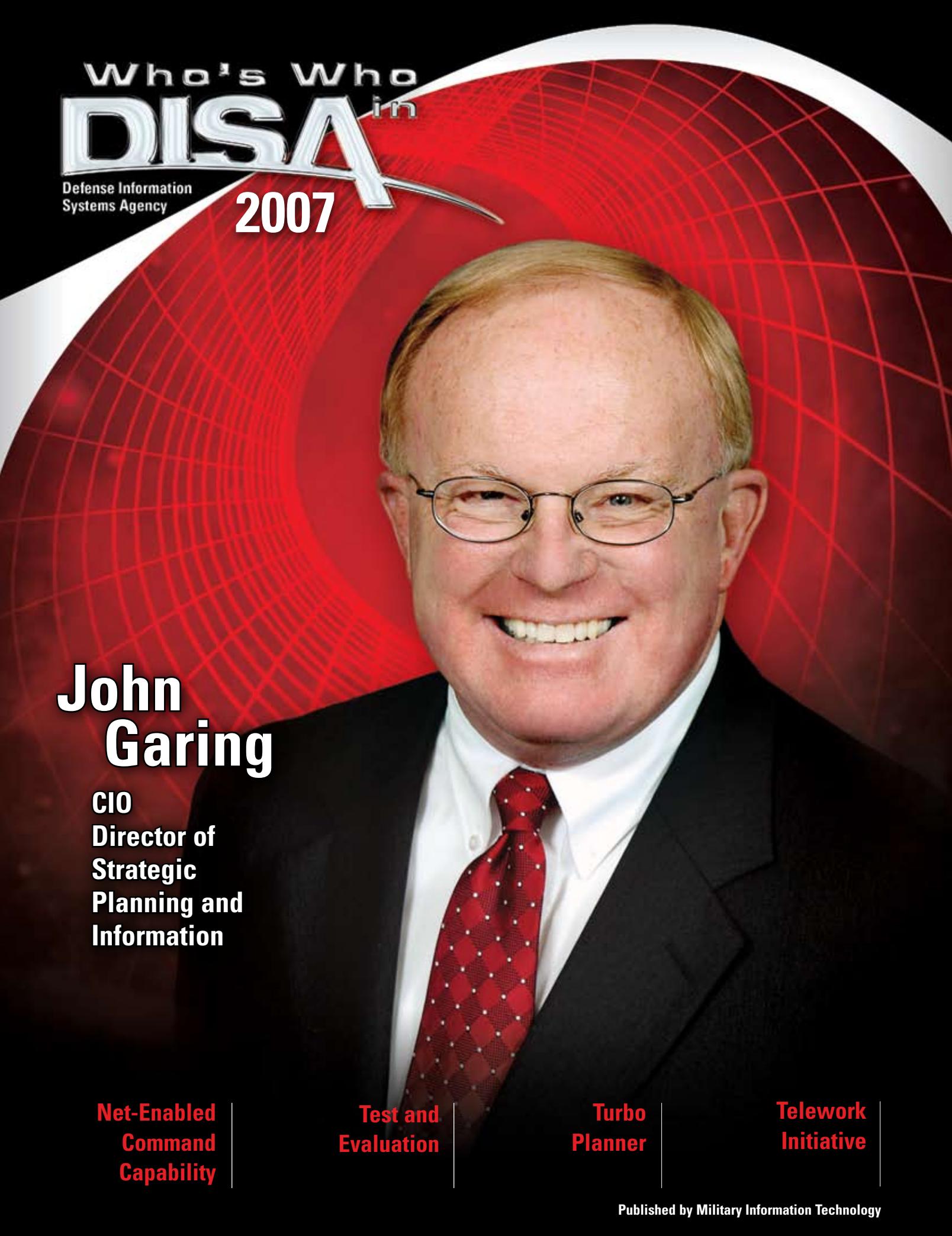
Who's Who in DISA

Defense Information Systems Agency

2007



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By Lieutenant Colonel Linda M. Ray

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DISA's test and evaluation function has undergone an extraordinary transformation over the last two years. The organization has been rebuilt to be the premier tester and evaluator of net-centric capabilities in the Department of Defense. It has solidified its credibility in the test and evaluation community and worked to re-engage with T&E organizations.
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BRAC Spurs DISA Telework Initiative
As part of the overall human resource BRAC strategy, DISA decided to use its recently expanded telework program as a cornerstone for its recruitment and retention effort. DISA changed its teleworking policy from allowing employees to telework one day per two-week pay period, to a maximum of two days per week.
By Aaron Glover

Publisher's Note

KMI Media, publisher of *Military Information Technology,* produced the "Who's Who in DISA" guide. The magazine, which publishes 11 times each year, reports on a wide range of C4ISR issues. The Rockville, Md., company also publishes *Military Logistics Forum, Military Geospatial Technology, Military Medical Technology, Military Training Technology, Military Advanced Education* and *Special Operations Technology.* The content of this guide was compiled by KMI editors in cooperation with DISA Public Affairs. This publication was designed by the KMI art department.

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The Net-Enabled Command Capability will enable decision superiority via advanced collaborative information sharing.

By Lieutenant Colonel Linda M. Ray

Linking Command and Control for the Future

The Net-Enabled Command Capability (NECC) will provide the Department of Defense's new principal command and control (C2) capabilities and services. NECC will enable decision superiority via advanced collaborative information sharing achieved through vertical and horizontal interoperability.

As the net-centric migration path for the Global Command and Control System (GCCS) family of systems, NECC will support force-level planning, execution, monitoring, and assessment of joint and multinational operations. NECC will use Net-Centric Enterprise Services (NCES) Core Enterprise Services and will be able to exchange data across multiple security domains.

The NECC mission space is defined as the C2 area encompassing the National Military Command System through unit-level commanders executing or supporting C2 functions in support of joint task force (JTF) or service components. Historically, warfighting C2 was divided into three stratified levels: strategic, operational and tactical. However, in today's warfighting environment, these demarcation lines are no longer distinct. NECC will eliminate these traditional vertical and horizontal C2 boundaries. NECC customers will include national political leadership, the national military leadership, combatant commanders, joint force commanders, component commanders and coalition partners.

The goal of NECC is to rapidly develop, test, evaluate and certify capability and deliver it to the warfighter. While technological solutions are important to achieving this objective, it's also essential to take a fresh approach within our requirements, acquisition and programming processes, as well as making some long-overdue cultural adjustments inside our DoD communities. NECC will ensure the operational transition of appropriate legacy C2 capabilities to state-of-the-art capabilities in support of joint, coalition and service C2 needs today and tomorrow.

Besides achieving NECC interoperability, the objective of the integrated NECC architecture is to reduce support needs such as logistics footprint, system administration, training and maintenance. NECC will facilitate the capability to exchange information across multiple security domains leveraging NCES services. NECC will also provide the capability to collaboratively plan, execute, monitor, and assess joint and multinational operations by enabling vertical/horizontal information exchange among the NECC community, and when required, with non-governmental organizations and external subject matter experts.

Why We Need It

The need for NECC goes beyond delivering the next generation of C2 capabilities. In today's world of highly dynamic, rapidly changing threats, the operational

customer is demanding that new C2 capabilities be produced and delivered much more rapidly than is done today and be much more flexible and easy to use.

In the past, we segregated military forces based on their primary battlespace—air, land, sea. The overlap between battlespaces was relatively small—limited to a weapons range, which in many cases was line-of-sight. But we recognized that there were benefits to be gained from having our services work together, so we began to coordinate their operations.

Continuing this idea, we gained additional capability by integrating service capabilities and adding in special operations forces, moving toward a coherently joint force with full spectrum capabilities. Our current focus is at the nexus between military services and combatant commands—the JTF. Specifically, we're working to integrate the command-and-control function of the JTF headquarters. With the integration of joint forces, allies, interagency, and industry partners, requirements are increased exponentially. NECC is one step along the journey toward achieving our target of interdependent operations.

As the nature of the joint operational environment has changed, so too have the demands of the joint C2 environment. We require more agile, adaptable, flexible and scalable C2 capabilities that enable iterative, parallel and cyclical processes that provide commanders with continual situational awareness, better collaboration with all partners, and facilitate timely decision-making to gain operational superiority.

The bottom line is that we have an overwhelming need to institute better vertical and horizontal interoperability. We must develop integrated C2 systems that ensure that our interagency and coalition partners can execute their critical role to win today's war and future conflicts. We must also eliminate long lead time training and minimize unique configuration variants, by building C2 systems that readily implement data standards and share common services across the full spectrum of conflict.

The key to understanding NECC is to focus on it as a migration of current capabilities—Global Command and Control System-Joint (GCCS-J) plus service GCCS family of systems program variants—to a single, joint, interoperable program of record. Starting with the current client-server-based systems that support unique uniformed services-based needs today, we look to take the best of breed in those systems and migrate them over to the net-enabled world. Our motivation for accomplishing this feat hinges on the need for synchronized, accurate and non-redundant information flows across the force.

The NECC program is proposing to extend the concept of Global Information Grid (GIG) operations to include Capability Provisioning Activities (CPAS). The main idea behind CPAS is to change the mindset of capability providers from infrequent block upgrades to rapid, continuous deliveries and ongoing product improvement.

Moving to a state of continuous capability provisioning will require significant changes to existing development, testing, and evaluation processes. DoD C2 development must move from producing a few large, complex, highly integrated systems, to producing many smaller, less complex, loosely connected network services. Testing must move from focusing on entire monolithic systems, to focusing on independent modules of capability.

Operational evaluation must move from infrequent warfighter/user participation involving complex field tests to continuous warfighter/user evaluation involving a broad spectrum of evaluation methods. Finally, security accreditation must evolve from a systems-based accreditation methodology to a more fine-grain capability-based accreditation methodology. The heart of NECC and the means by which we achieve continuous capability provisioning is known as the Federated Development and Certification Environment (FDCE).

Federated Environment

During the past 50 years, DoD has developed a rich set of processes and methods for managing the process of building new information and weapon systems. These methods span a wide range of management activities including program management, systems engineering practices, security accreditation procedures, and operational test and evaluation methods. As DoD migrates towards a services-based approach, these tried-and-true methods are going to have to undergo major changes. The policies and procedures that worked in a systems-oriented world will not be optimal when applied to managing the introduction of services.

The FDCE, also referred to as the "sandbox" is conceived as a virtual environment that exists on the GIG and is intended to address the challenges associated with developing and certifying net-centric services. Its purpose is to provide the policies, processes and infrastructure that allow services to be progressively refined, tested, evaluated, and certified in increasingly rigorous situations leading to an operational deployment.

The environment is referred to as federated to explicitly emphasize that it is not envisioned to be utilized, controlled or operated by a single organization. Rather, it should be a virtual environment made up of the appropriate service providers, testers, evaluators, certifiers and operators from throughout DoD. The FDCE is intended to facilitate the ongoing interaction and collaboration of these organizations throughout the entire development and certification process.

In order to concurrently address all aspects of development and certification, the FDCE must support multiple levels of maturity within the service building process. The FDCE consist of four maturity enclaves. (See Figure 1.)

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Our national security requires defense forces and intelligence teams to have responsive, reliable network-based applications supporting rapidly changing mission requirements. A flexible and responsive network allows the transformation of the fighting force by enabling the introduction of new applications with minimal additional cost. As base communications networks evolve to provide new connectivity for applications—such as web services, data replication, VoIP and high-resolution imagery applications—they must continually adapt to support new functionalities with minimal cost and complexity.

Ciena's FlexSelect Architecture
Ciena's approach to optical networking technology results in the delivery of a simpler, lower cost architecture that forms a flexible foundation for extending emerging mission-critical applications between locations. With Ciena's integrated and converged programmable network architecture, agencies can have the ability to support any mix of applications between sites by providing all traffic with bandwidth that ensures high performance, zero packet loss and low fixed latency. Networks based on FlexSelect architecture can serve as a strategic enabler for agencies, shortening lead times for new initiatives and new connectivity through rapid integration onto the architecture.

Ciena's FlexSelect Architecture is a software-first optical network architecture that combines programmable hardware with service-oriented management functionality —automating the delivery and management of any mix of services, including SONET/SDH, Ethernet (10/100, GbE, 10GbE), storage and video.

Ciena products form the foundation of assured networks that mitigate impacts of both natural and manmade threats and vulnerabilities. This commitment extends from the design of carrier-class platforms that ensure maximum systems resiliency and network survivability, to the tightly controlled manufacture of network systems and software, to the ability to enable secure platform management and operations.

Optical Transport Network (OTN) / G.709 optimizes utilization and assures network operations
OTN is the ideal standard on which to deploy Ethernet and virtually any storage and data center protocol transparently over a converged network. With inherent Layer 1 protection, OAM capabilities and deterministic performance, OTN far surpasses the reliability and manageability of any native Ethernet switched or IP-routed solution. Additionally, OTN ensures optimized bandwidth utilization by providing the ability to flexibly multiplex connections with any mix of protocol and bandwidth onto WDM wavelengths.

Programmable network interfaces and platforms enables connectivity flexibility and low total cost
Ciena believes that network platform systems should be developed with modular components that are programmable to support a variety of networking functions—not tied specifically to a single purpose. The result of this approach is that enterprise network architects can simplify planning and engineering, save money from costly sparing and hardware procurements, and drive maximum return on their network investment. This programmability extends to Ciena's flexible approach to ROADM and tunable optics. Ciena takes a hybrid electrical and optical approach to ROADM design by combining programmable whole and sub-wavelength switching in one platform.

Integrated Ethernet and data center protocol functionality for optimized optical transport

To help maximize bandwidth utilization and lower cost per transported bit, Ciena delivers systems with integrated protocol-independent compression, Ethernet switching, and dynamic bandwidth allocation capabilities to its metro optical platforms. Additionally, Ciena is driving the scalability of Ethernet beyond 10G, and collaborating with the research networking community on the delivery of 100G connectivity.

Automated Management

Ciena is a market leader in the development of optical network management and intelligent control plane software. Ciena's management systems and intelligent control plane capabilities dramatically streamline design, configuration, provisioning and management of large converged networks.

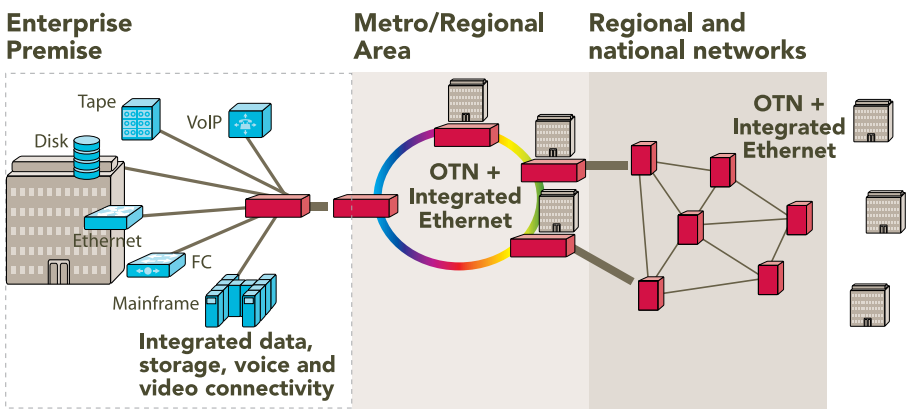
Ciena's next-generation, multifunction platforms

Ciena's FlexSelect Architecture portfolio is comprised of next-generation, multi-function platforms that flexibly support any mix of Ethernet, TDM, SONET, data and storage interfaces—converging new and legacy applications onto unified, efficient networks.

Summary

Ciena's global expertise is proven in its support of the U.S. Department of Defense, the Dept of Energy, and many of the world's largest carrier, government and enterprise networks. Ciena and its government subsidiary provide a full set of expert deployment, maintenance and management services to help government agencies augment their network support and achieve greater operating efficiency. Ciena is ISO 9001 and TL 9001 registered with yearly certification by Underwriters Laboratories. As a global leader, headquartered in the U.S., Ciena delivers on the requirements for assured, reliable and responsive networking.

Ciena's Architecture for Assured Adaptive Connectivity



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Visit **www.ciena.com/defense** now to download datasheets and free materials from Ciena, including the **complimentary Yankee Group white paper, "Adaptive Network Architectures Are Critical to Government IT Evolution."**

This report identifies the drivers of network transformation and the requirements of next-generation networks, and provides quantifiable guidance to government agencies weighing carrier versus private optical networking options.

For more information on Ciena Government Solutions Inc. (CGSI) contact Jim Archuleta at jarchule@ciena.com or 410-981-7340. GSA Schedule #GS-35F-0316S.

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Each enclave in the FDCE is intended to support a different set of development and certification activities. The idea is for services to start at the Development Enclave and progressively work their way through each enclave, eventually making it to the Operations Enclave. Each enclave will have entry criteria that are appropriate for the activities that are associated with the enclave's level of maturity.

The Process

The JC2 Analysis of Alternatives identified the need to "identify a JC2 Joint Combat Capability Developer (JCCD) and establish a process for concurrent doctrine, operations, training, leadership, policy and facilities (DOTLPF) development" to ensure dedicated and focused warfighter engagement with material developers.

Coupled with U.S. Joint Forces Command's (USJFCOM) designation as the DoD's operational lead for joint command and control, lead for the JC2 capability portfolio management, and operational sponsor for NECC, we have established a dedicated and focused organization for cradle-grave leadership and engagement of NECC capability development. While UJFCOM leads, the JCCD is a comprehensive team of representatives across the department. Success is in the continuous engagement with the material developers, testers and certifiers to rapidly deliver holistic capabilities to the warfighter.

Our process to execute NECC is both logical and inclusive, but complex. It combines the best of the requirements definition mechanisms in place today and matures them to a predictable and repeatable joint way to better capture the C2 warfighting needs. After validating our C2 requirements via the CDD, we bring the right folks together early in the next more detailed definition phase to build architecturally sound Capability Definition Packages (CDPs) that translate warfighter requirements into engineering parameters and specifications. We then engineer potential solutions called Capability Modules that fulfill the desired attributes articulated by the CDPs. We'll use an "adopt before buy, buy before create" philosophy to finding solutions.

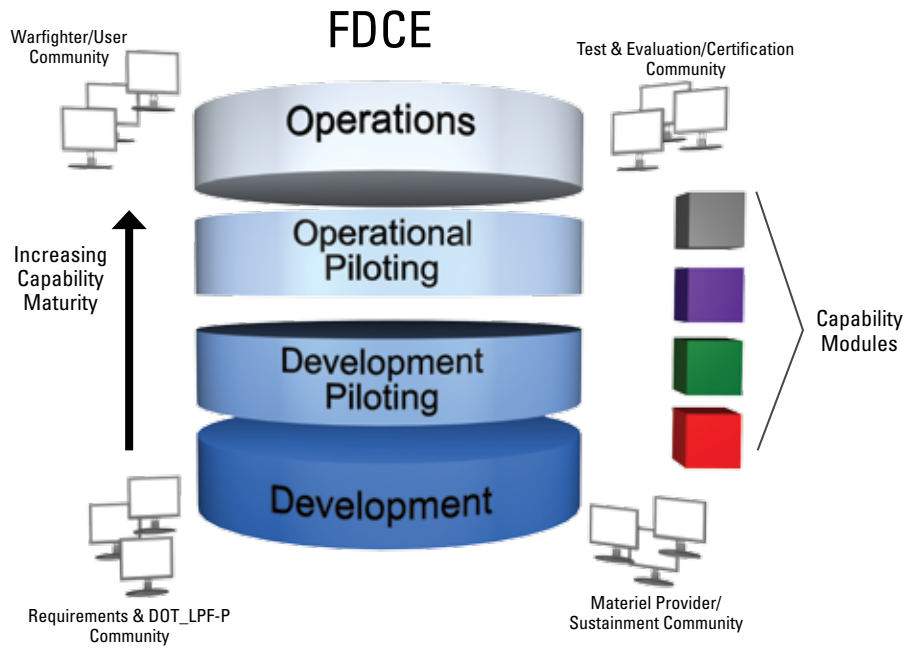

Figure 1

But the proof in the pudding does not come until a process of iterative development, piloting and evaluation in the "sandbox," whereby the community looks to see if it is building the right DOTMLPF-P solution that scratches the stated itch. Joint Staff, combatant commanders, services and agencies are involved throughout the integrated JCCD/FDCE process.

Summary

A critical need exists to deliver C2 capabilities to the warfighter faster than is done today. To address this challenge, the NECC Joint Program Management Office is moving towards a concept of rapid and ongoing Capability Provisioning Operations which will be a subset of overall GIG operations. Capability Provisioning Activities will be a net-centric process for maturing NECC developed capabilities from initial conception to a state where they are ready for supporting military operations on the GIG. Capability Provisioning Activities will be supported by a set of communities including the warfighter/user community, the requirements and doctrine community, the materiel provider/sustainment community, and the certification community (policy makers, test/evaluation communities, and security accreditation authorities).

These communities will collaborate to develop and certify new C2 capabilities using the newly established FDCE. The FDCE will implement the processes and infrastructure needed to support distributed, collaborative development and certification and will enable the use of distributed piloting. Piloting will be used as a key mechanism for developing, testing, evaluating and certifying C2 capabilities. The key piloting events that will be used for NECC are user-free play, capability provisioning events, and the operational concept exercise.

We are changing the way we acquire warfighting tools; we're compressing traditional acquisition timelines by using a vigorous end-to-end process that leverages continuous warfighter engagement. Whether it be command and control of our joint and coalition forces, or improving combat effectiveness while minimizing fratricide and collateral damage, we have a major hand in shaping 21st century warfighting and net-centric operations is the key attribute we are driving toward. ✭

Air Force Lieutenant Colonel Linda M. Ray is with the Program Executive Office-C2C Operations.

Contact Editor Harrison Donnelly at harrisond@kerriganmedia.com. For more information related to this subject, search our archives at www.MIT-kmi.com.

Test and Evaluation Transformation

***DISA** organization was rebuilt to be the premier tester and evaluator of net-centric capabilities in the Department of Defense. By Steven Hutchison*

DISA's test and evaluation (T&E) function has undergone an extraordinary transformation over the last two years. We have rebuilt our organization to be the premier tester and evaluator of net-centric capabilities in the Department of Defense. We have solidified our credibility in the test and evaluation community and worked to reengage with T&E organizations throughout the military services.

Historically, DISA's T&E community has not been well known, and our capabilities not well understood. Most people know that the Joint Interoperability Test Command (JITC) is a DISA field activity that does testing. Most people also think that testing role is limited to doing interoperability certifications for the Joint Staff. What is not well known or understood is that not only does JITC provide T&E services across the entire spectrum of test and evaluation (developmental testing, operational testing, interoperability testing and information assurance testing), but also we have forward presence (liaisons) in the combatant commands, deploy testers and troubleshooters (including into the combat theater) when needed, and run a major DoD exercise each year. Therefore, to improve community awareness across the DoD of our T&E capabilities and the vital role our T&E work force plays, we have begun a campaign to position ourselves as the leader in net-centric capability testing for DoD.

We started with a vision. In August 2005, we wrote a vision statement and established four major goals for DISA Test and Evaluation. Our vision is simple: We want testing to be an enabler of better acquisition, not a hurdle to overcome. In terms of our organization specifically, we want to be the "go to" organization for T&E expertise for joint command, control, communications and computer-based systems and services.

We want program managers to recognize and use our expertise to help them bring capabilities to our warfighters. We want the user and functional representative to recognize and use our expertise to help them define achievable and testable requirements. In short, our vision is to be an

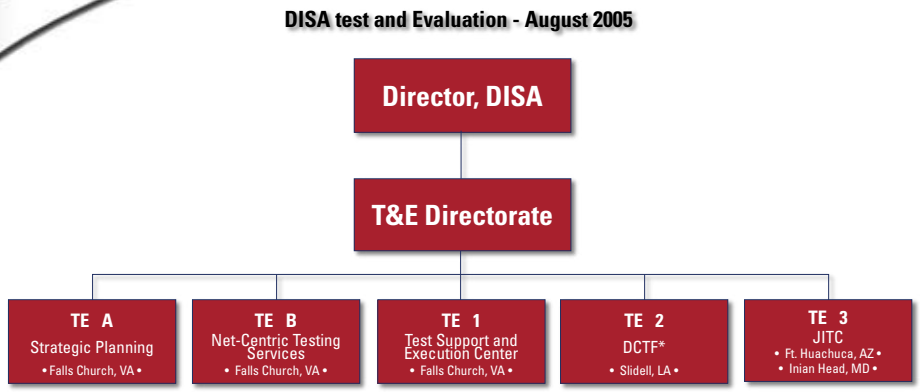

Figure 1: DISA T&E - Then

enabler for the acquisition of joint warfighting capabilities.

The goals for DISA T&E include:

- Support the warfighter. Provide responsive, relevant, value-added test and evaluation services to DISA's customers.
- Be the premier tester and evaluator of net-centric warfighting capabilities in the Department of Defense.
- Team for maximum efficiency. Empower our teams to create and execute robust test designs and provide independent, objective assessments to decision-makers.
- Develop and retain a highly qualified work force of test, evaluation and acquisition professionals.

Tomorrow's Mission

Our campaign began with an internal review of our organization, work force and engagement in the T&E community at large. What we found was an organization postured for today's mission but not for tomorrow's, a talented and diverse work force without career-management planning in T&E, and limited engagement in the community. Our organization didn't look at all like the military services, so we asked ourselves why. Over the past two years, we have addressed our weaknesses and are now moving full speed ahead toward achieving our vision and goals.

In August 2005 our organization was as shown in Figure 1. We were a single T&E Directorate of five direct reporting units, with overlapping test missions and functions. We wanted one tester for DISA. We noted that we had our independent operational tester (JITC has that mission), but unlike the services, we did not have an organization responsible for the strategic-level management of test resources and investments for DISA (our strategic planning element was focused only on Balanced Scorecard metrics). In fact, not only do the military departments have organizations devoted to the management of test resources and investments, but so too does the DoD, in the form of the Test Resources Management Center (TRMC), which is a DoD Field Activity under the undersecretary of defense for acquisition, technology and logistics.

We decided to mirror the military services' structure as well as their reporting chains: In the services, the independent tester reports to the service chief of staff. Since we already had an independent tester, we undertook the effort to stand-up the Test and Evaluation Management Center (TEMC) with the mission to provide strategic-level management of test resources and investments for the agency. We also redefined the role of the T&E executive in DISA to have overarching responsibilities for T&E, but the T&E leader is not in the rating chain of the independent tester.

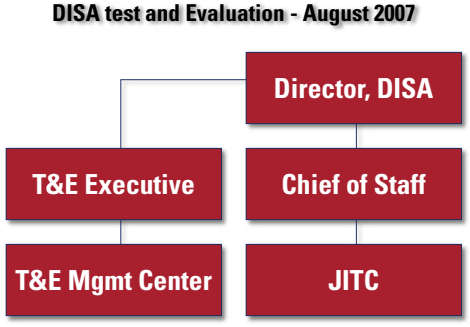

Figure 2: DISA Test and Evaluation - Now

The role of the TEMC mirrors that of the DoD Test Resources Management Center, as well as that of the Air Force Directorate of Test and Evaluation, the Army Test and Evaluation Management Agency and the Navy's office of the director of test & evaluation and technology requirements.

Organizationally, DISA T&E now looks just like the military services. Figure 2 shows the current organization. We now have one tester for DISA; we've eliminated the overlapping functions so that the tester focuses on execution and the T&E Management Center provides the long-term, strategic management of DISA's T&E resources.

Portfolio Management

We also looked closely at how we were executing our T&E mission in JITC. As previously stated, we had observed that our testing organization was positioned for today's mission but not for tomorrow's. Since information technology is central to our mission, we determined that the best course of action was to align our T&E centers of excellence with the DoD's concept for management of information technologies by portfolios.

In October 2005, the deputy secretary of defense signed into policy the DoD Directive 8115.01, "Information Technology Portfolio Management." This directive defined the portfolios and assigned portfolio managers. At the highest level is the DoD Enterprise Portfolio, which is further divided into four mission area portfolios: warfighting (lead by the chairman of the Joint Chiefs of Staff), business (lead by the undersecretary of defense for acquisition, technology and logistics), the DoD portion of intelligence (lead by the undersecretary of defense for intelligence) and enterprise information environment (lead by the assistant secretary of defense for networks and information integration).

This directive also had the effect of making it policy that DoD manage IT investments in portfolios, and prescribed its use as a management tool in the department's decision support systems, including the Joint Capabilities Integration and Development

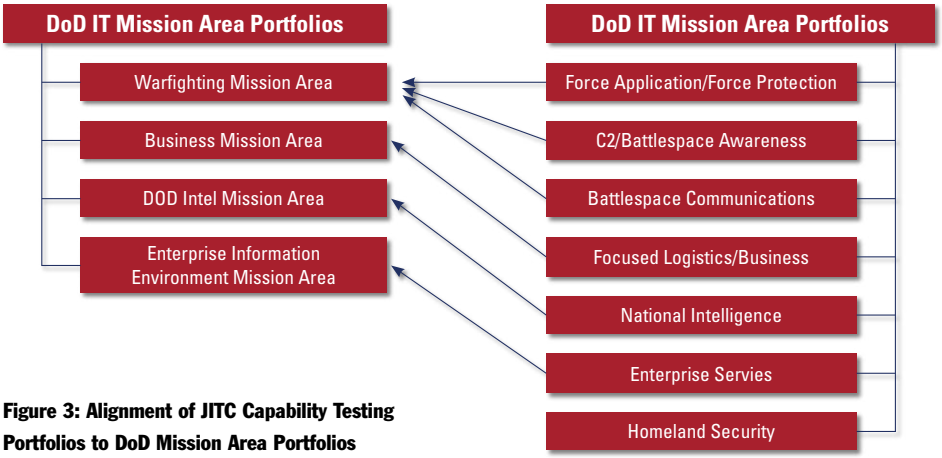

Figure 3: Alignment of JITC Capability Testing Portfolios to DoD Mission Area Portfolios

System and the Defense Acquisition System. Hence this construct has strong potential implications for test and evaluation of information technology.

We therefore decided to adopt this basic structure to posture our test organization for the future. JITC realigned into Capability Testing Portfolios as shown in Figure 3. When program managers approach JITC for T&E of their system or service, JITC assigns the program to the appropriate portfolio. The portfolio manager is responsible for ensuring that the T&E of the systems and services so assigned is adequate to determine effectiveness and suitability.

To execute an agile, capabilities-based T&E strategy, JITC forms Capability Test Teams (CTTs). As stated in our goal to "team for maximum efficiency," the CTT consists of members from the traditional T&E disciplines of:

- Developmental testing (DT)
- Operational Testing (OT)
- Interoperability Testing (IOP)
- Information Assurance (IA).

The CTT will have at least one military member to ensure an operational perspective in defining the right set of measures of effectiveness for use in the evaluation. The CTT can be augmented as appropriate for additional subject matter expertise, in such areas as human factors or electromagnetic environmental effects. Additionally, for joint capabilities under test, the CTT will seek members from the service operational test agencies.

The JITC commander empowers the CTT to act on his behalf in working with the PMO, user representative and T&E oversight communities to develop a capabilities-based, efficient and executable test strategy. The purpose of forming the team with members of the traditional DT, OT, IOP and IA disciplines is to eliminate the serial processes of the past in which different organizations were responsible for different test events—with the PMO responsible for DT, independent OTA responsible for OT&E, security tester responsible for IA, and so on—under different test conditions, and where test result data was not shared or was done so reluctantly.

The ultimate objective of an agile T&E strategy is involve the tester early, to focus on what's important to the warfighter, and to test as one team, one time and under one set of operationally realistic conditions. The CTT is JITC's means to achieve this end.

In summary, our vision is for T&E to be an enabler of the process of defining and acquiring joint warfighting capabilities. We have realigned to posture ourselves for the future—to be the premier tester and evaluator of net-centric warfighting capabilities in DoD. We have empowered our teams to provide responsive, relevant test and evaluation services to our customers, and in doing so, we are enabling the rapid delivery of effective and suitable capabilities in support of our warfighters. ✯

Steven Hutchison is DISA's test and evaluation executive.

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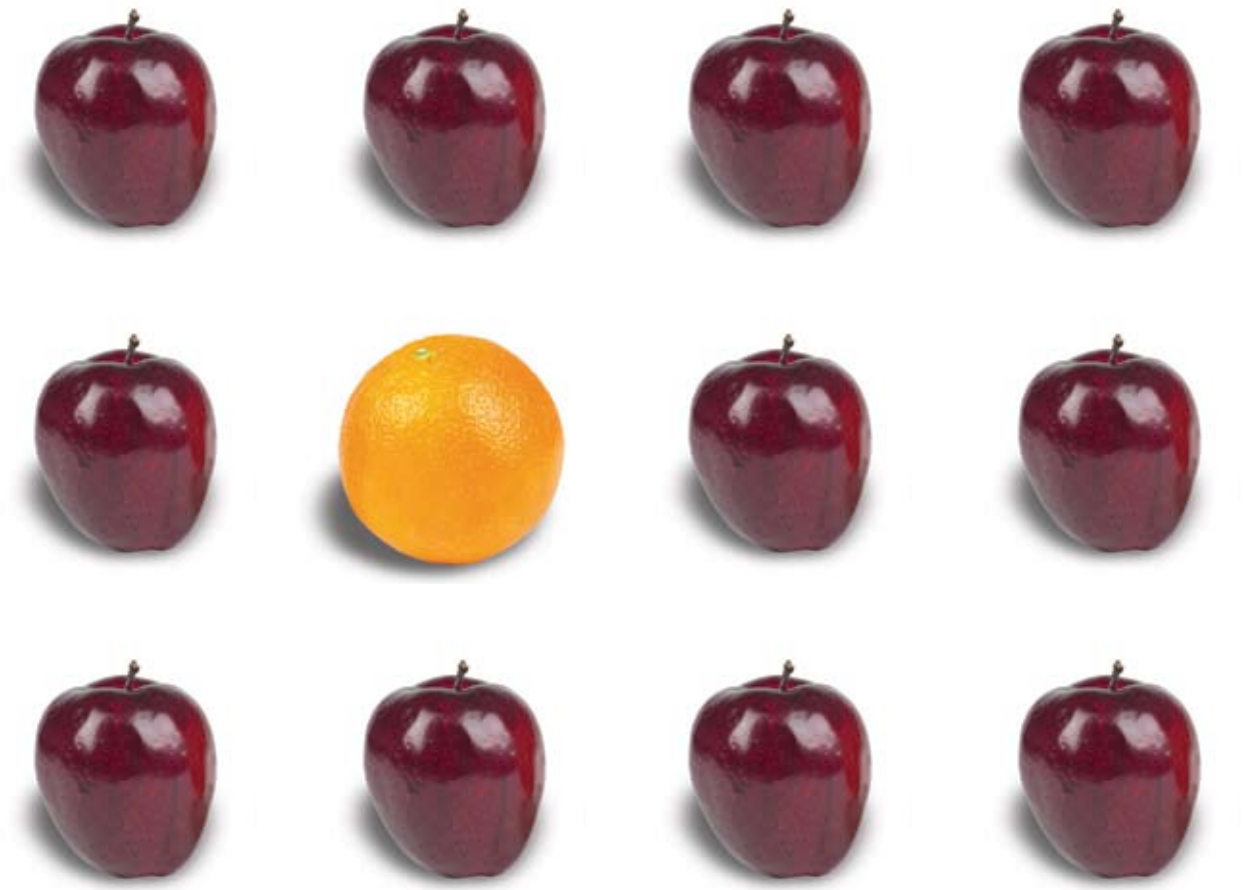

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Strategic CIO Q&A

Charting a Course for Surety, Reach and Speed

John Garing
Chief Information Officer
Director of Strategic Planning and Information
DISA

John J. Garing is DISA's chief information officer and director for strategic planning and information. He is responsible for supporting the DISA director in decision-making, strategy development and communicating that strategy both internally and externally. Garing ensures that DISA's program execution is aligned with Department of Defense strategy in planning, engineering, acquiring, fielding and supporting global-net-centric solutions, operating the Global Information Grid, information assurance and management of DISA information technology resources. As a support service unit, Strategic Planning and Information supports DISA missions with cost-effective information tools and capabilities, and provides leadership and support in a wide range of agency and DoD information management initiatives.

Prior to assuming this position, Garing was director of the Computing Systems Directorate, and was responsible for information processing and information technology services provided by DISA's Defense Enterprise Computing Centers (DECC) and DECC detachments, which provide combat support processing for the Department of Defense in a global, interoperable and assured environment. He also served as chief, combat support, deputy director operations, and was responsible for developing and managing the business aspects of the information processing and information technology services provided by the DECCs and DECC detachments. He was also responsible for electronic commerce operations and for the Joint Staff Support Center, and introduced innovative business practices to segregate and improve cost management, invoicing, and customer relations, and established a business management center to develop new business and improve customer management.

Garing was commissioned a second lieutenant in the Air Force in 1965, and his career encompassed tactical, base level and strategic communications planning, operations and maintenance. He commanded two communications squadrons, served for four years with the White House Communications Agency, served in the international military staff of the North Atlantic Treaty Organization, and was both a division chief and director at Headquarters Air Force. He retired as a colonel in 1989.

The following eight years, Garing spent in business supporting both government and commercial clients. He was responsible for programs providing systems integration, telecommunications, software development and re-engineering, network implementation, imaging, records management, and integrated logistics support. He progressed rapidly in executive and technical responsibility for multi-million dollar programs, and held the position of vice president for three different companies.

He holds a bachelor's degree from the University of Minnesota and a master's degree from Pacific Lutheran University.

Garing was interviewed by MIT *editor Harrison Donnelly.*

Q: How would you describe your role as chief information officer and director of strategic planning and information for DISA?

A: This office is a four-year-old organization, started in October 2003, and we've constantly evolved and changed as our challenges have changed. As CIO of DISA, I have legal responsibilities under the Clinger-Cohen Act and Title 40 to exercise oversight over internal IT investments and business systems. I also have the authority to allow systems to be on the network—it's called "authority to operate"—which is for security and information assurance. In addition, because DISA provides enterprise services for the department, I have another CIO role, which is an extension of [Assistant Secretary of Defense for Networks and Information Integration (ASD NII)/DoD Chief Information Officer John Grimes]. I sign off for DISA on the acquisition strategies, economic analyses, program office estimates and information assurance strategies for enterprise programs, such as Network Centric Enterprise Services [NCES]. So the CIO role is a little different from any others in DoD, because it has both an internal and an external focus, and we spend a lot of time on the latter.

As director for strategic planning and information, I have several roles. One is for resource planning, which we call the program objective memorandum, for the out-years of DISA funding. Tom Ainsworth is one of my senior executives and he manages a group of analysts organized by mission area. They are very deep into areas such as command and control. They really dig down and do the rigorous analysis that supports our resource planning in the out-years.

I also have the Corporate Communications division, which includes external and internal communications, such as public affairs, DISA's customer conference and our internal marketing. And, we have the director's group, which does speechwriting for General Croom.

In addition, there is a division that does customer outreach at the senior level. We establish relationships at the most senior levels in DoD and sponsor what we call "days." Examples are the recent DISA-National Geospatial-Intelligence Agency [NGA] Day and the DISA-Army Day. For about four hours, the seniors in DISA and the corresponding customers sit together and talk through topics of mutual interest, areas of contention and customer service issues. My staff organizes that—it's an interchange that occurs between DISA and its customers. We've been doing this for a number of years, but lately we've gotten more regular about how often we hold these. They are amazing interchanges. We draw people like Vice Admiral Edwards from the Navy, General Boutelle and now General Sorenson from the Army, General Peterson and General Johnson of ESC from the Air Force.

Another division is performance management, which helps with my CIO duties. We are responsible for the management of the performance of DISA, so we concentrate on things like our internal balanced scorecard and metrics. We look at how well we are executing what we said we would do. I also have a division that does strategy. We do a strategy booklet, titled "Surety, Reach, Speed: The DISA Strategy," which is based on a similar document from Sun Microsystems. Jonathan Schwartz, the chief executive officer and president of Sun, says he is flattered that we used his format. The strategy is not a strategic plan, but just that, a strategy. We ask questions and answer them, and each area has a vision and some initiatives. It guides where we're going and our resource planning. We've published two editions in a year, and we're going to do another one later this year.

Another role that I have is corporate outreach. We attempt to establish relationships with people senior enough in companies that we can influence the company's behavior and they can influence ours. To be candid, most of the dealings we have with our vendor partners are at the sales and business development or marketing level. I passionately believe that we have to get high enough in a company that we can work with leaders who say grace over more than a single P&L account. We want a relationship that is good enough that we can talk about things of mutual interest and work together when there are contentious issues. For example, we've been engaged recently with one company on a fairly serious issue of mutual interest at the highest level of the company. General Croom and I have had a number of interactions with executives in the company. A few years ago, another large company had four divisions competing for the same piece of business. So we went high enough in the company to get someone who had authority over all of those to get the company's single position.

We learn a lot by visiting companies, both our suppliers and non-suppliers, which has shaped what is in the strategy book. For example, the sourcing strategy that we follow is pretty much like what we learned from the CIO of a large financial institution. Using a technique like the Federated Certification and Development Environment or sandbox is based upon what we learned from Google. We spent a day with the United Parcel Service [UPS] CIO a few months ago, and have talked extensively with CIOs and other senior leadership of other major companies. We've learned from what these guys do in their jobs, which is basically solving the same challenges we have. By an exchange of ideas, we shape our strategy and business processes. That's an important and often times not recognized aspect of strategic planning.

Finally, the group that does resource planning also forms an independent cell of analysts that looks at major enterprise programs such as NCES and NECC, and provides the rigor of a review of independent government cost estimates and the analysis of alternatives that has to be done. We firewall these people off from the rest of the agency. They do good analysis

on our internal programs, as well as those we provide for the department, that is dispassionate but rigorous and independent, so that when we defend our budget request to the Pentagon, it stands the scrutiny. I'm also responsible for the programs analysis and evaluation [PA&E] of DISA. Our counterparts in the Pentagon are the PA&E Directorate and Mr. Grimes' [ASD for NII] office. We are careful to be consistent so we can defend our dollars.

Q: What do you see as the chief issues facing the agency as they relate to your responsibilities?

A: It's about charting a course for the agency. A few years ago, [DISA Director of Computing Services] Alfred Rivera and I were visiting the CEO of Unisys, who invited us into his office. We asked him what keeps him up at night, and one of the things he mentioned was to ask, "What's next?" Keeping market share for the company means understanding what's coming down the pike, and Unisys like other companies has to position itself to take advantage of what's new and leverage it in the marketplace. So it's kind of the "what's next" for us. I was at a symposium recently sponsored by the Tuck School of Business at Dartmouth, which puts on the CIO Thought Leadership Roundtable. The topic was Web 2.0, and how to deploy and control it. But we don't control it—Web 2.0 is blogging, wikis, instant messaging and whatever else the young people are doing to share information and collaborate today. It's happening, and the CIOs acknowledge that they don't deploy it—it happens. Secondly, controlling it is not likely. Maybe we can drive business value from it, for example in supply chain and customer relationship management.

Vice Admiral Edwards talks about the "millennium generation," which is the group from ages 6 and 24. The average 6th grader has more IT and bandwidth in his or her hand than a sailor on a carrier, and the average high schooler can have more than a whole frigate. How do we attract people who grow up with this incredible power into an organization that doesn't have as much at the tactical level where most of our people live and work? I have a friend who took her daughter on a skiing vacation recently. The 23-year-old daughter's only demand was to be on the side of the mountain where there was coverage, because

her whole life was in a little electronic device. We have to recognize that this is happening faster than we are, and that, as Mr. Schwartz of Sun says, the consumer drives volume, and volume drives the IT business. That tells you that we in defense and government are not driving what people are selling. It's being driven by the consumer—the iPods and iPhones and whatever you can do with these small devices, which are driving where the money and investment is going in the IT industry.

We don't have a lot of the "fetch" that we used to. Even 10 years ago, NASA and DoD drove the IT industry a lot, with many things that we use in our lives being developed in the space program. But that's changed, an effect that people call "inversion." Given Web 2.0 and this inversion, we have to ask what that means to us. General Croom's mantra is that it's all about speed. As it reads in the strategy document, DISA "will provide Internet technology at speeds necessary to bring people together efficiently, help them do their jobs in ways never anticipated and enable them to do things never envisioned." That means that we're going to be smarter, if we can, in Web 2.0. DoD is great in providing IT programs that take five years to develop and produce something that is four-and-a-half years out of date.

That's because we spend too long writing requirements, analyses of alternatives, and test and evaluation master plans. These take time and money, and if we make a mistake along the way, and we've spent tens of millions of dollars producing the paper that leads to development, testing and deployment, how, then, do we go to the people who gave us the money and say we made a mistake? There's a disincentive to cutting things off early. Our goal is to shorten the time it takes to deliver capabilities and services and put technology in warfighter's hands at the speed that we can get them at home. Osama bin Laden does not write a 500-page requirement. He goes to the network to buy what he wants. We have to become a lot more agile to be able to take advantage of what's happening in the marketplace, and adopt it and adapt to it, instead of prescribing what we want to have built and testing it to 100 percent before we deploy it. That just won't work today.

So everything we're doing in major programs is aimed at speed and getting things into people's hands more quickly, to effect real warfighting or business advantage. It ranges from using an existing contract vehicle for NCES's "crown jewel" acquisition, instead of writing our own RFP, and saving 16 months, to adopting Army Knowledge Online as a portal, to using a commercially available collaboration service rather than building our own. All this is aimed at shortening the time it takes to put technology in warfighters' hands. We're also going to managed services for capacity on demand at our data centers. When I used to be in that business and we wanted to upgrade a processor, we had to go to a contract vehicle, write down what we wanted and bid it three times, or write an RFP. Now, all we have to do is call and ask them to turn capacity on or off—we pay only for what we use. Think about the speed advantage that has.

Another unique phenomenon is the extension of our services beyond traditional boundaries. If you look back to when the Defense Communications Agency [DCA] was founded in 1960, you'll find that the reason it was founded was for long-haul communications that linked together the military services, which had their own systems. If you look at the *USS Liberty* incident during the Arab-Israeli War of 1967, or the *USS Pueblo* incident of 1968, you'll see that in both cases, teletype messages were sent days in advance warning the ships, but they weren't delivered, because of delays at tape relay stations or other factors. Then-Congressman Mollohan wrote a report at the time that talked about the need to do something different. Out of that, DCA and others, including the Air Force, derived a vision for joint end-to-end connectivity.

The traditional boundary of DISA services has been the connection of a terminal to a data center, or a DISN point of presence on an installation. The concept of net-centric means that whatever is available to the enterprise has to be available to anyone within the enterprise. So the data strategy, which is advocated so well by Mike Krieger and Dave Wennergren of OSD [NII], says we have to be able to expose our data on the network, and we have to have the tools to discover it, identify ourselves as being authorized to look at it, and pull it for whatever we are doing. That has lots of implications.

The services DISA provides are actually being extended because of the nature of net-centric warfare I just described. More DoD employees and people in uniform are actually touching DISA services than ever before. Our network and computing people touch everyone in the department—five million people a day. If you run a transaction, go to a military hospital or do something with your payroll, you touch DISA. If you're flying a C-17 on a mission, you're touching DISA. It's all related. So extending our services beyond traditional boundaries is a challenge, but it's happening. If you want to collaborate using one of our tools, all you have to have is a URL, user ID, password and a CAC card in some cases. You're touching a DISA service, and that's a change.

How we govern this is important. We have more than 400 service delivery nodes for the DISN core, and to that are attached service or base circuits. We provide the Interstate Highway System, and the local roads that connect to it. The person with a rifle on the other end, or a supply clerk, doesn't care who provides the network. What they care about is that they have access to a service. How do we govern that? Who's in charge, and looks end-to-end? The department created the Joint Task Force-Global Network Operations [JTF-GNO] under STRATCOM as part of the umbrella, but supporting them has to be a set of tools providing situational awareness and configuration control and management. DISA does that as part of extending services to the edge.

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There has been a lot written about net-centricity, frequently almost mystifying it, making it into a huge concept that one has to be immersed in to understand and live the concept. But, in my mind, it's really pretty simple. Today, people are used to living on-line, at home, at work, even when they go on vacation. That's net-centric—it's that easy. If I choose to shop online at home or from a hotel room in Illinois, I can do that, or do my banking at the airport. The point is that you and I are doing the choosing. Net-centricity is essentially enabling our forces all over the world to connect to the network just like I can in a hotel room. Then, like you in a hotel room connected to the network, the warfighter can pull the information needed at that particular place and for that particular, situation and time. The essence of net-centricity is that the warfighting unit is choosing what it needs to have and when it needs to have it. [Former DoD CIO John Stenbit] called it "smart pull." The bandwidth doesn't allow us to "push" information to everyone, so we have to enable it to be pulled smartly.

In terms of extending services to the edge, the NCES program is fundamental. In the simplest terms, NCES is three things: collaborate, search and share. The program has 10 product lines and services, such as mediation, collaboration and metadata registry, but it comes down to those three things. The sharing part is enabled by the service-oriented architecture [SOA] foundation. We often fail in trying to explain the SOA. It's really very simple. It's the magic behind the glass, which allows me in my personal life to do my travel planning, online shopping and so on. I read that one travel service has information on 122 airlines, and I know that they have thousands of hotels. These airline and car rental companies have their own automated systems, some different and some the same. They use the same behind the glass magic as NCES is providing to enable information sharing. In the past there would be hard interfaces between each of system and the online travel service, so that when one application changed, there would have to be a hard-code change. General Croom uses a metric that 80 percent of the cost of software maintenance is in such changes. The SOA foundation provides this: that if an airline or hotel chain exposes its data in certain "nouns," then I can connect them and expose their services to customers. The travel service will give them access to the world, and all they have to do is expose their data in certain formats. The travel service has to have a SOA foundation, which enables the sharing to occur. When an airline changes its automation system, as long as it exposes its data in certain simple ways, then the online service can still sell for it. NCES is simply that—connecting the consumer with the provider. In the net-centric world, where data is on the network, it is NCES behind the scenes that allows the discovery of data, governing those that are authorized to see it, pulling it, storing it, and sharing it. It's that simple.

We don't do enough to explain this. As General Croom says, we should be able to explain NCES to our grandmothers in 30 seconds. We tend to speak in our own language, but if we simply explain it like this—it's behind-the-glass magic that allows information sharing to occur we could better get our message across.

NECC is the next family of command and control, going from tightly coupled, hard-wired systems to loosely coupled, composable services that expose data for sharing. So if you want to plan a mission, you go to the mission planning portal, and use the search, collaboration and sharing services. Brigadier General Dave Warner and the NECC program are building command and control services that together form mission threads. And, they're all enabled by NCES.

Q: When DISA and DoD issued pay-for-service contracts for managed computing services last year, you described it as "a leap in what the department is going to be able to do." Has your experience so far with these programs borne that out?

A: We haven't exploited them as well as I would like. But the concept is revolutionary. Typically, the department today goes to an ID/IQ vehicle to buy equipment and software—in this case, equipment being servers, computing power and storage. In some cases, we even have to write an RFP, because the configuration is a little different. Or we go to an integrator who will buy it for us. In every case, the word is 'buy.' So we use capital dollars to acquire hardware, storage and software. But everyone in the IT industry will tell you that what we are buying are most commodities. There's nothing unique about a server. You may have different operating systems, but all the major companies make products that are similar.

What Alfred Rivera has said is that he is not as interested in how it's provided, but what is provided. Someone needs Linux or Unix or Windows, terabytes of storage, or a storage area network. What Alfred has done is put in place four contracts for capacity on demand, based on four principles: vendors retain ownership; put the equipment in our data centers for security purposes; manage capacity jointly with us; and when we need more capacity, turn up what we need for as long as we need it, and then turn it down again.

We no longer have to write an RFP, go through the acquisition process, work off the GSA schedule, or spend capital dollars. We are using operations and maintenance dollars to acquire capacity as a service that can be turned on and off, just like we buy electricity at home. You pay for what you consume. It has so much to do with speed and reducing costs. Arguably, from today DoD never has to buy a server again. That fundamentally changes how we do business, and the potential is unlimited. We're working on ways to exploit this concept because the potential is incredible.

In the computing business, we're going to have to go to what service providers, such as Amazon.com, are already doing today.

On Amazon, you can compose your own Web service and operate it for a very low cost. Because they need so much capacity during peak selling times, they have idle capacity for much of the year. You can build your own Web service, and they will charge you only for what you consume.

To be net-centric, the warfighting unit has to be able to deploy somewhere and compose what it needs, rather than having a prescribed set of things given to it. This includes composing a service out of existing data for warfighters to pull what they need. That means that our data centers must have a highly scalable Web services platform, with communications, processing and storage, that can turn on and off quickly and be allocated to a particular user. These managed service contracts give us the foundation to do that. You could never do Web services like we need to do without this capacity on demand strategy. If we had to buy something every time someone wanted to turn on a Web service, it would be impossible. The potential is unlimited.

Q: What role do you see for large system integrators under this new approach?

A: There is absolutely a role. One of my peers said last year that the day of the lead system integrator [LSI] is over. What he meant to say was that the LSI business model that has been used successfully over the years is changing. General Croom's mantra—think big, small scale and fast—means that we're not going to be buying a lot of big things. The essence of NCES' and NECC's small modules of service capabilities argues against large scale integration and turn-key solutions. On the horizon, I don't see any large systems integration effort coming out of DISA. Not to say that the military departments won't be doing that, but I don't think we will.

The challenge is how do we take advantage of the incredible muscle that exists in the LSIs and other service providers, and apply it to today's demands and problems. In the past few months, three large integrators have been in our offices to talk about this challenge. A senior executive from a major company asked General Croom what we can do together. We have to figure a way to use that muscle and not let it atrophy. It's too important to us. But we're not going to be using that muscle in the same ways we have traditionally, so both of us are going to have to adapt and change. We're trying to get a group of senior people in LSIs together to talk through how we can work together in this new environment. We might not have it right, and we may need counsel on how to do it correctly.

We will soon have an RFP out for a capability broker, a new concept and a new term. This is not a traditional integrator role, rather, it is someone who helps find the services we want, lashes them together with "little i" integration and acts as our eyes and ears. There may be a role for a venture capitalist as well. There is a trove of talent in the private sector that sells services to the consumer. If we could take what has been done for the consumer and adopt it, we could speed the delivery of information to warfighters. For example, I recently met with an executive from a company that allows users to create their own customized social networking site. That's what we would call a user-defined operational picture. I would like to take the challenge of a Marine commander in Iraq, who needed information on red and blue forces, supply status, and the nearest hospital, and ask people at companies like this social networking company how they would mash existing services together to do that. The capability broker would help us find these kinds of companies and people. So, the question is who will be the capability brokers?

Q: You have frequently expressed concern about how DISA's large up-front investments have made it difficult to kill programs even if they prove unsuccessful in practice. What is your strategy for addressing this problem?

A: We've got to shorten the requirements process, look for solutions in the marketplace, and use what we call the Federated Development and Certification Environment, which brings together the user who has a need, the developers, the tester and certifiers, to play with stuff in the "sandbox." While the developer and user are talking about what is needed, the testers are already doing their routines, and the security certifiers are looking at it as well. So when it is finished, all of the work has been done in parallel, and it is available to be used, rather than having all the steps done serially and separately, which gives us something in five years that is four-and-a-half years out of date. Addressing the requirements, testing and certification processes is important, as is putting all of this together in a parallel rather than serial process. We want to find "pearls" that, while not quite what we want, are close enough to what we need—the 70 percent solution that is better than what we have now. If we spend millions on a 500-page requirements document that takes two years to write, by the time we have it the world has changed.

This is an exciting time, and there is so much potential. Our boss has a vision and passion for surety, reach and speed, which makes it easy and fun to work. We can really break some glass. It all comes down to putting things quickly in warfighter's hands and allowing them to do things they never anticipated in ways they never envisioned.

Q: Is there anything else you would like to add?

A: When we talk about supporting the warfighter, it's not rhetoric. It's what makes us go every day. DISA's senior leadership could make a lot of money in the private sector. But we choose to do what we do because of the people we are doing it for. If we can cut the time to put IT that we can get at home into the warfighter's hands at near Internet speed, that's what it is all about—and save some money in the process. ✯

BRAC Spurs DISA Telework Initiative

Successful implementation of this newly expanded telework program required extensive cultural change within all levels of management. By Aaron Glover

Imagine this scenario: You are the director of a Department of Defense agency located in Northern Virginia, and you have just been notified that under the 2005 Base Realignment and Closure (BRAC) legislation, your agency will be relocating more than 4,000 employees to Fort Meade, Md.—about 26 miles from their current duty stations. Seventy-five percent of your affected population lives in Northern Virginia, and many already have a daily commute of more than an hour. In the National Capital Region, traveling an additional 26 miles during rush hour is like going to another country.

This is just the situation DISA found itself in last year. As part of the overall human resource BRAC strategy, DISA decided to use its recently expanded telework program as a cornerstone for its recruitment and retention effort. DISA changed its teleworking policy from allowing employees to telework one day per two-week pay period, to a maximum of two days per week.

Successful implementation of this newly expanded telework program required extensive cultural change within all levels of management. A team of DISA employees was chartered, and charged with researching best practices at other organizations, determining what equipment was needed, developing training needed for management and the work force, and bringing it all together within 90 days. A senior human resource manger and a senior IT manager were selected to co-chair the team, blending the two critically needed functions together during the entire process, reducing potential problems or roadblocks.

DISA Personnel Director Jack Penkoske served as the champion for the initiative, soliciting funds needed for equipment and knocking down barriers as they arose. Training was developed and provided to management at all levels as well as the work force. The employee-led team made recommendations on the standard equipment needed for the average employee to telework, and how to continue to protect computer network while teleworking. Within the 90-day limit, the co-chairs briefed DISA Director Lieutenant General Charles Croom and gained approval for the program.

One of the keys to the successful expansion of the program was the decision to revalidate the positions eligible for teleworking. Using a new approach, starting with all positions eligible, the number validated as eligible for telework skyrocketed from approximately 500 to more than 2,500. Since the change in policy, the number of participants teleworking on a regular and recurring basis increased 10-fold and continues to grow. There was also a change in acquisition policy regarding computer life cycle replacement; DISA now uses a ratio of 90 percent laptops to 10 percent PCs.

Penkoske sought to simplify the process for employees to apply for approval to telework and wanted to eliminate the cumbersome paper process that was in use. An innovative Web-based application was developed to support this initiative, which allows employees to register for the telework program and select the "ad hoc" or regular and recurring days they would like to work remotely. Managers are notified of pending applications and can login into this application to approve, disapprove, or modify their subordinates' registration requests. Additionally, managers can run reports that provide much needed data to assist in DISA's effort to make its telework program the best in the federal government.

Automated Application Tool

The automated application tool is a wonderful example of a federal agency looking at ways to improve processes, identifying the requirement, and developing the solution. Not only was the project completed in less than 60 days, but the only cost to DISA was the labor of its developers. Additional refinements to the application have occurred since its implementation. The application now serves as the sole source for validating eligibility for DISA's high-speed Internet reimbursement program, which covers up to 50 percent of the cost of broadband Internet access.

Employees can now submit applications for teleworking and get feedback almost instantly from their managers. This process eliminates paper and provides an electronic record of the approval that is viewable at each level of management. DISA's senior leaders can now view employees' teleworking status agencywide.

DISA now has the capability to gather required annual telework survey data within minutes instead of the days previously needed. The statistics are also used for DISA's balanced scorecard measurements on the implementation goal for the telework program.

DISA's telework program has provided the agency a solid tool to use in its recruitment and retention strategy of selecting and maintaining the very best workforce possible to support the warfighter. "The timing for the expansion of our telework program was great for our BRAC recruitment and retention strategy," said Penkoske, "But we would have expanded the program without the BRAC decision. We believe that teleworking is a vital element in our overall recruitment and retention strategy and if done correctly, will improve employee satisfaction and most importantly, employee productivity."

A recent employee satisfaction survey reveals a dramatic increase in satisfaction regarding DISA's quality of work life programs that was directly related to the telework initiative. Employees are now provided an opportunity to improve their quality of work life, save money due to reduced transportation cost and help to improve the environment. Employees and managers have also recognized an increase in productivity. DISA's telework program was recently recognized as "The Best New Telework Initiative" by a public/private partnership that is focused on eliminating telework gridlock. ★

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