in U.S. Army equipment, doctrine, training and force structure and to keep U.S. Forces abreast of similar operations in their respective forces to ensure seamless mission execution during joint operations.

By LTC Frank Beyer

Until recently, development, procurement and employment of information technology systems were tailored to meet the requirements of a single military service. Coordinated concepts, harmonized structures and procedures designed to produce possible joint solutions were few and far between. So we ended up with so-called island solutions i.e. isolated solutions and a myriad of systems and products.

This situation was further aggravated by long periods of analysis and development that characterized the planned procurement of major IT systems. Additional problems were caused by an attitude that would not accept anything but ideal solutions and functional requirements were often changed during realization due to mission requirements. All of this led to costly adjustment measures and delays or, in the worst of cases, to aborting IT projects.

Thinking and acting in terms of missions!

Keeping our soldiers out of harm's way in theaters of operation may also depend on the continued availability of IT services, that is on the support IT services provide to command and control processes and workflows. While meeting the criteria of efficiency, uniformity, relevance to operations, and quality, it is of paramount importance to take all measures that will ensure uninterrupted and effective availability of required IT services, in particular during operations when we

act together with our allies. We must keep track of the evolving information technology landscape to be able to consistently align the development of German Armed Forces' IT systems to the requirements and priorities of our missions. However, not everything that is technically feasible makes sense.

Prerequisites for further development

In order to guarantee, in the future, a development that evolves along the above criteria, the following prerequisites must be met to determine necessary IT capabilities and possible harmonized solutions to satisfy requirements.

- Commitment of strategic goals defining the long-term alignment of the German Armed Forces' IT system;
- Evaluation and taking into account of operational-level doctrine and lessons learned that will have an impact on the engineering design of the information and communications components of the German Armed Forces' IT system;
- Derivation of capabilities, functionalities and services based on a uniform, architecture-oriented harmonized approach resulting from multinational definitions;
- Creation of a database that can be used for the implementation of this approach.

Conceptual Reboot

The German Ministry of Defense's IT strategy ties in with this approach and is the conceptual foundation for the design and implementation of the German Armed Forces' IT architecture. This conceptual foundation has been adapted to meet the needs of the new structures and processes geared towards the realignment of the German Armed Forces. It defines IT goals and measures required to implement those goals. It sets standards for subsequent documents. In this context, our focus is on the improvement of our mission capability.

One of the main challenges is the provision of a

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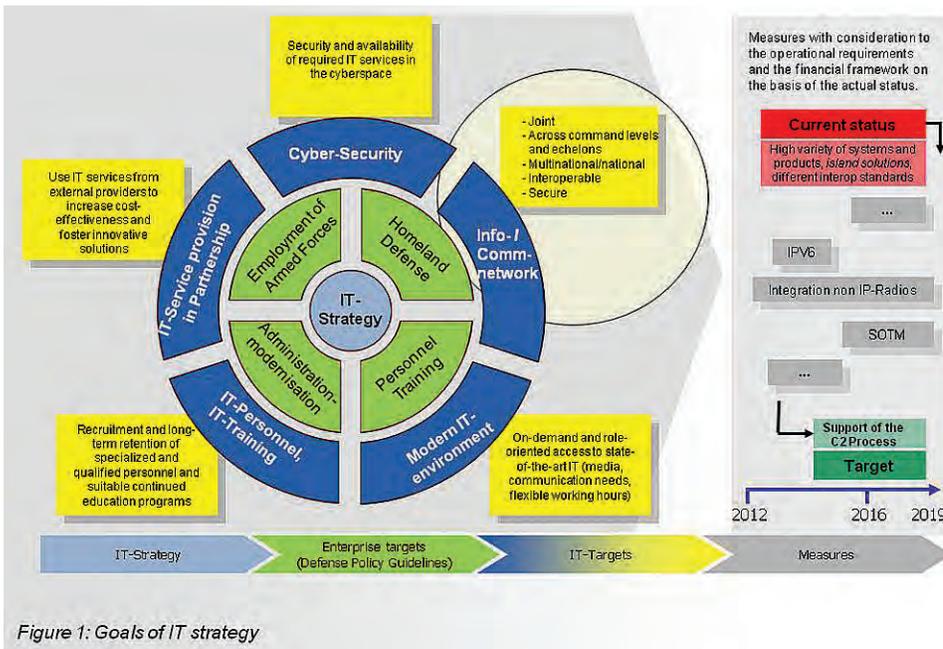


Figure 1: Goals of IT strategy

(Continued from page 41)

secure joint information and communications network across all levels of command and its compliance with national and international interoperability standards. This is the only way to provide uninterrupted support to command and control processes and workflows across all levels from the homeland to the mission areas while complying with IT security requirements (See Figure #1).

How can we transform the currently available information and communications systems into a near-term, affordable and structurally independent system that also provides us with a network-enabled operations capability?

With this question the Director of the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support, aptly

defined the principal challenge. The IT strategy provides us the harmonized implementation planning and evaluation criteria for the production of budgetary documents.

To achieve this end, the IT strategy puts an emphasis on defining, evaluating and improving capabilities, functionalities and IT services and also defines parameters for inferring, evaluating and implementing future user requirements as well. The following rationale will be applied. Capabilities are needed by military commanders and users in the mission areas to perform their tasks. Following NATO standards, tasks are associated with so-called services, which are provided by IT products that feature defined functionalities. A service provides task performance support to a user. The service can be made available through different sources and can be requested by different users in accordance with a role and authorization concept. Thus, necessary capabilities and functions are defined by the user's in-theater requirements and do not causally follow from current technical conditions.

In order to produce transferable

technical solutions that do not depend on a predefined structure or mission when called to implement the standards and measures of the German Ministry of Defense's IT strategy, one analysis used an exemplary, scenario-based and architecture-oriented approach. A reference architecture harmonized among the single military services provides the framework. The taxonomy of the NATO Overarching Architecture was used.

The approach used made it possible to arrive -- based on the interacting system triad of "capabilities, functionalities and services" -- at system engineering conclusions and solutions that enable us to implement measures of IT strategy in a timely manner, while meeting budget constraints (five years plus a three-year allowance). A demonstrated engineering solution that ensured our command and control capability exemplified the capability gain.

Using this approach throughout the German Armed Forces, will make it possible to generate consistent, comparable and traceable documentation in the future -- comprising the process from identifying user requirements to selecting German Armed Forces' IT system products and services. The mandatory use of the NATO Architecture Framework and the Bundeswehr's IT Office updated service taxonomy based on current in-theater user requirements are preconditioned. This precise and multinationally uniform description of capabilities and services will make it also possible to combine partial C2 support capabilities in a coordinated fashion and at multinational level (see Figure #2).

Required information processing capabilities
The command and control

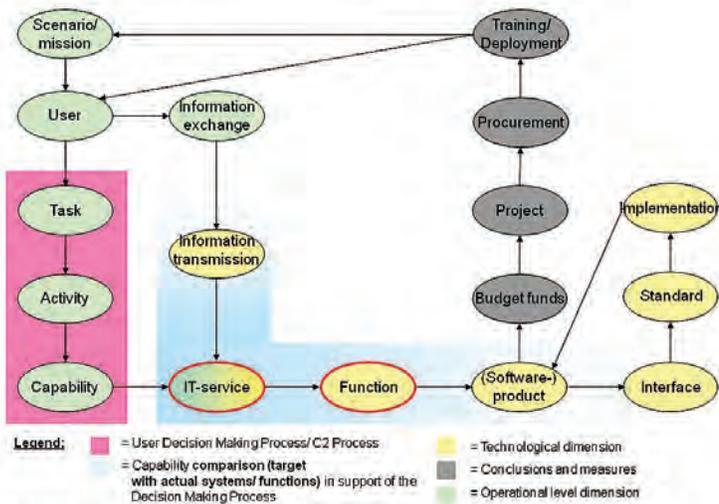


Figure 2: Command and control process capability evaluation

information systems support the user in the application of multinationally aligned command and control processes and workflows for training, exercises, operations and routine-duty activities. It will be crucial to ensure at all times an unlimited capability to work multinationally with allies and partners in mission-specific networks as part of United Nations, NATO, EU or civilian organization efforts while at the same time taking specific military needs into account.

The technological further development of systems must not limit itself to single scenarios or current missions since quite a number of mission scenarios can be envisaged which, given their specific requirements, would go beyond today's missions. Systems tailored to address special tasks and with strictly defined information relationships are not suited to timely react to changed requirements.

Future information processing must meet six core requirements.

- The processing of information must be designed in such a way that it can be integrated into a multinational environment. Thus flexibly providing a network-enabled capability to the most varied constellations of forces, without having to rely on structure-dependent solutions. The latter includes the capability to offer partners our own functionalities and conversely to use their services. This implies that EU and NATO requirements, too, have to be considered.
- IT support must be ensured to assist in accomplishing missions -- and this includes command and control processes and workflows at the operational and tactical levels -- both in a national and multinational setting. This includes the already established services

providing support to current missions.

- The provision of user-friendly, state-of-the-art web-based and portal-based platforms (IT hardware and software) to integrate information and collaboration.
- The provision of mission-relevant equipment for defined users in the homeland and the "extension" of the "in-theater" information space into Germany. This includes the possibility to exchange data between information spaces of different security classifications as well as the user's option to retrieve databases already established during routine-duty activities -- and all this must be doable even when on operations.
- The realization of a network-enabled operations capability essentially depends on the technological ability to generate, visualize and access a situation picture that is tailored to the respective levels.
- The realization of the "one-system philosophy" makes it possible for the user to have only one designated point-of-contact for troubleshooting (operation) and requirements (analysis, development and procurement).

Conclusions for further technological development of the C2I systems

The above core requirements encourage a service-oriented alignment of the harmonization and continued technological development efforts.

As far as possible, platform components, services and functions will be established only once. The number of services and service-related interfaces necessary for information exchange must be reduced to a minimum. The functionalities of the single services and major

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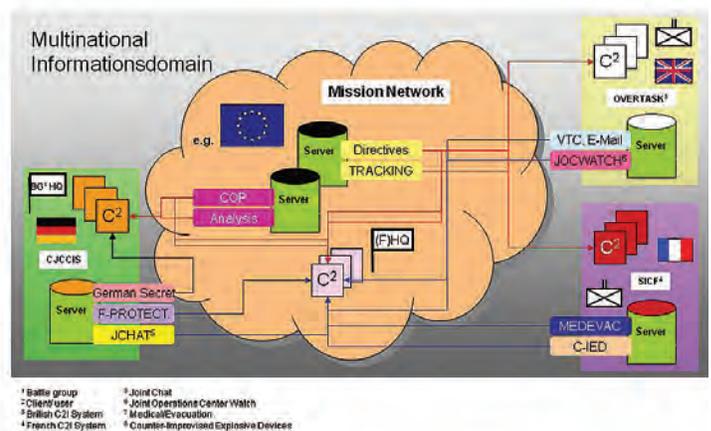


Figure 3: Service-oriented structures

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military organizations must be provided as specific services on the standard platform which also includes the standardized platform services (see Figure #3).

This requires a classification and systematization of the services (including those already implemented) based on a predefined scheme, that is to say, based on the harmonization of taxonomy resulting from the MoD IT-strategy and its reference architecture.

Bridging the gap between mission requirements and tight financial constraints must be accomplished through suitable measures that cover activities in the areas of development, in-service use, training and operation. This includes decoupling of hardware and software components by means of server virtualization and provision of overarching functions and technologies -- already known to the user from private applications or stipulated by NATO and EU regulations. The variety of products must be limited and the GAF will mainly use military off-the-shelf or commercial off-the-shelf products. A holistic operational-level IT service management and standardized German Armed Forces' test activities as well as a centrally controlled training of administrators and users are required.

With the MoD IT-strategy and its related Reference Architecture and Taxonomy, we came also up with possible solutions for implementing the identified necessary measures. The possible solutions comprise an updatable concept for the realization of services and the subsequent migration plan. This is geared towards moving from the

current military service specific command and control information systems to a joint C2I system for the armed forces.

The "Development Plan" from 2012 to 2019

The goal is to provide standardized hardware and software components that work in a joint service environment and across all levels of command and control. The target system will comprise, besides common platform components and joint service applications, functions for specific user groups in terms of engineering (see Figure #4).

Harmonization of the currently existing individual systems will be accomplished in four migration steps from 2012 until 2020. Migration of the existing systems will be accomplished in a low risk mode with short-time parallel operation of single components. To achieve this goal, an overall system approach with a common reference architecture and a common IT service management will be established.

As part of the first migration step, the so-called migration segment sets the starting point for the stationary component of the future C2I system. This segment consists of hardware, operating system and common application software. It provides all users with selected functionalities from the current C2I systems via a portal that supports a harmonized role and authorization concept. The latter concept defines the rules for the access to the data available in the system. Additionally, services

for classified material accounting will be integrated. This requires mechanisms for searching and calling up the services while complying with IT security requirements. At first, the main focus will be on the provision of stationary joint-service functionalities. However, right from the start requirements defining deployable mobile or maritime components and the interoperability of IT services will be considered. We part from the premise that components used in stationary elements will also provide the basis for developments and regeneration measures affecting non-stationary elements. The components will be provided in such a fashion that mission-related changes of user requirements can be responded to quickly and cost-effectively without

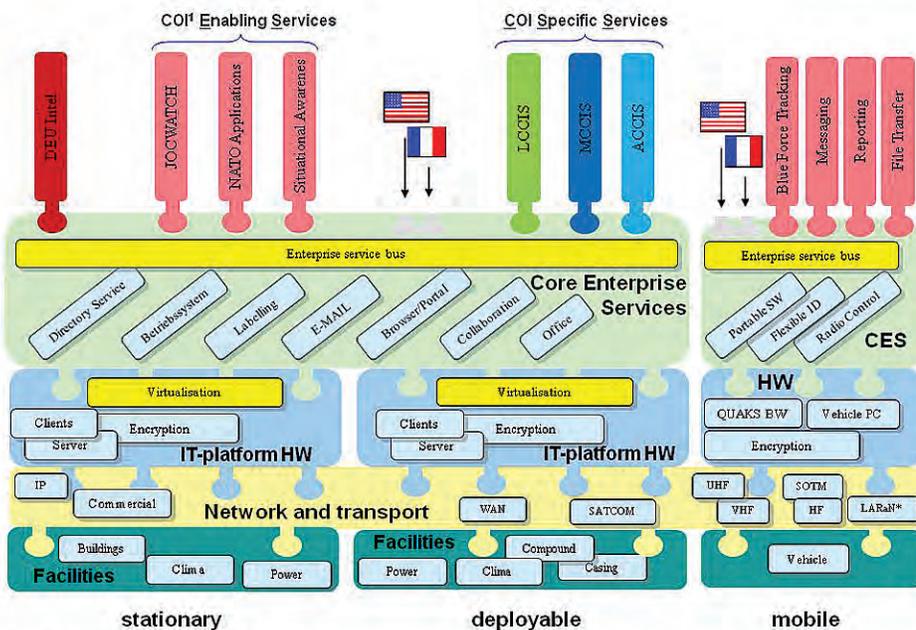


Figure 4: (Layer-)Architecture

1 Community of interests

straining development resources. The provision and use of functions across all levels of command and single military services will release financial and personnel resources that can be employed to implement previously nonexistent capabilities.

Migration steps 2 through 4 are aimed at harmonizing deployable (IT in service containers), mobile (vehicle-mounted IT) and maritime (IT on ships) platform components. Wherever it makes sense in terms of engineering and cost-effectiveness, applications will be modularized and supplemented or replaced by standard software and services (see Figure #5).

The following measures are required for migrating the C2I systems:

- Consolidation of requirements of current C2I systems while applying the approach described above;
- Definition of the performance specifications for the first common components of the future C2I system;
- Organizational pooling of Bundeswehr IT Office personnel to provide support during planning and in-service use of the C2I system;
- Organizational pooling of personnel to support and operate the system;
- Establishment of the German Armed Forces' capability during the immediate project phase to set architecture-related and service-oriented standards and guarantee quality assurance.

These measures are the foundation of the specific configurations of a common, modular, flexible, scalable and configurable future C2I system.

Required information transmission capabilities

A feasible networking of information processing systems is always based on a high-performance transmission medium. In

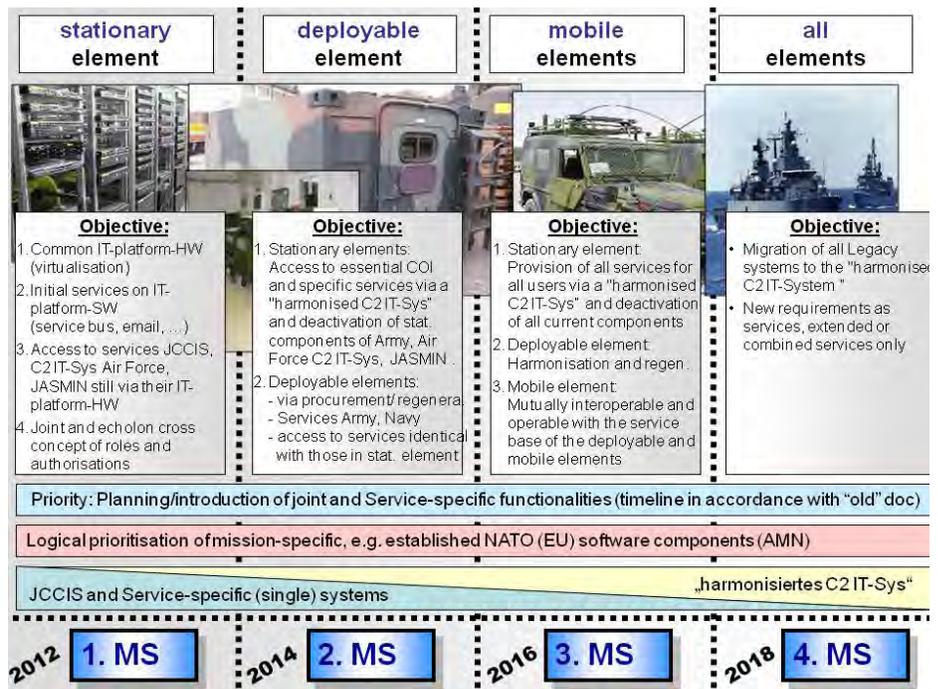


Figure 5: C2I System Migration Steps

conclusion, the information transmission components of the Bundeswehr IT system must ensure the availability of a high-performance, secure and interoperable communications network. This includes the capability to uninterruptedly transmit information by means of tactically mobile and network-capable transmission means. This enables the user to access -- in accordance with the established role and authorization policies -- throughout the communications network the required services via the command and control information systems, support information systems (formerly management information systems) and C2I and weapons control systems.

The network-oriented design requires three core capabilities.

- Combined missions with allied armed forces require a total system approach of multinational interoperability, providing the user with services that feature necessary connectivity, transmission, quality assurance and IT security capacities. A central network

(Continued on page 46)

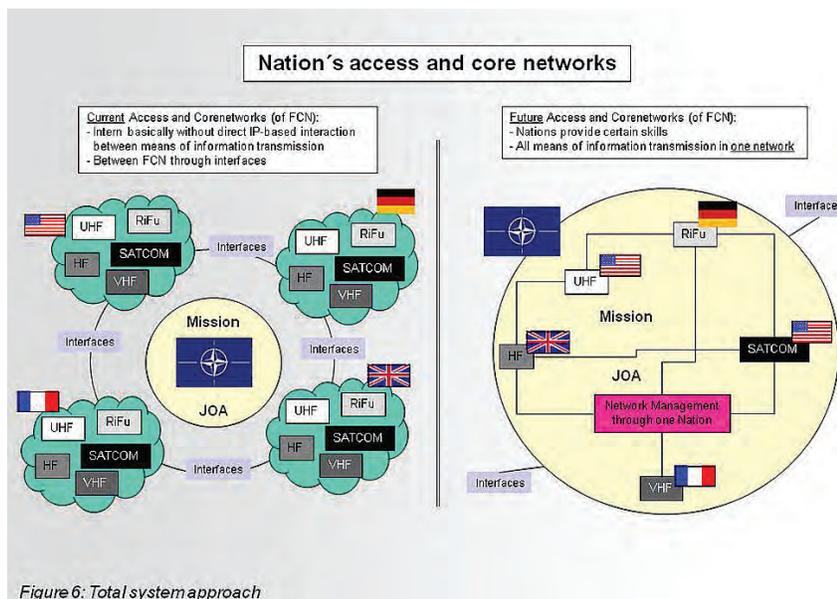


Figure 6: Total system approach

(Continued from page 45)

management system integrates individual transmission systems into a total system. This makes it possible for the different nations to provide partial capabilities as a service (See Figure #6).

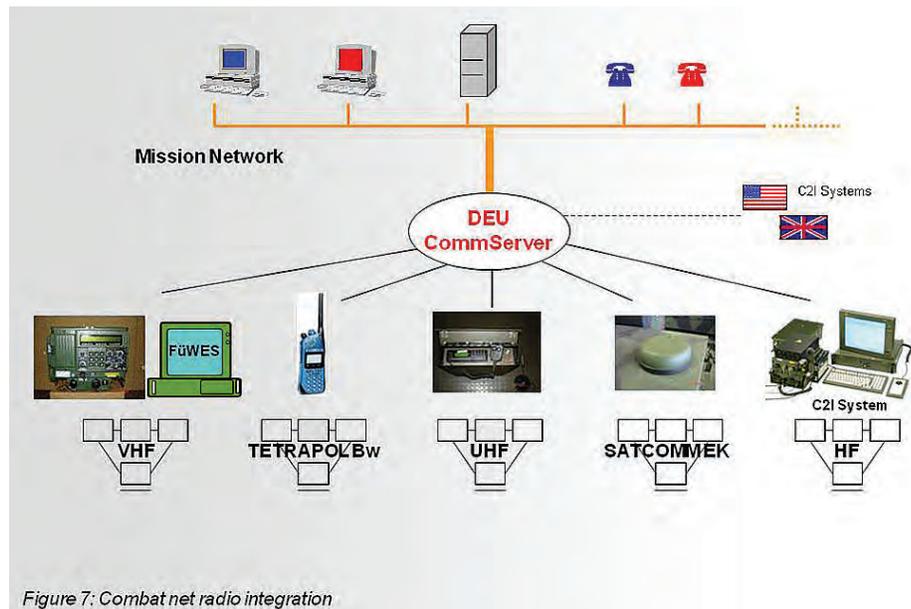
- In the future, we will additionally need transmission means of varying mobility levels without, as far as possible, sacrificing performance.
- The third capability required is the ability to provide uninterrupted, automated transmission between different physical means of transmission. In this context, we must ensure the integration of the combat net radio into a network-oriented communications network (See Figure #7).

Conclusions for further technological development

The possibility of interconnecting all transmission systems -- in particular the inclusion of radio systems -- is the most important capability gain with regard to information transmission. So we can fill capability gaps (e. g. limited VHF radio ranges) or compensate for individual transmission means that are down. Whereas information processing is in its fledgling stage in this respect, some of the required transmission products and systems are already in use or being procured.

The future core network will feature readily available commercial router technology combined with transmission means that ensure adequate data transmission rates. This enables performance of network management, data transfer rate management, quality-of-service mechanisms, control and monitoring functions.

When it comes, however, to access networks, and particularly



to the integration of radio systems, special measures have to be taken for some of them. Successful integration of networks and transmission systems depends on the Bundeswehr's Mobile Communications System and the jointly used components of the Bundeswehr's communications server, which are in the projecting phase. The Bundeswehr's Mobile Communications System is a crucial component of the core network for missions to come. While offering performance features of commercial provider networks, it enables us, in connection with other transmission systems (e. g. Bundeswehr's satellite communications and radio relay systems), to federate all access networks. Access networks are, for instance, subordinate local networks to be federated in a higher-level communications network. Additionally, the system provides -- besides comprehensive quality-of-service mechanisms -- gateways to networks of other nations and organizations as well as to public networks. It enables access to the in-theater information space via

connected C2I and weapons control systems, C2I systems and tactical data links.

A significant capability gap that affects all currently fielded military radio equipment is the missing IP and network capability of these sets. This gap will be definitely closed by the future VHF C2 radio sets -- to be used as part of the Enhanced Future Infantryman System -- and joint networkable radio equipment, in combination with the common share of the Bundeswehr's communications server. New radio sets, such as the joint networkable radio equipment, and the planned procurement of commercially available tactical VHF radio equipment will increase the currently low data transfer rate. All services required by the subscriber, including the simultaneous transmission of speech and data, will be provided in adequate quality. Usability of the joint networkable radio equipment and other IP-capable radio sets also requires the routing functionality and protocol conversion capability of the common share of the Bundeswehr's communications

server. This ensures a transparent gateway for the entire operational communications system of the German Armed Forces.

However, even cutting-edge network technology has its limitations. The failure of single transmission means or signal teams, or even of different systems, can be offset by network technology. However we will not be able to compensate for the failure of a complete system or project (e. g. the common share of the Bundeswehr's communications server). Therefore it is absolutely necessary to develop and field the common

share of the Bundeswehr's communications server and to make the Bundeswehr's Mobile Communications System available in operations abroad.

Future developments and evolutions must be aligned to build a transmission platform that can be used transparently by services and that meets mobility requirements in all mission scenarios.

Conclusion

The German Ministry of Defense's IT strategy is the conceptual basis for the realization of the German Armed Forces' IT. This IT

strategy has been developed along the lines of the new structures and processes that are geared towards the realignment of the German Armed Forces. The IT strategy defines IT goals, necessary technological capabilities and the measures required to realize them. Additionally, uniform standards for future user requirements were defined.

Information processing is improved through a service-oriented alignment, standardized hardware and software and timely and uninterrupted provision of a situation picture. To achieve this goal, current systems must be migrated to a joint C2I system (See Figure #8).

In the field of information transmission, the capability gain is obtained by networking of all transmission networks, in particular by integrating the area of radio communications into the overall communications network. Major milestones have already been reached. Some of the projects, however, currently have risks to their realization due to engineering, contractual and financial constraints.

LTC Frank Beyer has been Chief of the German Liaison Team to the U.S. Army Signal Center of Excellence since January 1, 2013. He previously served as Desk Officer for Plans, Policy and Concepts in the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support.

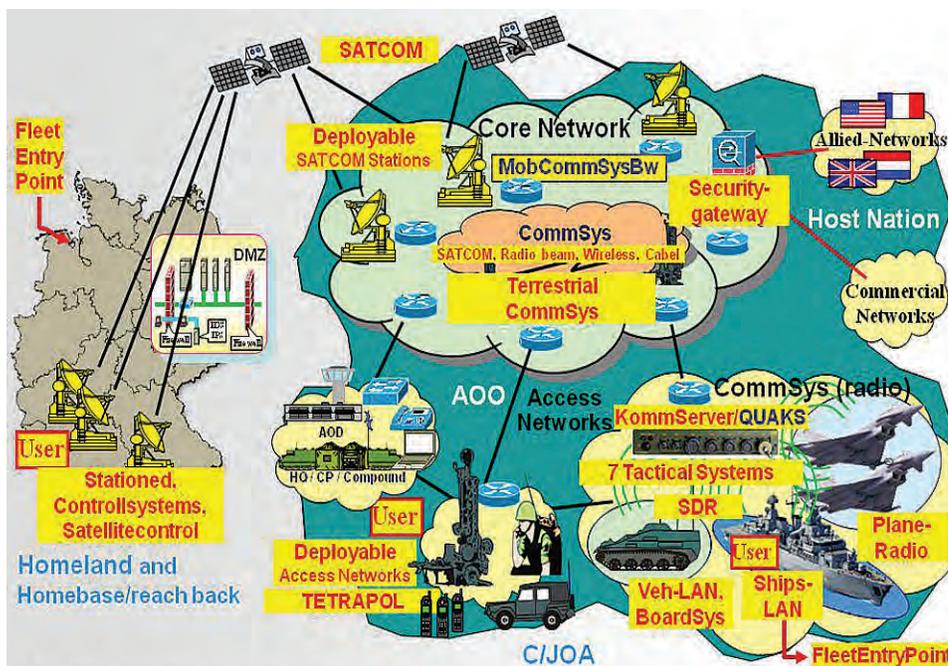


Figure 8: Gains in information transmission capability

ACRONYM QuickScan

AOO - Area of Operations
C2I - Command and Control Information
COTS - Commercial off-the-shelf products
DMZ - Demilitarized Zone
GAF - German Armed Forces
IT - Information Technology
JOA - Joint Operation Area
MOTS - Military off-the-shelf products

MoD - German Ministry of Defense
MS - Migration Step
NATO - North Atlantic Treaty Organization
RiFu - Point-to-Point Radio System i.e. LOS - Line of Sight
SDR - Shortwave Defined Radio
VHF - Very High Frequency

Letter to the Editor



As a recipient of two Chief of Signal Plaques, the Silver Order of Mercury, the title of "most published author in the history of the Army Communicator" and a lifelong member of the Signal Regiment, I was very pleased to see Nick Spinelli's paper in the last Army Communicator, titled "Signal Soldiers prepared for certification and licensing opportunities."

I have been advocating this very thing on the pages of Army Communicator, for many years. Unfortunately, my beloved Signal Corps has partially missed the boat when it comes to certification and licensing opportunities for Signal Soldiers. Specifically, the certifications listed in the article, are only in the fields of computers, computer networking, and automation.

Not a single program of instruction, license, or certification listed covers what is now and will be forever the critical backbone of the Signal Corps which is telecommunications by means of radio, television, cable, fiber optic and other systems. This is not to say that such certifications and licensing opportunities in these areas don't exist because they certainly do! They just seem to have been totally ignored in this instance in favor of the automation/computer interests. This is wrong and makes no sense if the Signal Center of Excellence truly plans to support an Army that has an on-the-move mindset. Automation, computers and their networking are very important but are not the only reason the Signal Corps exists.

What Signal leaders must consider along with current effort in computers and automation is to support programs of instruction and opportunities that will lead to certifications in critical areas such as:

- Radio operating procedures
- Radio system design, and engineering practice
- Electronic circuits and components
- Signal processing and emissions
- Radio installation design
- Lasers
- Radio physics and radio wave propagation
- Electrical power and system principles
- Practical system and circuit technology
- Antennas, feed lines, waveguides
- Fiber optics

Certification in all of these areas is readily available at very low cost from our own federal government with numerous commercial sources of instruction and training materials. Passing of the certification requirements will result in the widely recognized industry required Federal Communications Commission license or certification broken into the following categories:

- FCC 1st Class Radiotelegraph Operators Certificate
- FCC 3rd Class Radiotelegraph Operators Certificate
- Marine Radio Operator License
- FCC Radar Endorsement
- FCC 2nd Class Radiotelegraph Operators Certificate
- General Radiotelephone Operators License
- GMDSS Radio Maintainer's License
- Global Maritime Distress and Safety System Operator License

Having these Federal Government licenses and certificates will obviously add to any Signal Corpsman's body of professional knowledge whether they be officer, warrant officer, or enlisted and should be part of the criteria for promotion and ratings.

Signal Soldiers in radio/electronics career fields need to be treated exactly like those in the automation/computer career field are now being treated (with commercial certifications) according to Mr. Spinelli's article.

The bottom line of this letter to the editor is this, for many years and for many reasons the Signal Corps has avoided recognizing that Signal Soldiers need professional education and proof of technical competency beyond that provided by the Signal School.

It has become very clear particularly with the adoption of commercial equipment to accomplish the Signal mission that education and certification of Signal Soldiers by government and industry agencies outside the army now needs to happen or our personnel will not have creditability in the world of technology OR with our own leadership. This will benefit the army by providing a more creditable signal force to the combat commander and benefit the Signal Soldier by providing widely recognized credentials that will aid career development both in and out of the service.

The Signal Regiment needs to expand the license and certification effort begun in the computer/automation field to include all of telecommunications (via the existing FCC structure) or we will fail to provide the best to our army and to the members of the Regiment. The means to do it are there, the cost is low so let's get moving.

LTC (Ret) David M. Fiedler



(Continued from inside front cover)

enemy. It is not just a function of having good leaders. It is not just a function of having Soldiers who are experts at what they do. Well before the first round is fired, it is imperative that leaders and Soldiers have created within their organization and in themselves a dominant, winning spirit. The requirement to instill esprit de corps rests upon every leader and every Soldier at every level. Esprit de Corps is what binds individuals into cohesive, fighting units. The 'never quit' attitude is what makes our combat systems effective against any enemy.

*Your word is your bond. Honor, Truth,
Honesty and Character are your watchwords
that should never be forgotten*

The Army Profession does not expect for itself. The Army profession exists for the honorable purpose of preserving and protecting the American people and our way of life. Our honorable service is always performed within the realm of the Army values. Being a member of the Army profession is more than a job. It is a moral obligation. Members are required to commit themselves as subordinate to civilian authority and to put their own interest behind those of the nation and the mission.

All true professions must self-regulate and self-generate their own expertise and ethics and continually reinforce and enforce. The only way for the Army to remain a profession is to ensure that both military and civilians leaders at all levels serve as stewards of the profession. All members of the profession are responsible for policing the institution to maintain the Army ethic.

The Army has been through three reductions-in-force since the inception of the all volunteer force. The first one was from roughly 1972-78 and actually formed the basis for the all volunteer forces. The second RIF occurred in the late 1990's after the end of the Cold War and resulted in an approximate 1/3 reduction in the force structure. As we come to the end of a decade at war we are poised for the third reduction. It

is critical to assess whether we are able to maintain and develop leaders that are effective stewards of the profession.

History has shown that in many cases those leaders who would be the best stewards leave the force, either voluntarily or involuntarily, during these downsizings. Unfortunately, we will not know if we have maintained our effectiveness until the first battle of the next war.

As General of the Army, Douglas MacArthur said in his 1962 speech on duty, honor, country: "Yours is the profession of arms, the will to win, the sure knowledge that in war there is no substitute for victory, that if you lose, the Nation will be destroyed, that very obsession of your public service must be duty, honor, country...."

Let other than military voices argue the merits or demerits of our process of government. The free exercise of speech is available for others to ponder endless questions such as: whether our strength is being sapped by deficit financing indulged too long, by Federal paternalism grown too mighty, by power groups grown too arrogant, by career politicians tending toward corruption, by criminals acting with impunity, by shrinking moral plateaus, by escalating taxes chipping away at personal wealth or by extremists plying violent terrorist agendas.

Let those who never put on the uniform pontificate whether our personal liberties are as thorough and complete as they should be.

These ubiquitous national debates are not for your professional participation or military solution.

Our professional guidepost stands out like a tenfold beacon in the night--"Duty, Honor, Country."

Randall K. Faulkner, graduate of Clemson University with a BA in Psychology and an M.Ed in Organizational Behavior; commissioned a 2LT in the Signal Corps in 1979; served 12 years active duty and 8 years in the U.S. Army Reserves. His assignments included project officer in Directorate of Evaluations and Standardization and Combat Development; commander, HQS&A, 366 Signal Battalion; S-6 72 FA Brigade; automation/radio officer with J6, USACENTCOM, Tampa, Fla. and SOCSOUTH, Corozal East, Panama and Roosevelt Roads, Puerto Rico; and G6, USAREUR Forward in Taszár, Hungary. He retired as a major USAR in 2001. Currently he is assigned to the Learning Innovation Office, Directorate of Training, Fort Gordon, Ga.

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