



**STRATEGY  
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**THE UNITED STATES ARMY SIGNAL COMMAND:  
PAST, PRESENT, AND FUTURE**

**BY**

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USAWC STRATEGY RESEARCH PROJECT

**The United States Army Signal Command: Past, Present, and Future**

by

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## ABSTRACT

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No longer facing a single global military threat, the United States Army has been undergoing profound change as it evolves into a full dimension strategic land force for the 21<sup>st</sup> Century. In the process of this change, the Army is reviewing its organizational structures to adapt to the envisioned global environment and regional battlefields of the coming centuries. This new Army will leverage the exponential growth in digital information and information systems technologies to succeed in future missions. Central to this ongoing change in the Army's structure is the role of the United States Army Signal Command (ASC), located at Fort Huachuca, Arizona. What is the role of the Army Signal Command in the changing environment? What missions should be assigned to the ASC of the future? This study will review the past and present role of ASC, and propose the future role. It concludes that the ASC has an important strategic role in the Army of the 21<sup>st</sup> Century, leveraging information age technologies for the warfighter and providing necessary strategic leadership to achieve information superiority.



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## PREFACE

Many have contributed to this research. First, I would like to acknowledge the assistance of COL Frank Hancock for his guidance, suggestions and assistance in writing and editing this study. I would also like to thank those at Army Signal Command (ASC) and its subordinate commands that have graciously answered my many questions and assisted with research. These include COL William Lane, Mr. John Scott and LTC Paul Kelly. Most importantly, I would like to thank my wife, Rae Lynne and our children, Paige, Cameron, Benjamin, and Christian, for their patience and support during this study.



## **THE UNITED STATES ARMY SIGNAL COMMAND: PAST, PRESENT, AND FUTURE**

With the arrival of the new millennium, the US Army continues to undergo some of the most dramatic changes in over half a century. Sparked by the demise of the Soviet Union and the end of the Cold War, the Army has chosen to title this change the Revolution in Military Affairs (RMA). With the unparalleled advances in information technology continuing to progress at a most rapid pace, the RMA must exploit advances in technology to allow information dominance in the 21<sup>st</sup> Century. Clearly, the RMA must be centered on modern information systems and automated C4 systems. Secretary of Defense William Cohen, speaking of the RMA, noted:

the information revolution is creating a Revolution in Military Affairs that will fundamentally change the way U.S. forces fight. We must exploit these and other technologies to dominate in battle... that will ensure our domination of the battlespace in 2010 and beyond.<sup>1</sup>

As the US Army has been drawn down to current levels, the number of missions has significantly increased. At the same time, the explosion in available information technology has provided the potential for a new age of information and knowledge-based warfare. This smaller force must use all available technologies to enhance its warfighting capabilities.

Key to the leadership and management of this evolving information technology is the US Army Signal Command (ASC). Strategic communications will continue to play a significant role in today's and tomorrow's warfighting missions. This study will examine the important role ASC will play in oversight of the Army's Echelons Above Corps (EAC) Tactical and Director of Information Management (DOIM) Signal Brigades, which provide strategic communications to the deployed warfighters, the current situation involving the CONUS Director's of Information Management (DOIMs), the emerging role of Information Assurance required in a world of smarter and ever growing numbers of hackers, and the importance of the ASC Commander and staff. It will also discuss the requirement to have all Army tactical switches configured with the same versions of software to ensure compatibility. Finally, when discussing the important mission of Information Assurance, the need for unity of command and a centrally located Army Network Systems Operations Center (ANSOC), will be discussed. The conclusion of this study will recommend changes that need to be made to the ASC to ensure information dominance is provided to the warfighters between now and 2010.

### **US ARMY SIGNAL COMMAND – HISTORY**

Change continues to be a way of life for the U.S. Army Signal structure. As the Army has changed size and as technology has revolutionized, the Signal structure has adapted and changed to meet the warfighter requirements. The US Army Signal Command (ASC) history can be traced back to 1 February 1945. Organized under a Table of Distribution and Allowances (TDA) at the Pentagon, it was

originally named the 9423<sup>rd</sup> Technical Services Unit, War Department Signal Center (Traffic Operations Branch). It was later consolidated with the 9425<sup>th</sup> Technical Services Unit-Signal, Plant Engineering Agency, located in Philadelphia, Pennsylvania. The 9423<sup>rd</sup> received a Meritorious Unit Commendation streamer for service during World War II in May 1945. In 1947, the 9423<sup>rd</sup> was redesignated as the Army Command and Administrative Communications Agency and then again in 1957 as the US Army Communications Agency. In April 1962, a major reorganization occurred when the US Army Communications Agency was consolidated with the US Army Signal Engineering Agency to form the US Army Strategic Communications Command (STRATCOM). This new organization was a Class II activity under the command of the Chief Signal Officer, at that time a Signal Corps Colonel.

The establishment of STRATCOM occurred at about the same time as the Cuban Missile Crisis. While this major reorganization of several key U.S. communications system agencies was taking place, the Cuban Missile Crisis shocked the western world. In October of 1962, a US reconnaissance plane obtained photos of Russian missile sites under construction in Cuba. In the next few days, many communications shortcomings were discovered. The State Department experienced long delays in attempts to communicate with many American Embassies and the USSR. President Kennedy and Premier Khrushchev learned that the quickest way to send messages to each other was by making public statements that the news media immediately disseminated throughout the world. These deficiencies in the United States' strategic communications had to be resolved quickly. President Kennedy ordered the establishment of the National Communications System (NCS) to interconnect the communications for the Department of Defense, the State Department, and several other federal agencies. The Secretary of Defense became the executive agent for the National Communications System (NCS). The Defense Communications Agency (DCA), later to be redesignated the Defense Information Systems Agency (DISA), became manager of the NCS.

Consequences of the Cuban Missile Crisis were extremely beneficial for the US Army Signal Corps. STRATCOM gained Major Army Command status and was now commanded by a Major General, who reported directly to the Army Chief of Staff. With the activation of the 11<sup>th</sup> Signal Group (now a EAC Tactical Signal Brigade) and the 505<sup>th</sup> Signal Company in May 1963, STRATCOM was now provided with deployable Table of Organization and Equipment (TOE) units, which could support emergency strategic operations. In 1966, STRATCOM added another subordinate command. The famous 1<sup>st</sup> Signal Brigade was formed in 1966 in Vietnam, assuming command and control over all Army communications-electronics resources in Vietnam and Thailand. Scattered over more than 200 sites in Vietnam and Thailand, the 1<sup>st</sup> Signal Brigade became the largest combat signal unit ever formed and controlled the most comprehensive military communications system in the history of warfare up to that point.

In 1967, STRATCOM headquarters was moved from its Washington D.C. location to Fort Huachuca, Arizona. Here the command continued to grow and increase its participation in strategic communications. The nature of the war in Vietnam began to blur the distinction between strategic and tactical communications. On many occasions, STRATCOM personnel and equipment supported tactical

operations and therefore many Signal Leaders recommended that STRATCOM drop the word "strategic" from its name. As a result, in 1973 the Army redesignated STRATCOM as the US Army Communications Command (ACC). This new name better reflected the command's total communications-electronics mission, from strategic to tactical. As a part of this redesignation, ACC assumed responsibility for the communications systems at all Army posts, camps, stations, depots, and arsenals around the world, as well as responsibility for the Military Affiliate Radio System (MARS) stations.

In May 1984, following still more growth and added responsibility, ACC was again redesignated as the United States Army Information Systems Command (USAISC). This change in name also highlighted the change from a purely communications organization to an organization responsible for information systems, or computers. With the continued advances in technology, the US Army instituted the Information Mission Area (IMA) concept. This concept allowed for the consolidation of communications with automation and the other disciplines of record management, visual information, and printing and publications. Before the IMA, most Major Commands (MACOMs) managed their own automation efforts. The Army found itself with computer resources scattered worldwide, with little or no compatibility or centralized management. USAISC was the organization tasked to resolve these deficiencies.<sup>2</sup>

The wide-ranging mission of USAISC at this time was to:

- Provide information systems and services for the US Army and Department of Defense agencies and other government organizations, as assigned.
- Plan, engineer, acquire, install, test, operate, and maintain assigned Army information systems and the Army portion of the Defense Communications System (DCS).
- Assess and develop requirements for sustaining base fixed station portion of strategic information systems, in coordination with the Army staff and major Army commands (MACOMs).
- Serve as the material developer, in coordination with the US Army Material Command (AMC), with responsibilities for developing the technical design of assigned information systems; acquiring information systems within the scope of the information mission area (IMA) program, as assigned in Army Regulations; and planning and implementing controls for material release for issue.
- Provide Program/Project/Product Management, as defined in the AR-25 series, and required for the development and acquisition (research, engineering, procurement, production, distribution, installation, and integrated logistics support) of information systems.
- Test and evaluate selected information systems. Perform user testing on systems as assigned by ODCSOPS, HQDA, under the oversight of the US Army Operational Test and Evaluation Agency (OTEA).

- Command assigned organizations, installations, and activities under peacetime and mobilization conditions.
- Coordinate with the Chief, National Guard Bureau on matters relating to the Army National Guard and with the Chief, Army Reserve on matters relating to the Army Reserve.

In brief, ISC planned, engineered, acquired, installed, operated, maintained, tested, and evaluated information systems for the entire Army and the Department of Defense. This process included gathering, storing, processing, transferring, and displaying information for Army users.<sup>3</sup>

### **THE ARMY SIGNAL COMMAND – PRESENT**

With the continued explosion in information technologies, especially with the migration of powerful personal computer systems to the desktop, there was a need for reorganization within the U.S. Army Signal community in order to alleviate redundancies. In 1995, the Army Vice Chief of Staff directed that a study be conducted to identify redundancies and make recommendations on how to run a more efficient Signal force. The Signal Organization and Mission Assessment (SOMA), the Information Mission/Functional Area Analysis (IM/FAA), and the Institutional Army Redesign all recommended that the U.S. Army Information Systems Command (USAISC) transition from an Army Major Subordinate Command (MACOM) to the status of subordinate command under FORSCOM, and be named the 9<sup>th</sup> U.S. Army Signal Command (USASC). Each of these studies examined the current Army wide functions and responsibilities and recommended where these could be realigned for a more effective Army information management structure. It was determined that the Army Signal Command (ASC) and the entire Signal world would be able to better support the warfighters, Force XXI doctrine, and the National Military Strategy.

On 16 September 1996, the Secretary of the Army approved the U.S. Army Information Systems Command (USAISC) being redesignated as the U.S. Army Signal Command (ASC). On 1 October 1996, Army Signal Command was reassigned to FORSCOM, as a major subordinate command. The Commander ASC would also serve as the FORSCOM G-6, with the assistance of a small staff at the FORSCOM HQs. Within this reorganization, missions previously under ISC involving Project Management functions were transferred to the Communication-Electronics Command (CECOM). Also, all testing responsibilities were transferred to the U.S. Army Operational Test and Evaluation Agency (OTEA). It was at this time that the mission of the Army Signal Command was revised, became more focused and less redundant.

The current mission of the U.S. Army Signal Command is to:

- Train and maintain a combat-ready, worldwide deployable signal force to support warfighting commanders-in-chief in the execution of joint and combined operations across the spectrum of conflict.

- Sustain and protect command, control, communications, and computers (C4) systems and personnel.
- Assist in the integration of arriving signal forces into the theater.
- Execute sustaining base, strategic, and theater tactical C4 systems integration with all components, defense agencies, and non-Governmental organizations.<sup>4</sup>

The ASC vision is to be a responsive provider and the recognized expert for warfighting and force projection information services that support decisive victory. Further analysis to determine how ASC is currently organized and enabled for success during today's continuing technology revolution will set the stage for determining the ASC of the 21<sup>st</sup> century.

#### ANALYSIS OF CURRENT MISSIONS

In order to execute the above stated missions worldwide, the Army Signal Command is organized as a major subordinate command under FORSCOM. Headquartered at Fort Huachuca, Arizona, the ASC staff is organized with the normal allocation of principle staff sections. These include the G1, G2, G3, G4, G8 (Resource Management), and the Command Engineer. Special staff sections include the Staff Judge Advocate, the Office of Internal Review, the Protocol/Public Affairs Office, the Safety Office, the EEO Office, the Inspector General, and the Command Chaplain. These headquarters elements are organized under a Modified Table of Organization and Equipment (MTOE) and are deployable. Let us now look more closely at each of the currently assigned missions, particularly at how the ASC is organized to accomplish each mission.

#### **MISSION: TRAIN/MAINTAIN A COMBAT READY, WORLDWIDE DEPLOYABLE SIGNAL FORCE**

The Army Signal Command (ASC) is organized with two CONUS based power projection EAC Signal Brigades, two forward deployed EAC Signal Brigades, and three forward deployed DOIM Signal Brigades, supporting the warfighting Commanders in Chief (CINC's) with command, control, communications, and computers (C4) during joint and combined operations across the spectrum of conflict.

The 5<sup>th</sup> Signal Command (Europe), located throughout Europe, is an ASC subordinate command assigned to the United States European Command (EUCOM) area of operations. Commanded by a Brigadier General, the 5<sup>th</sup> Signal Command has responsibility for Echelons Above Corps (EAC) Signal assets, both the EAC tactical and the Directors Of Information Management (DOIMs) located throughout EUCOM. Today, this includes the 7<sup>th</sup> Signal Brigade (EAC Tactical) and the 2<sup>nd</sup> Signal Brigade (European DOIMs). Headquartered in Mannheim, Germany, the 5<sup>th</sup> Signal Command provides support to SHAPE and NATO; the Commander-in-Chief, U.S. Army, Europe, and all major Army, Navy and Air Force headquarters in Europe. The command also operates Defense Satellite Communications System (DSCS) facilities in Europe. The OPTEMPO/PERSTEMPO of these strategic Signal units has been the highest in the Army over the last several years. Signal soldiers have deployed and supported units in BOSNIA, all

other EUCOM theater missions, and are still deployed today to Kosovo. The 7<sup>th</sup> Signal Brigade consists of two EAC Tactical Signal battalions. The 2<sup>nd</sup> Signal Brigade consists of five DOIM Battalions, providing installation communications capabilities throughout the theater. All in all, the 5<sup>th</sup> Signal Command is currently over committed and could use immediate relief in its assigned operational missions, especially the EAC tactical missions.

The 1<sup>st</sup> Signal Brigade, located throughout Korea, supports the Peninsula with EAC communications, consisting of two EAC Tactical Signal Battalions and two DOIM Battalions. Headquartered in Seoul, the 1<sup>st</sup> Signal Brigade provides support to the Commander-in-Chief, U.S. Forces, Korea; Commander, 8th U.S. Army; and the Combined Forces Command. The Brigade also operates Defense Communications System facilities in Korea. Each year during annual training exercises, the 1<sup>st</sup> Signal Brigade is stretched to its limits supporting the Korean Peninsula with both EAC tactical and installation communications capabilities. Supporting Ulchi Focus Lens (UFL) and the Reception, Staging, On-Ward Movement, and Integration (RSOI) training exercises, the Signal forces support both those forces already in theater, as well as those that may be deploying into the theater. The 1<sup>st</sup> Signal Brigade's assets are totally committed when supporting such exercises and real world missions.

The 11<sup>th</sup> Signal Brigade, located at Fort Huachuca, is one of two power projection EAC Signal Brigades located in CONUS. The 11<sup>th</sup> provides worldwide, with a focus on communications support to the CENTCOM area of operations. Organized with two EAC Tactical Signal Battalions and one DOIM Battalion, the 11<sup>th</sup> Signal Brigade is quickly deployed anywhere around the world on short notice. Using satellite, microwave, cable and tropospheric scatter, the Brigade is capable of providing service to units no matter where they are in the world. It provides both long distance and local service. The 54<sup>th</sup> Signal Battalion (DOIM), located in Riyadh Saudi Arabia, provides DOIM support to the forward deployed CENTCOM organizations. Most recently, 11<sup>th</sup> Signal Brigade soldiers deployed in support of the U.S. deployment to East Timor, Indonesia, providing reach-back communications to all elements deployed. While assigned to the CENTCOM area of operations, the 11<sup>th</sup> Signal is called upon regularly to deploy its assets throughout the world.

The 93<sup>rd</sup> Signal Brigade, located at Fort Gordon, Georgia, is the second power projection EAC Signal Brigade located in CONUS. The 93<sup>rd</sup> consists of two EAC Tactical Signal Battalions and DOIM Battalion. A newly organized Signal Brigade, the 93<sup>rd</sup> also is worldwide deployable, with focus on the SOUTHCOM area of operations. Its subordinate units currently support Forces Command, Central Command, Southern Command and U.S. Army South, as required.

The 516<sup>th</sup> Signal Brigade, located in Hawaii, supports the Pacific Command with DOIM communications. This DOIM Brigade consists of four DOIM Battalions located throughout the theater. Headquartered in Fort Shafter, Hawaii, the 516<sup>th</sup> Signal Brigade provides support to the Commander-in-Chief, Pacific; and to elements in Hawaii, Japan and Alaska. The Brigade also operates Defense Systems Communications System (DSCS) facilities in the Pacific. It also has the largest geographic area of operation of all the DOIM Brigades.

Finally, the 1108<sup>th</sup> Signal Brigade has responsibility for the communications support to the National Command Authorities (NCA). Headquartered at Fort Detrick, Maryland, the 1108<sup>th</sup> Signal Brigade is a strategic Signal Brigade providing support for the Alternate Military Command Center. The Brigade also operates automated switching centers, Defense Metropolitan Area telecommunications systems, and other facilities. The brigade operates and maintains satellite earth stations, including the Washington-Moscow "Hotline."

Army Signal Command is also associated with two Reserve Component (RC) Theater Signal Commands (TSC), each commanded by a Reserve Component Major General. The 311<sup>th</sup> Theater Signal Command, headquartered at Fort Meade, Maryland, will assume the major Signal headquarters role of the 1<sup>st</sup> Signal Brigade in Korea, upon mobilization. Also upon mobilization, the 311th's Commanding General becomes the deputy chief of staff for information management for the supported senior Army headquarters. In this capacity, the 311th would augment Signal forces in Korea.

The 335th Theater Signal Command (TSC), located at East Point, Georgia, provides EAC communications support to warfighters in Central Command. When mobilized, the 335th's commanding general becomes the deputy chief of staff for information management for the supported senior Army headquarters in the CENTCOM area of operations.

In summary, Army Signal Command is organized with two power projection EAC Tactical Signal Brigades, two forward deployed EAC Tactical Signal Brigades, and three forward deployed DOIM Signal Brigades. Each of these Signal Brigade's operational missions has increased significantly over the past several years.

#### **MISSION: SUSTAIN AND PROTECT C4 SYSTEMS AND PERSONNEL**

With the technology revolution that has taken place over the past several years and the increased reliance on networked information systems, the threat to such systems has increased dramatically. The Army Vice Chief of Staff tasked the Army Signal Command to implement an Information Assurance program to immediately provide detection and protect all Army networks and information systems throughout the world. In order to better accomplish this mission, the Army Network Systems Operation Center (ANSOC), currently assigned to the U.S. Army Networks, Engineering, and Telecommunications Activity (USANETA) at Fort Huachuca, was recently OPCON'd to the Army Signal Command's G3 staff, to provide 24 hour-a-day oversight of all Army networks. The ANSOC consists of dedicated teams providing system, network, and database management support to U.S. Army customers in support of the Army Power Projection missions on a worldwide basis.

If the adage, "it's bandwidth, stupid," rings true, then managing that bandwidth and the systems that feed it have become one of the Army Signal Command's top priorities. That's where the work of the Army Network Systems Operations Center, or ANSOC, comes into play. This center provides the Army with a consolidated, coordinated and properly configured information systems network and systems operation. The center supports the Army warfighters power projection mission on a worldwide basis.

The ASC is currently in the process of planning, testing, and implementing a comprehensive Information Assurance program throughout the Army. This is a difficult mission, as the technology of hackers is advancing on a daily basis. Today, hacking is as simple as connecting with a web site, downloading hacker tools, and devising a plan to hack.<sup>5</sup> This important mission of protecting C4 systems around the world will be a priority in ASC for years to come.

#### **MISSION: ASSIST IN THE INTEGRATION OF ARRIVING SIGNAL FORCES INTO THEATER**

As forces deploy into a theater of operations, it is critical to have an established Signal force on the ground to provide immediate communications and data connectivity for the deployed warfighter. This is much easier to accomplish if there is an existing infrastructure already on the ground and integrated with reach back capabilities, in order to provide services such as DSN, Red Switch, SIPERNET and NIPERNET. If these services are not already available, EAC Tactical Signal forces must be deployed to provide such reach back capability.

In the EUCOM theater, this infrastructure is in place or is in the process of being put in place for the majority of the region. Standard Tactical Entry Point (STEP) sites are available in order for deployed Signal forces to plug-in and receive the services mentioned above. Much of the communications support provided in the Balkans, specifically the forces deployed to Bosnia, have been mostly commercialized and now require minimal EAC support. Communications in Kosovo are still provided by EAC Signal assets, but will also soon become mostly commercialized. All in all, the 5<sup>th</sup> Signal Command is well established in the EUCOM theater and fully capable of integrating arriving forces into their theater of operations.

In the CENTCOM theater, the infrastructure is not as advanced as in the EUCOM theater. While the U.S. has taken steps to provide a minimal amount of communications and data connectivity, we have not provided the kind of infrastructure that will be needed for a long-term commitment. With the recurring challenges encountered with the unfriendly nations in this theater, improvements must be made now to prepare to support the future warfighters deployed to this region. Also, the 335<sup>th</sup> Theater Signal Command (TSC) is a reserve unit that will be activated, as the need arises, and be responsible for the integration of arriving forces. This will be a difficult task, considering the timelines for activation of RC Signal forces.

In the PACOM theater, there is sufficient infrastructure to provide needed integration of forces into many parts of the theater. While this is the largest theater geographically, we have had much experience throughout the various countries and have built limited infrastructure. Unfortunately, with the size of this theater, we will have to take risk and rely on the power projection EAC Signal Brigades to fill the gap. As the threat in this theater remains low, the existing infrastructure seems sufficient.

In the SOUTHCOM theater, there is little infrastructure in place because of the move of the SOUTHCOM headquarters back to the continental United States. While the threat remains low in this

theater of operations, this lack of infrastructure is acceptable and may not pose any significant problems in the near term.

On the Korean Peninsula, the 1st Signal Brigade assets already forward deployed will integrate arriving forces into theater initially. As is the case in the CENTCOM theater, a second theater level Reserve Component Signal Command, the 311<sup>th</sup>, will be activated and deployed to assume responsibilities for integration of all arriving forces. Again, timing will be a problem with the 311<sup>th</sup> coming from its Reserve Component status.

#### **MISSION: EXECUTE SUSTAINING BASE/STRATEGIC/THEATER C4 SYSTEMS INTEGRATION**

As was discussed in the previous paragraphs, the current organization of Army Signal Command assets in each theater have capabilities to integrate arriving forces into the sustaining base and strategic C4 systems. With all this emphasis on the overseas sustaining base C4 system capabilities, there has been a loss of focus on capabilities right in our own back yard, specifically in the CONUS based DOIMs. Back during the days of the U.S. Army Information Systems Command (ISC), the CONUS DOIMs were under the command of a DOIM Brigade, ensuring configuration management and standardization across all the DOIMs. When USAISC was reorganized into ASC, the CONUS DOIM Brigades were inactivated and the DOIMs became part of the installation services.

Let's begin with a discussion of the current sustaining base systems situation. After the above review of the current ASC organization, the obvious question that should come to mind is, 'What about the CONUS Director's of Information Management (DOIMs)?' Where do they fit in the current ASC structure? The answer can be found if we examine a couple of reorganization processes that took place. The first process was the Vanguard Study,<sup>6</sup> a TDA study of the Army driven by the Army leadership and the Deputy Chief of Staff for Operations. This study looked closely at the Institutional Army to see where manpower could be cut in order to resource the warfighting TO&E Army. As a result of this study, the Director of Information Systems, Command and Control, Communications and Computers (DISC4), along with the Assistant Secretary of Defense for Command and Control, Computers and Intelligence (C3I), decided on implementing a concept called the Information Mission Area (IMA). The IMA included printing and publications, records management, and visual information responsibilities, which were previously an Adjutant General, or local command responsibility. Under the IMA, these functions would fall under the US Army Signal Corps, with responsibility for implementation to DOIMs in the installation environment, and to the tactical signal unit's when in the field. At that time, the DOIMs were subordinate organizations under the US Army Information Systems Command (USAISC), and would provide IMA services to each installation. The DOIMs would provide a set of standard services and charge for additional services. The ISC would have dictated Army-wide technical standards, to ensure interoperability throughout the installations. Unfortunately, after this concept was approved, the Army's senior leaders told the Army Chief of Staff that they wanted to own everything within the installation boundaries, to include hospitals, DOIMs, and so forth. With respect to the DOIMs, this concept was approved. Because of this change,

USAISC lost financial oversight of the CONUS DOIMs. This loss of financial control occurred because the budgets for all the CONUS DOIMs, previously budgeted through the USAISC, were now transferred to the Installation Commander's budget. This was an unfortunate situation, as one of the main reasons for implementing the IMA concept was because of the coming explosion in information technology. In the midst of the technology revolution, which occurred soon thereafter, the Army dismantled the IMA by fragmenting the DOIMs. The DOIMs were now under the control of the Installation commanders, not the Signal Community as originally intended. Fortunately for the overseas commands, USAISC was able to retain control over the overseas DOIMs, as local contracting of many services associated with the DOIMs was not a doable option.

This situation of dwindling control continued for the next 3-4 years, when it was again decided to study the TDA Army through a series of Functional Area Assessments (FAAs) to the VCSA. For the Signal Corps, this effort was called the Signal Organization and Mission Analysis, or SOMA. Under this reorganization, the acquisition and engineering functions of ISC were transferred to the Communications and Electronics Command (CECOM), and the EAC combat developments functions to the Signal Center. Again, the resulting organization was the current ASC, a subordinate command under FORSCOM.

#### **THE FUTURE ARMY SIGNAL COMMAND (ASC)**

In Joint Vision 2010, General Shalikashvili emphasized the fact that the Army 2010 must have information superiority, the ability to collect, process and disseminate an uninterrupted flow of information, while exploiting or denying an adversary's ability to do so, to achieve total success.<sup>7</sup> LTG Burnette of U.S. Joint Forces Command, speaking at the Defense Information System Agency's (DISA) recent Information Assurance conference, re-emphasized the fact that rapid decision operations are driven by information superiority and highlighted the importance of the common relevant operational picture to the warfighters.<sup>8</sup> Each of these statements further support the need for the Army Signal Command, with a renewed focus, to provide support to today's Army. With a good understanding of the requirements to be placed on the Signal community over the next several years and an understanding the current organization/mission of Army Signal Command well in hand, we can explore what the future missions and focus of ASC should be. The next several paragraphs will provide recommendations for changes to be made within the Army Signal Command, to better enable mission accomplishment in Army 2010.

A good starting point is to review the recent comments made by the outgoing Commander of the Army Signal Command, MG Charles Suttan. MG Suttan relinquished command of ASC in August of 1999, turning over command to MG William Russ. During an interview at that time, MG Suttan mentioned three key areas for ASC's focus in the coming years. These include, 1) a renewed focus on improving communications support from the Power Projection Platforms (PPP's) to the deployed warfighters, 2) implementing and improving the Army's Information Assurance (IA) program, and 3) improving Computer Network Defense (CND)<sup>9</sup>. These recommendations will be explored in the following paragraphs, along with other recommended changes needed in the Army Signal Command of the future.

#### SUPPORTING THE WARFIGHTING CINCS WITH C4

Support to the warfighting CINCs will remain a vital mission of the Army Signal Command for years to come. A recent deployment of a portion of the 11th Signal Brigade's assets to support U.S. forces in East Timor highlights the need for smaller, lighter, and more deployable Signal systems. This task force required 12 C5 and 1 C17 aircraft to deploy 150 personnel and their associated equipment to East Timor.<sup>10</sup> Signal slices will be hard pressed to get this amount of aircraft during a normal deployment and hence must get smaller and lighter. Because the current communications and information systems equipment fielded to ASC's tactical signal brigades is quickly becoming obsolete, the Director of Combat Developments at the U.S. Army Signal Center has submitted an Organization and Requirements Document (ORD) describing the requirements for the next generation of signal systems to support the warfighters on tomorrow's battlefield. The systems are to be fielded to both the Corps level and Echelon Above Corps (EAC) signal units. At the same time, the Signal Corps is in the process of procuring replacements for pieces of the current communications system. These replacements will make tomorrow's tactical Signal brigades much smaller, lighter, and thus more deployable. These systems should be in-place in the next 3-5 years.

Secondly, as the higher headquarters of all U.S. Army strategic Signal assets, the Commander of ASC must continue to provide priorities and training guidance/focus to the brigade commanders. This will enable maximum unity of effort across the strategic Signal force. This will also allow synchronization of all strategic Signal assets around the world. Another key component of this process is the Semi-Annual Training Brief from the Brigade Commanders to the ASC Commander. These briefs allow the ASC Commander the time to ensure training focus and provide additional guidance to the strategic brigades. Future deployments may involve tasking of specific strategic Signal assets from different brigades, which will require these Signal assets to work together to achieve mission success. This unity of effort is critical to a technical field such as communications and information systems. If this unity of effort were not provided from the ASC Commander, each strategic Signal brigade would develop its own Standard Operating Procedures (SOPs), Tactics, Techniques, and Procedures (TTPs), and unique ways of doing business. This would lead to a very disorganized and unsuccessful Signal force. SOPs and TTPs must be developed and approved at the ASC level to ensure seamless cross attachment of Signal forces. Unity of Command will remain an important principle in the ASC.

Thirdly, there is an immediate need for a strategic Signal Brigade, headquartered in the CENTCOM area of operations. History has shown that as U.S. forces have been deployed to major theaters of war to win the nations wars, substantial infrastructure and forces were left in place to ensure the capability for a quick return to each theater. This is the case in both Europe and in Korea. This is not the case in Saudi Arabia, where allied forces deployed to defeat the Iraqi forces and then redeployed the majority of forces out of the theater. This left a significant shortfall in the required infrastructure needed to ensure successful integration of forces into theater from the Signal standpoint. With the continued threat from Iraq and Iran in this theater, it makes sense to establish another strategic Signal Brigade and

forward deploy parts of it in theater. This will facilitate the rapid expansion of the theater should hostilities again be eminent, and reduce the OPTEMPO of the two CONUS based strategic Signal Brigades which are continually deployed to this theater.

Another in-progress change is the standardization of the MTOEs across the Army Signal Command. This standardization of MTOEs was directed by the Department of the Army and will take several years to implement. Currently, there are several different versions of MTOEs across ASC, and this situation must be corrected as soon as possible. The ASC Force Development section is currently implementing standardized MTOEs, seeking approval through FORSCOM and DA.<sup>11</sup>

The most important change that must take place with respect to support to the warfighting CINCs, is the need for more operational mission focus at the ASC Headquarters. It should be clear by now that all future missions will be joint and combined types of operations, requiring integration of communications from all services and potential allied nations. The Army Signal Command will play an important role in this transformation to joint and combined operations in many ways. The ASC staff must become mission focused and more synchronized. The days of merely focusing on the DOIMs missions are over. Military and civilians alike must review and understand OPLANS of the various CINCs, and react to enable the best connections to the technical lifeline of the global networks available.

Each of these three changes will enable the Army Signal Command to better support the warfighters and mold the Signal forces as Army 2010 unfolds over the next century, being better enabled for mission accomplishment.

#### INFORMATION ASSURANCE

With the increase in use of commercial communications and information systems in today's Army, the information passed over these systems becomes much more vulnerable. By interconnecting military systems to commercial systems (Internet), the risk of loss of information increases even more dramatically. LTG Campbell, the current DISC4 for the Army, recently talked about the potential for an electronic pearl harbor<sup>12</sup> With the rapid pace of technology change today, the military must make use of commercial systems, especially those which are open systems. The use of open systems has the advantages of being cost effective, easily maintained, and user friendly. Unfortunately, the disadvantages include global exposure to malevolent actors, the fact that hacker tools and techniques are very available, and that solutions to security problems become a race against time. Also, hacker tools have become very user friendly, allowing anyone to take a shot at hacking.

Because of this pronounced threat to military systems and information, the Defense Department initially tasked the Deputy Commander of DISA to serve as the Task Force Commander for Computer Network Defense (CND). More recently, this mission has been reassigned to SPACE Command, along with Computer Network Attack (CAN). The Vice-Chief of Staff, Army has taken similar steps, directing the Commander, Army Signal Command to take immediate actions to implement an Information Assurance (IA) program for the Army. With this tasking, the Army Signal Command has taken viable actions to

implement an IA program. Unfortunately, this has not been an easy task. First, there must be a master plan for IA. Second, personnel must be trained and gain experience in dealing with IA. Third, this expertise must be shared throughout the world to assist all Signalers in their efforts to protect C4 assets and the information it contains.

To make matters even worse, the Army has violated the principle of 'unity of command' in assigning the IA mission. While ASC has been tasked with the IA mission, Intelligence Command (INSCOM) currently owns the Regional Computer Response Teams (RCERTs), who are an important part of the IA mission. These teams assist users in the defense and reaction to attacks and intrusions. Also, the DCSOPS has also been tasked to oversee IA and report attacks and intrusions to the Army Chief of Staff. Therefore, a triad of organizations are already involved in the IA process, with the potential for much confusion. Each of these organizations is also receiving funding for their part of the assigned mission.

The Army Signal Command has established the Army Network Systems Operations Center (ANSOC) at Fort Huachuca, which currently has the capability to view most Army networks worldwide. With 24 hour-a-day manning, the ANSOC is able to detect outages and attacks in networks and attempt to respond to fix such outages. The ANSOC, assigned to the U.S. Army Networks, Engineering, and Telecommunications Activity (USANETA), has been OPCON'd to the ASC G3 section. This Center is a most valuable asset in ASC's plan to implement IA. This ability to view all Army networks will be vital to detecting and responding to intrusion attempts made against any Army networks. Also, regional Tactical Network Operation Centers (TNOCs) have been established in Europe, the Pacific, and Korea in order to provide local awareness of network status. The RCERT's mentioned above also have regional teams, which are collocated with the TNOCs, but still are assigned to INSCOM.

The next step to improve IA throughout the Army is to assign the IA mission completely to the ASC Commander. Reassign the RCERTs from INSCOM to ASC, giving the total package of detection and response to ASC. Also, fund the ASC ANSOC to become the Army's NOC of NOCs, with the ability to capture information from worldwide Army networks and respond as necessary. This will allow the ASC Commander to develop the policies, standards, and enforcement strategies that will be consistent across the Army. Further, the ANSOC will be integrated into the DoD Network Computer Defense program, allowing SPACECOM oversight of all services networks. These recommended changes will organize the battlefield for long-term success.

#### REASSIGNMENT OF THE CONUS DOIMS TO THE ASC

Since the breakup of the U.S. Army Information Systems Command (USAISC) in 1996, the CONUS DOIMs have not been a priority for the Army Signal. From the CONUS DOIM standpoint, there has been little guidance from ASC, a loss of configuration control, little technical oversight, with a focus only on concerns from the higher headquarters, such as Information Assurance (IA), and for coordination. There appears to no longer be a standard architecture for the CONUS DOIMs, something that is greatly needed. There has been little guidance on Information Assurance (IA) actions to be taken and a great

need for expertise in the IA area. ASC must always provide both engineering and technical support for the DOIMs, both CONUS and overseas. ASC is slow to respond to the CONUS DOIMs requests for assistance. ASC must continue to tie the DOIMs architecture as Power Projection Platforms (PPP) to deployed forces, a priority stated earlier by MG Suttin, the former ASC Commander.

#### THE RESERVE COMPONENT THEATER SIGNAL COMMANDS

Currently, the two RC Theater Signal Commands are assigned to the Reserve Component until activated and deployed to their specific areas of operation. This relationship is clearly old Army thinking and should be revised immediately. These two commands should work for the Commander of Army Signal Command on a daily basis and be fully integrated into ASC. This would allow for a better working relationship and bring these organizations into 'The Army.' This relationship could be patterned after the way the Special Operations world does business today, where the US Army Special Operations Command actually commands the RC USACAPOC, Civil Affairs, and Psychological operations units. The current command relationship clearly again violates the principle of unity of command, having the RC Theater Signal Commands work for two different higher headquarters.

#### LOCATION OF ASC HEADQUARTERS AND THE CG, ASC

As stated earlier, the ASC Headquarters is currently located at Fort Huachuca, Arizona. Its been there since the move from Washington, D.C. in the days of the early organization. The question of where the ASC headquarters and the Commanding General should be geographically located must be analyzed. Several points make this discussion relevant. Remember also, that the ASC Commander is also the FORSCOM G6.

As the FORSCOM G6, the ASC Commander has daily responsibilities at the FORSCOM headquarters, located at Fort McPherson, Georgia. A Colonel, serving as the Deputy Commander, Army Signal Command (ASC), currently carries out these daily functions. While this position is authorized a Brigadier General, the Signal Corps has rarely had enough Brigadier Generals to fill it. Obviously, a Colonel is not going to have the influence or impact of a Major General at a MACOM headquarters. Current leaders within the ASC feel that much more could be accomplished with the two-star Commanding General influencing the FORSCOM Commander and staff. If the ASC Commander were moved to the FORSCOM Headquarters, the Signal Corps would have to make the Deputy Commander position a priority fill, assign a Brigadier General, and move this person to Fort Huachuca to oversee the ASC Headquarters on a daily basis.

A second option to solve this geographical location problem would be to move the entire ASC Headquarters to a location closer to the FORSCOM Headquarters. An ideal location would be the Signal Center, at Fort Gordon, Georgia. There would be several benefits from this move, not the least of which is having the ASC Commander within a few hours of FORSCOM by car. This would allow the ASC Commander easy access to the FROSCOM Commander and staff, resulting in his influence affecting both. An added benefit would be having the ASC staff located on the same installation as the Signal

Corps' Director of Combat Developments (DCD), allowing easy coordination on changes to doctrine, organization, and so forth.

## **CONCLUSIONS AND RECOMMENDATIONS**

The Army Signal Command has a very important role in moving the strategic Signal forces in a direction to be able to support the warfighters of the next decade in order to achieve information superiority. This role affects both the role of the strategic Signal Brigades and the Director's of Information Management (DOIMs), located throughout the world. This role will only grow more important as the U.S. Army continues to implement the Information Assurance (IA) policy and doctrine.

The following recommendations are in order:

- The Army Signal Command must continue as the higher headquarters for all strategic Signal assets located throughout all theaters. The Commander, Army Signal Command must continue to provide priorities and focus for the Brigade Commanders. The Brigades must be organized under similar MTOE's and be managed from a technical standpoint, as well as a leadership one, from ASC. A new Signal Brigade must be organized to support the CENTCOM area of operations, with a greater forward presence than currently exists. Part of this force structure can come from the existing structure and part will have to be new, in order to meet the strategic requirements of 2010.
- The total Information Assurance (IA) mission must be assigned solely to the Commander, Army Signal Command (ASC). The triad must be broken between INSCOM, DCSOPS, and the ASC. The RCERTs must be reassigned to ASC and become integrated into the regional Network Operations Centers (NOCs). The ANSOC must be reassigned to the G3, ASC, allowing the ASC Commander continuous visibility of all Army Networks.
- The CONUS DOIMs must be reassigned to the control of the Army Signal Command. With the current assignment to various Installation Commanders, there is a lack of configuration control and technical oversight. Installation Commanders, who control the DOIMs budgets, do not have the technical background to make decisions affecting the DOIMs. This expertise only resides in one place, ASC. This reassignment must include the budget strings, which were passed to the Installation Commanders under the IMA program.
- The RC Theater Signal Commands should be reassigned to the Army Signal Command during peacetime, as well as war. This reassignment will foster a better relationship between ASC and the Commands.
- The Commanding General, Army Signal Command must be re-located to be in a better position to affect actions and decisions at the FORSCOM Headquarters. A Signal Corps Brigadier General must fill the position of Deputy Commander of ASC.

Whether this means moving the entire ASC Headquarters or not isn't particularly important. What is important is that the Commander of Army Signal Command (ASC) be located close enough to the FORSCOM Headquarters to enable closer interaction and influence on the FORSCOM Command and staff.

Each of these recommendations will result in the Army Signal Command (ASC) being better organized and able to ensure that Signaleers around the world are setup for success on the battlefields of the next decade.

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## ENDNOTES

<sup>1</sup> Elizabeth A. Stanley, Evolutionary Technology in the Current Revolution in Military Affairs: The Army Tactical Command and Control Systems, (U.S. Army War College Strategic Studies Institute, March 1998), 9.

<sup>2</sup> U.S. Army Signal Command History, "About USASC," 10 January 1996. Available from <http://www.asc.army.mil/ABOUT/wwwhist.htm>; Internet; accessed 8 October 1999, 1.

<sup>3</sup> U.S. Army Information Systems Command, Annual Historical Review FY 1991, (Fort Huachuca, Arizona; U.S. Army Information Systems Command, March 1993), 1.

<sup>4</sup> U.S. Army Signal Command, Annual Command History Calendar Year 1998, (Fort Huachuca, Arizona; U.S. Army Signal Command, Sept 1999), 1.

<sup>5</sup> The ideas in this paragraph are based on remarks made by a speaker participating in the Noon-Time Lecture Series.

<sup>6</sup> John R. Greenway, Project Vanguard Final Report (Fort Belvoir, VA: U.S. Department of the Army, 1990).

<sup>7</sup> John Shalikashvili, Joint Vision 2010 (Washington, D.C.: U.S. Joint Chiefs of Staff, 1997), 16.

<sup>8</sup> Malcolm Cowley <Malcolm.Cowley@carlisle.army.mil>, "Notes from DISA's IA Conference," electronic mail message to Michael Guthrie <Michael.Guthrie@carlisle.army.mil>, 14 Feb 00.

<sup>9</sup> SFC James Ward, "As he retires, Army Signal Command's Suttin shares thoughts," August 1999; available from <http://www.grdon.army.mil/regtmktg/AC/VOL24N04/suttin.htm>; Internet; accessed 28 November 1999.

<sup>10</sup> John Scott <scottj@hqasc.army.mil>, "Army Signal Command," electronic mail message to Michael Guthrie <Michael.Guthrie@carlisle.army.mil>, 30 December 1999.

<sup>11</sup> William Lane <LaneW@hqasc.army.mil>, "Army Signal Command," electronic mail message to Michael Guthrie Electronic <Michael.Guthrie@carlisle.army.mil>, 21 December 1999.

<sup>12</sup> William Campbell, "DISC4 – One Voice for the Army," briefing, Fort Gordon, GA, U.S. Army Signal Symposium, 6 December 1999.



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