LAN upgrade

A new Local Area Network developed and installed by the U.S. Army Information Systems Engineering Command-Europe will increase office automation and improve information management activities at the Army's V Corps, Frankfurt, Germany.

According to 1st Lt. Alan Holbrook, ISEC-Europe engineer responsible for the LAN implementation, the network will be used primarily for office automation to include word processing, document coordination, coordination of graphics for briefings, file transfer, E-mail and several other functions.

The network will also provide users with virtual disk storage and remote logon capability. Virtual disk storage is the ability to use a disk on a LAN server system on a single user DOS PC as though it was a part of the single user DOS system.

"Users will now be able to share information easier," said Nelson McMicken, an ISEC-Europe engineer, who worked closely with V Corps to develop the network. "Because documents and briefings can be coordinated on the network, less paperwork is generated and the time spent preparing and distributing information is greatly reduced.

"The network currently has over 1100 users and is still growing," said McMicken.

He added there are several hosts on the network to include a number of UNISYS 5000/80s, more than 10 Intel 320s and a connection to DDN.

"All users on the network have access to the local E-mail host and will also have the capability to interface with the worldwide E-mail network," said McMicken.

The original type of network requested by V Corps involved the implementation of new fiber optic cable, but because of the expense and time needed to implement this concept, an alternate networking concept was developed.

ISEC-Europe engineers worked closely with V Corps personnel to develop a networking concept that used existing twisted pair cable.

"Using this concept, we were able to merge existing assets with new equipment and quickly fulfill V Corps' networking requirements," said Holbrook.

ISEC-Europe engineers also performed acceptance testing of the network and assisted in obtaining the required equipment.

"So far we have not received any complaints on the network. Everything seems to be working as initially planned," said McMicken.
—Douglas Garman

Operation Desert Voice

More than 120 volunteers made up of amateur ham radio operators, concerned citizens and Minnesota Army National Guard members kept gulf soldiers "in touch" with home and loved ones waiting 7,000 miles away, thanks to a unique radio transmission site dubbed, The Desert Voices Project, located in Farmington, Minn.

Since it's first transmission on December 13th, the privately operated station handled over 2,000 telephone patches and hundreds of faxed "Sandgrams" between U.S. service people and the friends and relatives they left behind. Project Desert Voice is the brainchild of Ed Addy, owner of Minneapolis-based Antenna and Communications Company and former U.S. Army Corps Signal soldier. Addy explains that the idea was to enlist the help of the community-at-large—businesses, civic leaders and government—to provide the necessary technology, equipment and services needed to establish a radio transmission site capable of reaching out to the deserts of Saudi Arabia.

Under the guidance and authorization of the U.S. Army MARS (Military Affiliate Radio System), which governs radio air transmissions in and outside of the Continental U.S. and with the expertise of some 90 licensed amateur radio operator volunteers, the Farmington site evolved into one of four major relay stations in the U.S. geared to troops stationed in the Gulf.

"The U.S. Bureau of Mines provided the lease for the 34-acre communications center," said Addy of the thousands of hours that went into the acquisition of equipment and renovation of buildings. "Local businesses donated all the necessary services to upgrade buildings, while others provided such things as electrical power, telephone services, FAX time, carpentry skills, antennaes, transformers, radio, office equipment and the 120-foot-tall transmission tower. It was the Minnesota Army National Guard who approved use of their radio transmission license for the project.

According to Addy, the combined power of people and resources resulted in around-the-clock communications between military members and their loved ones.

A guide for the desert

When the decision was made to deploy U.S. troops to Saudi Arabia, one of the first things which came to the Army's attention was the lack of sufficient information for the troops about the area to which they were being sent. There just wasn't enough printed material to go around.

The Army Intelligence Agency (AIA) answered the problem by producing a guide for deployed troops, but the information in their computers had to make it to the printed page. Where to turn? The logical choice was the experts in printing and publications of 7th Signal Command. And 30 of those experts were in the print plant at Redstone Army Arsenal in Alabama.

In an effort that won kudos from the Vice Chief of Staff of the Army, the personnel of the print plant for U.S. Army Information Systems Command-Missile Command (USAISC-MICOM), Redstone, Ala. printed 300,000 copies of a 48-page guide, and they did it in record time.

At the end of the total run of 300,000 guides, the plant had produced seven million units, said Jo Parton, branch chief, Print Plant. But while that sounds like a lot, she noted seven million units per month is a normal workload for the plant. However, this request wasn't normal, and the print plant had to produce the guides at the same time that it was also serving its regular customers.

Producing a doubling of the workload meant some sacrifices had to be made. Parton said the plant went into 12-hour shifts, seven days per week until the full 300,000 copies were printed. And to ensure regular customers received their products on time, the plant contracted out several print jobs.

But the sacrifices paid off. On August 22, the AIA had initially

ordered 50,000 copies to see if the plant could handle the workload. Given a four-day turnaround, the plant personnel finished the job in two and a half days.

Bennett Hart, deputy director, AIA, picked up the first batch personally, and was impressed with both the speed and quality of the work. The job was officially USAISC-MICOM's!

The guide, small enough to fit into a soldier's pocket, illustrates how the Iraqi military conducts offensive and defensive operations; unit structures; military equipment illustrations; Iraqi rank insignia; as well as tips on how to deal with the heat, poisonous animals to be aware of in that area of the world, road signs, and a few common words of the Arabic language.

—Vernon Davenport, Jr.

Computer storm

Operation Desert Storm's high technology battlefield demanded unprecedented support from Army information systems activities.

One such measure of this support was the implementation of the U.S. Army Information Systems Command's Computer Support Center (CSC) in Saudi Arabia.

According to MAJ Tony Kovacs, plans officer, Deputy Chief of Staff for Logistics, USAISC, the mission of the center was to provide commercial computer maintenance support and direct exchange services for all U.S. Army units in the theatre.

Estimates indicate that well over 10,000 separate pieces of automated data processing equipment were in operation throughout the theatre.

Services have been well received.

"Customer satisfaction was high," said Marty Wall, Deputy Director of Logistics, Information Systems Management Activity, based at Fort Monmouth, N.J. and commanded by BG John M. Watkins Jr. "According to comments from customers, we were able to reduce turnaround time for repair/replacement from an average of five weeks to about five days."

The CSC began operation Dec. 15 with direct exchange services only. The addition of a contractor several days later introduced actual maintenance capability at the site.

Later, three contractor personnel plus an ISMA military liaison operated a bustling activity.

Business during the first few days consisted primarily of exchanges for all types of hardware. Wall said this changed as the facility acquired more parts.

"As repair parts were stocked, the incidence of repair went up while direct exchanges declined," he said.

According to Kovacs, 521 transactions (exchanges and repairs) were processed by Jan. 21.

"That's probably a pretty good number," he said. At times, the equipment was not coming to them, so they had to go out and pick it up. Some of the customers were seven hours away."

The need for a computer support operation was identified when many units, having deployed to the Gulf region with personal computers and other automated data processing equipment, lacked resources for maintenance.

"It was in late October that we determined we had a need for some type of support for ADP equipment," said Kovacs. "We then tasked ISMA to actually take the lead in coordinating and doing all the groundwork to get it operational."

"ISMA was tasked to undertake the implementation and planning for the CSC by ISC commander LTG (Alonzo) Short (Jr.) on Nov. 8, 1990," said Wall. "From Nov. 8 to Dec. 15, we acquired a half million dollars of float and repair parts, had them shipped to Saudi Arabia, then moved to the CSC site without the loss of a single item."

The planning process included making arrangements for a contractor to operate the center, and coordinating with the Army Materiel Command through its subordinate command—the Communications-Electronics Command—for additional support. This partnership was instrumental in the implementation process, completed at unusual speed.

"The support through the ISMA-AMC connection proved to be a major ingredient to our success in implementing the CSC quickly," said Wall. "CECOM worked with us as a full partner in planning the approach, conducting acquisitions, funding, providing and preparing the facility, supporting our people and contractors in-country, and advising us during the actual implementation time."

—T. Anthony Bell

All star performance. *The United States Southern Command, Quarry Heights, Republic of Panama, recently honored retiring SOUTHCOM commander, GEN Maxwell R. Thurman (right), who retired after more than 37 years of service. Hosting the ceremony was GEN George A. Joulwan, new SOUTHCOM commander. GEN Carl E. Vuono (left), Chief of Staff, was in the reviewing party. But in the center of it all was SGT Alisha A. Boyd, 1109th Signal Brigade, Panama, who carried the Defense Distinguished Service Medal, presented to Thurman. Boyd earned the honor after she was named USARSO soldier of the year for 1990. (US Army photo)*

Brain Storm

The adage "necessity is the mother of invention" was proven to be true by engineers at Fort Monmouth, NJ, when, over the course of a weekend, they designed and fabricated a piece of test equipment for use in Operation Desert Storm.

The engineers—Salavtore Romano and Martin Rosenzweig, who work for the Army Communications-Electronics Command's (CECOM) Center for Command, Control, and Communications (C3) Systems—were told that soldiers deployed in the Saudi Arabian Desert needed a way to test communications cables rather than trial and error. The time frame was early February—the war in the Gulf had started.

The engineers received their marching orders to devise a better way of testing cables on a Friday afternoon. By Monday morning, they had in hand a small, lightweight test set that would enable soldiers in the field to quickly test 26-pair cables and instantly give a go/no-go diagnosis.

The test set consists of two parts—a power unit that houses long-life batteries and resistors, and a display unit including 26 light-emitting diodes (LEDs). It is small enough to be held in a hand, easy to use, has no switches, and requires no adjustments. Soldiers simply connect a 26-pair cable and they can almost instantly tell if any of the 26 conductor pairs are shorted, open, or suspect depending on which of the green LED's light up.

"Because we had such a short time frame, it forced us to make it simple—we simply didn't have time to make it more complicated," said Romano.

Another engineer for C3 Systems, Matthew Zieniewicz, served as the design team's logistical arm, coordinating with depots and CECOM's Emergency Operations Center, and doing whatever it took to get the right material to the right place at the right time. Some of the parts needed to complete the cable tester were purchased from a local Radio Shack. The clerk there didn't believe, at first, that parts from his shelf were going to help our troops in Desert Storm. Said Rosenzweig, later, jokingly, "We don't mess around—as long as Radio Shack is open."

The tester is as effective as it is simple. Now, in fifteen seconds—as long as it takes to connect the test set to the cable, soldiers can field-test lengths of cable up to 1,250 feet—a task that previously took hours.

Twenty of the test sets were shipped to Saudi Arabia for use in Operation Desert Storm. Preparations are now underway to produce the test sets in quantity. Production units will be rugged, reliable and low cost, and the cable test set will be added to the Army inventory.

"It's a real simple design, but something that's very needed," said Rosenzweig, "sort of like the electronic equivalent of designing a paper clip."

—Lisa Risko

Engineers Salavtore Romano (left) and Martin Rosenzweig of the Army Communications-Electronics Command's (CECOM) Center for Command, Control, and Communications (C3) Systems demonstrate the cable tester they designed and fabricated over the course of one weekend for use by our troops in Operation Desert Storm. (Photo by Russ Meseroll)

IMA Future

The Army has approved a plan for future restructuring of the way it manages communications and automation systems to service command headquarters and installations throughout the U.S.

The plan, known as "IMA Future," was developed by the U.S. Army Information Systems Command (ISC) as part of a two-year Armywide organizational study to streamline management and reduce overhead.

IMA Future encompasses the Army's extensive programs in communications, automation, audio visual, printing and publishing and records management, collectively labeled the information mission area.

Savings will come principally from the elimination of an intermediate headquarters engaged primarily in administration and management activities. Under the new arrangement, that responsibility will be shared by ISC headquarters, presently located at Fort Huachuca, and five to-be-established brigades, each covering a specific geographical area.

Additional savings will result from the congressionally ordered consolidation, under ISC management, of some software engineering functions, now scattered at many locations.

While the locations of the new brigades and other details remain undecided, the geographic service areas concept is intended to offer greater flexibility and faster client services to the scaled down Army of the future.

The Army's decision to maintain ISC as a major command—reporting directly to the Chief of Staff—reflects the importance the military places on communications and related functions in both peacetime and wartime environments.

Lt. Gen. Alonzo E. Short, Jr., the ISC commander, expressed satisfaction in the Army decision to retain a single major command to manage these high-tech functions. "The technical know-how we have acquired has proven invaluable in the support ISC gave to Operation Desert Storm," the general commented.

"The Army would have been hard pressed if it could not call on a central source of expertise for communications support during the rapid Persian Gulf buildup," Short continued.

—Larry Grossman

Spanning the Gulf

On land and sea and in the air, computers played a vital part in the war against Iraq. To support its automation capability, the Army created in the Persian Gulf the largest data communications system ever used in any military conflict.

Using this system, a typical message transmitted via satellite from the Gulf traveled more than 46,000 miles and took less than three seconds to reach the United States, officials say.

The system, installed in the Gulf by the Army's Information Systems Command, not only has the ability to network different kinds of computers—that once were unable to communicate with one another—but it also has valuable rerouting capabilities allowing data transmissions to bypasss inoperable sections of the network, Army officials say.

The Saudi system, which was designed and installed by personnel drawn from ISC elements here and overseas, consisted of a network capable of communicating with computers and systems located anywhere in the world.

More than 20 subnetworks (also known as the ODS-NET), located at key locations in the Gulf, were part of the Operation Desert Storm network.

According to ISC communications specialist, Chief Warrant Officer Robert Weissert, the ODS-NET used a complex collection of routers, bridges, packet switches and satellite trunks which require tedious, constant, and accurate network management from a central location. It's not surprising that this network control center was called "the AWACS of the Saudi network." The AWACS (Airborne Warning and Control System) plane had already won fame in the war against Iraq for providing air traffic control for combat aircraft in the Gulf.

COL Steven C. Harman, Jr., ISC's Deputy Chief of Staff for Operations, oversaw the design and installation of the Army's communications systems in the Persian Gulf.

"We began putting these systems in place within three weeks of the Iraqi invasion of Kuwait," Harman said. He noted that the network was also used by Navy, Air Force, and Marine elements in Saudi Arabia.

The beauty of the new technology is that the network can be remotely reconfigured very rapidly to take advantage of all available communication links in the event some are damaged or disabled, Harman said. He added that ISC began to develop this capability in 1988.

"We needed to have a system sufficiently robust and dynamic to satisfy battlefield conditions," he said.

The volume of data transmitted daily between the U.S. and the Gulf was equivalent to 10 million words or the text contained in 13 copies of the Bible or 80 paperback novels.

The ISC, with a workforce of some 45,000 soldiers and civilians operating in 14 nations and throughout the U.S., is the largest military communications and automation organization in the world.

—Diana Hawkins

Logistics course

The Senior Officer Logistics Management Course (SOLMC) is specifically designed to update commanders and their primary staff at the battalion and brigade level in the logistics arena. The course encompasses maintenance, supply, and transportation procedures, as well as hands-on experience with vehicles, weapons, ammunition, medical, communications, NBC, and quartermaster equipment. The course is open to officers, major or above, in the active and reserve Army, US Marine Corps, and allied nations as well as DOD civilians GS-11 or above. The one-week course is conducted ten times each fiscal year at Fort Knox, Kentucky. Class quotas may be obtained through normal TRADOC channels. For more information, contact CPT Hammerle, DSN 464-7133/3411 or commercial (502) 624-7133/34ll.

FY 91	FY 92
18-23 Aug 91	25 Oct 91
15-20 Sep 91	10 Jan 92
	31 Jan 92
	13 Mar 92
	Mar-3 Apr 92
	10 Apr 92
	Apr-1 May 92
	15 May 92
	May-5 Jun 92
	25 Sep 92