# Defense AT&L

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## The "Now," the "Next," and the "After Next" of Geospatial Intelligence

Defense AT&L Interview with NGA Director James R. Clapper Jr.

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Requirements Management: A Template for Success

Innovations in Systems Engineering in DoD

Team Osprey Rodeo Training

Knock, Knock: Knocking on Newton's Door

Weblog Technology for Acquisition Program Management: A Risky Fable

Acquiring All You Need to Maintain Your Software

Using Military Standards in Acquisition Programs

Accrediting DoD Technical Representatives in Italy

Defense AT&L

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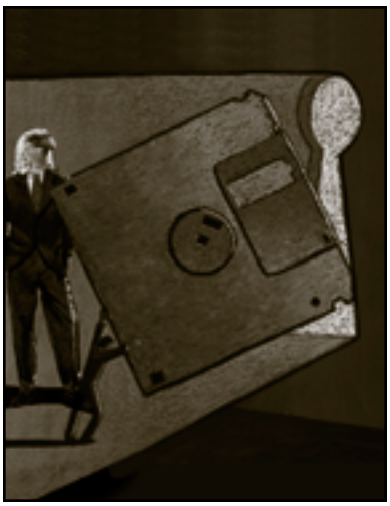

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# The "Now," the "Next," and the "After Next" of Geospatial Intelligence

## Lt. Gen. James R. Clapper Jr., USAF (ret.)
## National Geospatial-Intelligence Agency Director

Formed from several defense and intelligence organizations, the National Geospatial-Intelligence Agency merges imagery, maps, charts, and environmental data to produce geospatial intelligence—the analysis and visual representation of security-related activities across the globe. Using state-of-the-art software and hardware, NGA can create animated renditions of imagery and geospatial data, allowing users to visualize inaccessible terrain.

NGA has contributed to homeland defense efforts, helped resolve international disputes, aided disaster relief efforts, helped the armed forces overseas, developed safer airways charts, and remapped the world.

Serving as director of this complex organization is retired Air Force Lt. Gen. James R. Clapper Jr. Chosen for his extensive experience in intelligence matters and knowledge of the needs of combat commanders, Clapper became the first civilian director of NGA on Sept. 13, 2001.

Late in 2004, from his office in Bethesda, Md., Clapper spoke with James P. McNulty, Defense Acquisition University professor of systems acquisition management. Clapper explained how he has seen the demand for geospatial intelligence skyrocket during his tenure, and he described some of NGA's key contributions and accomplishments in meeting this demand, as well the challenges that lie ahead for the agency.

**Q:** *On Nov. 24, 2003, the president signed the 2004 Defense Authorization Bill, a provision of which authorized NIMA* [National Imagery and Mapping Agency] *to change its name to the National Geospatial-Intelligence Agency. What is the significance of this change?*

**Invariably, you're faced with 30 pounds of requirements and probably no more than 20 pounds of money. So this year we tried a new process for being as rigorous as we can on evaluating programming alternatives that would pay the most cost-benefit for as many of our users and constituents as possible.**

Photographs by Sgt. Mason Lowery, USA

**A:**
Well, I think the major significance is that it's a visible affirmation that this is not two separate organizations or two separate cultures or two separate endeavors, which was the case when the Defense Mapping Agency was combined with some other organizations to form what was called the National Imagery and Mapping Agency. That name itself essentially perpetuated the separateness: imagery and mapping. What the new name symbolizes or connotes is the synthesis of mapping, charting, and geodesy on one hand, and imagery analysis and imagery intelligence on the other, into the concept of geospatial intelligence, which is really what this agency is about. That represents, in a word, our vision of where we need to go to support our customers.

**Q:**
*You began your tenure as NGA director by introducing an organization principle that focused on three elements: the "now," the "next," and the "after next." The current challenge facing NGA is dealing with the now mission—the war on terrorism—while continuing to attend to the next, as well as planning for the after next and the future. In the face of the accelerated work flow triggered by our current situation, how do you encourage personnel to allocate time and resources to keep a focus on the future?*

**A:**
I served previously as director of DIA [*Defense Intelligence Agency*], and for four years on the NSA [*National Security Agency*] Advisory Board after I retired. So I came to this position with the recognition of how difficult it is to do 24/7 response to the daily crisis kind of missions all operational intelligence agencies confront *and* focus on transforming in the future.

I decided that given that difficulty, I wanted to introduce an organizing principle revolving around the temporal dimension of time so that there is a conscious, overt identification in the minds of the employees that we have to keep straight these three dimensions. The "now," which is our here, today, 24/7—essentially our operational warfighting mission. The "next," which is the acquisition. Approximately a third of our program each year is tied up in acquisition, which is a lot for an operational intelligence agency. And the "after next," which is keeping a view of the more distant future, what's out there in terms of technology, new software, and new processes that we can introduce to continue to transform the business. You have to keep—in my mind at least—those three dimensions reasonably separate, and we try to do that both functionally and organizationally so that there is clarity for the employees.

**Q:**
*What structures exist within the current system to help shape the next and the after next?*

**A:**
Organizationally, we have directorates that are quintessentially committed to each one of those dimensions. That's not to say that the rest of the agency doesn't have to think in terms of now, next, and after next, but our analysis and production organization—which is by far the largest, and the basic reason we exist—is essentially the now organization. We have an acquisition directorate that attends to the next. And for after next, there is what we call "Innovision," a term we use for our futurists and our research and development activities. Institutionally or structurally or organizationally, those three directorates represent the three dimensions.

Now that's not to say that each directorate has a singular focus. For example, enterprise operations, which runs our information technology and what we call source operations and management, and which operates our collection task, must think in those three terms as well. So it's not a one-on-one binary relationship between a temporal dimension and an organization. There is some organizational congruence, but it's also a mindset or a way of organizing how we approach things in terms of running the business and transforming.

**Q:**
*It's not an easy task trying to strike that balance is it?*

**A:**
No!

**Q:**
*In a memorandum that was sent to the entire agency, you strongly outlined the NGA plan as "not government business as usual." You described a typical government budget as burning through as much money as possible per fiscal year, guided by the philosophy that the more you spend, the more you get and the more successful you can be. NGA, you declared, is doing business differently. How is NGA approaching the budget process?*

**A:**
The elusive holy grail, I suppose, is the extent to which you can possibly inject commercial or business processes into what we do in government. And having spent six years in industry, I know that's not exactly possible, since what we do is essentially produce free goods and services. People don't have to pay for what we do. Nevertheless, there are many practices we can inject into our "business," if you will—the enterprise—and how we manage it that are commercial-like.

So this year, we radically changed the process that we use to build our program objective memorandum and did more rigorous analysis independent of the rest of the agency. We essentially set up our own mini-program analysis and evaluation organization to weigh the proposals

**Lt. Gen. James R. Clapper Jr., USAF (ret.)**
***Director, National Geospatial-Intelligence Agency***

Air Force Lt. Gen. (ret.) James R. Clapper Jr., has more than 37 years' experience in intelligence, working at all levels and phases of the field. He retired from the Air Force in September 1995 as a lieutenant general after a four-year tour as the director of the Defense Intelligence Agency. Since his retirement, he has served successively as executive vice president of Vredenburg, a systems acquisition services company headquartered in Reston, Va.; executive director, military intelligence, for Booz, Allen & Hamilton, McLean, Va.; and most recently, as vice president, director of intelligence programs for SRA International, Fairfax, Va. He was a senior member of the Downing Assessment Task Force, which investigated the terrorist bombing of Khobar Towers in June 1996.

Clapper began his service with a brief period of enlisted service in the U.S. Marine Corps Reserve, followed by a transfer to the Air Force Reserve Officer Training Corps program and a commission as a distinguished military graduate from the University of Maryland. He commanded a signals intelligence detachment in Thailand (where he flew 73 combat-support missions in EC-47s); a signals intelligence wing at Fort George G. Meade, Md.; and the Air Force Technical Applications Center, Patrick Air Force Base, Fla. The general served as director of intelligence for three of the unified commands: U.S. Forces Korea, U.S. Pacific Command, and Strategic Air Command. He also served as senior intelligence officer for the Air Force.

given by various constituencies within the agency, as well as by our larger community, the National System for Geospatial-Intelligence, which involves military departments, the commands, and a variety of civil customers and constituents. Invariably, you're faced with 30 pounds of requirements and probably no more than 20 pounds of money. So this year we tried a new process for being as rigorous as we can on evaluating programming alternatives that would pay the most cost-benefit for as many of our users and constituents as possible. The process analyzes, as though we were a profit-making enterprise—which, of course, we're not—what would derive the greatest "profit" in terms of utility for our users.

**Q:**
*So it's not really a matter of just cutting out anything; it's a matter of getting the best value for your money.*

**A:**
Exactly. It's maximizing the utility of the funding that we do have.

**Q:**
*The war on terrorism has greatly increased the operations tempo at NGA. Faced with an urgent demand for intelligence on a region of the world not fully covered in its databases, the agency turned to private industry for products and services. You've noticed the importance of your industry partners in meeting the increased tempo and need for information. Can you comment on the role of industry in your organization?*

**A:**
It's quite prominent. We depend very heavily on our contract workforce in two dimensions: one, those who are embedded in the organization as full-time equivalents, and two, products and services that we derive from our industry colleagues. The trend has been to rely even more on our industry partners, and it's one that's projected to continue.

What that does, though, is to reinforce the importance of our overseeing what the contractors do for us and to ensure that we carry out our contractual and fiduciary oversight responsibilities. Even though our government workforce is growing as a proportion of the total workforce, it is actually smaller proportionally than the totality of our workforce when you include the contractors.

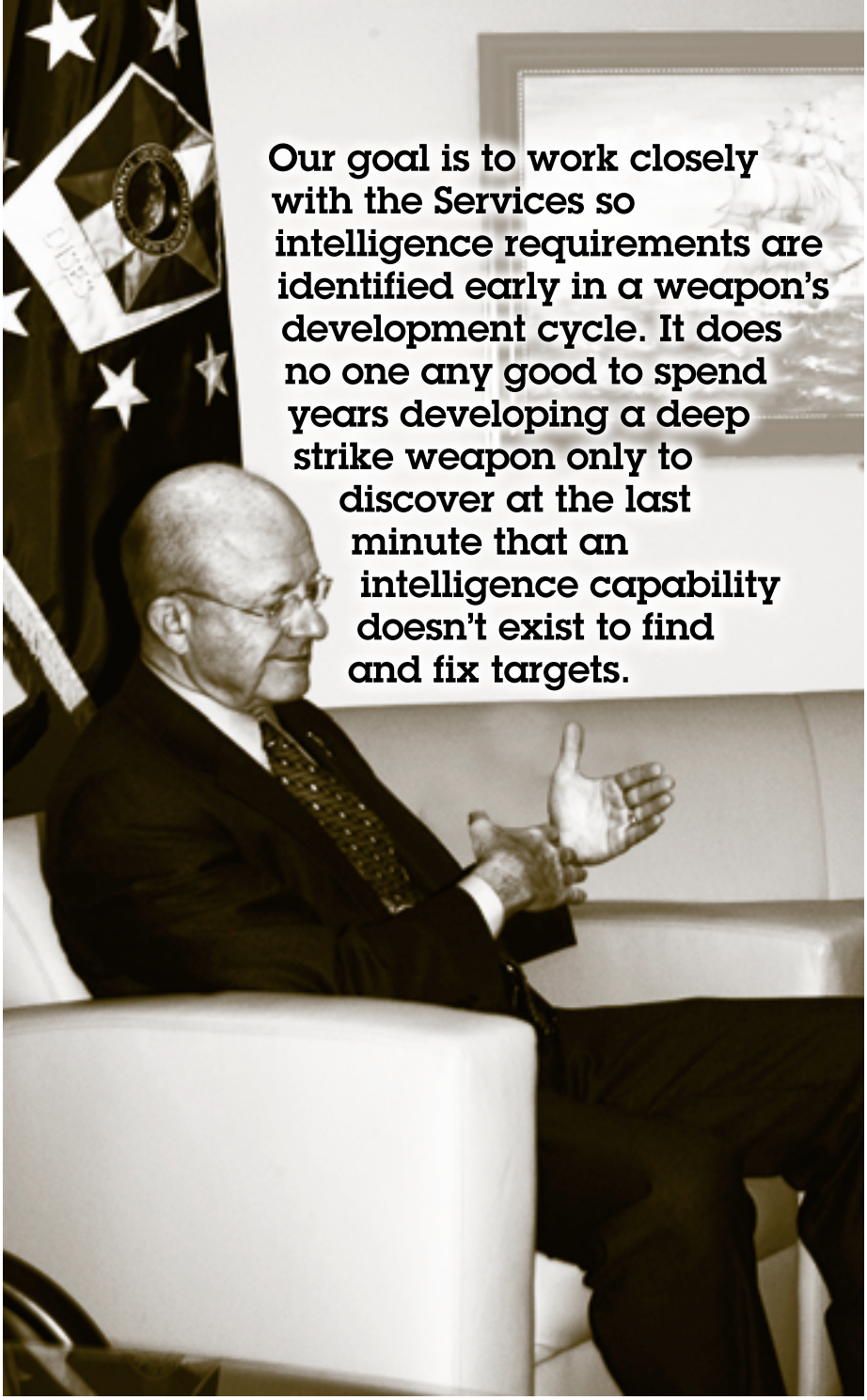
**Q:**
*With your surveillance activity, have you changed anything about the way you monitor your contracting activities?*

**A:**
No, we use the traditional methods. I think we've done what we can to expand our contracting office and to professionalize it as much as we can. It's under superb leadership right now. We do have an extensive internal education process. You have to be on guard constantly for conflict-of-interest violations and that sort of thing when you're working elbow to elbow and side by side with the contractors, as we are.

We try to instill a philosophy of teamwork between government and contractor as much as we possibly can, but even so, we still have to be sensitive to and mindful of our obligations to oversee what they do.

**Q:**
*The cooperation aspect of it is much more productive than a head banging.*

**A:**
Absolutely. Certainly my own personal attitude about contractors and contracting changed after I retired from ac-




tive duty and spent six years as a contractor working for three different companies that serviced the intelligence community. So that obviously has colored my attitude and philosophy about what contractors can and should do.

**Q:**
*To meet the needs of decision makers and warfighters in an accelerated timeframe, NGA has introduced advanced methods and products of its own such as the introduction of geospatial intelligence, or GEOINT. Can you tell us about some of the new initiatives that have taken place during your tenure, and any new capabilities you are delivering to the warfighter?*

**A:**
As one example, I think a major thing is automating products and services. I was the chief of Air Force Intelligence during Desert Shield and Desert Storm, and we have progressed a long way, I believe, in conveying intelligence in general to users. Our ability to move it has increased exponentially. So that's one factor. There will always be a need for hard-copy products, but to the extent that we can automate, convey this electronically, we're always going to be fighting laptop wars.

As increased communications bandwidth has been made available to us, we've attempted to maximize the technology, and we're able to move ever-greater amounts of data and imagery. In our case in particular, imagery has traditionally been a voracious bandwidth eater, and our ability to distribute it has increased tremendously.

Another change for this agency has been having representatives present in the forward area, working side-by-side with the customers we serve. We mounted up a substantial deployment for operations Enduring Freedom and Iraqi Freedom. This, I think, also pays big dividends: you have your representatives at the pointy end of the stick who are in the same time zone, enduring the same privation and same hazards, and who understand first-hand the requirements of the customer. They can and do reach back into the larger agency capabilities to provide that kind of support. So those are two things I think I'd cite. The technology improvements and what we do with respect to people representation.

**Q:**
*That feedback gives you some real-time methods of being able to change your products and services, too.*

**A:**
It makes the requirements process a lot more dynamic when you have specific needs for a specific product for a specific mission, let's say, which are invariably time-sensitive. When you have the capability to reach back and get it, that does improve things for the user.

**Q:**
*As the military's need for situational awareness grows, demand for NGA's products increases exponentially. For example, the Army's Future Combat System is expected to require substantial amounts of detailed geospatial intelligence. How are you collaborating with the Services to develop requirements for systems that NGA can support and sustain?*

**A:**
NGA is working across a broad front to ensure collaboration among the various agencies that exist in the Intelligence Community. This is especially true in our interaction with the military services.

We have NGA support teams, called NSTs, embedded with each of the Services. Our goal is to work closely with them so intelligence requirements are identified early in a weapon's development cycle. It does no one any good to spend years developing a deep strike weapon only to discover at the last minute that an intelligence capability doesn't exist to find and fix targets.

These efforts are changing the way people work. When analysts from different tradecrafts and Service backgrounds work together, they gain new perspectives through the insights provided by their disparate disciplines. This collaboration helps them to shorten and streamline the product development process, and it results in more complete and accurate information.

**Q:**
*A significant change since September 11 is that NGA's traditionally foreign-oriented products, services, and capabilities are now being applied to homeland security. Examples include assisting in surveying the World Trade Center site to determine the extent of the destruction, and providing geospatial assistance to the 2002 Winter Olympics in Utah. How is NGA responding to this additional strain on resources? What new skill sets and policies are necessary to turn NGA's efforts to domestic issues?*

**A:**
All NGA domestic activities are in response to specific and formal customer requests for support, and they undergo an intelligence oversight review by our policy and legal offices. The workforce skills and techniques that have served us so well in an overseas context for many years are the same ones we put to use supporting our domestic customers, who are always defined as a "lead federal agency."

NGA has an established and highly capable workforce of analysts and liaison personnel. Workload is distributed on a daily basis to cover the priority overseas and domestic issues, especially those in support of DHS—the Department of Homeland Security—the Defense Department, and NORTHCOM [*U.S. Northern Command*]. The primary daily focus is analyzing information, both classified and unclassified, to support customer requests for geospatial intelligence relative to such topics as critical infrastructure protection, vulnerabilities, security events, exercises, and disaster response.

One way NGA is reducing workload for domestic requirements is by funding the purchase of federal-wide licenses of critical infrastructure datasets. This helps us leverage our funds and provide information to as many people as possible at the same time. We are also collecting imagery and elevation data for the United States Geological Survey national map and customer data archives; providing mobile equipment at the Federal Emergency Management Agency and NORTHCOM to improve deployment capabilities; replicating data holdings at multiple NGA, DHS, and NORTHCOM sites for contingency operations; and funding contract support to data integration and Web-based access.

**Q:**
*The Future Intelligence Requirements Environment or FIRE system developed by NGA and currently still in early prototype stage, offers the ability to store and use data across multiple disciplines and agencies in an integrated fashion. Can you give us any insights into the system and its potential application for U.S. intelligence agencies?*

**A:**
One of my goals as the director of NGA and as the functional manager of the national system for geospatial-intelligence is to champion multi-intelligence collaboration.

FIRE will enable the intelligence community to work in this collaborative environment by providing the data and tools necessary to analyze our future ISR—intelligence, surveillance, and reconnaissance—processes and systems across the diverse intelligence disciplines. We need to be smarter in our design, acquisition, and operation of ISR systems in meeting the intelligence needs of the users; FIRE will help get us there.

The vision for FIRE is as a multi-intelligence database and simulator that will assess the effectiveness and synergy of current and postulated multi-INT concept of operations, collection strategies, systems, and architectures. FIRE will be different from previous ISR modeling tools in that it will consider multi-INT capabilities versus single-INT capability, using "knowledge gained" as the final measure of merit.

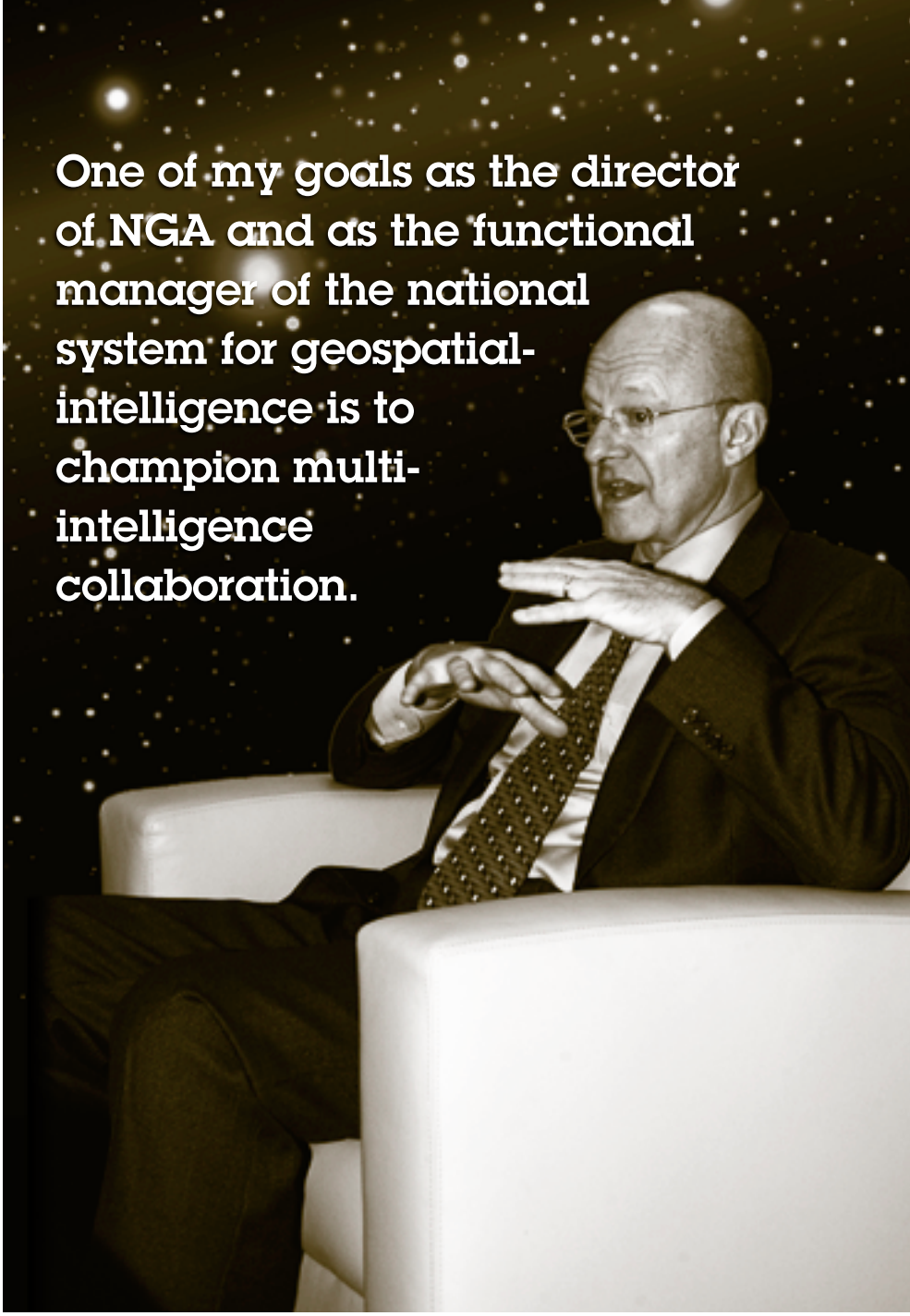
FIRE will allow us to break the paradigm of system utilization as a success measure and actually consider what information can be gleaned from multi-INT operations. It will help analyze the design and operation of integrated ISR architectures and answer age-old questions like "How should imagery, signals, and advanced geospatial intelli-

gence be employed as a whole rather than in parts?"

**Q:**
*Technology has enabled the collection of an unprecedented amount of information. Information overload affects people both inside and outside the intelligence community. A concern at NGA is the longstanding end balance between data collection and the ability to process, exploit, and disseminate intelligence. How does your agency cope with such large volumes of data, and what dissemination methods do you use to ferret out what's important?*

**A:**
This has been kind of a traditional challenge for us as a community: balancing the front-end collection with the back-end processing, exploitation, dissemination, posting, and all that.

What we are attempting to do comes under the general rubric of what we call convergence, meaning that we're striving for a universal, sensor-agnostic keypad architecture, tasking, processing, posting, exploitation, dissemination, all of that. As new collection capabilities come online, be they from space, be they governmental or commercial, be they airborne or any other sources, we want—with not so much trauma—to ingest and use the data and make them available to users electronically, much in the same way as you would do business on the Internet. That's the objective here, and it requires a robust keypad capability in order to do that.



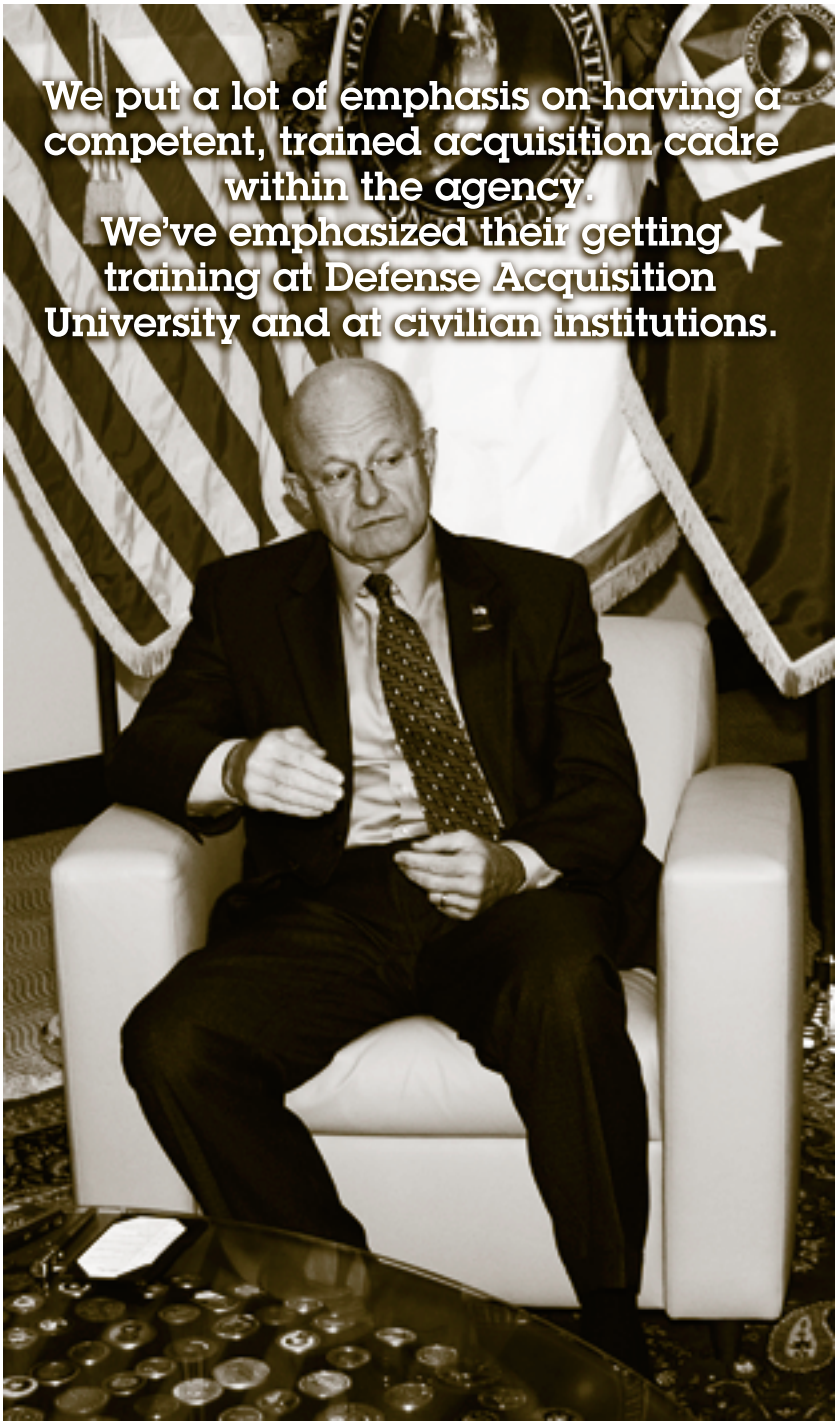

So the dissemination mechanisms, to the maximum extent possible, will emphasize electronic availability of our data whereby customers can come into our portal and sort of click to their hearts' content and extract the data that they need to build their own products. This is apart from classical hard copy—and believe me, there will always be a requirement for hard-copy mapping, charting, geodesy imagery products, particularly in the combat arms. So this is in addition to that, and it's up to us to populate those data to ensure they're as rich as possible.

Our approach is to build a geospatial-intelligence knowledge base, or GKB as we call it, populate it, and make it available to users at whatever security level they need it. Let them extract what they need, rather than our mailing it or shipping it to them.

**Q:**
*Is that part of what you've described as NGA's being the "populator of the grand knowledge map?"*

**A:**
The geospatial-intelligence knowledge base is the formal reference.

**Q:**
*Transformation plays a key role in defining the future of your organization. You've predicted that one result of transformation at NGA will be a "self-service" environment. Is*




*this part of the convergence you described? Can you give us an overview of what that might mean for your customers?*

**A:**
The self-service environment is a component of NGA's strategy for providing our geospatial intelligence products and services to our customers. What does all that mean? Think about how we use the Internet these days. We're all used to getting the information we need, when we need it, anytime and anywhere. We demand the ability to pull what we are interested in when we want it.

The self-service, one-stop access portal will make available to our customers the data, information, and tools they need to do what they want, anytime, anywhere.

As we deploy this information service, users will have browser-based Web access to all relevant NGA holdings and will be able to use the data in their environments without having to understand how we are organized, how we produce the geospatial-intelligence product, or where it is physically stored.

Implementing this service delivery concept will also free up our analysts to serve better those customers with unique analytical needs and enable us to devote more resources to deep, long-term analyses of our nation's most challenging problems.

**Q:**
*Are there any other initiatives or programs you'd like to share with* Defense AT&L *readers?*

**A:**
I think the major one that we're focusing on today is the issue of convergence. Instead of separate stovepiping keypad capabilities tied to a specific collection capability is the marriage or synthesis of all of that. In this day of automation, it's kind of all zeros and ones anyway. It's our view that the extent to which we can build a robust keypad and add new sensor capabilities as they come online to that infrastructure, either for volumetrics or additional functionality, will facilitate the provision and rapid dissemination of geospatial intelligence and do it a lot faster and more efficiently than we're able to do it today.

**Q:**
*And how can Defense Acquisition University better support the people and mission of NGA?*

**A:**
We put a lot of emphasis on having a competent, trained acquisition cadre within the agency. We've emphasized their getting training at Defense Acquisition University and at civilian institutions to get advanced degrees in acquisition. I don't really have any suggestions for you specifically, other than to keep doing what you're doing.

For more information on the National Geospatial-Intelligence Agency, go to <www.nga.mil>.

*Defense Acquisition Regulations System Directorate Launches*

# Online Resource for AT&L Workforce

The Defense Acquisition Regulations System (DARS) Directorate launched the first phase of Procedures, Guidance and Information (PGI), enabling the Department of Defense to more rapidly communicate internal administrative and procedural information to the acquisition workforce. As an online resource, PGI serves as a companion to the Defense Federal Acquisition Regulation Supplement (DFARS) to help acquisition professionals more effectively and efficiently do their jobs. Further, PGI will rapidly assist the acquisition community by providing DoD internal procedures and other information not requiring implementation in the formal regulation.

"The PGI site was actually born out of an initiative to redefine and better focus the content of DFARS," says Ron Poussard, deputy director of DARS. "However, it has really evolved into a solution for rapidly communicating DoD policy and guidance."

Historically, DFARS contained both mandatory and non-mandatory acquisition procedures, guidelines, and best practices. DoD recently decided the DFARS should focus only on:

- requirements of law
- DoD-wide policies
- delegations of Federal Acquisition Regulation (FAR) authorities
- deviations from FAR requirements and policies
- procedures having a significant effect beyond the internal operation of DoD
- procedures having a significant impact on the public.

## PGI Released in Two Phases

PGI will be fully implemented in two phases. The first phase primarily encompasses the non-regulatory coverage removed from the DFARS. In the future, DARS plans to rewrite PGI in non-regulatory language and to create additional content on specific topics of interest to users. The second phase adds:

- training resources
- supplemental background
- reference information to the Web site.

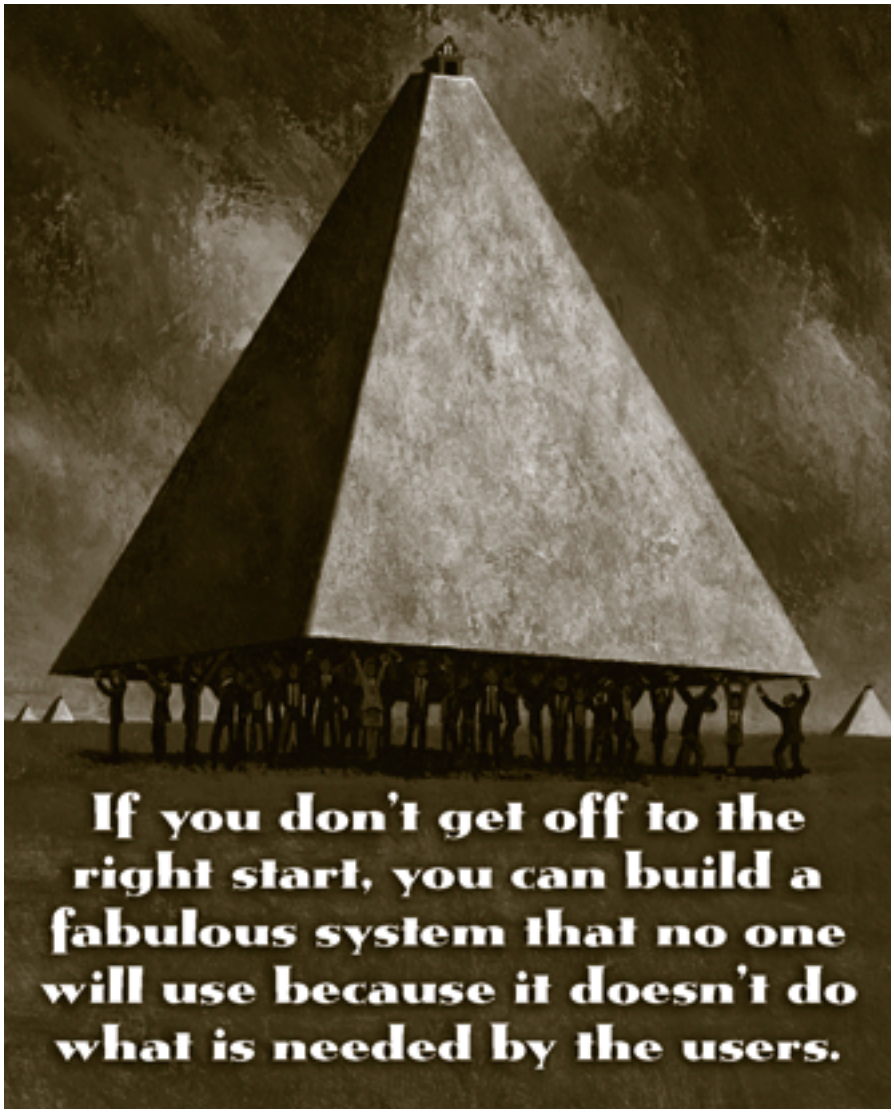
The initial installment of the site is now available on the Web at <http://www.acq.osd.mil/dpap/dars/pgi>.

# Requirements Management

## A Template For Success

*Wayne Turk*

What do you do when you have a process identified as a government best practice by the Government Accountability Office (GAO)? Why, revamp it of course. At least in the DoD Health Affairs TRICARE Management Activity (TMA) Information Management Division (IMD) you do because even a good process can be made better. But I am getting ahead of myself.




### The Information Management Challenge

Let's look at a little background information. DoD has to capture patient information for its 9 million beneficiaries. Data must be available for sharing 24/7 worldwide on a very mobile population that receives care in 75 hospitals, 461 medical clinics, 417 dental clinics, as well as forward-deployed medical units overseas. Information has to be timely and accurate for patient safety. And there are logistics data, pharmacy data, and insurance information that must be tracked—not to mention the myriad of other systems that must warehouse data, assist in decision making, provide back-office support, or help medical providers in other ways. This is a significant challenge.

To meet the challenge, IMD, using SRA International and other contractors, developed a world-class requirements management process in 2001—at least the GAO thought so and declared it a government best practice in 2003. The requirements management process is a critical part of the IT development process. The first step in the design and development of any IT system is requirements identification and definition. If you don't get off to the right start, you can build a fabulous system that no one will use because it doesn't do what is needed by the users. There is much more to a requirements management process than just identifying requirements. They must be refined, coordinated, validated, checked for feasibility, bundled, justified, funded, built to, tested to, and deployed in a usable system. The IMD process takes requirements up to and then overlaps the "build to" step. It only stops there because of the split between IM and IT in TMA.

Under James Reardon, the chief information officer, TMA initiated a bold experiment. The IM function was split off

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FIGURE 1. **Content of Capabilities Packages**

- Information manager lead
- Process owner
- Program office lead
- Functional sponsor
- Project manager
- Objective*
- Functional requirements (prioritized)
- Preliminary data standards analysis
- Strategic alignment
- Regulatory drivers*
- President's management agenda*
- Benefits
- Business process reengineering efforts*
- Business value *
- Operational impacts
- Information assurance
- Architecture and data standards
- Specific referenced policies/guidance
- Infrastructure impacts
- Project Life Cycle
- Life cycle issues
- Projected schedule
- Fiscal year XX to YY program office memorandum budget profile
- Risk assessment*
- Federal enterprise architecture*
- Business process activities
- Operational architecture summary

* Denotes sections also used in the OMB 3000

from the IT or program office function of acquisition and development. IM was made responsible for everything up to the point where requirements are turned over to the program offices to build or buy software to meet those requirements. IM personnel also stay involved in the development, testing, and deployment, but to only a minor degree. SRA International provided many of the primary functional analysts for support. This model has proven to be successful for TMA. But an IM versus IT model is not the point of this article.

## A Model for Success

An excellent example of the success of the requirements process is the Composite Health Care System II. CHCS II is a second-generation clinical system that serves as a complete electronic medical record. With CHCS II, DoD has a platform that supports worldwide access to centrally stored, computable data that extend medical providers' capacity to take better care of their patients. CHCS II is an enterprise-wide medical and dental clinical information system that provides secure online access to comprehensive health records. It also facilitates trend analysis activities and medical surveillance at the patient or population level. When CHCS II is demonstrated outside of DoD, those who see it—doctors, administrators, and others in the healthcare community—inevitably ask how they can get such a system for their own use. It is seen as far better than anything on the commercial market.

To end up with a system that is usable and will be used, end users have to be involved from the beginning. In CHCS II, it was healthcare providers who were involved. For the resource or back-office systems, it is hospital administrators. And so on and so on. The requirements are developed in integrated product teams. The IPTs consist of functional experts from the field and IMD, and SRA and other contractor support personnel, providing a mix of functional and technical experts who ensure that the requirements are right, comprehensive, meet the standards of good requirements, and can be translated into systems by developers. The IPTs identify what they feel are all of the requirements. Admittedly some of these don't make it into the final systems because of financial or technical constraints, but any requirements not included are maintained and may be developed later or added as enhancements as they become technically or fiscally feasible.

## A Key Element: The Portfolio Process

One large and important subprocess of the overall requirements management process is the portfolio process created by SRA to support IMD. Various related requirements are bundled together in packages. These capabilities packages are the basis of modules for systems or, in some cases, complete systems. The packages contain a significant amount of information, much of which is also used in other documents, primarily the OMB 300. The package is updated annually and is used for, among other things, the basis for determining funding priorities. Package input comes from both IMD and the program office that will be in charge of development or the purchase of commercial-off-the shelf software to meet the identified requirements. The contents of each package can be seen in Figure 1.

Sections vary from a single name, to check boxes, to tables, to text, to referenced documents that are not normally included. The program office memorandum entries and schedule, for example, are tables; the functional requirements are bulleted text entries. A few sections, such as information assurance and architecture and data standards, are the same for all packages and reference documents available in other places. If new sections are identified, they are added as needed.

## The Requirements Management Process

From a very simplistic viewpoint, requirements management is a four-step process Each step varies in the time and effort required, as well as who actually accomplishes the work.

### Step 1: Identification and clarification

Submissions containing new requirements or change requests come from users, the Services, functional organizations, or internal sources.

### Step 2: Feasibility assessment

Submissions are reviewed and validated by subject matter experts, a life cycle cost estimate is requested, and they are added to the portfolio.

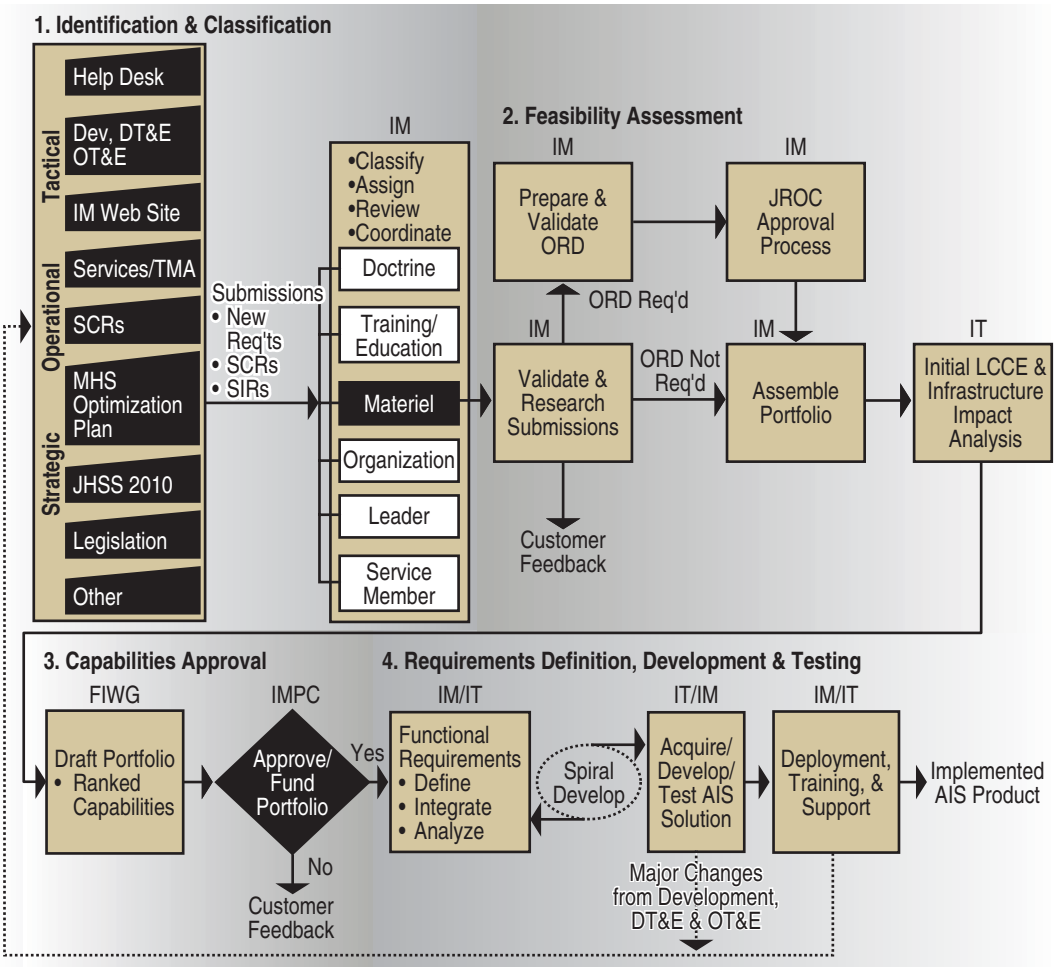
### Step 3: Capabilities approval

The requirements are prioritized and reviewed by the group that determines funding priorities and funding approval. After further review by a resources management group, high-level requirements are expanded into detailed requirements suitable for development/acquisition.

### Step 4: Requirements definition, development, and testing.

Detailed requirements are then moved into the spiral development or acquisition process. Feedback is coordinated throughout the process to ensure that what's going to be provided to the user is what's really needed.

FIGURE 2. **Operational View of the Requirements Management Process**




The real-life process is significantly more complex, as demonstrated by Figure 2, which shows the full process and who is responsible for each step.

This was the process deemed a government best practice by the GAO. It continues to be used because it works, but it is constantly being tweaked to improve it. The primary results of the process can be summed up as providing:

- Good, understandable requirements
- Buildable, usable systems
- Lower costs and shorter schedules to field systems
- User satisfaction
- A better military health system for the beneficiaries.

As seen in Figure 2, the process can became fairly complex and bureaucratic. IM has managed to keep it reasonably simple in practice. This article cannot present all of the detailed steps and procedures associated with the project, since each project would need to change the procedures to meet the organizational structure, culture, and needs. This is presented just to show how it is done successfully in one organization.

## The Tracking Tool

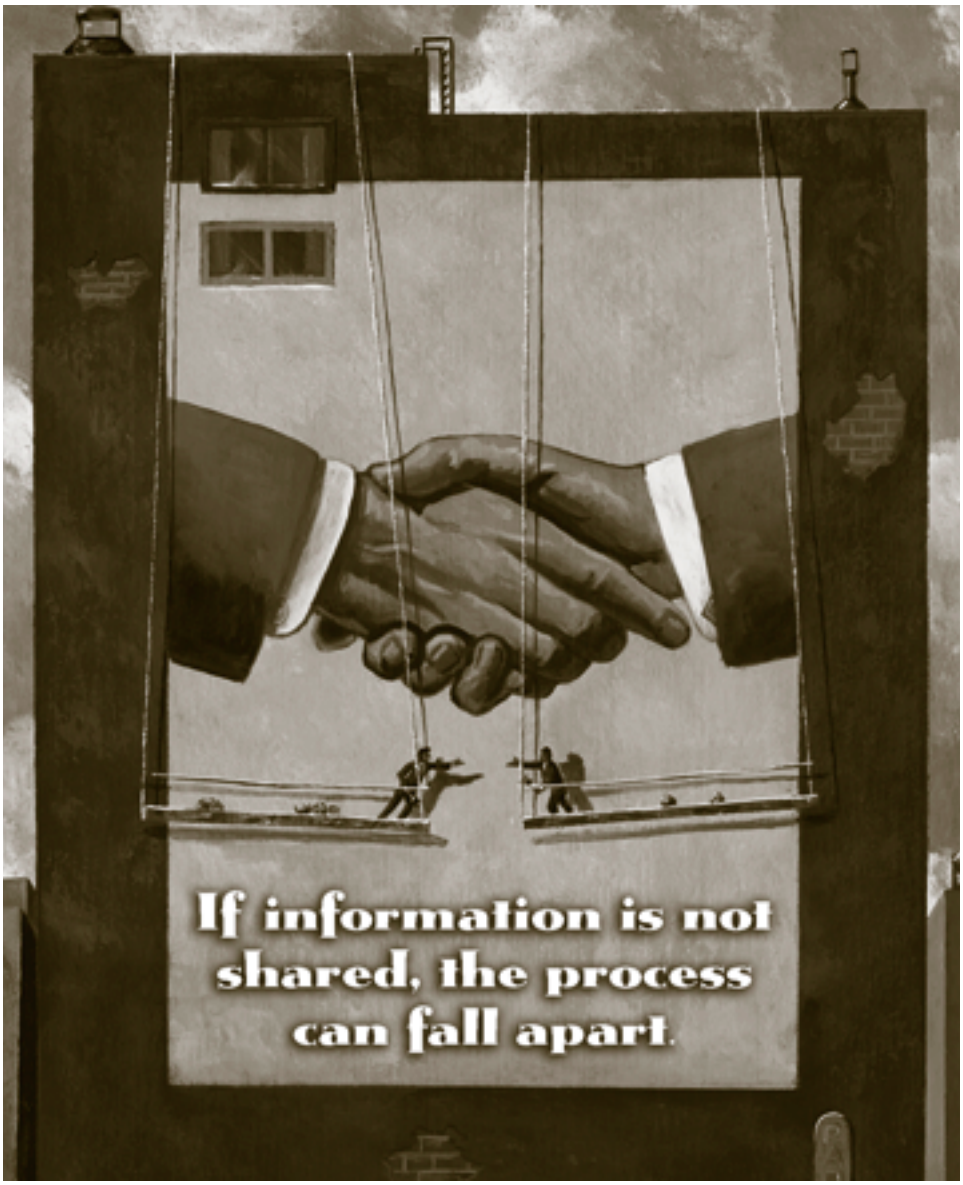
Not to be confused with Windows®, DOORS—Dynamic Object Oriented Requirements System—is a tool for tracking requirements from the initial identification through deployment. There are many other tools out there that can serve this function, but DOORS was selected because it met the needs of the IM and the military health system. Your organization may want to look at what tool is the best to meet your needs. While DOORS is not the most user-friendly system in the world, it has significant capabilities. It allows identification and tracking throughout the process and can provide an audit trail of all changes, who made them, and when they were made. It provides the capability to sort in a number of ways and print out what is needed. It can be integrated with Microsoft® Word or Excel to provide documents and reports. A tool is needed for tracking the requirements. Excel would probably work for a small project, but for a large and complex program with hundreds or thousands of requirements, a tool custom designed for requirements tracking is needed.

## Some Lessons Learned

As I mentioned in the beginning, the process is constantly being changed—or rather, it is being tweaked to make it

even better and to correct some minor problems. The following are a few of the lessons learned that might benefit another organization or program. I have omitted a number of lessons particular to the DoD healthcare environment that might not translate well to other organizations.

- The division of IM and IT makes communication critical. If information is not shared, especially the changes to requirements in the development stage, the process can fall apart. The final product might not meet the original requirements and no one knows why.
- There cannot be an "us/them" mentality. Everyone is in the process together; that goes for users, requirements people, developers, people who assign/monitor the funds, those deploying the system, and the senior decision makers.
- Priorities and status of requirements should be monitored and updated regularly.
- Costing must be done early and as accurately as possible. This can change the priority of a requirement. Cost/benefit analyses can be critical in determining which requirements are met when. In fact, moving the costing up in the process flow is one of the recent changes in progress.
- Keep both current and historical records of all of the requirements. Many times "old" requirements resurface. If they are tracked, managers know what has been considered before.
- Give someone or some group the responsibility for reviewing requirements for overlap. If the same or very similar requirements are submitted for two systems or different modules of a system, determine if one can meet the requirement and share the data with the other.
- Use a requirements management tool, and try to set it up to give you the information that you need from the beginning. Keep it current.
- When requirements are presented for funding, they must be graded/prioritized objectively. That is sometimes extremely difficult. To accomplish this in TMA, standard briefing templates are used. Also, scoring criteria are determined in advance and shared with those responsible for briefing. Finally, the group doing the scoring is made up of representatives from all of the Services and organizations affected.
- Be willing to adjust the process as the environment changes. If some part of the process doesn't work, modify it, and keep trying until the process works for you.




## A Starting Point

Requirements management is a critical part of the development process, not only for software, but for all products. The template presented here is constantly changing, being tweaked for improvement. However, since it would have to be adjusted for any project or program, it can, nonetheless, be considered a good starting point; and using it as the basis on which to mold your own is one proven way of achieving success.

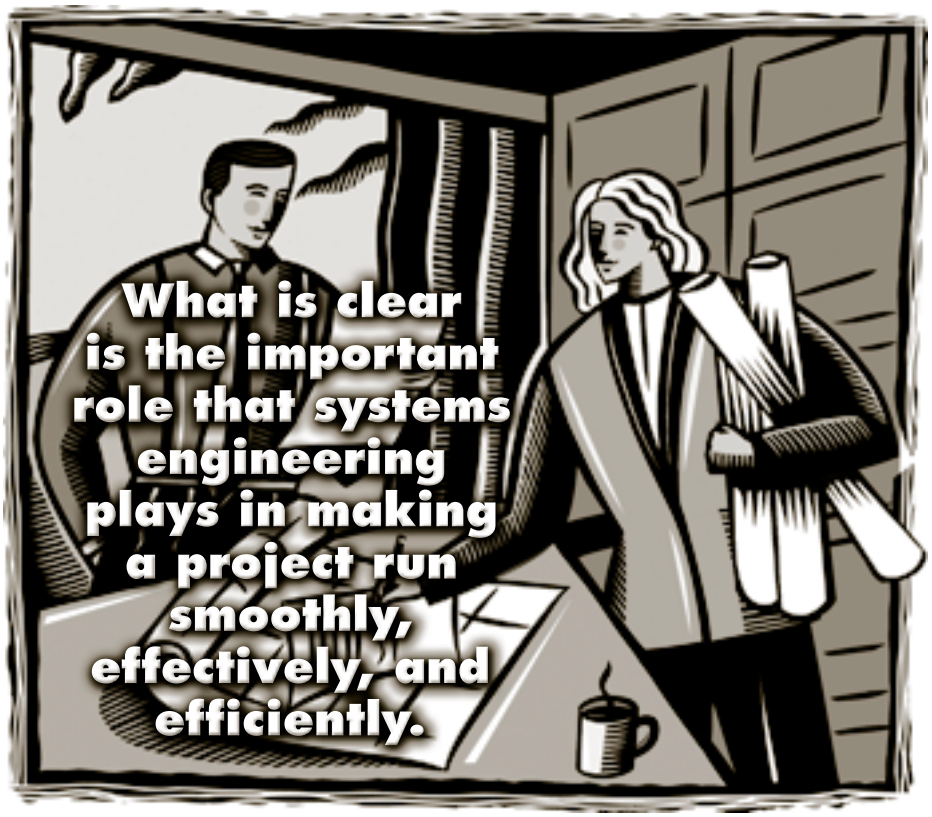
The author welcomes questions and comments. He can be contacted at wayne.turk@sra.com.

# Revitalization of Systems Engineering in DoD

## Implications to Product Cost Control

*Michael W. Wynne* with *Mark D. Schaeffer*

Many systems approaching an acquisition milestone review come before the Defense Acquisition Board (DAB) without demonstrating sound management practices firmly based in systems engineering. Our analyses of a sampling of major acquisition programs show a definite linkage between escalating costs and the ineffective application of systems engineering. It is clear to me that our budgets are only going to become tighter, public scrutiny is only going to become stronger, and demands for our services are only going to come faster.




### Making Revitalization a Priority

Consequently, we've made the revitalization of systems engineering a priority within the U.S. Department of Defense. We have taken the first steps to reinvigorate policy, guidance, education, and training, as well as to develop program support and outreach. We expect to see a reduction in acquisition risk, which ultimately translates to improved product cost control over the entire life cycle.

Our primary goal is to re-establish DoD's systems engineering prowess and to let that expertise flow down to our industry. We will accomplish this through systemic, effective use of systems engineering as a key acquisition management planning and oversight tool. In addition, we will promote systems engineering training and best practices among our acquisition professionals.

### Policy Shows Way

In our review of existing systems engineering policy, we identified specific gaps in policy that required immediate attention. In my Feb. 20, 2004, policy memorandum, I directed that:

> *All programs responding to a capabilities or requirements document, regardless of acquisition category, shall apply a robust systems engineering approach that balances total system performance and total ownership costs within the family-of-systems, systems-of-systems context. Programs shall develop a Systems Engineering Plan (SEP) for Milestone Decision Authority (MDA) approval in conjunction with each Milestone review, and integrated with the Acquisition Strategy. This plan shall describe the program's overall technical approach, including processes, resources, metrics, and applicable performance incentives.*

**Wynne** *is the acting under secretary of defense for acquisition, technology and logistics.* **Schaeffer** *serves in a dual capacity as the principal deputy, defense systems, and as the director, systems engineering in the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics.*

With this policy, we have established the SEP as the cornerstone of the systems engineering revitalization effort. "Early and persistent systems engineering" is a theme now emphasized by policy; and the SEP, mandated at a program's earliest milestone decision, does just that. For systems coming before the Office of Secretary of Defense (OSD) DAB review, the OSD staff is responsible for providing an assessment of readiness based on the program's achievements against the planned activities documented in the SEP.

On Oct. 22, I issued an addendum to this policy, focusing on two aspects. First, I directed each program executive officer or equivalent entity to revitalize systems engineering. Each must have a chief systems engineer who will review assigned programs' SEPs, oversee the SEP implementation, and assess the performance of subordinate chief systems engineers. Next, I demanded further rigor in the procedures for technical reviews: reviews must be event-driven, instead of schedule-driven. In other words, reviews should be conducted when the system meets review entrance criteria as documented in the SEP. Additionally, unless waived by the SEP approval authority, reviews must include participation by subject matter experts independent of the program.

## Guidance Provides Reinforcement

The policy has been reinforced by explicit guidance from my systems engineering flag bearers. Mark D. Schaeffer and Dr. Glenn Lamartin, director of defense systems (DS), have emphasized that the SEP should convey the core information needed to understand the systems engineering approach planned for a program and how that approach is integrated with the overall program management activities, including risk management, contract management, and financial management. The SEP should answer the following questions:

- What are the technical issues?
- Who has responsibility and authority for managing the technical issues?
- What processes and tools will be used to address the technical issues?
- How will that process be managed and controlled?
- How is that technical effort linked to the overall management of the program?

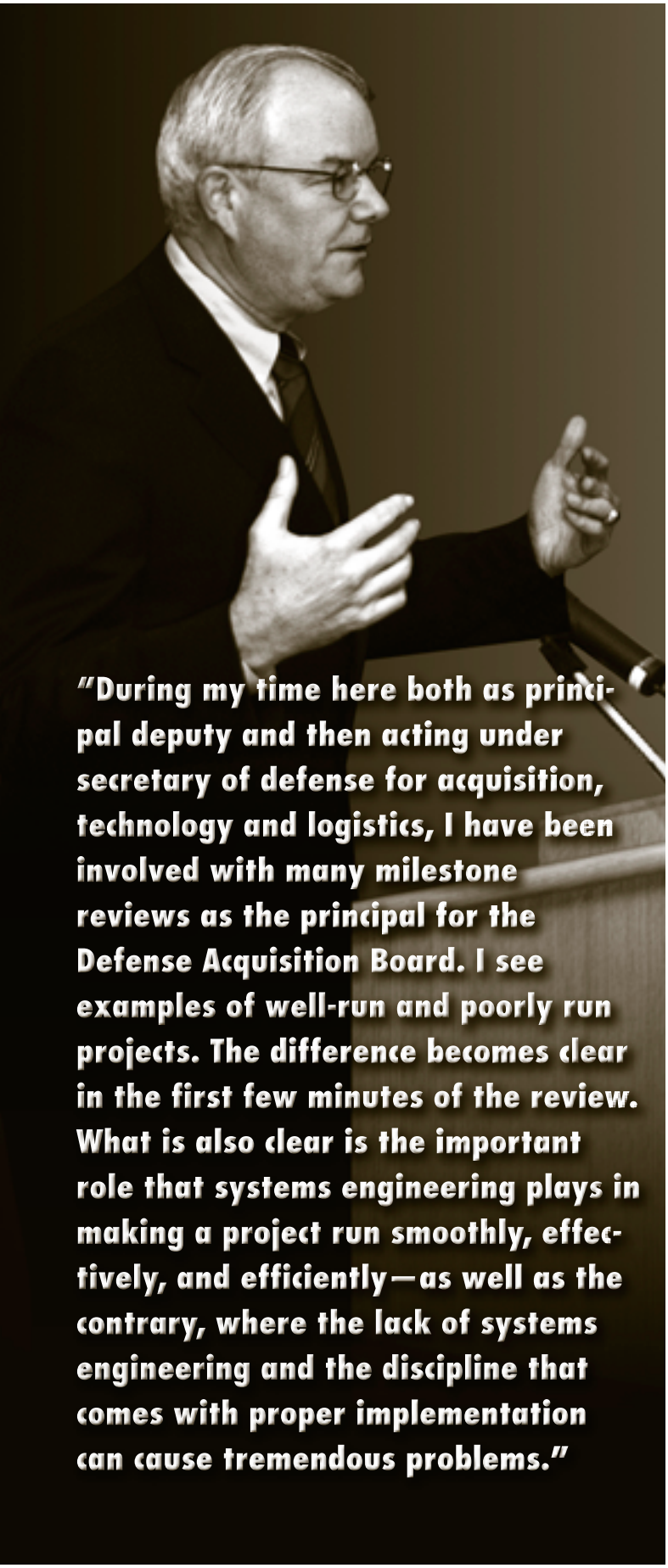
Guidance documents recently released include the DS interim guidance memorandum (March 30, 2004); a systems engineering chapter in the new *Defense Acquisition Guidebook* <http://akss.dau.mil/dag/>; and the *SEP Preparation Guide* <www.acq.osd.mil/ds/se/publications.htm>. These documents emphasize the changes in the Department's approach to systems engineering, which specifically addresses:

- SEP purpose, contents, use, integration with other program documents
- Phased systems engineering activities with new emphasis on pre-Milestone A and post-Milestone C systems engineering processes
- Systems engineering leadership from senior technical leaders in a component down to technical staff on a program
- Event-driven technical reviews' timing, critical questions to be answered, participation by technical experts from outside the program (i.e., peer review).

## Emphasis on Systems Engineering Overdue

"Early and persistent" is our clear message, and it is reflected in these documents. We believe that the earlier in a program's life cycle that requirements are intensively managed by the systems engineering processes, the greater the likelihood that the program's cost and schedule estimates will be on target. And when these steps are documented in a SEP, the program will be supported by quantified technical data that can be scrutinized in a program's technical reviews.

We have reviewed many cases where programs have not delivered as promised. These programs failed to conduct the required systems engineering analyses before setting requirements, and the programs were prematurely launched. Gaps between resources and requirements were not discovered until well into product development. Many programs trace their rising costs and lagging schedules to requirements-based problems such as poor program definition, lack




of traceable allocations, and incomplete or weak verifications.

Our studies show that in cases where programs were started with requirements that exceeded resources, costs increased from 55 percent to nearly 200 percent, and schedule delays jumped an estimated 25 percent. Early application of systems engineering will give DoD's top decision makers the necessary confidence in a program's ability to define and match technical requirements with resources—in other words, to stay on budget and on schedule—and to define, understand, and manage program risk.

In addition, several programs we reviewed had completed less than 26 percent of their engineering drawings prior to their critical design reviews. These programs experienced cost overruns from 23 to 182 percent and schedule delays of 18 months to more than three years. Contrast this with commercial firms that typically have more than 90 percent of engineering drawings available prior to a critical design review.

These facts clearly show that our renewed emphasis on systems engineering and the concomitant technical review planning and conduct are way overdue. Technical reviews, particularly with peer participation from outside a program office, are more likely to identify immature technologies and proscribe intensive risk mitigation and technology maturation efforts before a "fragile" technology becomes disruptive. We have found programs that were at low maturity levels, and yet the acquisition program was launched despite a significant gap between technology maturity and weapon system requirements. For example, in one program this gap was not closed until well into the development, and problems with technologies were a main contributor to the program's 88 percent cost overrun and 62 percent jump in schedule.

### Education and Training Updated and Expanded

Policy and guidance need reinforcement throughout the extended acquisition workforce. We are introducing a number of changes that will re-emphasize the teaching of sound technical program management. The formal training available for our acquisition workforce will soon include a new introductory course in systems engineering, and the intermediate and advanced systems engineering courses are getting substantial revision.

Defense Systems, along with the Defense Acquisition University, is designing this new introductory course to address basic systems engineering processes and their relationship to other acquisition and program management processes. Intermediate and advanced

systems engineering courses are undergoing revision to reflect the new policy and guidance. In addition, they are refocusing on application of systems engineering processes by life cycle phase, as well as on systems engineering leadership and technical program management.

These formal courses are enhanced by a number of new online continuous learning modular courses. This year, we introduced two new ones: Reliability and Maintainability and Technical Reviews, both accessible from <www.dau.mil/>; a third, System Safety, is in development.

Key to the successful implementation of systems engineering is the relationship between program management, contract management, and financial management. It is vital that program managers, contracting personnel, and finance personnel understand that effective "early and persistent" application of systems engineering contributes to program success. Thus, we are also working with DAU to make sure that the acquisition, program management, contract management, and financial management curricula answer the question, "Why systems engineering?"

## Outreach and Partnerships Essential

We are reaching out with program support in two key areas. First, we are changing the way we conduct program reviews. We have developed a tailorable common assessment process methodology that serves two purposes. One, it provides systems engineering support to program managers at their request. Two, it supports the DoD's decision makers prior to milestone reviews by providing a context for technical decisions on individual programs. Early results from these program assessments indicate that most of the issues could have been avoided through rigorous systems engineering improvements. Program offices have overwhelmingly accepted the recommendations made to date, resulting in lower program risk and added cost savings. We will continue to drive sound systems engineering into programs through our reviews.

Next, we are reaching out and supporting our programs with a Systems Engineering Forum, first convened in April 2004. Meeting almost monthly, the forum provides a venue for planning and discussing the Department's systems engineering initiatives. This gives members from across DoD and other government acquisition agencies the opportunity to share ideas at the senior executive level.

Systems engineering reinvigoration would not be complete without strong industry involvement. Among the most active of our external partners is the National Defense Industrial Association. The NDIA Systems Engineering Division has the mission "To promote the widespread use of systems engineering in the DoD acquisition process in order to achieve affordable and supportable weapon systems that meet the needs of the military users, and to provide a forum for the open exchange between government and industry to trade ideas and concepts, and develop a new understanding of a streamlined process."

Members come from across the full range of the defense contractor community, from largest systems integrators to smallest small businesses. We work with industry associations such as NDIA to share ideas, concerns, and best practices. We join with them in annual conferences, special-topic forums, and fact-finding reports. Partnering in systems engineering reinvigoration with industry is a key to program success. We believe program offices must set expectations regarding the sound application of systems engineering and work with contractors to comply with our new expectations. So far, we have had a positive response from our industry partners.

## From Unique to the Norm

The goal of systems engineering is to see problems on the horizon so we can address them before they hit and potentially destroy a program. We will need everyone—at DoD and in industry—to drive systems engineering back into acquisition programs. It will be up to each and every one of you to implement our new policy and guidelines, as well as to apply the guidance appropriately to your program.

You are the people in the trenches. You are the people who will be held accountable. And you are the people who can make or break a program.

Just in case you were wondering how I define program success. Let me give you a wonderful example: Aegis Ballistic Missile Defense Long Range Surveillance and Track Development and Deployment Team.

The team fully embraced systems engineering by successfully integrating a new capability into the Aegis weapon system that detects and tracks both long-range and intermediate-range ballistic missiles. The system then reports that information to the nation's ballistic missile defense system. This was not a simple achievement. It was a Herculean effort made possible through a sound, disciplined systems engineering approach. It should come as no surprise to you that the Aegis Team was the 2004 winner of the Team NDIA Systems Engineering Award. That is what I expect from *all* our programs. I want to see that practice go from being unique to being the norm.

Comments and questions should be addressed to atl-ed@osd.mil.

# Team Osprey Redefines Training

*John Walsh ▪ Louis A. Kratz*

Improving the way that training development is integrated into the life cycle of a weapons platform is a much needed acquisition reform. Training is, unfortunately, often the first subprogram to be suggested when program managers look to reduce costs. From an organizational perspective, training managers are rarely at a level of parity with systems engineering and other subprogram offices.

The V-22 Osprey tilt-rotor aircraft, whose variants will enter service with the Marine Corps, Navy, and Air Force Special Operations community later this decade, is being supported by a transformational program that has elevated training to a level of equity within the organizational structure and made other reforms to increase the effectiveness and visibility of training within the program.

## From Tragedy to Transformation

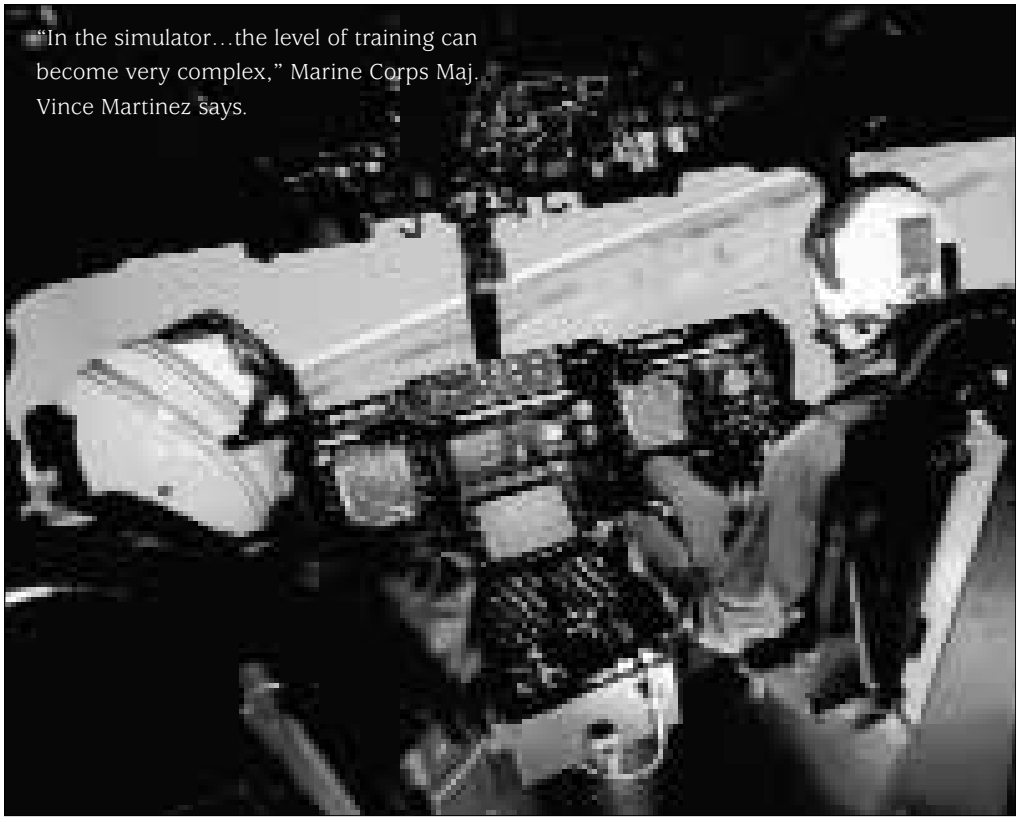
The V-22 program has faced difficult challenges. In December 2000, just as the program approached the decision to enter full-rate production, one of the test aircraft experienced a fatal and very public accident during a routine training mission. The fleet was grounded and two independent assessments were chartered—the Panel to Review the V-22 Program (DoD Blue Ribbon Panel) and a NASA Ames Research Center Review.

Although each assessment recommended, independently, that the program move forward, specific engineering changes and improvements were needed. Indeed, while the Blue Ribbon Panel concluded that pilot training was adequate, it also opined that "historical precedent suggests that funding may not remain stable throughout upcoming budget cycles" and recommended that adequate funding be provided for aircrew ground training, aircraft simulators, and upgrades to training devices.

The V-22 program office accepted this and other recommendations, conducted a rigorous analysis in training and other missions, and recast the way it operates, creating a new program—unique in many ways, including the transformational redesign of the complete Osprey training system.

With strong leadership, tragic events can become the impetus for success. This seems to have been the case for the V-22. A fleet of nine test aircraft logged more than 1,300 flight hours to complete developmental testing and begin the follow-on operational evaluation phase in January 2005.

The transformation was achieved not through some exotic technology, but through a rigorous application of long-known but sometimes-forgotten training and acquisition principles. Strict adherence to instructional system design has allowed training tasks to be allocated to the classroom, the simulator, and the live-fly aircraft in a way that



"In the simulator…the level of training can become very complex," Marine Corps Maj. Vince Martinez says.

**Walsh** *is deputy director, readiness and training, policy and programs, Office of the Deputy Under Secretary of Defense (Readiness).* **Kratz** *is the assistant deputy under secretary of defense (logistics, plans and programs) in the Office of the Deputy Under Secretary of Defense (Logistics and Materiel Readiness).*



Photography courtesy Flight Safety International

will save over $1 billion in training aircraft costs. A real partnership between business and government, combined with an open mind to commercial off-the-shelf (COTS) products and other technology innovations, has enabled all training products to be delivered on time, on cost, and before the primary system, so the initial crew training is on the training system, not in the factory.

**With strong leadership, tragic events can become the impetus for success.**

### Focus on the Warfighter

"By making the training system the first priority for program funding, we are doing something that no other major acquisition programs are doing that I am aware of," says retired Marine Corps Lt. Col. Ken Fancher, the former V-22 training systems manager.

State-of-the-art glass cockpit technology permits the program to make the leap from early 1960 era to latest technology. Higher-fidelity visuals, motion and other flight simulator subsystems, and other innovations also help. Osprey accession pilots accomplish more than 50 percent of their training in a ground-based environment. This compares with a 5 percent ground-based training percentage for the venerable CH-46 helicopter. "This is a transformation of Marine Corps aviation," Fancher says. Other transformational aspects are evident throughout the program.

In legacy acquisition programs, the warfighter defines training requirements and passes them to the Service acquisition team and the contractor to build trainers and other products. The Osprey team relies on regular warfighter participation throughout the development process to build the training system. "What this means is that at this and every other critical decision point, the warfighter is part of the decision. For every trade-off we discuss, the warfighter weighs in with a perspective," Ward Carroll, V-22 spokesman, says.

This focus on warfighter participation allowed the up-front analysis to be completed as envisioned. Early user inputs in the curriculum process included:

- Defining every pilot and aircrew training task
- Determining the level of proficiency at which each task must be conducted
- Specifying how often each task must be trained.

It is the V-22's end user who defines success (i.e., effectiveness of a training device) for the training continuum. "In previous acquisition models, all of the groups—the training device managers, classroom instructors and others—defined success separately," Osprey program analyst Robert Cox says. "In the V-22 training model, there is only one person who defines success—the user. If the training system change does not meet the user's need, another change will be submitted and will be passed through the requirements process."

### Reducing Training Costs

The V-22's training systems approach is expected to yield dividends for Marine Corps aviation. The Osprey team projects that by optimizing simulators to complete up to 75 percent of 100-level training at the Fleet Replacement Squadron (FRS), the number of MV-22 aircraft marked for training can be reduced from 40 to 20. "This is about $1.2 billion in cost avoidance from not buying 20 additional training aircraft—not a small sum," Cox points out.

Cox reiterates that for any other Corps aviation program to reduce flight hours and realize similar efficiencies, it would need a V-22-like training system that would include not only high-fidelity simulators, but also effective courseware and other components.

The program is looking to obtain similar savings through the increased use of simulation at 200- and 300-level FRS training, with plans that include the use of simulators for 50 percent of that training.

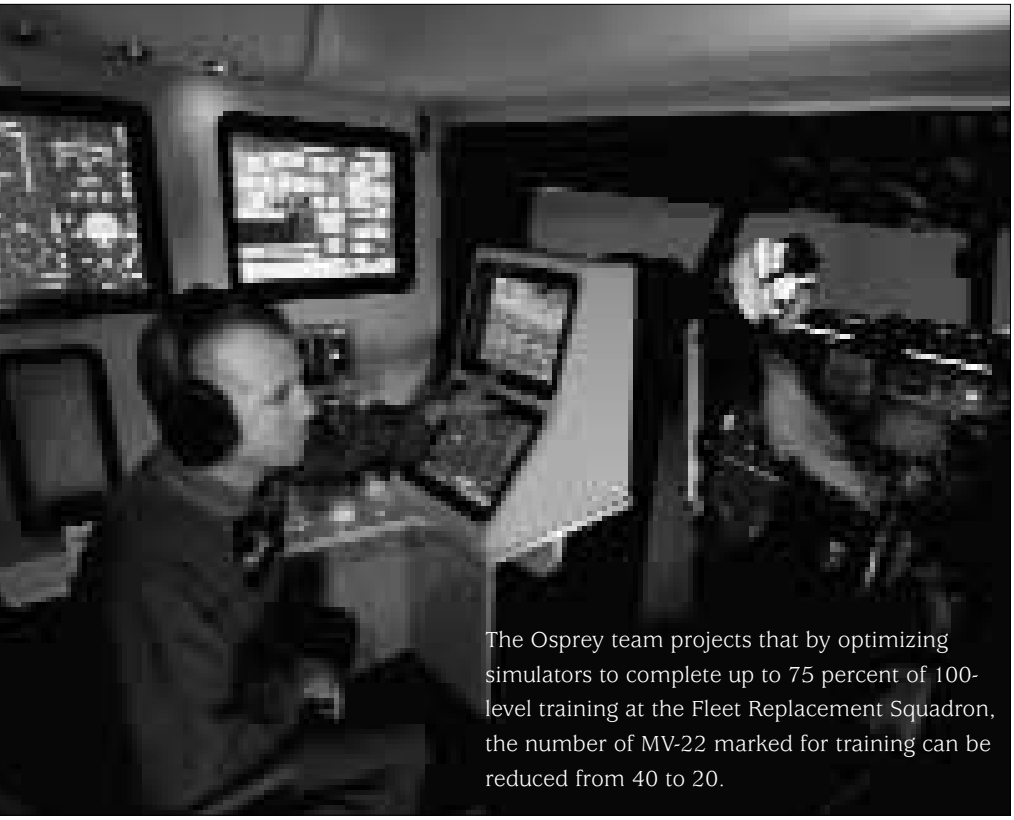
Other data are also impressive. The program's effort to deliver its training products better, faster, and cheaper enables it, in part, to train a 100-level FRS student for $450,000. Comparable per-student training costs for other programs are CH-53E Sea Stallion helicopter ($980,000) and F-18C Hornet ($1.8 million).

### Delivering Increased Effectiveness

In addition to cutting training costs, the Osprey team is looking to achieve other measures of effectiveness to help shape tomorrow's aviation community.

Legacy weapon platform programs have a track record of belatedly incorporating their latest hardware and software system changes into training devices. As a result, changes to tactics, lessons learned, and engineering plans are seldom integrated into training devices in a timely manner. "Training systems lag grossly behind the aircraft—by an average of two years. As a result, you often have training devices that are not relevant," Cox says.

The V-22 program is determined to integrate platform changes more efficiently into program devices. "If we are



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spending $25 million for a simulator, it will become a door stop in a few years if it's not kept current," according to Deborah Paris, Osprey training concurrency manager, whose team monitors platform changes after the training device is delivered.

One acquisition strategy that helps to correct this disconnect is to optimize COTS technology in training devices. For example, with the exception of the cockpit, 100 percent of the MV-22 full flight mission simulator hardware is COTS. This plan also enabled the program's seventh training device to be delivered under budget and ahead of schedule.

Since 2000, Team Osprey has also involved the aircraft configuration management team in the concurrency process. V-22 maintenance and flight training devices are Block A-concurrent—matching the huge change that has been made to the aircraft since the December 2000 pause in the testing program. As a result, aircrews have trained in Block-A-type simulators since June 2003—*before* the actual aircraft were delivered in November of that year! This outcome was made possible thanks to the of the program's priority to fund training systems.

**Training systems lag grossly behind the aircraft—by an average of two years. As a result, you often have training devices that are not relevant.**

## The End-User Connection

The training concurrency integrated product team, a V-22 curriculum working group, and other program teams include the users, the acquisition community, and industry team members. The end users are objectively asked whether to incorporate change inputs, including those that originate from aircraft modifications, the curriculum, the users themselves, and other sources.

The program uses its instructional systems design to produce the master task list, which represents "training objectives, all of the tasks, learning objectives, and everything else that has to do with training," Paris says, adding that this part of the process allows the team "to run a change through the master task list and get an objective point of view." The training concurrency integration process evaluates where in the training system a change needs to be inserted, whether in a simulator, a training device, or another component. One envisioned outcome is to help the program to establish all training and associated costs at the front part of the budget planning cycle.

Paris summarizes her integrated product team's efforts: "That's what we are doing at this time—going through the policy and procedures to prove the concept of whether we can incorporate all of the program's changes into our training concurrency model." To successfully meet this goal, her team maintains a close working relationship with Marine Corps Training and Education Command, Quantico, Va., and other Service offices.

Another projected outcome of the IPT's efforts will be to reduce the time to integrate a change submitted by the user into a training system. Through focused efforts, the V-22 program office wants any change routinely made in 48 hours. "We want to get to the point where, if we wanted to submit a change, we would know how many pages of interactive multimedia instruction are affected," Paris says. And it follows, she adds, that if training devices are concurrent and have commonality with the supported

aircraft, the pilots will want to train with those systems.

Marine Corps Maj. Vince Martinez, assigned to VMX-22 at Marine Corps Air Station New River, N.C., summarizes the fidelity of a V-22 Full-Flight Simulator and the benefits of training in a state-of-the-art environment: "While it is very hard to make any simulator absolutely realistic, with the high fidelity FFSs that we currently have, it is possible to generate tactical scenarios with networked devices that provide very realistic training. If I network a training mission with two devices and two sets of pilots, and the second aircraft is flying off a lead aircraft in virtual space, or if the lead aircrew turns early or misses a checkpoint on a route, they are forced to react to the mistake the same way they would in the actual aircraft."

**PMs must effectively communicate any problems with the warfighters and the acquisition chain of command before the leadership reads about them in a morning paper.**

Martinez continues, "In the simulator we can add night vision goggles or forward looking infra-red devices, reduce light levels, or add the weather to obscure the visual cues, and then introduce threat that can 'shoot' them out of the sky. The level of training can become very complex." He adds that the realism is not just a product of the simulator itself, "but rather, it's in the fact that I can tax the pilot's decision cycle and keep him reacting to things external to his aircraft. This is a significant shift from the cockpit procedures trainer mentality that has typically been associated with aircraft simulators."

## Lessons Learned

Fancher says that DoD Directive 5000.1 (The Defense Acquisition System) and DoD Instruction 5000.2 (Operation of the Defense Acquisition System) "give me, as a program manager, a lot more guidance in terms of my responsibility for the entire life cycle of this training system." This is a monumental change in how the Defense Department's training systems have been managed. "In the past, program managers concentrated on putting their hardware on the concrete on cost and on schedule, and then leaving it—they were done and left the follow-on work for the type commander," Fancher reflects. Now the entire life cycle, including keeping the device current with the supported aircraft, is important, he adds.

Asked what lessons learned from his V-22 program experience he would provide to a Defense Acquisition University PM course, Fancher replies that teamwork is at the top of his list. "A lot of people in other DoD acquisition programs say that they function as a joint IPT, but they really don't. Without teamwork, that concept won't succeed," he points out.

Fancher also notes, "Things are going to go wrong. The manager doesn't own that information. He or she has to be at peace with that inevitability." Accordingly, PMs need to organize a system that will allow them "to effectively communicate any problems with the warfighters and the acquisition chain of command before the leadership reads about them in the morning paper."

In an effort to obtain the best-of-breed practices throughout the military and civilian training community, the Osprey training team maintains an open dialogue with the F-35 Joint Strike Fighter and other weapon platform programs, and visits commercial airline and training system company offices.

Addressing the significance of the team's gaining training insights from the commercial airline industry, Carroll observes that despite the breathtaking advances in digital architectures, other technologies, and their applications during the 1980s and 1990s, "naval aviation—and I include Marine Corps aviation—really didn't believe that there was a lot of value in simulators. In order to replicate mission training, you had to be in the airplane. So this is the element that is not minor about learning from the airline industry: When you use their approach—for a simulator to be the real training—and provide the 'check-in-the-block,' it changes everything."

The program's collaboration among warfighter, industry, and Service program office has fostered a level of communication and cooperation in an acquisition program that is refreshing. This is the way that we should conduct business with respect to integrating training into our weapons platform and system programs, particularly for major defense acquisition programs.

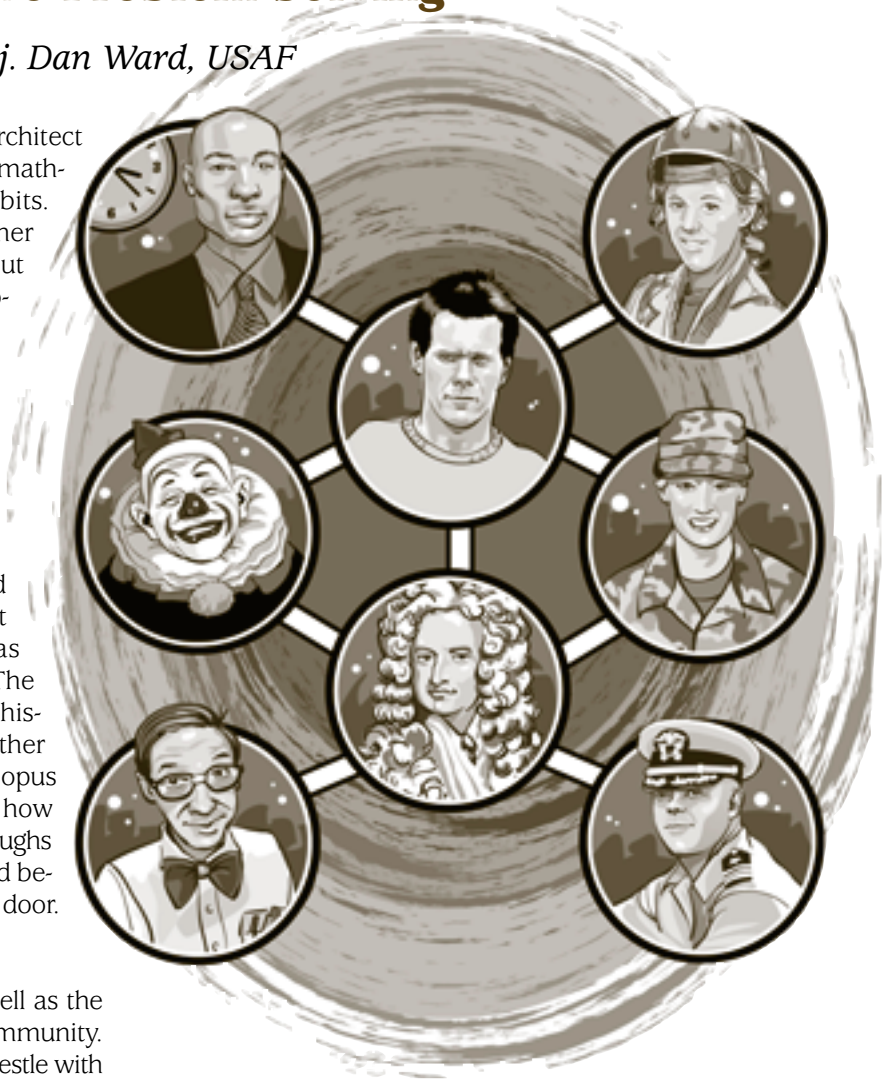
As our office continues to work with the Services to ensure that training systems are efficiently integrated throughout a weapon platform's life cycle, we look forward to assisting other programs to collaborate with the Osprey office and gain insight into and use the best practices that helped it achieve its recent successes.

The authors welcome comments and questions. Contact Walsh at john.walsh@osd.mil and Kratz at louis.kratz@osd.mil.

# Knock, Knock, Knocking On Newton's Door

## Building Collaborative Networks for Innovative Problem Solving

*Maj. Dan Ward, USAF*



In 1684, astronomer Edmund Halley and architect Sir Christopher Wren were wrestling with a mathematical proof for explaining planetary orbits. They asked the esteemed natural philosopher and inventor Robert Hooke for assistance, but Hooke was unable to provide the requested solution. Halley then visited Isaac Newton, who claimed to have solved the problem years earlier. Unfortunately, the disorganized genius couldn't immediately find the papers, so Halley left empty-handed.

Some three months later, Newton sent Halley a nine-page treatise containing the elusive proof. At Halley's request, Newton revised and expanded the short paper, and after another 18 months, it filled the three volumes we now know as *Philosophiæ Naturalis Principia Mathematica*. The *Principia* firmly established Newton as one of history's greatest scientists, but it is not clear whether Newton would have produced this magnificent opus without Halley's urging. It makes one wonder how many other scientific and technological breakthroughs throughout history were delayed or undiscovered because there was no Halley to knock on Newton's door.

### Desperately Seeking Newton

Similar situations exist today, in academia as well as the defense acquisition, technology, and logistics community. Program managers, engineers, and logisticians wrestle with many challenges, technical and programmatic, that have already been solved by others who would be willing to share their solutions—if asked. Some of those "hidden Newtons" live and work in commercial or scholastic arenas, while others are government and military personnel. And some, undoubtedly, are still in high school. The challenge, therefore, is to locate and engage experts with rele-

**The challenge is to locate and engage experts with relevant—often non-obvious—skills, experiences, and knowledge that could help us solve the problems at hand.**

**Ward**, *now assigned to the Air Force Research Lab in Rome, N.Y. , once shared an office with Capt. Chris Quaid, USAF, who is a cousin of actor Dennis Quaid, who was in* The Day After Tomorrow *with Jose Ramon Rosario, who was in* Mystic River *with Kevin Bacon. Small world indeed!*



Illustration by Jim Elmore

vant—often non-obvious—skills, experiences, and knowledge that could help us solve the problems at hand. As we will soon see, most of them are quite close by.

This centuries-old challenge merits a close look today for at least three reasons. First, despite our best efforts, no one has really solved it yet. Even denizens of cyberspace often find it challenging to identify and connect with potential collaborators. Second, academia is finally beginning to seriously study the structures and functions of networks. Understanding how networks work is key to figuring out how to establish the connections we seek, so this new realm of academic investigation is likely to produce useful insights and answers. The third, most obvious, reason is the increasing ubiquity of the Internet and other network-establishing technologies.

### Hungry Physicists and Lots of Bacon

Social psychologist Stanley Milgram performed his famous "small world" experiment in 1967, concluding that everyone on earth is connected to everyone else by no more than six people (if I may oversimplify his results a bit). This led to the party game "Six Degrees of Kevin Bacon," where players try to establish connections to the esteemed actor in the least number of jumps. (Check out the University of Virginia's <www.oracleofbacon.org> for one example.) Naturally, formal academic investigations soon followed, the initial results of which are nicely documented in the book *Six Degrees: The Science of A Connected Age* by Columbia University sociology professor Duncan J. Watts.

In this highly readable book, Watts explains how sociologists, mathematicians, physicists, and experts from other disciplines converged to explore the new field of networks and "small-world" models. He gives physicists much of the credit, explaining: "The arrival of physicists into a previously non-physics area of research often presages a period of great discovery and excitement. … No one descends with such fury and in so great a number as a pack of hungry physicists."

The story of how this academically diverse group of people came together is itself an enlightening example of how networks function, but the group's actual output is where the money's at. Watts' list of further reading exceeds 30 pages, to which the bibliography adds another 12, an impressive output indeed for such a new field of study.

### Large Tents and Small Worlds

Why does this matter? Let's return to Halley and Newton and the persistent challenge of establishing connections between people to facilitate problem solving. That is the point, after all. Centuries before Linus Torvalds (creator of the Linux operating system) opined that "given enough eyeballs, all bugs are shallow," Edmund Halley understood the value of collaboration—hence his entreaties to Hooke and Newton. Echoing Halley's experience, Watts offers an assessment—and a warning—for modern organizations in terms Halley would certainly agree with: "Firms that are bad at facilitating distributed communications are bad at solving problems, and therefore bad at handling uncertainty and change." Watts goes on to explain that "rapid access to everybody else's work … dramatically speeds up the cycle of ideas and innovation." It certainly worked for Halley.

The DoD is currently in a time of great uncertainty and change, not only in terms of the global war on terror, but also because of the continuing information technology revolution. Rapid innovation and an accelerated "cycle of ideas" are clearly called for. *Six Degrees* offers insightful guidance to help smooth the path forward.

Along with explaining how networks function and contribute to innovative problem solving, Watts offers some specific advice. He writes: "A good strategy for building organizations that are capable of solving complex problems is to train individuals to react to ambiguity by searching through their social networks, rather than forcing them to build and contribute to centrally designed problem-solving tools and databases." Such informal networks are able to bring to bear intellectual resources that would otherwise be excluded, creating a somewhat paradoxical situation I call Large Tent/Small World. An LT/SW approach is both widely inclusive (LT) and well-connected (SW). Unfortunately, many DoD enterprises tend towards centrally designed and controlled structures, not the more flexible, responsive approach advocated by Watts. An exclusive, isolated (Small Tent/Large World) framework makes distributed communication difficult and is less than optimal for innovative problem solving.

## Curiosity Nourishes the Cat

As well as the books and Web sites mentioned in the article, curious readers may be interested in the following:

- *The Cathedral and the Bazaar*, Eric Raymonds: Explores two software development approaches, one of which (the "bazaar") is strongly network-centric
- *The Medici Effect*, Frans Johansson: Shows how innovation often results from cross-pollination between intellectual and experiential domains
- *Tipping Point*, Malcolm Gladwell: Explains impacts of social networks, from fashion trends to epidemics
- *The Wisdom of Crowds*, James Surowiecki: Explains why "the many are smarter than the few," and how group intelligence can be greater than the sum of the parts

In his book *Smart Mobs*, Howard Rheingold makes a related point, observing: "The Web spread by infection, not fiat." Here again, the DoD—like many other bureaucracies—has a tendency to inoculate against such "infections," rather than allowing them to spread and grow as the Web has. There are some legitimate reasons for doing so—security and accountability, to name just two. But perhaps flexibility and security are not mutually exclusive. The continued growth of the Web will make it difficult, if not impossible, to insist on centrally designed, fiat-driven approaches. Whether we are ready or not, the tent is growing and the world is shrinking, and while that creates some new challenges, it is ultimately a good thing.

## Our Mission, Should We Choose to Accept it

The task of establishing fruitful connections between people and groups is not an easy one, but time spent addressing the challenge is likely to pay off in spades. There are four areas of activity PMs can pursue as they seek "to locate and engage people who have relevant knowledge."

### Area A: Understand networks

This is the intellectual, academic area, and at times it may feel like homework, but hang in there. Along with *Six Degrees*, readers may want to check out the books recommended in the sidebar on the previous page. These resources help explain the structure, functions, limitations, and utility of networks, and they provide an intellectual foundation upon which to build. And for the most part, they're actually pretty good reads. Understanding what networks are and how they work makes it easier to create them and use them to our advantage.

### Area B: Foster curiosity

This is the most personal, character-oriented dimension. The more curious a person is, the more likely he or she is to search widely for information and establish a large network of partners. PMs can encourage curiosity in many ways—by hiring for it, encouraging it, valuing it, and at the very least, by not squooshing it—but ultimately, curiosity is an internal quality of a person's character. It's probably not possible to force someone to become curious. Fortunately, there is something universal about it. Einstein said it's a miracle curiosity survives formal education, and yet it usually does. It's unlikely curiosity can be either created or destroyed, but by their words, actions, and priorities, PMs can certainly encourage or discourage it. Wise PMs foster it at every opportunity, directing this innate human attribute towards the team's particular challenges.

Further, curiosity and creativity tend to be linked. This means not only are curious people usually well connected to a diversely populated network, but they also tend to have a greater aptitude for creative thinking and problem solving … but that's a topic for another day.

### Area C: Facilitate connections

This is the most formal, organizational dimension. Mentorship programs are one official way to facilitate connections that may not develop otherwise. Similarly, unit fitness programs, professional conferences, and other informal environments can bring people together in interesting ways. In the commercial world, the Web site <www.friendster.com> seeks to connect people through mutual friends who act as connective nodes—an interesting model for the defense community to consider. And speaking of dot-com, the Internet itself is a wonderful way to find, engage, and collaborate with people from around the world—just ask Linus Torvalds and the Linux community.

> The beauty of informal networks [is] they function best when the connections are loose. A person need not be an official member of the team to contribute significantly.

In *Smart Mobs*, Rheingold explains: "When a network is aimed at broadcasting something of value to individuals, like a television network, the value of services is linear. When the network enables transactions between the individual nodes, the value is squared. When the same network includes ways for the individuals to form groups, the value is exponential." Similarly, the more opportunities an individual has to create and join groups (particularly informal groups), the more he or she will be able to contribute to a problem-solving endeavor. In the words of my former officemate, Air Force Capt. Chris Quaid, "Networking *is* working."

### Area D: Pursue intellectual diversity

We all know the old saying about how every problem looks like a nail if your only tool is a hammer. Similarly, a room full of engineers is likely to produce an engineering solution to whatever problem they are given, and sometimes an engineering solution is not actually needed. A well-placed psychologist, marketeer, mathematician, or circus performer may bring a much needed fresh perspective and fresh solution to problems, old and new. For all the weaknesses of matrixed organizations, one good thing they often did was create a diversely skilled team.

Few of us have the ability or authority to hire new people onto our teams, but that is the beauty of informal networks. They function best when the connections are loose. A person need not be an official member of the team to contribute significantly. As Watts explains, it is often the case that "important innovations originate not in the core of a network but in its peripheries." The trick is to pursue and engage those peripheral connections.

**Networking *is* working.**

Capt. Chris Quaid, USAF

### The Newton Network

The challenge of building collaborative communities is as old as humanity itself, and it is unlikely to be solved in a magazine article. There is no quick fix here, and following these recommendations will undoubtedly lead to new challenges. Some people will not want to help. Some will give wrong answers. Some will try to eat your lunch. And some will probably be spies. People are funny that way, and no one said this would be easy. But the beauty of a Large Tent is it likely includes some people who are willing and able to help… and a Small World makes it easier to connect with them. The essential first step in pursuing a LT/SW approach is to understand how networks function and then use that knowledge to begin breaking down organizational stovepipes and geographic/academic/professional barriers.

The optimal solution would be a whole network of Newtons, each highly competent in a particular field, each firmly dedicated to collaborative, innovative problem solving, and each connected to everyone else by no more than six degrees. The IT revolution has provided a host of new technologies that make it easier to establish these networks, from chat rooms and blogs to cell phones and BlackBerry® devices. Duncan Watts' book (and others) provide much of the necessary foundation. It is up to us to do our homework and start knocking on some doors.

*The author would like to thank Air Force Col. Ted Cope in California, Air Force Maj. Phil Garrant in Virginia, and Mark Linderman in New York for their assistance on this article.*

The author welcomes comments and questions. Contact him at daniel.ward@rl.af.mil.

# Weblog Technology for Acquisition Program Management

*David P. Brown ▪ Tammi McVay*

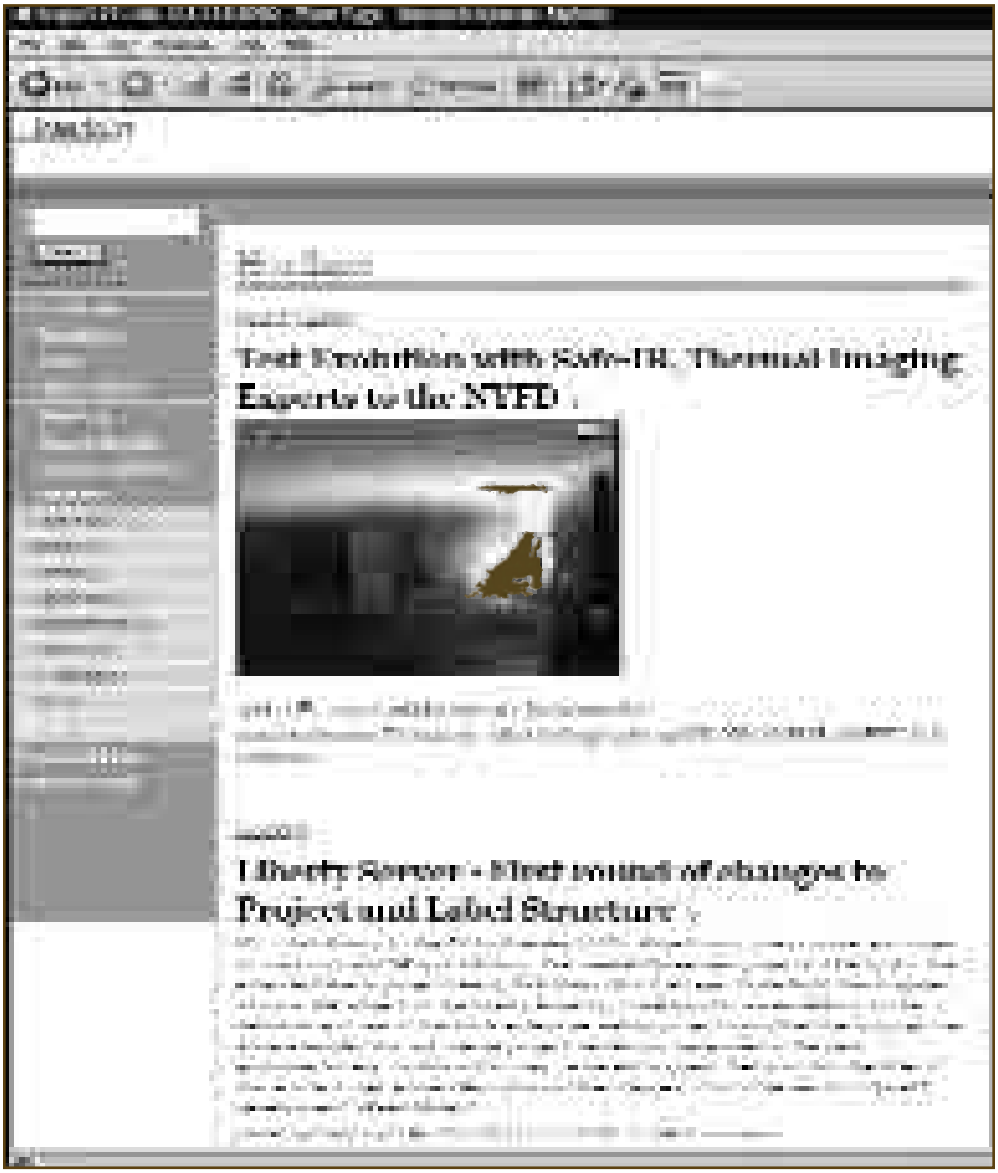
First developed in 1992, weblogs are "logs" of material distributed across a Web or network—a collaborative tool that facilitates the chronological organization and archiving of material on a specific subject. Links to multiple related topics can be located on a single page, and the primary advantage is to allow the creation of Web content without the need to manually construct Web pages. The growth of weblog use has been exponential; millions are currently in operation.

The power of weblogs and "bloggers" (those who contribute to weblogs) was demonstrated in 2004 when documents used in a CBS *60 Minutes* segment on President Bush's National Guard service were exposed as forgeries. Weblogs allowed a number of individuals to communicate rapidly and share their knowledge about the state of typewriter technology at the time the documents were supposedly written.

## Streamlining Business Communication

Private industry is increasingly using weblog technology to improve business operations. According to a 2004 article in the *Wall Street Journal*, managers are increasingly turning off or ignoring their e-mail in order to get work done. But while managers may get the work done, they may also miss critical communications.

Weblogs overcome many of the problems associated with conventional e-mail. Messages and discussions are orga-



**Liberty Project Weblog**

**Brown** *is a professor of systems engineering in the Technical and Engineering Department at the Defense Acquisition University.* **McVay** *is a program analyst at the Naval Undersea Warfare Center, where she currently supports strategy and planning for Newport Division with an emphasis on knowledge management.*

nized by specific topics that are custom tailored to the needs of each organization. There is no need to search through hundreds of messages to find the one of interest. Only authorized participants may post material, which eliminates the problem of spam and other unwanted communications. And because all material and discussions are saved, weblogs provide an enabling method of knowledge management and an archival record of important documents, decisions, and the discussions that led to those decisions. Because of these advantages, industry has found that weblogs can be used as a collaborative project tool.

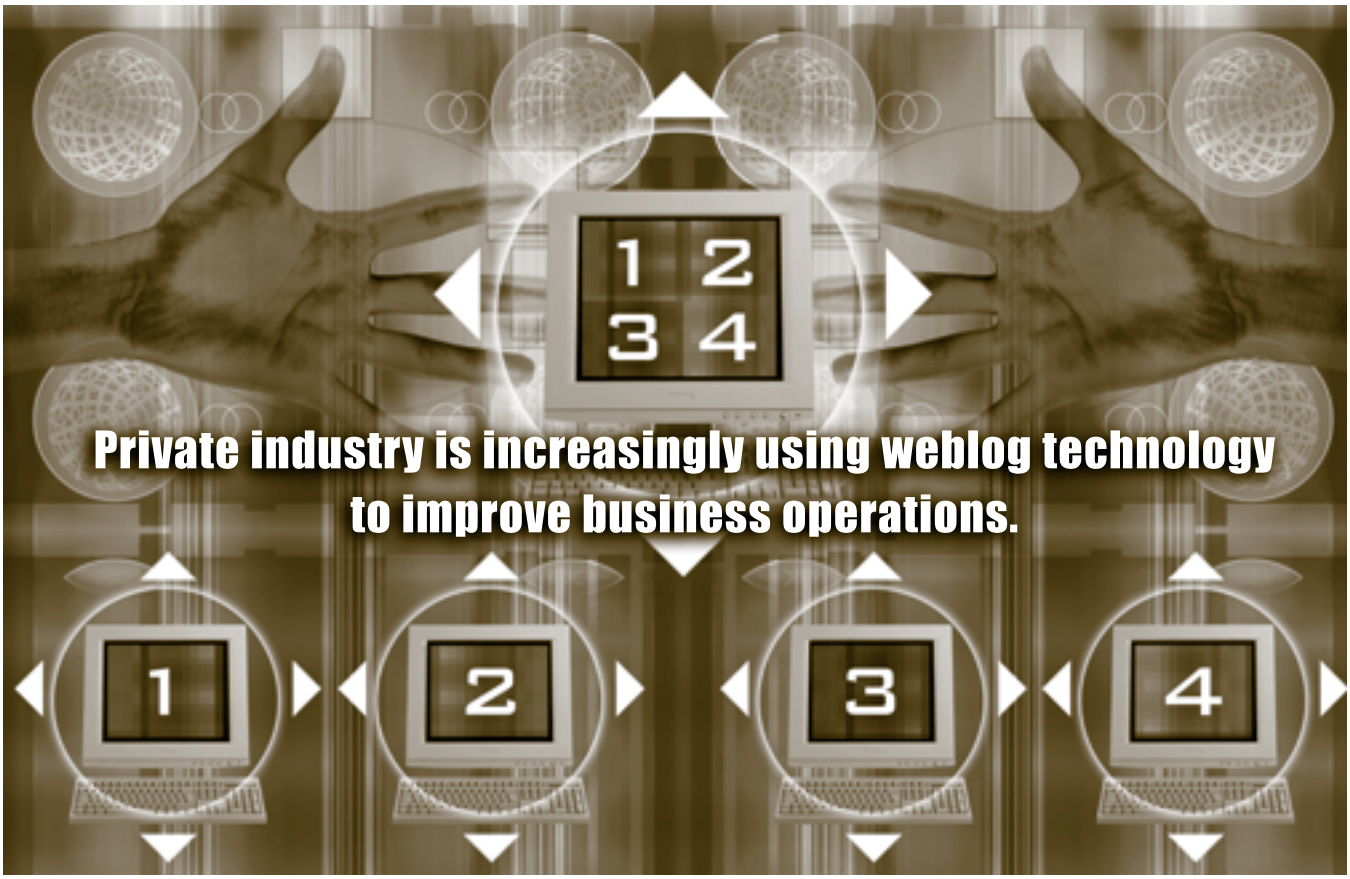
In today's acquisition environment, rapid sharing of formal project documents and project-related material is necessary, but the bulk of the project life cycle communication currently relies on nothing more than e-mail, corporate or capital knowledge of the project, and an exceptional memory of the progressive information shared at any given time period. This common practice makes it very difficult to bring new team members and project participants up to speed efficiently when they join the project in progress. Critical working information is lost in e-mails, deleted, or stored as intellectual capital in the minds of the original project team members. When sponsors or other stakeholders request information not in the form of a formal document, the working information in play must be located or recreated and summarized in response to each request.

## Navy Undertakes Study of Weblog Technology

The Department of Defense Rapid Acquisition Incentives-Net Centricity (RAI-NC) Pilot program office recently completed an opportunity analysis for implementation of weblog technology to accelerate test and evaluation programs. Managed by the Department of the Navy e-business Operations Office and the Naval Undersea Warfare Center, the process was designed to assess weblog technology's ability to provide DoD/first responders with a low-cost alternative for a secure "communications hub." This was accomplished by providing a prescriptive framework for structured collaboration and a net-centric method to share program/project data. Sharing was done through user authentication on a centralized Internet/intranet while employing commercial standards and a variety of software applications. Additionally, the project specifically evaluated the applicability of weblog technology as a tool for program managers to disseminate information, control information access, and capture knowledge generated during product development.

Weblogs have the potential to support two of the top five DoD transformation initiatives:

- Change the force and its culture from the bottom up through the use of experimentation, transformational articles (operational prototyping), and the creation and sharing of new knowledge and experiences




**Private industry is increasingly using weblog technology to improve business operations.**

- Implement network-centric warfare as the theory of war for the information age and the organizing principle for national military planning and joint concepts, capabilities, and systems.

Weblogs can also assist in moving DoD acquisition programs closer to an integrated digital environment. The IDE initiative is intended to establish data management systems and appropriate digital environments that allow every activity involved within a program to exchange data digitally throughout its total life cycle. An IDE has been required of all acquisition programs since 1997, but programs have implemented this directive with varying degrees of success.

## Proof: The Liberty Project

An active night vision technology was chosen for the demonstration project of the weblog software. To execute the project, a collaborative team was formed that included the Office of Naval Research; Naval Undersea Warfare Center (NUWC); Ford Motor Company; San Diego Sheriff's Department; the New York Fire Department; the Newport, R.I., Police Department; San Diego First Responders; and the Georgia and Rhode Island National Guard. Traction software was selected to adapt commercial weblog software to support the night vision system test and demonstration. (Traction was funded in 2000 with investment from In-Q-Tel, a Central Intelligence Agency-funded nonprofit company that supports technologies that may benefit the U.S. government.) Epsilon Systems Inc. provided the systems engineering support for integration of the night vision system for the various test scenarios. Dr. David Brown and Dale Shrader of the Defense Acquisition University Capital/Northeast Region provided fee-for-service consulting support on the acquisition aspects of the project. Tammi McVay of NUWC was the program analyst project leader for the government.

The active night vision system demonstration, named the Liberty Project, provided a realistic scenario for demonstrating the weblog technology in test and evaluation (graphic on page 26). Developed by the Ford Motor Company and provided without license fee for DoD testing, the project had many stakeholders located at a variety of locations, and field tests were also conducted by multiple geographically dispersed organizations. The Liberty Project provided a realistic test case to validate the perceived benefits of weblog technology. Although limited to the test and evaluation segment of program management, the project demonstrated benefits for any phase of a program.

A specific success of the weblog during the project was the ability to rapidly disseminate technology availability by the Department of Homeland Security during a terror alert. During this alert, intelligence indicated that terrorists might be planning to use limousines packed with explosives to attack financial centers. One of the tactical capabilities discovered during testing was the ability of the system to see through tinted glass windows. Test data along with film footage of this capability were immediately made available to those who might have use of them. Operational assessment reports done in the field by first responders and military personnel were available to assist in determining whether the technology would be of use in mitigating the threat. This example also demonstrated the value of the weblog in moving from requirements-based to capabilities-based systems. As a result of this information dissemination capability, three illuminators were delivered to the Technical Assistance Response Unit of the New York Police Department for use during the 2004 Republican National Convention.

Team communication was also demonstrated during the project. Prior to an evaluation, users were able to review results from previous efforts and use the information to formulate their own tests. Test results were available to stakeholders immediately after the test was conducted. The old adage of one picture being worth a thousand words holds true. Movie footage of surveillance operations by the Georgia National Guard providing security for the G-8 summit was available during the summit. One user of the weblog commented, "I wish I'd had this available all through those PMRs [*program management reviews*] I sat through during my ten years as a tester."

## Communication, Security, and Cost Saving

Keeping people informed is always a challenge for any organization. In addition to archiving program information, one of the strongest capabilities demonstrated during the project was the information dissemination capability of the weblog technology. Traction software provided a news reader function and real time chat capability. Using the newsreader function, a program manager can get real-time updates to activity within the weblog. Author Brown entered the project while it was under way and found it easy to come up to speed by reviewing the chronological discussions, test plans, and test results. He also found it easy to monitor progress even though he was on temporary duty at multiple locations teaching DAU courses through the conclusion.

Another strong feature of this technology is individual control of the amount and timing of information a user receives. A program manager, for example, may want real-time updates of activity as it occurs in the program, but that volume of information might overwhelm someone like a program executive officer who could be overseeing several programs. Update options range from the real-time updates using the news reader to hourly, daily, or weekly executive updates; they may include complete text or just the headline or title of the material. The weblog technology provides a "smart pull" capability as opposed

to current methods that push information—which can lead to information overload.

Protecting program information is another major feature of weblogs. Although the Liberty Project used a secure site connected to the Internet, weblogs can also operate across secure networks. This feature enhances information assurance and security. Access to information can also be controlled by a program manager. Information is generally divided into a number of area folders, and access to these folders, as well as read/write privileges, can be set for individual users or user groups. This enables a government program manager to allow access to relevant program documents such as draft requests for proposal to contractors, while keeping source selections data in government-restricted folders that the contractors would not be able to see.

Another area of the study looked at quantifying potential cost saving for the use of weblog technology as opposed to a traditional method of e-mail communication. The comparison found an approximate 8:1 saving on bandwidth and 100:1 saving on storage requirements. This was primarily the result of posting data once in a central location (rather than sending large e-mail attachments to multiple people) and the separation of project-specific communications from general e-mail traffic. Although individuals may create separate folders to store project-specific e-mail traffic, movement of mail into these folders is mostly a manual process. One study showed that a typical e-mail user will spend 78 hours per year managing his or her mailbox.

## Next Steps

The next phase of the program, if funded, will look at expanding the use of the weblog from test and evaluation to all aspects of an acquisition program. One approach might involve implementation of weblog technology on an acquisition program as part of the plan to achieve an integrated digital environment. This will demonstrate the scalability of the technology to handle a larger number of activities and users across the life cycle and will further validate the predicted savings in time and cost. It can also be used to validate the knowledge capture potential for use on other programs. Later efforts would focus on expanding the technology across the DoD enterprise to achieve bandwidth, storage, and cost saving.

The authors welcome comments and questions. Brown can be reached at dave.brown@dau.mil and McVay at McVayTR@Npt.NUWC.Navy.Mil.

# A Risky Fable

*Alvin Ware*

**Risk management won't work unless everyone does it all the time and the leader of the land shows the way.**

Once upon a time, long ago and far away in the country of Dod, there was a muttering and grumbling. The workers were sorely vexed. They were tired of the success or failure of their efforts being based upon the inconsistent skills of their foremen, and they craved a process, a means to ensure more successes than failures—or at the very least, less severe failures.

There came a day when the King of Dod could no longer ignore the muttering and grumbling. He called in the royal advisors for a conference, but their opposing opinions soon rose to a cacophony. Finally, in rueful royal confusion, the King placed his palms to his ears and shouted, "Enough!"

Distraught with despair, the King thought to call upon his neighbor, the good King of the land of Commercia for advice because it was well known that the successes of Commercia were always so profitable as to far outweigh the failures.

"Oh noble King of Commercia, I beseech you to divulge the secret of making successes outweigh failures," appealed the King of Dod.

## The Expert Speaks

The King of Commercia said, "Surely there is a fair price to perform an independent study. A study on the way work is done in the land of Dod. I am confident I can help to bring back happiness to your gentle land."

The King of Dod said, "Name the price. Compare our ways with yours, and devise a transformation process so we may properly succeed—even though there is no structure or need for profit in our land."

And so it came to pass that agreements were negotiated and signed, and dates of delivery were declared. The King of Commercia collected his fair fee and assigned his excellent experts and superior sages to the task of studying Dod.

Some few years later, he called upon the King of Dod with the results. "You are in great luck, your majesty. I have in my hand the salvation of your land," said the Commercia monarch. "We will soon deliver to your librarian the considerable tomes containing the validations behind our findings. This single page I hand you now—the royal overview— has the essence of the study. If you follow the guidance of this list of ten best business practices, you will find your country replete with happiness once again."

## Sage Advice

The King of Dod fairly hopped with glee and grabbed the manuscript. His lips rapidly moved as he silently read the list, but a frown furrowed his brow as he reached the end. "What is this, oh marvelous monarch?" asked the King of Dod. "Your caveat at the end says the glue that binds these ten elements is of more value than each of the separate parts—the glue being some mysterious process you call 'management of risks.'"

**Ware** *is senior risk manager for the SPAWAR Systems Center Charleston, S.C., Risk Management Advisory Group.*



Illustration by Jim Elmore

"It is so," answered the King of Commercia. "First you must conquer your fear of planning for risk and embed the management of risk in your very way of life. If you do that, then all manner of successes will fall at your noble feet."

The King of Dod replied, "Well, I have favored you with a fair fee, and your perfect process seems so ... well, perfect. All across my land shall embrace it."

"You must not perceive this purported process as perfect," the King of Commercia said quickly. "Remember, I said the glue that binds the whole is the *management of risk*. At your imperilment will you neglect its implementation," he warned.

Hastening on his way to hand down salvation to his workers, the good King of Dod distractedly shouted, "Whatever!"

## Imperiled Implementation

Anxious to get back to his neglected kingly duties, the King delegated the dissemination of the list to his Minister of Processing. The Minister of Processing read the list, harrumphed in haughty concurrence, and efficiently passed the action down to the Officer-in-charge of Implementing New Knowledge, who asked where the tomes of validation were.

"Trust me," said the Minister of Processing, "and speedily make these ten best business practices our process across the land. They are simplicity itself, so no training will be required. The workers will know a good thing when they see one. And when you say that it's the King's will, it will *certainly* be done."

So the Officer-in-charge of Implementing New Knowledge made haste and passed the ten best practices to the masses. Soon the workers were busily buzzing the buzz words. Risk management process acronyms were flying about like startled quail from a meadow.

But after a few months, some workers found the process was not designed to easily fit all tasks. Some of them were too busy fighting fires to try it. Others were chasing off wolves or polishing away rust and were far too preoccupied to bother with a process that—as it turned out—was *not* simple or intuitive. Still others feared that reporting risks would be tantamount to declaring that they didn't know how to do their jobs.

A great cry arose for training and managerial guidance. When it reached the ear of the King, he again called on his advisors (but this time told them to speak in proper turn). The consensus was that the process was simple enough, but the workers just weren't perceiving it correctly. The King sagely issued a royal decree that all residents of Dod should adopt the management of risk process because it would bring wealth and happiness to them and to the land of Dod.

The King of Dod promptly delegated to the Minister of Processing the task of ensuring that the decree was faithfully followed. Now the paperwork resulting from the issuance of royal decrees is massive, and the Minister of Processing felt strained to finish it *and* monitor the risk process—so he promptly delegated the latter task to the Officer-in-charge of Implementing New Knowledge.

## A Short-lived Fad?

Not long after, the King issued another royal decree, this time about the Critical Strategies for Dod to Function. Alas, there was not a single mention of the risk management process. All in the kingdom read the latest decree. Finding no mention of risk management, they assumed it must have been a short-lived fad, and they returned to their old ways.

Years passed, and one day the King of Dod realized that he was again hearing mutterings and grumblings from the workers. "Egad!" he said to himself. "Are these people never satisfied?"

He hurried back to the King of Commercia and began to complain about a wasted (though fair) fee paid for a process that wasn't working. Before he could finish, the King of Commercia said, "You didn't heed my warning about the glue that binds the ten best practices! Risk management won't work unless everyone does it all the time and the leader of the land shows the way. Your kingdom merely followed your example, your highness."

## Embracing the Concept

The weary monarch finally realized the error of his ways. "You speak truth," he said sadly. "I delegated without monitoring. I didn't set the example for how to embed the process into our whole way of life. I didn't provide my people with training for the process. And I failed to establish the proper infrastructure for them to embrace your sage advice. I failed to push down from the top."

After a brief moment of introspection, the King of Dod smartly snapped his fingers and began running back to his kingdom, shouting over his shoulder to the King of Commercia, "I shall set up a Risk Central of specially trained risk managers and they shall guide my people in embracing the process!"

## Moral of the story

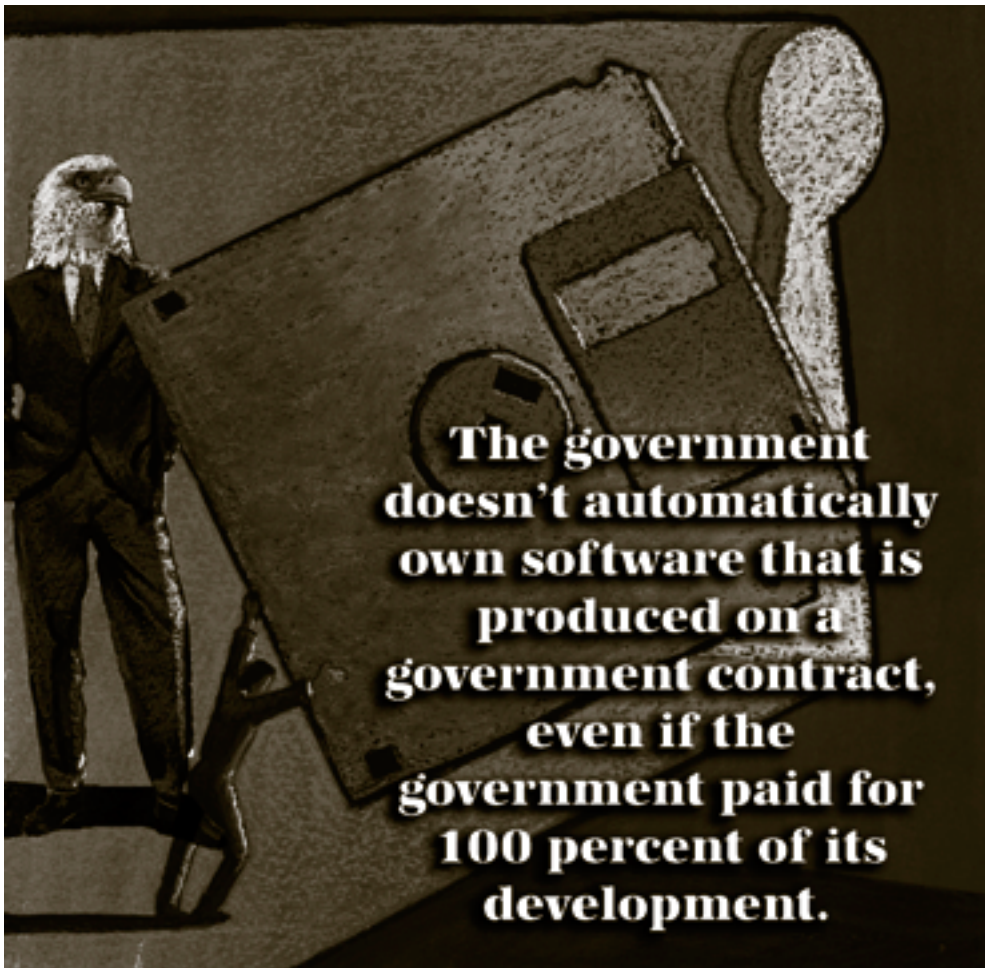
When a leader is too busy to truly embrace a new concept, he or she cannot expect the rank and file to embrace it.

The author welcomes comments and questions. Contact him at alvin.ware@navy.mil.

# Acquiring All You Need to Maintain Your Software

*Al Kaniss*

In my filing cabinet at home, I have a drawer devoted to all the things I get when I buy an appliance or power tool. These include owners manuals, instruction manuals, maintenance manuals, attachments, and spare parts. While I don't always need these things when I first buy the item, I often need them in the future to learn more about how the item works, repair it myself, or find out how to get it serviced by a dealer. That's when I'm glad I kept all the ancillary items. Making sure I have what I need up front helps make the item maintainable down the road.




Maintainability is also important if you acquire software for the government. Whether procuring software by itself or as part of a system, you should determine the need for maintenance of the software, determine who might maintain it (the software developer, government personnel, or a third party), and make sure you get whatever is required to perform that maintenance, which includes not only error corrections but also enhancements and adaptation to different hardware. Don't forget to think beyond just the first few years when the developer of the software may still be under contract to maintain it. The software may be in use for 30 years or more.

Besides considering what documentation you might need (requirements documents, design documents, programmer manuals, user manuals, etc.), you'll also want to evaluate the need for source code and data rights. Just like the license agreements that come with software for your personal computer, data rights specify what you can and can't do with the software: make and use copies, run it on multiple computers, modify it, and allow other government agencies or third-party vendors access to it.

## Software Data Rights: A Thorny Issue

Unfortunately, determining the need for software data rights is not as simple as merely specifying the maximum (also referred to as "unlimited") data rights in the contract. Recent intellectual property laws preclude the government from asking for anything beyond minimal ("restricted") data rights unless there is justification. Several reasons to specify more than restricted rights would be the possibility for the government to do software maintenance in-house or to compete it among vendors. Inadequate data rights may make in-house or third party software maintenance extremely costly (if these data rights must be purchased after contract award) or even impossible. The need

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for software maintenance without adequate data rights usually requires a non-competitive contract with the organization that developed the software.

Many people are surprised—even shocked—when they hear that the government doesn't automatically own software that is produced on a government contract, even if the government paid for 100 percent of its development. Copyright laws say that an individual contractor or contracting company owns the computer software, computer software documentation, or technical data the individual or the company creates. The government typically receives only standard license rights to use the software, software documentation, or technical data in certain limited ways and only if the proper data rights clauses are in the contract.

Standard rights may or may not meet your needs. It's the responsibility of the contracting officer to put the proper data rights clauses in your contract, but it's your responsibility to provide the contracting officer with a complete assessment of your work effort. This assessment, called a "Data Rights Requirements Analysis," should include a determination of your contemplated present uses of the software or other deliverables as well as an assessment of any future uses by you or others. The DRRA should be conducted prior to contract award, taking into consideration such factors as multiple-site or shared-use requirements, and whether the government's software maintenance philosophy will require the rights to modify or have third parties modify the software. If the DRRA determines that the standard data rights clauses are not sufficient to meet your needs and the future needs of the federal government, additional rights may be obtained through negotiations with the contractor, usually at an additional cost. These negotiations will be conducted for you by the contracting officer.

The DRRA should address the following:

- Is this a new or existing procurement?
- Do you have the proper rights in existing software or other deliverables that permit the government to modify, in any way, that existing software for this new contracting effort?
- What type of procurement or assistance vehicle is/will be involved (cooperative research and development agreement, Federal Acquisition Regulation contract, other transaction agreement, technology investment agreement, etc.)?
- What clauses already exist regarding data rights?
- How much, if at all, might requiring more than restricted/limited rights diminish competition or increase procurement cost?
- Will one of the standard Defense Federal Acquisition Regulation Supplement (DFARS) levels of data rights ("unlimited," "government purpose," "limited," or "restricted") be acceptable, or do the data rights need to be specifically tailored and negotiated for this procurement?
- Do the number of anticipated changes to the software and the required response time for those changes warrant the possible additional cost or fewer bidders on the procurement?
- What is the likelihood that the government will perform the software maintenance in-house?
- What is the likelihood that the software maintenance will be competed and awarded to a third party?
- Might there be any situations that would require licensing outside the federal government (e.g., foreign military or commercial sales)?
- Do you require the rights to modify the deliverables now or in the future? Modifications include updates, corrections, and enhancements.
- Do you need to maintain configuration control over the deliverables? If so, the government may obtain ownership of all or a part of the deliverables.

After the DRRA has been conducted, the contracting officer will determine if the standard DFARS data rights clauses provide the necessary rights for you and the government to accomplish the stated objectives. If additional rights are required, the contracting officer will enter into negotiations with the contractor to try to acquire such rights.

To close, here are five important things to keep in mind when planning to acquire software:

- The data rights issue is very complex and requires expert guidance from both a patent attorney and contracting officer to determine the best strategy.
- Inadequate data rights typically result in paying large sums of money to acquire the required rights or having only one option for software maintenance—sole-source procurement to the creator of the software.
- Without the proper data rights, you will not be able to legally use your deliverables the way you want.
- Don't forget to consider the maintenance that may be required over the useful life of the software, sometimes 30 years or more.
- Make sure you get *everything* you will need to recreate the software product—not just the source code.

When you buy a new tool or appliance, it's easy to get caught up with its features and how well it works— and neglect to think about future maintenance. Don't throw away the opportunity to acquire what it takes to maintain the item later on. Similarly, when contracting for software, get and save what you'll need to maintain it over its lifetime.

The author welcomes comments and questions and can be contacted at alan.kaniss@navy.mil.

# Using Military Standards in Acquisition Programs

*David Eiband*

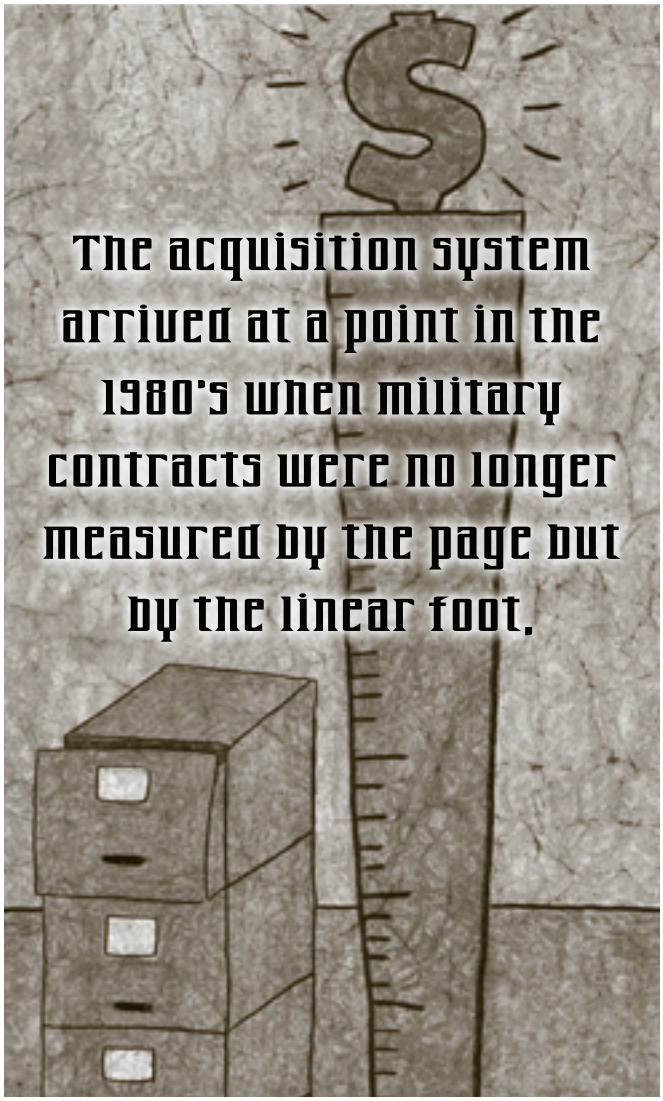
If one were to ask members of the Department of Defense acquisition workforce whether or not military standards may be used in their programs, the responses might be surprising. Rather than receiving a consistent, unambiguous statement, one commonly hears: "We can't use military standards in contracts"; or "We can use standards only if we obtain a waiver"; or "Sometimes we can use them"; or "I didn't think military standards even existed anymore." There are many more variations, but when one regularly asks the question, it is apparent that there is no consistent working level understanding of DoD policy regarding the application of military standards. Thus the basic issue is what exact policy is to be followed.

## How We Got Here

Rather than launching into current policy, it may be useful to discuss exactly how we arrived at the current situation. Starting with the one-page requirement issued to Orville and Wilbur Wright for the first military heavier-than-air flying machine, the acquisition system arrived at a point in the 1980s when military contracts were no longer measured by the page but by the linear foot, maybe even by the pound as some skeptics suggested.

One of the major contributors to the increased bulk was identified as the overuse of military standards and specifications, and the solution was to "tailor" requirements to eliminate unneeded requirements and thereby decrease procurement costs. While that approach did diminish the mass of requirements, the final steps occurred in June 1994 and then March 1996 with directives from then Secretary of Defense Dr. William Perry emphasizing commercial practices and products while simultaneously departing from the traditional military specification system. Apparently in the intervening years, some of that initial clarity was lost, leaving us with many current views of the milspec system.

As with any good research, the only acceptable data should be collected from primary sources, not word-of-mouth, your buddy, or somebody's opinion. In the case of military standards, the primary source is found in DoD 4120.24-M, the Defense Standardization Program (DSP) Policies and Procedures. And despite the varied usage views presented in the introduction, there are only two classes of standards and specifications to be considered: those that may be used with no restrictions and those documents requiring waiver. The remainder of this article will discuss the two classes, giving examples of their application.




Defense Standardization Program Policies and Procedures Paragraph C3.8.2. of DoD 4120.24-M lists nine types of documents that may be used in development contracts. Of particular interest are three military document types: standard practices, interface standards, and defense standards.

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In the first category, standard practices, one finds: MIL-STD-961E, Defense and Program-Unique Specifications Format and Content; and MIL-STD-882D, System Safety. Each title sheet clearly includes the term "standard practice," and that identifier is consistent on all military standards that may be used without restriction.

In the second category, are: MIL-STD-1553B, Digital Time Division Command/Response Multiplex Data Bus; and MIL-STD-1760D, Aircraft/Store Electrical Interconnection System. Both are titled as "interface standards" and are approved for use without restrictions.

Finally, DOD-STD-1399, Shipboard Systems, offers an example of a DoD standard—in this case an interface standard as well.

## Getting ASSISTance

Each of these three categories requires use of documents listed in the ASSIST database at <http://assist.daps.dla.mil/online/start/>. The ASSIST database is the official source of all documents listed in the DoD Index of Specifications and Standards and all Data Item Descriptions, and it contains both current and outdated document versions. Establishing an ASSIST account is quite simple, provides significant capability, and controls the approved DoD standards and interfaces.

C3.8.2 also defines several types of nonmilitary standards that may be used in development contracts. These include nongovernmental standards, commercial item descriptions, and international standardization agreements. As can be imagined, these three categories are both expansive and comprehensive, but the field user has easy access to them in separately listed areas in the ASSIST database. In fact, in the nongovernmental standards area alone, the listing currently contains 9,122 standards from numerous organizations such as the American National Standards Institute, American Society for Testing and Materials, Society of Automotive Engineers, Underwriters Laboratory among other well-known entities.

Handbooks listed in the ASSIST database may be used but may not be cited as contractual requirements. This inclusion is especially important when one considers such powerful tools as MIL-HDBK-881, Work Breakdown Structure; and MIL-HDBK-245D, Handbook for Preparation of Statement of Work, both of which are critical to the proper preparation of any solicitation. Acquisition professionals will note that MIL-HDBK-245D also contains an excellent discussion of and requirements for use of the statements of objectives solicitation method as well.

As can be seen from the preceding discussion, DoD professionals have several different types of standards and specifications that may appropriately be used in development contracts, and among these types are often-forgotten military standards and handbooks. Many of these documents are essential to well-developed technical programs and their associated procurements.

## When *is* a Waiver is Required?

One final commonly heard comment remains: "I thought I had to get a waiver to use a military standard." Having established within published DoD policy the approved use of identified standards and documents, it is clear that other standards and specifications will require a waiver before use in development contracts. DoD 4120.24-M lists the circumstances under which a waiver would be required, and many of those circumstances are quite well-known: detail defense specifications or standards; program-unique detail specification and standards defining an exact design solution; or any specifications or standards that describe management or manufacturing processes in a major defense acquisition program, as are defense test method standards, design criteria standards, and manufacturing process standards.

In most of these waiver circumstances, the issue is clearly one of detail specification rather than the DoD preference for performance-based specifications. And while the sometimes subtle differences between detail and performance specifications can be a subject of lively discussion, the prime source and approved definitions can be found in MIL-STD-961E, Defense and Program-Unique Specifications Format and Content. In general, by the MIL-STD-961E definition, a detail specification states such requirements as type of material, how the requirement is to be achieved, or how an item is to be fabricated or constructed. When required, the waiver is processed in accordance with each Service's implementing instructions.

## Waiver Exemption Process

The waiver process also has a companion exemption process. It is presented in paragraph C3.8.4, which defines situations that are not at all uncommon: reprocurements not requiring major modifications or upgrade; specifications or standards proposed by an offeror in a proposal; non-DoD customer requirements; and situations where another agency or country is leading the program. More uncommon—and quite understandable—the requirements for nuclear components are also exempt.

While many people have differing understandings of the policy basis of acquisition decisions, the DoD policy is actually quite clear and understandable, and it provides unambiguous guidance to the concerned professional in the field.

The author welcomes comments and questions and can be contacted at dave.eiband@dau.mil.

# Accrediting DoD Contract Technical Representatives in Italy

## Without Reinventing the Wheel

*Maj. Michael J. McCormick, USAF*

When the NATO Status of Forces Agreement (NATO SOFA) came into existence in 1951, there was no mention of Department of Defense contractors as a category of personnel. Fortunately, the supplemental agreements between Italy and the United States acknowledged a category of the forces termed "technical representatives" (TRs)—contractors under the supervision of DoD who perform work in Italy on more than a temporary basis.

Fast forward to the modern day: DoD contractors are a substantial and vital part of the U.S. forces in Italy. To accommodate the growing reliance on contractors, the U.S. forces needed a process to streamline and uniformly manage the accreditation of TRs under the NATO SOFA and U.S. and Italy supplemental agreements. The solution came from a process already in place in Germany to screen DoD contractors for similar NATO SOFA status. The DoD Contractor Personnel Office (DOCPER) in Germany, along with the U.S. Sending State Office for Italy (USSSO) and the Service Component Headquarters, agreed to adapt the DOCPER process used in Germany to process TR accreditations in Italy. The result has been a significant increase in control of accreditation as well as a systematic process for DoD contracting officer representatives (CORs) and DoD contractors.

The foundation documents for the stationing of U.S forces in Italy are the NATO SOFA and the classified Agreement Between the United States of America and the Republic of Italy Regarding Bilateral Infrastructure in Implementation of Article III of the North Atlantic Treaty of 20 October 1954 (known as BIA). The BIA acknowledged that personnel who were not military service members or DoD civilian employees might go to Italy to assist the U.S. forces. An additional category, "Civilian Personnel," was created and further divided into subcategories, one of which is TRs—contractors assisting the U.S. forces in Italy for more than a temporary period.

In 1995, the DoD and Italian Ministry of Defense signed a memorandum of understanding known as the Shell

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Agreement, which defined TRs as "persons … who are closely affiliated with the United States Armed Forces and under their authority, but not employed directly by them … technical representatives of firms having special relations with the United States Armed Forces, when such persons come to Italy for other than temporary visits."

The U.S. Forces Tri-Component Implementing Regulation for Italy briefly discussed the concept of TRs, but did not elaborate. The 2001 edition of the Tri-Component Regulation provided a more detailed definition of TRs as "persons who have a high degree of skill or knowledge in the systematic procedures by which a complex or scientific task is accomplished, as distinguished from routine mental or physical processes." The directive gives as examples of positions granted technical representative status "warranty repair technicians for repair of complex equipment; key executive and supervisor positions in government-owned, contractor-operated facilities that perform major maintenance on U.S. government-owned vehicles; and computer software engineers." Examples are given, too, of positions that have been denied technical representative status: "administrative personnel; automobile sales representatives; carpenters; masons; painters; plumbers; sales representatives for china, jewelry, clothes, computers, encyclopedias, and similar items; and secretaries and typists."

### TR Accreditation: Out with the Old Procedures

Prior to 2004, the TRs were not generally screened for accreditation before they arrived in Italy. This meant that most TRs had already obtained from an Italian consulate the necessary mission visa without any legal review by the local installation legal office to ensure that they were entitled to the TR status the mission visa accorded them. (The mission visa allows persons to enter Italy for more than 90 days for the purposes of accompanying the U.S. forces.) Upon arrival at an installation, the TR would seek authorization of logistic support. Originally, the installation would accept the TR's application and forward it to USSSO for approval. USSSO would review the application for proper orders, visa, and any indication of Italian citizenship or "ordinary resident status," either of which would disqualify the applicant. If the applicant were determined to be a TR, then USSSO would issue a SOFA stamp to be placed in the contractor's passport. In 2000, USSSO delegated the entire screening process to the staff judge advocate offices of the U.S. forces units in Italy.

The process generally worked insofar as most contractor employees came from the United States and would have the type of expertise that met the requirements of the TR category. However, the rotation of military personnel among the staff judge advocate offices hampered the continuity of the program. Additionally, the implementation of the program differed from installation to installation.

**Technology has streamlined the accreditation process.**

### … And in with the New

In 2003, USSSO proposed new procedures for the TR process. The staff judge advocate from the Army's Southern European Task Force (Airborne) suggested that DOCPER's experience in Germany might be useful. USSSO, DOCPER, and the Service Component Headquarters spent the next year developing the new process. On July 12, 2004, the Civilian Personnel Accreditation Procedures for Italy were published as an annex to the February 2004 edition of the Tri-Component Regulation for Italy. The new procedures have resulted in a reinvigorated screening process and a more orderly accreditation program.

One of the biggest changes is the use of computer automation. The DOCPER Italy Operations Web site <http://www.per.hqusareur.army.mil/cpd/docper/> walks the TR applicant and COR through the process. The first step is to download the TR Application Form from the forms page. DOCPER's database contains information on

current contracts and companies doing business in Italy. If the TR applicant's company, contract, task order, and position are already listed in the form, then the TR applicant fills out the form and forwards it to the COR for transmittal to DOCPER. If the company, contract, task order, and position information are *not* listed, the COR downloads and completes the Contract Registration form, then forwards it to DOCPER, who updates the database.

DOCPER screens the information submitted based on guidance found in the Civilian Personnel Accreditation Procedures for Italy; legal questions are referred to USSSO. DOCPER makes two determinations: whether the position to be used in contract performance meets the definition of a TR position; and whether the person proposed to fill the position meets all the requirements to be accredited as a TR. For each qualified applicant, DOCPER submits for USSSO signature an accreditation letter addressed to the Italian consulate that has cognizance for the area where the TR applicant resides. By this letter, USSSO certifies to the Italian consulate that the person has been accredited as a TR and should receive a mission visa. Once approved by USSSO, DOCPER sends the signed accreditation letter and a completed Application for Uniformed Services ID Card to the COR, who forwards the documents to the TR. The TR goes to the Italian consulate, receives the mission visa, and travels to Italy. Upon arrival, the TR processes through TR accreditation, receives the ID card, and then processes the mission permit of stay (that allows him or her to remain in Italy) from the local Italian police station.

**Benefits of the New Process**

Technology has streamlined the accreditation process. Because of databases, pre-printed forms, and e-mail, information can be transferred immediately. Additionally, the database provides, for the first time, a complete record of TRs accredited in Italy. The U.S. forces in Italy manage the TR accreditation unilaterally, and with the new process, they can state with confidence that they carefully screen each TR coming into Italy. The civilian personnel accreditation procedures for Italy have also built into the new system a comprehensive review. This allows DOCPER to establish the baseline database for TRs in Italy.

The most significant development is that the Italian consulates have been instructed by the Italian Ministry of Foreign Affairs not to issue a mission visa to a DoD contractor without the USSSO-signed accreditation letter, a step that has completely eliminated the previous problem of DoD contractors showing up in Italy without proper documentation.

Another advantage of the new process is uniformity. Previously, each installation had slightly different procedures or different offices handling TRs. Now there is a single point of contact handling TR matters for Italy. Additionally, while the procedures are different in some aspects, contracting office representatives and contractors now benefit from having a single point of contact for both Germany and Italy.

Finally, the benefits of the new process have been realized without adding human resources or creating new offices. Even better, the new TR accreditation process now frees installation legal offices from a function that previously took up their time. By using technology and drawing from experience in Germany, DOCPER was able to incorporate the Italy process within its existing operations—all without reinventing the wheel.

The author welcomes comments and questions and can be contacted at McCormickMJ@state.gov.

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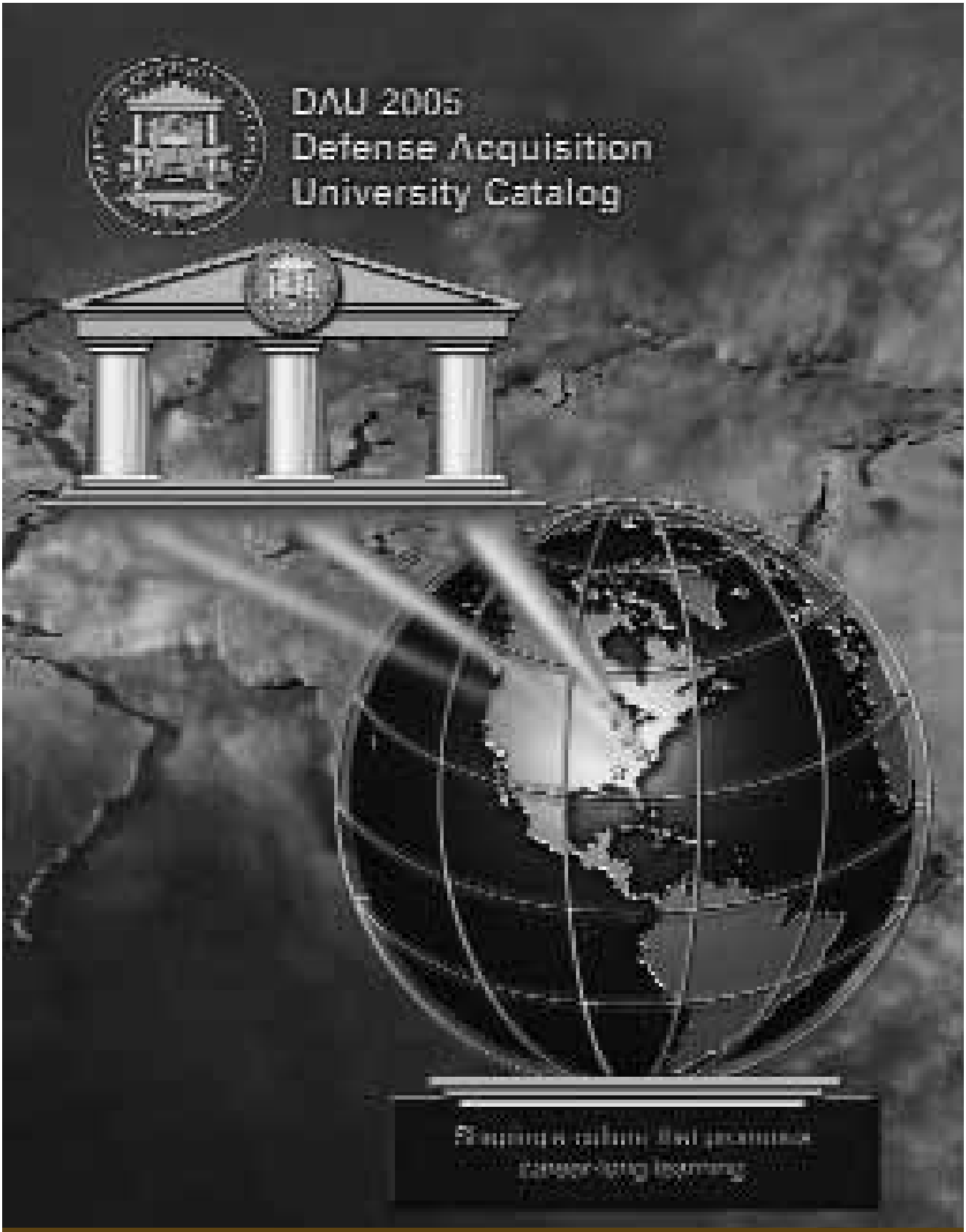


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# *Fort Myer Hosts Welcome Ceremony for*
# Secretary of the Army
# Dr. Francis J. Harvey
## *"Successful Business Transformation Essential to Long-term (Financial) Health of the Army"*

*Dr. Francis J. Harvey delivered the following address at a ceremony held at Fort Myer, Va., on Dec. 6, marking his appointment as the new Secretary of the Army. Harvey spoke of how he proposes to transform the Army during his tenure, including adapting new technologies to warfighting and business operations.*

I am truly honored to be appointed the 19th secretary of the Army and have the opportunity to serve our country, our great country, during a time of war. I am looking forward to working closely with the chief [of staff of the Army] as together we lead the Army in successfully meeting the challenges of the dangerous and complicated 21st-century security environment and, specifically, jointly fighting and winning the global war on terrorism.

Although these challenges are daunting, I know the Army will meet them. I say this because the Army isn't just an ordinary institution—it's a great institution with an unparalleled set of enduring core values, a long, rich tradition, and a demonstrated ability to change and adapt to new situations.

Values like loyalty, duty, respect, selfless service, honor, integrity, and personal courage; and the Soldier's Creed, which states: "I will always place the mission first, I will never accept defeat, I will never quit, and I will never leave a fallen comrade."

To me, there is no institution in our country that has a richer tradition than the Army. A tradition that is older than the Republic itself. The tradition of the long gray line. The tradition of bravery as manifested at Omaha and Utah beaches and the Battle of the Bulge, as the deputy secretary has [just] noted. The tradition of courage as demonstrated at Okinawa and Guadalcanal, and most recently, at Falluja. The tradition that has preserved the peace and freedom of our country for over 229 years. This great institution, in concert with the Navy, Air Force, and Marines, has been the "Vanguard of Democracy" around the world—countries such as Japan, Germany, France, South Korea, Afghanistan, and Iraq are free today because of the United States Armed Forces and the sacrifices of our men and women in uniform.

I recently had the opportunity to visit wounded soldiers at Walter Reed Army Medical Center. What a moving experience that was for me—to see the resilience of these young men and women, and that of their spouses; to feel their commitment to something much greater than self. The nation and free peoples around the world will sleep better tonight because of the willingness of our soldiers and their loved ones to endure hardships so that others might have a brighter future—a future of freedom, democracy, equality, and opportunity.

Ladies and gentlemen, values, tradition, and people—that is the essence of the United States Army.

### National Security Environment

So I am confident that the Army will succeed in meeting the challenges of the 21st Century security environment. As the chief has stated on many occasions, this security environment, which is characterized by asymmetric adversaries, transnational terrorists, non-linear battlefields, and intense post-conflict operations, is, perhaps, more complex than at any other time in our nation's history.

In order to ensure our country's national security in this complex environment, it is essential that the Army continue to successfully carry out its mission of providing trained and ready forces with the necessary capabilities to the combatant commanders in support of the national security and defense strategies both today and in the future. These forces must be fully capable across the entire range of military operations.

In the near term, that means we must meet our fundamental responsibilities of recruiting, organizing, training, equipping, sustaining, and developing soldiers and leaders. As the chief has frequently said, soldiers are the centerpiece of our formations. I could not agree more. As the secretary of the Army, my top priority will be the well-being of soldiers and their families. There is no more important aspect of our effort to win the global war on terrorism than taking care of our people.

### Business Transformation

As we carry out these responsibilities in the near term, we must also develop a future force that is better able to

**"A network centric capable force is one that is robustly networked (including command and control, warfighters, platforms, and sensors); fully interoperable; and shares information and collaborates by means of communications and information infrastructure that is global, secure, real time, reliable, Internet-based, and user-driven."**

meet the challenges of our security environment by implementing a key element of defense strategy, and that is transforming the way the Army fights and the way it does business.

Transformation is a multidimensional and interdependent process that involves adapting new technologies to warfighting and business operations; developing improved joint operating concepts and business processes to utilize these technologies; changing organizational structures and, most important, developing leaders, people, and a culture that are relevant to the future. The intent is to establish an overall capability that is totally aligned with our security environment.

But most important, to truly be successful, transformation must build on those enduring values and rich traditions of the Army. We will keep the best of the past, while transforming to be better able to meet the challenges of the future.

### Information Technology

The technology that is at the center of transformation is information technology. The long-term goal of the Information Age transformation of the Department of Defense is an organization that is capable of conducting network centric operations, both military and business, in a totally joint fashion, to include our allies and partners.

### Network Centric Force

From the military point of view, a network centric capable force is one that is robustly networked (including command and control, warfighters, platforms, and sensors); fully interoperable; and shares information and collaborates by means of a communications and information infrastructure that is global, secure, real-time, reliable, Internet-based, and user-driven.

A network centric force has dramatically improved situational awareness and quality of information, which, in turn, leads to dramatic improvements in military effectiveness across the board including operational cycle time, command and control, force application, force protection, and logistics.

Under the chief's leadership, the Army has made significant progress on force transformation with initiatives such as modularity, force stabilization, rebalancing of the active and reserve components, and the Future Combat System, as well as a number of interrelated communications and information systems projects.

In the area of business transformation, there is much work yet to be done. Successful business transformation is essential to the long-term health of the Army because it will free up financial resources that can be applied to the warfighter.

As secretary, Army transformation, leadership development, and generating the land forces to win the global war on terrorism will be among my top priorities.

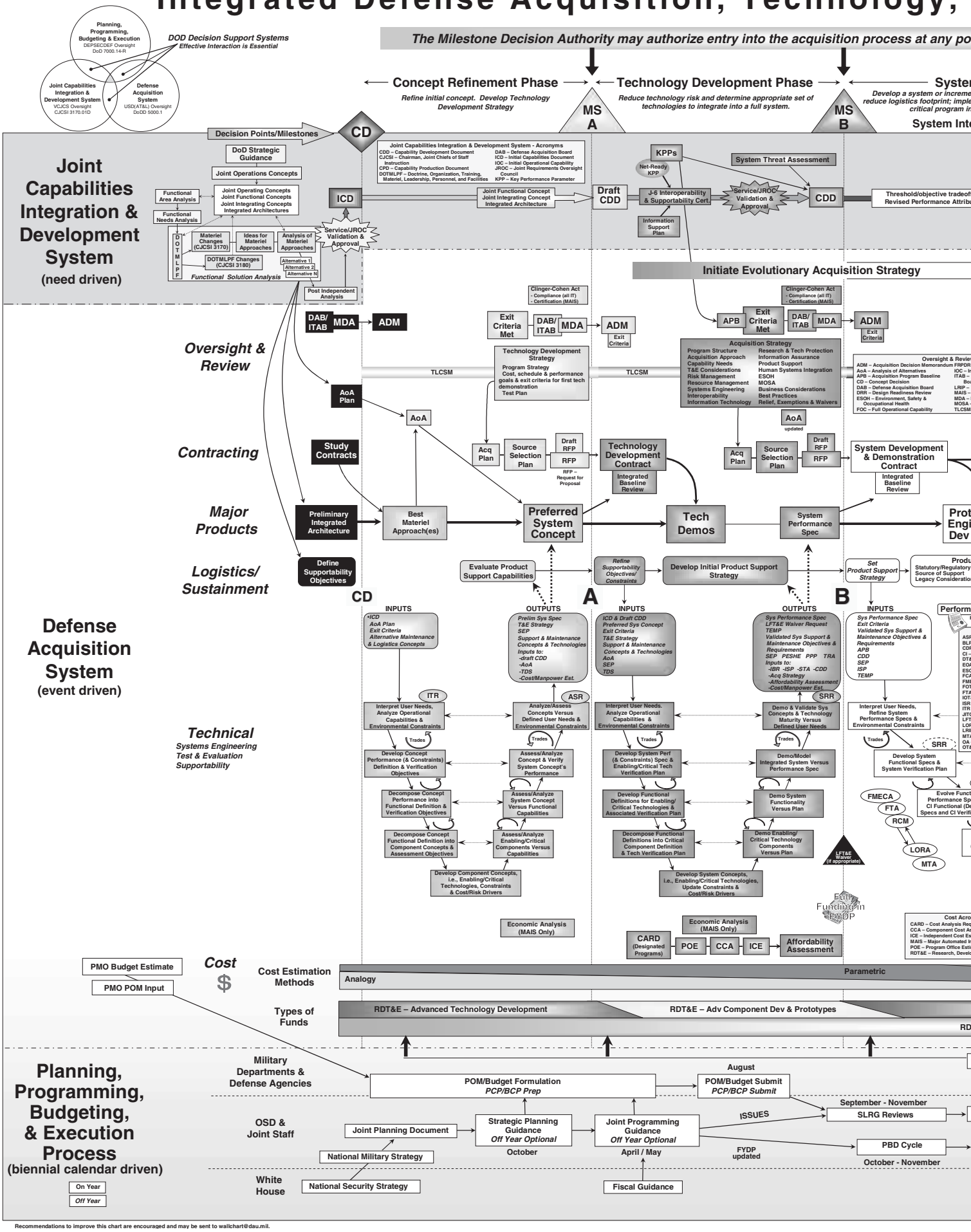
In closing, let me state that whether we are talking about the current force or the future force, my number one priority that will be overarching and enduring is the well-being of soldiers and their families. I want them to know that I greatly value the service and the sacrifices that they are making for our country. You can rest assured, too, that I am committed to ensuring that our soldiers get the best training and the right equipment to do their jobs. When they are out there in the cold and the dark fighting the war on terrorism, know that I will be working intensely for their near-term needs while building the Army of the future.

God bless our soldiers; God bless the Army; and God bless this great nation. Thank you very much.

Photograph by Staff Sgt. Carmen L. Burgess, USA

ver. 5.1. December 2004

# Integrated Defense Acquisition, Technology,




Recommendations to improve this chart are encouraged and may be sent to wallchart@dau.mil.

# & Logistics Life Cycle Management Framework

This chart is a classroom aid for Defense Acquisition University students. It provides a notional illustration of the interfaces among the three major decision support systems used to develop, produce, and field a system for national defense. Defense acquisition is a complex process, with many more activities than shown here, and many concurrent processes that cannot be properly displayed on a two-dimensional chart. Supporting information is on the back of this chart. For more information see the Acquisition, Technology & Logistics Knowledge Sharing System (http://akss.dau.mil).

*int, consistent with phase specific entrance criteria and statutory requirements*

## m Development & Demonstration Phase

*nt of capability; reduce integration and manufacturing risk; ensure operational supportability; ement human systems integration; design for producibility; ensure affordability and protection of information; and demonstrate system integration, interoperability, safety, and utility.*

## Production & Deployment Phase

*Achieve operational capability that satisfies mission needs.*

## Operations & Support Phase

*Execute a support program that meets operational support performance requirements and sustains the system in the most cost-effective manner over its total life cycle. Dispose of the system in the most cost-effective manner at the end of its useful life.*

egration | DRR | System Demonstration | MS C | Low-Rate Initial Production | FRP DR | Full-Rate Production/Deployment | Sustainment | Disposal

KPPs | Net-Ready KPP | System Threat Assessment | Joint Functional Concept | Joint Integrating Concept | Integrated Architecture | J-6 Interoperability & Supportability Cert. | Information Support Plan | Service/JROC Validation & Approval | CPD | Threshold/objective tradeoffs – Revised Performance Attributes | Joint Functional Concept | Joint Integrating Concept | Integrated Architecture | IOC | FOC | Validated and approved CDD and CPD for each increment of an evolutionary acquisition

Evolutionary Acquisition Strategy | Increment II | Increment III

Exit Criteria Met | DAB/ ITAB | MDA | ADM | Exit Criteria

APB | Exit Criteria Met | DAB/ ITAB | MDA | ADM | Exit Criteria

Clinger-Cohen Act - Compliance (all IT) - Certification (MAIS)

Acquisition Strategy: Program Structure, Acquisition Approach, Capability Needs, T&E Considerations, Risk Management, Resource Management, Systems Engineering, Interoperability, Information Technology, Research & Tech Protection, Information Assurance, Product Support, Human Systems Integration, ESOH, MOSA, Business Considerations, Best Practices, Relief, Exemptions & Waivers

TLCSM | Total Life Cycle Systems Management

w Acronyms
– Full-Rate Production Decision Review
nitial Operational Capability
Information Technology Acquisition
rd
Low Rate Initial Production
Major Automated Information System
Milestone Decision Authority
– Modular Open Systems Approach
– Total Life Cycle Systems Management

AoA (updated n/a MAIS) | Acq Plan | Source Selection Plan | Draft RFP | RFP | LRIP Contract | Integrated Baseline Review

Purpose of LRIP:
- *Establish Production Base*
- *Ramp to Production Rate*
- *Produce systems for IOT&E*

AoA (MAIS only) | Acq Plan | Source Selection Plan | Draft RFP | RFP | Production Contract | Integrated Baseline Review

Post Production Software Support Contracts | Sustainment Contracts

ototypes/ ineering Models | Prototypes/ Engineering Dev Models | Initial Production Baseline | Low-Rate Initial Production Systems | Final Production Baseline | Full-Rate Production Systems | Post-Deployment Review

ct Support Plan: Product Support Elements, Supply Support, Maintenance, Training, Support Data, Manpower & personnel

Demonstrate Product Support Capability: Footprint Reduction, Supply Chain Management, Product Support Elements

Product Support Package/PBL Implementation: Product Support Elements, Supply Chain Management, Support and Cost Baseline, Contract for Sustainment (organic & commercial)

Product Support/PBL Management: Public-Private Partnering, PBA Modifications, Assessment of PSI/PSPs, Supply Chain Management, Continuous Tech Refreshment, Obsolescence Management, Configuration Control, Data Management

Operations & Sustainment: Peacetime, Training, Joint Operations, Crises

DRR | C | FRP DR

ance Based Logistics (PBL) Strategy (Preferred Product Support Approach)
Performance Based Agreements | Business Case Analysis | Product Support Integrator/ Product Support Provider

Pre-IOC & Post IOC Supportability Assessments

Logistics & Technical Acronyms
– Alternative Systems Review
IP – Beyond Low Rate Initial Production
– Critical Design Review
Configuration Item
E – Developmental Test & Evaluation
A – Early Operational Assessment
H – Environmental, Safety & Occupational Health
– Functional Configuration Audit
CA – Failure Mode Effects & Criticality Analysis
T&E – Follow-on Test & Evaluation
A – Failure Tree Analysis
&E – Initial Operational Test & Evaluation
– In-Service Review
– Initial Technical Review
C – Joint Interoperability Test Command
&E – Live Fire Test & Evaluation
SA – Level of Repair Analysis
P – Low Rate Initial Production
A – Maintenance Task Analysis
– Operational Assessment
E – Operational Test & Evaluation
OTRR – Operational Test Readiness Review
PESHE – Programmatic Environment, Safety & Occupational Health Evaluation
PDR – Preliminary Design Review
PCA – Physical Configuration Audit
PRR – Production Readiness Review
PPP – Program Protection Plan
RCM – Reliability Centered Maintenance
RMS – Reliability, Maintainability & Supportability
SEP – Systems Engineering Plan
SFR – System Functional Review
SRR – System Requirements Review
STA – System Threat Assessment
SVR – System Verification Review
T&E – Test & Evaluation
TEMP – Test & Evaluation Master Plan
TDS – Technology Development Strategy
TRA – Technology Readiness Assessment
TRR – Test Readiness Review

OUTPUTS: *Initial Prod Baseline, Test Reports, TEMP, Elements of Product Support, Risk Assessment, SEP, TRA, PESHE, Inputs to: -CPD -STA -ISP -Cost/Manpower Est.*

FCA | SVR | PRR | Combined DT&E/OT&E/LFT&E Demonstrate System to Specified User Needs & Environmental Constraints

Trades | System DT&E, LFT&E & OAs, Verify System Functionality & Constraints Compliance to Specs

SFR | TRR | Integrated DT&E, LFT&E & EOAs Verify Performance Compliance to Specs

PDR | Evolve CI Functional Specs into Product (Build to) Documentation and Inspection Plan | Individual CI Verification DT&E

CDR | Fabricate, Assemble, Code to "Build-to" Documentation

OTRR | Independent IOT&E | Full-Up System Level LFT&E | JITC Interoperability Certification Testing | J-6 Interoperability & Supportability Validation | BLRIP Report to Congress | LFTE Report to Congress | FOT&E

INPUTS: *Test Results, Exit Criteria, APB, CPD, SEP, TEMP, Product Support Package*

OUTPUTS: *Production Baseline, Test Reports, TEMP, PESHE, SEP, Input to: - Cost/Manpower Est.*

INPUTS: *Service Use Data, User Feedback, Failure Reports, Discrepancy Reports, SEP*

OUTPUTS: *Data for In-Service Review, Input to CDD for next increment, Modifications/upgrades to fielded systems, SEP*

Analyze Deficiencies To Determine Corrective Actions | PCA | Verify & Validate Production Configuration | Modify Configuration (Hardware/Software/Specs) To Correct Deficiencies

Monitor and Collect All Service Use Data | Trades | Analyze Data to Determine Root Cause | Determine System Risk/ Hazard Severity | Develop Corrective Action

In-Service Review | Implement and Field | Trades | Assess Risk of Improved System | Integrate & Test Corrective Action

Process Change – Hardware/Support Materiel Change

Disposal: Recycle/Reuse, Reprocessing, Disposal — Most Acceptable, Least Acceptable

nyms
uirements Description
assessment
timate
nformation System
mate
opment, Test & Evaluation

CARD (Designated Programs) | POE | CCA | ICE | Affordability Assessment

Economic Analysis (MAIS Only) | CARD (Designated Programs) | POE | CCA | ICE | Affordability Assessment

Actual Costs | Engineering

RDT&E – Systems Development & Demonstration | Procurement | Operations & Maintenance

DT&E – Management & Support

Appropriated Funds To Support Contracts

Planning, Programming, Budgeting & Execution Acronyms
BCP – Budget Change Proposals
FYDP – Future Years Defense Program
MBI – Major Budget Issues
OMB – Office of Management & Budget
PBD – Program Budget Decision
PCP – Program Change Proposals
PDM – Program Decision Memorandum
POM – Program Objectives Memorandum
SLRG – Senior Leadership Review Group

DoD Testimony | DoD Appeals | Allocation

PDM(s) | Final PBDs (November) | MBI (December) | DoD Budget | FYDP updated | OMB (January) | President's Budget to Congress (February (1st Monday))

Apportionment

Congress: Budget Committees | Authorization Committees | Appropriation Committees | Authorization/ Appropriation Acts Passed (February - September)

# In the News

ARMY NEWS SERVICE (NOV. 3, 2004)

## SOLDIERS GLIMPSE FUTURE CAPABILITIES

*Sgt. Lorie Jewell, USA*

Soldiers of the future will head into battle with lighter loads, enhanced body protection, better chow, and more portable electrical power.

Technologies like nanotechnology and photovoltaics—evolving methods that are responsible for much of the improvements—were part of a recent forum on "Equipping the Soldier for the 21st Century" at the Association of the United States Army annual meeting.

Nanotechnology involves the manipulation of atoms and molecules to create materials or items at the nanometer scale, which is about 50,000 times smaller than the diameter of a strand of human hair. It's being used to develop lighter, stronger, and more flexible body armor, helmets, uniforms, eye protection, and food packaging, among other possibilities.

Using nanotechnology, scientists and engineers envision the soldier of the future in a battle uniform that can stop or slow bullets and other projectiles, repel water, monitor health, and automatically deliver medicines to treat injuries.

Such technology will improve a soldier's chance of surviving serious injuries from blasts and firefights, said Lt. Col. Charlie Dean, the Army's liaison at the Massachusetts Institute of Technology, where The Institute for Soldier Nanotechnologies opened earlier this year.

Photovoltaics, or PVs, use solar cells to convert light into electricity, with no noise, no moving parts, and without producing pollution, scientists said. PVs can be integrated into existing materials like fabric, shelters, and vehicles.

Lightweight and portable PV panels can be laid out on a table, or spread out on top of a shelter, to generate power that can be used for a variety of things, like recharging batteries. With a small PV panel that rolls up and fits in a pocket, soldiers can recharge two double-A batteries in about two hours. Larger PV panels can also provide emergency power to field hospitals.

The forum also included a demonstration of the new combat uniform, with Sgt. Maj. of the Army Kenneth Preston fielding questions about it. The uniform, designed with input from soldiers, has been field tested by Stryker Brigade soldiers in Iraq.

Wrinkle-free with a digitized camouflage pattern of greens and light browns, the uniform features angled breast pockets, a collar that folds up to prevent chaffing from body armor, Velcro and zippers instead of buttons, and pockets on the upper sleeves and toward the bottom of the legs. A pleat in the back shoulders makes the shirt more expandable for larger-chested soldiers.

Soldiers will also wear moisture-wicking T-shirts and undergarments, and lightweight jungle-style brown boots.

The uniform will help soldiers blend into a variety of environments and especially so in urban areas and at night, Preston said. It will be phased in much like the physical training uniform was, he added. Soldiers deploying next year for OIF 3 and OEF 6 will get the uniforms, which will replace the desert camouflage uniforms and both the summer and winter versions of the battle dress uniforms.

Basic training soldiers should start getting them issued in May 2006, with all soldiers in them by May of 2008. They'll cost a little more than battle dress uniforms, but clothing allowances will be adjusted to compensate, Preston said. Soldiers will also save money because the uniforms cannot be professionally laundered or dry-cleaned; they also won't pay for patches to be sewn on since Velcro will be used.

Preston said sleeves stay down in theater, and the Army is getting away from rolling sleeves up in general.

Sgt. Maj. of the Army Kenneth Preston describes features of the new combat uniform, demonstrated by Soldier of the Year Spc. Wilfredo Mendez, far left, and Staff Sgt. Andrew J. Bullock, Noncommissioned Officer of the Year. To the far right, Sgt. Rock, an interactive robotic soldier, also wears the new uniform.

U.S. Army photograph by Sgt. Lorie Jewell, USA

One concern expressed about the uniform was the noise Velcro makes when a soldier opens a pocket. Preston said the leg pockets have drawstrings that can be used instead.

Most soldiers were enthusiastic about the uniform and future technologies. Sgt. Samuel Cowell, a signal intelligence analyst from Korea, appreciated the chance to see the uniform up close.

"This dispels a lot of rumors about it," Cowell said. "People are saying there aren't any real improvements, that the Velcro won't work right. But with all the testing it's been through, and showing us, I think it's going to be fine."

AIR FORCE PRINT NEWS (NOV. 12, 2004)

## AIR FORCE'S FUTURE 'INVENTED' AT RESEARCH LAB

*Master Sgt. Scott Elliott, USAF*

WASHINGTON—It still may be a little too soon for *Star Trek's* "beam me up, Scotty" technology, but Air Force scientists and engineers are trying to narrow the gap between science fiction and science fact.

The Air Force Research Laboratory at Wright-Patterson Air Force Base, Ohio, recently published the results of a study on the feasibility of teleportation physics. The study looked at scientific and engineering literature worldwide to determine the practicality of advanced research into the disembodied transport of people or inanimate objects from point to point across space.

While the study indicates science and technology are not quite ready for teleportation, Col. Michael Heil, chief of AFRL's propulsion directorate, said the Air Force is not about to quit looking to the future.

"I think it's premature to discount the basic research into promising technologies," he said. "We keep our fingers on the pulse of science at all times, so it's a continual process by our scientists and engineers to stay up to date in following the technical literature and looking for breakthroughs in physics and other sciences."

Some technological breakthroughs spend many years making the transition from concept to reality. One example is the pulse-detonation engine, where the air and fuel mixture is detonated rather than allowed to simply burn.

"The concept, thermodynamically, has been around for many years, but no one had been able to make the concept work until we took it into the laboratory here," Heil said. "We have shown we can produce thrust from a pulse-detonation engine."

The colonel said a PDE has been installed on an aircraft and has successfully completed taxi testing. "That's an example of a technology that has payoffs in terms of efficiency of producing thrust, particularly in the supersonic regime," he said.

Another promising propulsion technology involves the manufacture of unique molecules.

"We actually have chemists who will theoretically design high-energy molecules on their computers, then go into the laboratory and synthesize those molecules," Heil said. "The [chemists] have invented new nitrogen ions. We're doing advanced research to see if these new compounds and materials have payoffs for rocket propulsion. Sometimes efficiencies are at least twice [that of] current rocket fuels and oxidizers."

Heil admitted that AFRL scientists and engineers occasionally have to deal with the "giggle factor" when looking into new concepts.

"Sometimes things start to look like science fiction, like *Star Trek*," he said. "We don't fund science fiction in AFRL, we only fund legitimate science that has potential payoff for the Air Force. However, it is our job to look far out into the future to pursue promising areas of science and look at high-payoff, high-risk technologies."

Heil said the Flash Gordon ray gun was one of those one-time giggle factor ideas. That science fiction has been turned into science fact in the form of laser technology, which currently has military, medical, and commercial application.

The colonel pointed to the very basis of the Air Force—the airplane—as justification for pursuing far-out technological concepts.

"We are a high-tech Service," he said. "We were born of technology when the airplane was invented. We always push the edge in terms of embracing technology and being on the cutting edge.

"We have brilliant people [at AFRL] who are inventing the future of the Air Force," he said.

17TH PUBLIC AFFAIRS DETACHMENT NEWS RELEASE (NOV. 8, 2004)

## ARMY INITIATIVE PROVIDES LATEST EQUIPMENT TO DEPLOYED SOLDIERS

*Sgt. Frank Magni, USA*

FORWARD OPERATING BASE ORGUN-E, Afghanistan—As the battlefield of the 21st century evolves, so does the equipment that keeps soldiers in the fight. In response to the rapid deployments of the past few years, the U.S. Army leaders have created the Rapid Fielding Initiative, known as RFI, which aims to ensure that soldiers are issued the most technologically advanced equipment available to them.

The initiative team issues a variety of equipment, from boots and gloves to sunglasses and improved helmets. Most units receive a rapid fielding initiative issue before deploying. But in a time of no-notice or last-minute deployment orders, there are some soldiers who are missed. In this case, the RFI team will travel to the field to get equipment to soldiers, said Sgt. 1st Class James Mical, Army Test and Evaluation Command RFI consultant.

"With technology changing so fast, and soldiers rapidly deploying, it is necessary to have a flexible solution to get equipment to the soldiers," said Philip Whitlock, initiative team member.

The advantages of Rapid Fielding Initiative are numerous, Whitlock said. Because the team can travel throughout the world, they are able to bring equipment to soldiers whose units did not have the opportunity to receive the equipment at their home station.

"We go where the soldiers are," said Whitlock.

Once the members of the team visit the soldiers in Iraq, they send the measurements and sizes back to a warehouse in Kuwait. There, a duffel bag is filled with each soldier's gear based on his or her sizes. The bag is then sent back to the individual's unit for issue. This process can have the gear back to the soldier in about 15 days.

Emphasis on the soldier is one reason why the initiative is gaining in popularity within the Army, said Whitlock. Not only do members of the team pay close attention to customer service, but the equipment they issue keeps them popular, Whitlock said.

The items issued vary by the type of unit a soldier is in, but most get improved T-shirts, belts and socks, along with silk-weight long underwear, goggles, hydration systems, improved knee pads, fleece jackets, and bib overalls.

Some soldiers are even issued multi-function tools and other tools they use as part of their military occupational specialty. Combat soldiers are also issued modular lightweight load-carrying equipment, known as MOLLE gear.

On Forward Operating Base Orgun-E, in Afghanistan, the initiative team came to properly size soldiers for the Advanced Combat Helmet. The unit, 2nd Battalion, 27th Infantry Regiment, was issued a majority of their RFI items before deploying, but the advanced helmet was a supplemental item.

The ACH is an improvement over the traditional helmet because of its advanced design, said Luis Samuel, RFI team member. "It is designed to work better with interceptor body armor," he continued. "It is easier to shoot from the prone position with these new helmets."

The ACH is also one-and-a-half pounds lighter than the traditional Kevlar helmet and has a four-point chin strap system for a better fit. It also provides a better fit because each helmet has rotating pads that fit to different sized heads.

Each ACH comes with a night vision mount, helmet cover that is reversible with either desert or woodland pattern, movable pads, and the four-point chin strap

Sgt.Luis Samuel, right, a Rapid Fielding Initiative team member, fits an Advanced Combat Helmet to Spc. Richard Delgado on Forward Operating Base Orgun-E, Afghanistan. Delgado is assigned to Company C, 2nd Battalion, 27th Infantry Regiment.

U.S. Amy photograph by Sgt. Frank Magni, USA

retaining system. It can also be fitted with a communications system.

While the ACH is just now being issued to many soldiers in Operation Enduring Freedom, Spc. Edgar Salas of the battalion's Company C wore the ACH when he was with the 101st Airborne Division (Air Assault) during the early phases of Operation Iraqi Freedom.

Salas said he was very satisfied with the helmet during the months he used it in Iraq.

"It fits so well, and it is so much lighter that you sometimes forget you have it on," said Salas. "It really helps lessen neck and shoulder fatigue on long missions."

Spc. Dan Maulsby, another Company C soldier, said he likes RFI for a few different reasons.

"It feels good because it feels like the Army is going out of its way to get us the best equipment they can," said Maulsby.

The piece of equipment that has been most useful is the MOLLE vest, said Maulsby.

"These vests are comfortable and practical," he said. "It makes sense because each person can put the pockets in different positions. This is better, because with the different weapon systems, each person can put ammo where it is most efficient."

Both Maulsby and Salas said all the equipment they have received from RFI has been very useful and that they would likely have purchased some of the items themselves if they weren't issued them.

This is a common response heard by the Rapid Fielding Initiative team, and it has become one of the most rewarding aspects of their jobs.

"These are all items soldiers were buying anyway, We were just giving them something they can use," said Samuel. "This just cuts down on [unnecessary] cost to the individual soldier."

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AIR FORCE PRINT NEWS (NOV. 2, 2004)

## LEADERS UNVEIL UPDATED UTILITY UNIFORM COLORS, PATTERN

*Tech. Sgt. David A. Jablonski, USAF*

WASHINGTON—Responding to airmen's feedback, Air Force leaders unveiled an alternative utility uniform color scheme and pattern Nov. 2 as part of the ongoing wear-test that was announced in August 2003.

Secretary of the Air Force Dr. James G. Roche, Air Force Chief of Staff Gen. John P. Jumper, and Chief Master Sgt. of the Air Force Gerald R. Murray are now wearing the latest test version of the utility uniform during visits to airmen serving in Operation Iraqi Freedom.

The most striking change in this version is the switch from a deep blue, gray, and green color scheme to a more subdued mix of tan, blue, and two shades of green. And the tiger-stripe pattern is now pixilated.

This test version includes design changes incorporated in September based on feedback from airmen.

More than 700 people at 32 installations are wear-testing the first test uniform. These airmen participated in scientific surveys and focus groups. Their feedback was instrumental in making the most recent adjustments. The original plan called for only 300 testers, but uniform board officials decided to increase the number of testers

The Air Force utility uniform's revised colors are tan, blue, and two shades of green in a pixilated tiger-stripe pattern. Secretary of the Air Force Dr. James G. Roche, Air Force Chief of Staff Gen. John P. Jumper, and Chief Master Sgt. of the Air Force Gerald R. Murray are wearing the updated utility uniform during visits to airmen serving in Operation Iraqi Freedom.
U.S. Air Force photograph by Tech. Sgt. David A. Jablonski, USAF

to get more exposure and collect more test data. A select group will test the newest version.

Data showed that a Service-unique appearance was very important to airmen.

"Ninety-one percent of the airmen responded in favor of a distinctive Air Force utility uniform," Murray said. "Airmen take great pride in serving in America's Air Force. Having a distinct uniform that presents a professional appearance to the public and our sister Services, when we are at home station or deployed, is important"

A unique Air Force-designed uniform has another big advantage.

"Our new utility uniform incorporates a unique fit tailored for men and women, and a variety of realistic sizes beyond just small, medium, and large," the chief said.

"More than 20 percent of our airmen are women, and we continually received feedback on how the male uniforms they currently wear do not fit well. Fit and comfort are important for all airmen to project a professional military image."

Officials said they are reaping additional benefits from this particular uniform wear-test process.

Air Force Clothing Office officials took detailed measurements of as many body types as possible and recorded them into a database for future uniform design studies. Since the last such measurement in the 1960s, officials discovered that the average airmen now has a more athletic build.

Not only are airmen more fit to fight; they are deployed more often and for longer periods than ever before. There is no time to fuss over finicky uniforms, officials said.

"The wash-and-wear uniform will be easier and cheaper to maintain," said Senior Master Sgt. Jacqueline Dean, uniform board superintendent. "The permanent-press treatment eliminates the need for ironing, and home washing can save an airman from $180 to $240 in laundry costs over the course of a year."

Dean oversees the wear test and leads the uniform board's campaign to display the uniform as much as possible in a variety of locations.

"The wear test allows airmen around the world to see the uniform in work places and to give feedback on its appearance, comfort, function, and maintenance," Dean said. "The chief of staff took that feedback into consideration when making the decision to move forward with expanding the test to include the new color and pattern."

Special operations and survival, evasion, resistance, and escape airmen will field-test the new utility uniform's pattern and colors to see how they perform in extreme conditions.

In January 2005, the uniform board will standardize the pattern, material, and specifications and deliver the results to the Defense Logistics Agency for production. Normal production to delivery time can take 18 to 24 months.

## AMERICAN FORCES PRESS SERVICE (NOV. 9, 2004)

## UNMANNED AIRCRAFT GAIN STARRING ROLE IN TERROR WAR

*Donna Miles*

WASHINGTON—Unmanned aerial vehicles are earning star status in the global war on terror, becoming the most requested capability among combatant commanders in Southwest Asia and increasing fourfold in that theater during the last year alone, according to the deputy director of the Pentagon's UAV planning task force.

Dyke Weatherington told the American Forces Press Service that UAVs are topping combatant commanders' wish lists. During the past year alone, the number of UAVs in Iraq has jumped from less than 100 to more than 400.

"We've seen a huge growth in the total number of UAVs in the theater, with most of that growth in the area of small UAVs," he said. "There's a lot of capability over there today, and frankly, the warfighter is asking for more."

What makes UAVs so valuable, Weatherington said, is their ability to provide eyes in the sky for extended periods of time, beaming real-time images to the ground.

"In the global war on terror, persistence is vitally important," he said. "It's important to deny the enemy sanctuary. And constant surveillance in his backyard, so to speak, prevents him the opportunity to mass assets and forces."

In the event the enemy does this, UAVs offer an additional capability beyond their traditional intelligence, surveillance, and reconnaissance role, Weatherington said. Now they're demonstrating a strike capability as well.

The Air Force's Predator UAV, which earned its stripes flying reconnaissance missions in Bosnia, showcased that capability in Southwest Asia. Predator is credited with taking out one of al Qaeda's top lieutenants in Afghanistan with a Hellfire missile, and has since been used widely for offensive operations in Iraq.

Although Predator wasn't initially designed as a strike platform, Weatherington said its ability to provide continual surveillance and respond quickly to on-the-ground threats makes it a valuable asset in the war on terror.

"A UAV with a strike capability can take action very early in that cycle [of enemy activity]," Weatherington said, "and in many cases, eliminate the threat entirely."

Even unarmed, Predator and other UAVs can identify targets so other strike platforms, such as AC-130 Spectre gunships, can engage them more quickly and effectively, Weatherington said.

But Predator isn't the only UAV proving its value in Southwest Asia. Weatherington said the variety of UAV systems in the military inventory ensures that UAV technology is adaptable to the widest range of missions.

In all, the military now has more than a dozen UAV systems in its inventory and is at work on several new ones, including the Joint Unmanned Combat Aerial System, which will incorporate direct-strike capabilities and a rotary-wing UAV.

On the more immediate horizon, there's the high-altitude, super-sophisticated Global Hawk being developed for the Air Force to conduct long-term surveillance. At the other end of the spectrum, the Marine Corps' hand-launched Dragon Eye system already in use in Iraq gives

U.S. Marines prepare a hand-launched Dragon Eye unmanned aerial vehicle along the outskirts of Fallujah, Iraq, in the first hours of Operation Al Fajr on Nov. 8, 2004. The Marines are assigned to 3rd Battalion, 5th Marine Regiment, 1st Marine Division.
U.S. Air Force photograph by Cpl. James J. Vooris, USMC

squad- or company-level leaders a snapshot of their operating area, then breaks down into pieces that fit in a backpack.

The Raven, another small, hand-held system in use by the Army, is the most common UAV in Iraq, Weatherington said, with about 250 systems providing real-time, up-to-date, over-the-horizon views over trouble spots. It packs into a transit case that fits into the back of a Humvee.

Another rising star is the Shadow tactical UAV, which is proving its value in Iraq during improvised-explosive-device sweeps and reconnaissance missions. Weatherington said six Shadow systems in Southwest Asia "are flying almost continuously."

Weatherington, whose office coordinates all military UAV initiatives and programs, said there's no single, one-size-fits-all formula for UAVs. Different systems are more readily adaptable to different missions, providing capabilities from the squad or company level to the division or corps level, to the theater level.

"It's the integration of all those capabilities that make them advantageous," he said. "The integration of those systems is what provides very persistent surveillance capabilities."

In Iraq, UAVs provide situational awareness for troops guarding garrisons and high-value targets, support mobile troops during scouting missions, and watch over convoy movements, among other missions, Weatherington said.

"They're a real advantage," he said. "If a convoy is going down the road and sees something up ahead that looks unusual, they can literally stop, put one of these things together and launch it, fly down the road and see what's down there—without endangering the convoy."

Weatherington said these small UAVs extend the capabilities of ground forces involved in protecting strategic locations. "You can have a detachment there for protection, but they can't always service the entire area," he said. "So with one of these small UAVs, you can extend their eyes and ears to a much larger area and have a very rapid response if they detect a potential threat."

Meanwhile, UAVs provide high-altitude surveillance with "robust capabilities" at the theater level. Weatherington said as many as five Predator systems—all operated from within the United States—continually monitor the skies over Iraq and Afghanistan, sometimes simultaneously.

Weatherington said UAVs can do what people can't—or ideally, shouldn't have to. They're able to operate at long ranges and don't tire or lose concentration as a human would over extended periods, particularly when operating in dangerous, high-stress environments.

They're less expensive to operate than manned platforms. For example, operating Predator costs "about a quarter of what it costs to operate an F-16—and it stays up 10 times as long," Weatherington said.

But perhaps most important, they can conduct highly risky missions without risking human lives. "It affords combatant commanders flexibility in using an asset to conduct a mission that they may not choose to risk a human, manned platform to do," Weatherington said.

In the long term, Weatherington said he expects to see UAVs and other unmanned systems replace more manned systems, particularly for high-risk or high-threat missions. "I think we'll continue to see that evolution," he said.

But despite their contributions, Weatherington was quick to point out that UAVs "aren't a panacea."

"They can't do everything for everybody, and we shouldn't try to make them do everything for everybody," he said.

Air-to-air combat, for example, is probably best left to the highly skilled pilots trained to operate in what Weatherington called "a highly dynamic environment." Similarly, tanker and airlift missions are probably most appropriate for manned aircraft, although Weatherington said the Services are eyeing the possibility of "optional manning" for these aircraft.

In the meantime, Weatherington said UAVs have become "an extremely valuable asset, in terms of their endurance, their intelligence, surveillance and reconnaissance capabilities, their flexibility, and their cost."

"They've proved their worth and continue to be a very effective tool for combatant commanders fighting the global war on terror," he said.

AIR MOBILITY COMMAND NEWS SERVICE (NOV. 15, 2004)

## NEW AMC DELIVERY PROCESS SPEEDS SHIPMENTS TO TROOPS

*Tech. Sgt. Mark Diamond, USAF*

SCOTT AIR FORCE BASE, Ill.—A new Air Mobility Command program, dubbed "Pure Pallet," is simplifying and speeding up airlift shipments into the U.S. Central Command's area of responsibility.

The program involves building and shipping individual aircraft pallets with cargo for a single customer, AMC officials said.

Lt. Col. Steve AuBuchon, AMC's cargo management branch chief of the logistics air transportation division, said that a customer's cargo is normally loaded onto an aircraft pallet with cargo for other customers within the same region. Under this system, a single pallet could contain cargo for dozens of customers. The colonel said once these "mixed" pallets arrive at a forward-deployed aerial port, they must be broken down, sorted, re-palletized, and distributed to the individual customers.

Besides adding a considerable amount of time to the delivery process, AuBuchon said the airmen, soldiers, or Marines responsible for breaking down, sorting, rebuilding, and redistributing these mixed shipments are vulnerable to attack for longer periods of time.

"In CENTCOM right now, the aerial ports are very restricted on the amount of cargo processing facilities, equipment, people, and experience [because of] the threat of attack," he said. "If you're unloading and sorting cargo at Balad, you could easily have a mortar drop on top of you."

The program transfers this additional workload to what he called "the peaceful end of the process." When a pure pallet arrives at the deployed aerial port, it can be pulled from the aircraft and immediately handed off to the customer or placed on a truck or C-130 Hercules headed to more remote locations. "The process never stops," AuBuchon said.

The colonel said the program is based on the principle that the earlier in the logistics pipeline that individual shipments are unitized into a single package, the quicker and more efficiently the package is going to go through the system.

"Obviously, there are going to be some limitations, but our limitations are [fewer] than they have [at the deployed aerial port], so we've taken this upon ourselves," he said.

What the program means to the warfighter is a more rapid and simplified distribution of shipments into the theater of operations, said Maj. Michael Kossow, the branch's chief of strategic distribution.

"Our nation's military efforts in support of the global war on terrorism, particularly those of the Army and Marine Corps in the Central Command area of responsibility, have changed the old paradigm of logistics support to a new philosophy of time-definite delivery," he said. "The focus is on airlifting shipments to the warfighter at the right speed, at the right time, and most important, on the right pallet to a designated location."

Since March, the program has been incorporated in aerial port operations at Dover Air Force Base, Del., Charleston AFB, S.C., and Ramstein Air Base, Germany, for cargo shipments into the CENTCOM theater.

The process of building each pure pallet begins at the aerial port, where cargo is held in aisles or lanes, according to the customer's Department of Defense activity address code. AuBuchon said the codes can be compared to ZIP codes used by the U.S. Postal Service—each customer has his or her own code.

"One of the problems with building pure pallets is having enough cargo to fill an entire pallet," the colonel said. "When we were negotiating with the Army and Marine Corps, we told them it would kill us to ship a half-empty pallet. Airlift is a precious commodity, and we can't send a C-5 [Galaxy] over there with 36 half-empty pallets. We have better things to use that airlift for. Airlift is a precious national asset, and we have to make sure we use it as efficiently as we can."

He said Army and Marine Corps officials said they would be willing to wait a certain a number of days for the aerial port to accumulate cargo for specific codes. Additionally, AuBuchon said, certain codes can be combined to fill a single pallet.

Although the aerial ports are holding cargo for an additional three to five days, Kossow said the program has still reduced delivery times into Southwest Asia.

He said that because a single mixed pallet could include cargo for dozens of customers within the same region, aerial port workers and customers expend valuable time and resources breaking down, sorting, rebuilding, and distributing the shipments, resulting in delays of up to several weeks. The major said pure pallets, on average, are reaching their customers in fewer than nine days.

But AuBuchon said AMC officials cannot take all the credit.

Although pure pallets are new to the Air Force, the colonel said AMC's program was actually modeled after a similar system used by the Defense Logistics Agency.

"Our pure pallet operations are much smaller than the Defense Logistics Agency's, but no less effective," AuBuchon said. "Our program has been very successful. [Soldiers have] had some very high praise for the program, not only because the cargo is getting to them faster, but because of the quality job AMC is doing."

Kossow said the "quality" is a by-product of the hard work from AMC airmen.

"Our AMC aerial ports at Charleston, Dover, and Ramstein have made a very complex and unique task look easy," he said. "But the reality is these aerial port professionals have really stepped up to the task with hard work, creativity, and an insatiable drive to keep the warfighter equipped in the global war on terrorism."

AIR FORCE PRINT NEWS (NOV. 16, 2004)

## NEW LIGHT-WEIGHT WEAPON JOINS BALAD ARSENAL

*Master Sgt. David Reagan, USAF*
*332nd Air Expeditionary Wing Public Affairs*

BALAD AIR BASE, Iraq—In an effort to keep pace with the ever-changing face of close-quarters combat, F-16 Fighting Falcon crews here plan to use a new, lightweight satellite-guided munition soon.

The GBU-38 500-pound Joint Direct Attack Munition is designed to reduce collateral damage, limit unintended casualties, and take the fight up close and personal to enemy insurgents and anti-Iraqi forces alike.

Although they will not be the first in theater to drop the newest JDAM in the U.S. arsenal, munitions specialists, maintainers, and aircrews dedicated to keeping the bite of the 421st Expeditionary Fighter Squadron "Black Widows" lethal are saying, "Let's Roll."

As specialists and maintainers fine tune the basics to certify the GBU-38 on F-16s based here from Hill Air Force Base, Utah, elsewhere in the area the new JDAM has already proved to be a thorn in the side of those who choose to impede the Iraqi reconstruction effort.

Two F-16s from an undisclosed location completed the first successful combat drop of GBU-38s on Oct. 4, 2004, during a precision strike on a confirmed Abu Musab al-Zarqawi terrorist meeting. The two released JDAMs precisely struck the terrorist hideout causing only minimal collateral damage.

BALAD AIR BASE, Iraq—Airman 1st Class Michael Claypoole assembles a GBU-38 500-pound Joint Direct Attack Munition. The new munition is designed to reduce collateral damage, limit unintended casualties, and take the fight up close and personal to enemy insurgents and anti-Iraqi forces alike. Claypoole is a munitions systems journeyman with the 332nd Expeditionary Maintenance Squadron at Balad.
U.S. Air Force photograph by Master Sgt. David Reagan, USAF

"We're ready to go and just waiting on the final steps in the approval process," said Senior Master Sgt. Douglas Baker, 332nd Expeditionary Equipment Maintenance Squadron munitions flight chief. "After receipt of our JDAM tail fin kits in late October, my munitions crew produced sufficient quantities of the new JDAM to support our mission requirements in only 24 hours."

Additionally, Baker said the new weapon greatly enhances the capabilities of the Black Widows by giving them an additional choice of weapon that performs well in a confined, inner-city environment.

Normally with new equipment and cutting-edge technology, one can expect a certain degree of difficulty or steep learning curve to be associated with the product; however, during the initial build, munitions crewmembers found the newest version the easiest to assemble of all the JDAM line-up.

"We prefer building this JDAM over the others simply because it is much easier to work with the smaller weapon compared to the 2,000-pound JDAM we routinely call the monster," Baker said.

"The focus and level of teamwork we used in building the initial complement of GBU-38s was high. There is a profound likelihood these weapons will be expended on each mission here, so it was imperative for us to learn and follow the new procedures to the letter," said Tech. Sgt. Patrick Van Vranken, 332nd EMXS munitions flight production supervisor. "After all, it is all about bombs on target in this environment," he said. Van Vranken oversaw the initial assembly of the new JDAMs here.

"Anytime you experience a new weapons system, it is interesting and challenging all at the same time," Van Vranken said. "We have to do it right each and every time. Our Army, Navy, and Marine counterparts expect no less and need this support on the ground; they need this firepower."

## AIR FORCE PRINT NEWS (NOV. 16, 2004)
## SPACE ASSETS CRITICAL TO WINNING WAR ON TERRORISM

*Capt. Johnny Rea, USAF*
*Air Force Space Command Public Affairs*

NEW YORK—Space-based assets are proving critical to winning the war on terrorism, according to the commander of Air Force Space Command.

"You cannot go to war and win without space," Air Force Gen. Lance W. Lord said during a live appearance on "Fox and Friends" here Nov. 11, 2004.

The command comprises about 40,000 space professionals who provide combat forces and capabilities to North American Aerospace Defense Command and U.S. Strategic Command, supporting various operations worldwide.

Space allows precision attack on the battlefield, the general said, and has transformed the way American forces fight modern wars.

Precision-guided munitions using Global Positioning System satellites limit the exposure and vulnerability of forces while minimizing collateral damage and maximizing combat effectiveness, he said.

"We take the 'search' out of search and rescue," Lord said during his television appearance.

He said the command's airmen are currently supporting warfighters on the ground in Fallujah, Iraq.

"We provide the navigation and the timing so that [the warfighters] can know exactly where they are—and what the target coordinates are—and [are] able to hit those with precision using space-based capabilities."

The general reiterated the importance of space during a speech at a luncheon later the same day.

"Our nation depends upon our space capabilities for precision attack, speed, and unmatched maneuverability on today's battlefield," he said. "We are well on our way to becoming a full spectrum combat command in the future."

He said space superiority is a prerequisite for success, describing three elements necessary to achieve and sustain space superiority.

"Space situation awareness provides a robust understanding of what's going on in the medium of space," he said.

Defensive counterspace is not a program or a goal, but rather a mindset, he said. "We must work diligently to protect our advantage in space. Our nation depends on it."

Finally, the general said the United States must develop the ability to counter enemy systems through reversible effects.

"We have made some tremendous progress with our existing capabilities, and we can all be proud of the contributions made by our military space systems," Lord said. "We are making a difference—where it counts the most—on the battlefield."

## ARMY NEWS SERVICE (NOV. 24, 2004)
## ARMY MATERIEL COMMAND MERGES UNITS IN EUROPE

*C.W. Fick Jr.*

SECKENHEIM, Germany—In keeping in step with the Army's transformation, Combat Equipment Group–Europe and Army Materiel Command Forward–Europe merged Nov. 18, forming Army Materiel Command Field Support Brigade–Europe.

The new unit mirrors the mission of its parent, Army Field Support Command, and will deliver the full spectrum of logistics power projection and support to forces in the field.

"By combining two Army Materiel Command units with a proud history of warfighter support, the Army gains a leaner organization, focused on delivering expertise and equipment to soldiers and units throughout the European area of operations," said Col. Max Lobeto, commander of the newly formed brigade.

The focus of AMC FSB-E is to provide service to supported units.

"Adopting a brigade structure aligns us with the expeditionary Army units we support in Europe and beyond," said Lobeto. "Our mission is unchanged: AMC Field Support Brigade–Europe provides an essential and enduring link from America's arsenal to units and troops in the field."

More than 300 people form the core of the brigade, with several hundred more host-nation service providers and contractors adding capabilities ranging from mechanical repairs to logistics assistance.

"We have over 1,600 people on the ground throughout Europe and attached to U.S. Army Europe units for one purpose: delivering logistics readiness power forward," Lobeto said.

The new brigade also brings with it the capability to reach back to commands in the United States.

"Our team includes representatives from AMC's major subordinate commands, like Tank-automotive and Armaments Command, Aviation and Missile Command, and others, enabling us to deliver expertise and equipment directly from the source to the soldier," Lobeto said.

Pre-positioned equipment and repair capabilities also feature prominently in the new command. Field support battalions (formerly called combat equipment battalions) located in The Netherlands, Italy, Luxembourg, and the United Kingdom bring 20 years of experience in delivering combat-ready equipment to the battlefield.

"Many of the tanks and trucks the 3rd Infantry Division drove to victory in Operation Iraqi Freedom were deliv-

Brig. Gen. Jerome Johnson, Army Field Support Command commander, Gen. Benjamin S. Griffin, Army Materiel Command commander, and Col. Max Lobeto, AMC Field Support Brigade–Europe, salute during a Nov. 18 ceremony at Seckenheim, Germany, in which CEG-E and AMC Forward–Europe were merged to form AMC Field Support Brigade–Europe. U.S. Army photograph by C.W. Fick Jr.

ered by CEG-E, which has become the field services arm of the new brigade," the commander said.

Though the name has changed and the staff are consolidated, the pace of operations has not missed a beat all across the brigade.

"Now that the 1st Armored Division is back in Germany, our workforce is heavily engaged in rapidly repairing and returning equipment in what is called a 'reset' mission," Lobeto said. He said this enables the soldiers to concentrate on training and getting back to full operational readiness.

"We're part of an Army at war, and we are adapting to the mission," Lobeto said. "By merging capabilities into one headquarters, we're providing combatant commanders with one-stop logistics services."

## ARMY NEWS SERVICE (NOV. 30, 2004)
## ARMY SCIENCE CONFERENCE SPEAKER FORECASTS REPLACEMENT OF COMPUTERS BY 2010

ORLANDO, Fla.—By 2010, computers will be replaced by electronics so tiny they can be embedded in clothing or eyeglasses and broadcast on the human retina, a noted inventor predicted at the Army Science Conference.

Dr. Ray Kurzweil, creator of the first synthesizer, inventor of the first commercially marketed large-vocabulary speech recognition machine, and winner of the $500,000 Lemelson-MIT Prize for invention and innovation, also foresaw the introduction of realistic 3-D holographic projection and machines that instantly translate the spoken word from one language to another.

His presentation on Nov. 29, 2004, capped off the first day of the 24th biennial conference sponsored by the United States Army to explore how transformational science is changing our world and the soldier fighting force. Senior Army leaders, industry experts, and noted academics joined together here to build collaborative relationships and develop the technologies and capabilities that will be the hallmark of the future force.

Technological advance has incredible potential to improve the warfighting effort, Kurzweil said. New virtual technologies will reduce—and in many ways, are already reducing—the time it takes to develop new combat systems, he said.

Miniaturization, or the process of condensing more powerful technologies into smaller packages, will help the Army create more and better unmanned machines that remove soldiers from dangerous combat situations. Some fighting will be done by remote control, Kurzweil said.

Today we have smart bombs, but tomorrow we may have smart bullets, he added.

Human knowledge of information technology, computer technology, and health science is doubling annually, Kurzweil said. In nearly every area, we are experiencing exponential growth in knowledge.

This knowledge does not only have military applications; its possibilities across the spectrum of human existence are astounding, he noted.

Kurzweil offered the example of genetics. It took 15 years to sequence the HIV virus, the cause of AIDS, but it took only 31 days to sequence the SARS virus. This knowledge allows scientists to explore gene suppression, a possible key to unlocking a cure for dozens of diseases, he said.

"There are new drugs… kind of like smart weapons, that zero in on specific targets with no side effects," Kurzweil said.

Another example is the development of instantaneous language translation devices, which Kurzweil predicted will be common on cellular telephones by the end of the decade.

"Within a few years, we will be able to talk to anyone, regardless of language," he said.

Because of the importance of technology, the threat to the military and economic dominance of the United States lies in the decline in Americans' pursuing careers in fields such as engineering and natural science.

Kurzweil noted that more and more students in China and other Asian nations are pursuing advanced education in science-related fields. In America, these trends are reversed.

Kurzweil admitted while technology will solve many problems we face today, a utopia is not on the horizon. He concedes this development will unlock new problems we do not fully understand today.

Commissioned by Claude M. Bolton Jr., assistant secretary of the Army for acquisition, logistics and technology, the Army Science Conference has a focus that is twofold: to discuss the current state of technology and how it is being used to support the global war on terror; and to forecast how emerging technologies will be harnessed in the future.

ARMY NEWS SERVICE (DEC. 3, 2004)

## ARMED ROBOTS SOON MARCHING TO BATTLE?

*Sgt. Lorie Jewell, USA*

ORLANDO, Fla.—Soldiers may have armed robots as battle buddies by early 2005, according to industry and military officials attending the biennial Army Science Conference.

The Special Weapons Observation Reconnaissance Detection System, or SWORDS, will be joining Stryker Brigade soldiers in Iraq when it finishes final testing, said Staff Sgt. Santiago Tordillos, a bomb disposal test and evaluation NCOIC with the EOD Technology Directorate of the Army's Armament Research, Development and Engineering Center at Picatinny Arsenal, N.J.

"We're hoping to have them there by early 2005," Tordillos said. "The soldiers I've talked to want them yesterday."

The system consists of a weapons platform mounted on a Talon robot, a product of the engineering and technology development firm Foster-Miller. The Talon began helping with military operations in Bosnia in 2000, deployed to Afghanistan in early 2002, and has been in Iraq since the war started, assisting with improvised explosive device detection and removal. Talon robots have been used in about 20,000 missions in Iraq and Afghanistan, according to Foster-Miller reports.

"It's not a new invention; it's just bringing together existing systems," said Tordillos, who has been involved with the project since its inception about a year and a half ago.

With a weapons platform mounted to a Talon robot, the SWORDS system allows soldiers to fire small arms weapons by remote control from as far as 1,000 meters away. The system, demonstrated at the biennial Army Science Conference, may soon join soldiers in Iraq.
U.S. Army photograph by Sgt. Lorie Jewell, USA

Different weapons can be interchanged on the system—the M16, the 240, 249, or 50-caliber machine guns, or the M202 -A1 with a 6mm rocket launcher. Soldiers operate the SWORDS by remote control, from up to 1,000 meters away. In testing, it's hit bullseyes from as far as 2,000 meters away, Tordillos said. The only margin of error has been in sighting. "It can engage while on the move, but it's not as accurate," Tordillos said.

The system runs off AC power, lithium batteries, or Singars rechargeable batteries. The control box weighs about 30 pounds, with two joysticks that control the robot platform and the weapon, and a daylight viewable screen. SWORDS recently was named one of the most amazing inventions of 2004 by *Time* magazine.

There are four SWORDS in existence. Eighteen have been requested for service in Iraq, Tordillos said. So far, each system has cost about $230,000 to produce, said Bob Quinn, lead integrator for the project. When they go into production, Quinn estimates the cost per unit will drop to the range of $150,000 to $180,000.

Quinn credits soldiers with getting the project started. "It's a classic boot-strap effort," said Quinn.

Tordillos fielded a variety of questions while showing off the system in the exhibit hall. Soldiers wanted to know what military occupational speciality they have to sign up for in order to work with the system. There is no specific MOS for it, he said.

Other questions were more thought-provoking. Does he envision a day when armed robots will outnumber humans on the battlefield? Tordillos firmly said no. "You'll never eliminate the soldier on the ground," he said. "There'll be a mix, but there will always be soldiers out there."

ARMY NEWS SERVICE (DEC. 7, 2004)

## EMERGING TECHNOLOGIES FORM FUTURISTIC UNIFORM

*Sgt. Lorie Jewell, USA*

ORLANDO, Fla.—Dressed in black from head to toe and wearing a helmet that allows barely a glimpse of his face, Staff Sgt. Raul Lopez looked like something out of a science fiction thriller.

Lopez, an infantry soldier stationed at the Natick Soldier Center in Massachusetts, spent four days in what could be the Army uniform of the future at the 24th Army Science Conference, explaining the technology behind it.

The black fabric of the form-fitting suit would be made through the wonder of nanotechnology, which involves manipulating atoms and molecules to create things at the nanometer scale. That's about 50,000 times smaller than the diameter of a strand of hair. Soldiers wearing the suit would have the ability to blend into any environment, like a chameleon.

The helmet is the main hub of the uniform, where "all of the action happens," Lopez said. A tiny video camera in front provides 360-degree situational awareness. A series of sensors inside give the soldier three-dimensional audiological hearing and the ability to amplify specific sounds, while lowering the volume of others.

Complete voice translation is also provided for what the soldier hears and what he or she says. Night vision sensors, minimized to the size of pencil erasers, are also in the helmet. Maps and other situational awareness information are projected on the inside of the visor, while everything the soldier sees and hears is sent in real time up to higher headquarters. "It's all voice activated," Lopez said. "I can tell it to show me where my buddies are, and it projects it on the visor."

Virtual reality technology would also play a part in helping the soldier navigate an environment by projecting maps on the ground surrounding him or her.

### Sensors detect threat, provide treatment

Thermal sensors weaved into the fabric of the uniform control its temperature, based on the soldier's environment. An on-board respirator, tethered to the soldier's back, provides a continuous supply of fresh air—eliminating the need for a protective mask. Should the soldier breath in some kind of harmful agent with the visor up or the helmet off, the uniform sensor will immedi-

Army Staff Sgt. Raul Lopez models a conceptual version of an Army soldier's uniform in the year 2025.
U.S. Army photograph by Sgt. Lorie Jewell, USA

ately detect it, release tiny embedded capsules to counter it, and inject treatment into the soldier's body.

From the waist down, a skeletal system allows the soldier to carry two or three times his or her body weight, feeling only the weight of the body through the technology of an XO muscle, which augments a soldier's strength.

Wearing the futuristic suit doesn't make Lopez feel like a science fiction superhero or invincible. "It's just conceptual right now," he said, smiling.

### Liquid armor protection

The uniform might be made out of fabric treated with another technology featured in the conference's exhibit hall, shear thickening fluid. Unofficially referred to by some as "liquid body armor," STF is made of equal parts polyethylene glycol—an inert, non-toxic thickening agent used in a variety of common products, like some ice creams—and miniscule glass particles, said Eric Wetzel, who heads the STF project team in the Weapons and Materials Research Directorate of the U.S. Army Research Laboratory.

In a small glass vial, the light blue liquid is easily stirred with a small plastic stick—as long as the stick is moving in slow, easy motion. When sudden, rapid or forceful motion is applied, the liquid instantly hardens, preventing any movement.

"When the movement is slow, the glass particles can flow around each other," Wetzel explained. "But when the movement is fast, the particles bump into each other, preventing any flow of movement."

STF has been applied to regular Kevlar material, Wetzel said. The fabric's texture doesn't change; it looks and feels the same as if it hadn't been treated. Using a test swatch of four layers of untreated Kevlar—the normal thickness of body armor—Wetzel is able to stab an ice pick through the fabric. But when stabbing a treated section of fabric with all the force he can muster, the ice pick dents the fabric but can't penetrate through.

Research is being done into whether STF can be of use to the Army, Wetzel said. If it is, soldiers may start getting gear treated with it in about two years, he added.

## PROGRAM EXECUTIVE OFFICE FOR ENTERPRISE INFORMATION SYSTEMS NEWS RELEASE (DEC. 10, 2004)

## ARMY AND INDUSTRY WORKING OVERTIME TO SUPPLY IMPROVED TACTICAL HEADSETS FOR TROOPS IN IRAQ

*Stephen Larsen*

The Army is scrambling to acquire sufficient quantities of improved tactical headsets (ITHs), which are designed to protect soldiers' hearing and to allow them to communicate in the high-noise environment of the M1114 up-armored HMMWVs (High-Mobility Multipurpose Wheeled Vehicles) and other light tactical vehicles being used by the Army in Iraq. The ITHs are manufactured by Bose Corporation under a subcontract with Northrop Grumman Corporation. The hurdle is that the improved tactical headset is a completely new, revolutionary design that is being rushed into production to satisfy the Army's needs in Iraq.

"The Army had not planned on needing the new headsets until sometime in late 2005," said Maj. Ron Claiborne, the Army's assistant product manager, vehicular intercommunication systems, with the Project Manager, Defense Communications and Army Transmission Systems. "But we have soldiers in Iraq who need these headsets now, so Bose is working with us to produce ITHs on an accelerated production and delivery schedule."

Speaking in December 2004, Claiborne said there were "around 2,000" ITHs fielded—all in Iraq—and that Bose was able to produce between 125 to 400 a week. "Our goal is to get production and fielding up to between 500 to 700 ITHs per week by the end of January," he said. "Then after we satisfy all requirements for M1114 HMMWV headsets in Iraq, we hope to be able to field them to the rest of the Army beginning in July 2005."

Designed to fit under the standard U.S. Army personnel armor system ground troops helmet and the newer advanced combat helmet, the ITH provides hearing protection through both active and passive noise reduction technologies and enables soldiers to communicate in the high-noise environment (up to 95-plus decibels) that is typical of the M1114 up-armored HMMWV. Soldiers can wear the ITH for extremely long periods without discomfort because of the reduced clamping force on their ears and its light weight (only about 16 ounces). Bose also has a special patent on ear cushion material, which further increases comfort.

Claiborne said that the ITH will be replacing nearly 15,000 emergency-issue interim headsets and older models currently in use. "The emergency issue interim headset doesn't provide any hearing protection from the noise in the M1114 HMMWV," he explained. "The Army's goal is to replace every interim headset with the new ITH so that the soldiers have adequate safety and protective equipment, and reduced hearing loss medical claims."

Also, he said, the new ITH can be put on or quickly removed without requiring a soldier to remove his or her helmet. "This is an absolute requirement for soldiers who might have to quickly dismount from a HMMWV for combat or security operations," said Claiborne.

Claiborne said that he has feedback from Maj. Matt Paige, the project leader for the M1114 Up-Armored HMMWV, who was on temporary duty in Iraq. "Paige said that every soldier he spoke to had only positive things to say [about the ITH]," said Claiborne. "One M1114 crew told him they were wearing the ITH when a tank was operating nearby, and not only was the M1114 driver able to keep in constant contact with the gunner through the headset, but the headset canceled out almost all of the background noise from the tank. Before getting the improved tactical headset, the driver or vehicle commander wouldn't have been able to communicate with the gunner in a safe manner because of the tank turbine engine noise levels."

The effectiveness of the ITH's active noise reduction technology was supported by a study completed in early December 2004 in the engineering psychology department of the U.S. Military Academy, West Point, N.Y. by cadets Edward "Flip" Klein and Jon Wertz, under the leadership of research coordinator Maj. Dan Smith. They studied

The improved tactical headset (inset) protects soldiers' hearing and allows them to communicate in the high-noise environment of the M1114 up-armored HMMWVs (High-Mobility Multipurpose Wheeled Vehicles) and other light tactical vehicles being used by the Army in Iraq.

Photograph by Stephen Larsen/inset courtesy of Bose Corporation

the effect of noise cancellation on sound localization, comparing use of the interim headset with the improved tactical headset.

"The study supported our hypotheses, which were based on signal detection and sound localization theory," said Wertz, "that the improved tactical headset allows soldiers to better localize the direction of exterior sounds, although there is a degree of typical front-rear confusion."

"In practical terms, this means a soldier wearing the new ITH headset has a better chance of identifying the direction of incoming sniper fire than a soldier wearing the older interim headset," said Claiborne.

For information about availability or technical characteristics of the improved tactical headset or vehicle intercom system, contact Maj. Ron Claiborne at (732) 532-5415 or ronald.claiborne@us.army.mil.

*Stephen Larsen is the Public Affairs Officer for the PEO EIS at Fort Monmouth, N.J.*

West Point Cadets Jon Wertz (left, wearing Improved Tactical Headset, ITH) and Edward "Flip" Klein studied the effect of noise cancellation on sound localization, comparing use of the Interim Headset with the ITH at the U.S. Military Academy, West Point, N.Y.
Photograph by Stephen Larsen

# Career Development

## ARMY CONTRACTING STUDY: "PREPARING FOR TOMORROW'S ARMY TODAY"

On Oct. 7, 2004, Deputy Assistant Secretary of the Army for Policy and Procurement Tina Ballard kicked off an assistant secretary of the Army (acquisition, logistics and technology) (ASA (ALT))-approved study to design a world-class procurement and contracting organization in support of all Army personnel: active, Reserve, National Guard, and civilian. The purpose of the study is to determine if Army procurement and contracting structure and staffing are positioned for today's and tomorrow's changing world and to determine the best organizational alignment of procurement and contracting functions and activities throughout the Army, to include future forces and missions. The study will include an examination of lessons learned from the challenges of providing procurement and contracting support to the global war on terrorism and Operation Iraqi Freedom post-conflict operations.

On Nov. 1–5, 2004, a working group met at the Defense Acquisition University to begin the study. The group was made up of representatives from contracting offices across the Army, support contractor LMI, and subject matter experts from a number of Service schools including the Industrial College of the Armed Forces, the Army War College Fellowship at University of Texas, the Naval Postgraduate School, and Defense Acquisition University. The group will solicit input from Army contracting customers and stakeholders including the secretary of the Army, chief of staff of the Army, G-3, G-6, G-8, G-4, and selected Army major commands and program executive officers.

The draft study findings will be briefed to and coordinated with a cross-Service senior advisory council chaired by Ballard, and the coordinated study results will be briefed to Claude M. Bolton Jr., ASA (ALT) in March 2005.

Carol Lowman, co-leader of the Army Contracting Study Future Force/Mission team, briefs members of the senior steering group and other working group teams on Dec.16, 2004, at the Defense Acquisition University. Seated to Lowman's left is Future Force/Mission team leader April Miller.
Photograph by Staff Sgt. Kevin Moses, USA

The approach to the study will be collaborative combining the best of government and contractor expertise to create the final recommendation. Selected topics under the major focus areas to be examined are briefly described below:

**Organizational Structure**: How should Army contracting offices be structured? What management chain of command would be most effective? What types of positions are necessary to staff contracting offices to meet future procurement needs?

**Process:** What are the sources of major inefficiencies within the Army procurement and how should they be addressed? How can effectiveness be improved?

**Future Force/Mission**: What should the future Army contracting and procurement organization look like? What type of training will be required for procurement personnel? What type of flexibility for personnel/hiring do we need?

**ASA(ALT) Strategic Plan**: Compliance with the ASA(ALT) mission—to "equip and sustain the world's most capable, powerful, and respected Army"—will be incorporated with the study recommendations.

For further information, contact marcia.richard@dau.mil.

## AMERICAN GRADUATE UNIVERSITY OFFERS "CONTRACT MANAGEMENT AND ADMINISTRATION"

The ability to effectively manage your government contracts to ensure on-time, on-budget, and on-spec delivery is a crucial component of your contract performance rating. With past performance counting for up to 50 percent of your evaluation on future contracts, now is the time to strengthen your contract management knowledge and practices.

American Graduate University's Institute of Professional Training offers "Contract Management and Administration," an intensive 4-day training class to help you:

- Maximize successful contract performance
- Ensure full contract compliance
- Build solid government-industry partnerships
- Avoid common pitfalls and penalties
- Identify and effectively manage change.

For a full course description, go to <http://www.agu.edu/courses/531 > or call 1-866-273-1736. American Graduate University is an accredited educational institution and a training partner of the Defense Acquisition University. Contract Management and Administration is recommended for 45 hours toward the National Contract Management Agency's Certified Professional Contracts Manager (CPCM), Certified Commercial Contracts Manager (CCCM), and Certified Federal Contracts Manager (CFCM) certifications.

## PERFORMANCE BASED LOGISTICS: A PROGRAM MANAGER'S PRODUCT SUPPORT GUIDE (NOV. 10,2004)

This document supersedes *Product Support: A Program Manager's Guide to Buying Performance*, published in November 2001, which has been commonly known as *The PBL Guide*. The new *Performance-Based Logistics: A Program Manager's Product Support Guide* captures the progress that has been made in implementing PBL over the past three years, and presents up-to-date guidance based on the lessons learned from the application of PBL to support activities throughout the Services.

Download the new guide from the Acquisition Community Center (ACC) Web site at <http://acc.dau.mil/simplify/ev.php?ID = 58394_201&ID2 = DO_TOPIC >.

## RELEASE OF THE INTEGRATED DEFENSE AT&L LIFE CYCLE MANAGEMENT FRAMEWORK CHART

The Integrated Defense AT&L Life Cycle Management Framework Chart Version 5.1 dated December 2004 has been approved and is available for viewing and downloading at the AT&L Knowledge Sharing System (AKSS) Web site. A small version of the new chart is included on pages 44-45. Print a copy or view the full-size chart and the accompanying description definitions at <http://akss.dau.mil/jsp/default.jsp>.

## DAU AND NDIA TO SPONSOR DEFENSE SYSTEMS ACQUISITION MANAGEMENT COURSE OFFERINGS FOR INDUSTRY MANAGERS

DAU and the National Defense Industrial Association will sponsor offerings of the Defense Systems Acquisition Management (DSAM) course for interested industry managers May 9–13, at the Pan Pacific Hotel, Vancouver, BC, Canada; and July 18–22, at the Hyatt Regency, Long Beach, Calif. DSAM presents the same acquisition policy information provided to DoD students who attend the Defense Acquisition University courses for formal acquisition certification. It is designed to meet the needs of defense industry acquisition man-

agers in today's dynamic environment, providing the latest information related to:

- Defense acquisition policy for weapons and information technology systems, including discussion of the DoD 5000 series (directive and instruction) and the CJCS 3170 series (instruction, and manual)
- Defense transformation initiatives related to systems acquisition
- Defense acquisition procedures and processes
- The planning, programming, budgeting, and execution process and the congressional budget process
- The relationship between the determination of military capability needs, resource allocation, science and technology activities, and acquisition programs.

For further information see "Courses Offered" under "Meetings and Events," at <http://www.NDIA.org>. Industry students contact Christy O'Hara at (703) 247-2586 or e-mail to cohara@ndia.org. A few experienced government students may be selected to attend each offering. Government students must first contact Bruce Moler at (703) 805- 5257, or e-mail Bruce.Moler@dau.mil, prior to registering with NDIA.

Online registration is available at: <http://register.ndia.org/interview/register.ndia?PID = Brochure&SID = _1CW0YYQ5H&MID = 502B>.

## OVERVIEW OF USD(AT&L) CONTINUOUS LEARNING POLICY

Acquisition personnel in Defense Acquisition Workforce Improvement Act (DAWIA) billets who are certified to the level of their position must earn 80 continuous learning "points" to meet Continuous Learning Policy requirements issued by the USD(AT&L) on Sept. 13, 2002. Continuous learning augments minimum education, training, and experience standards. Participating in continuous learning will enhance your career by helping you to:

- Stay current in acquisition functional areas, acquisition and logistics excellence-related subjects, and emerging acquisition policy
- Complete mandatory and assignment-specific training required for higher levels of DAWIA certification
- Complete "desired" training in your career field
- Cross-train to become familiar with, or certified in, multiple acquisition career fields
- Complete your undergraduate or advanced degree
- Learn by experience
- Develop your leadership and management skills.

A point is generally equivalent to one hour of education, training, or developmental activity. Continuous learning points build quickly when you attend training courses, conferences, and seminars; complete leadership training courses at colleges/universities; participate in professional activities; or pursue training through distance learning. Continuous learning points are assigned to distance learning courses <http://clc.dau.mil> based on their academic credits or continuing education units. Other activities such as satellite broadcasts, viewing a video tape, listening to an audio presentation, or working through a CD-ROM or Internet course can earn continuous learning points on a 1 point per 1 hour of time devoted to that activity. On-the-job training assignments, intra- and inter-organizational, rotational, broadening, and development assignments may also qualify toward meeting the continuous learning standards.

## OFFICE OF INTERNATIONAL TECHNOLOGY SECURITY LAUNCHES NEW WEB SITE

The Office of International Technology Security is proud to announce the release of its new Web site. The office's primary duties include identifying, assessing, and protecting U.S. "technological dominance" for the U.S. warfighter while influencing and supporting globalization <http://www.acq.osd.mil/its/>.

## ACQUISITION CORPS ELIGIBILITY

As the DoD transforms, the expectations and opportunities for acquisition professionals will increase by order of magnitude. To prepare for advancement to levels of greater responsibility and authority, acquisition professionals should demonstrate exceptional analytical and decision-making capabilities, job performance, and gain qualifying experience. Earning membership into the Acquisition Corps is a critical step in preparation for acquisition leadership. Per the Defense Acquisition Workforce Improvement Act (DAWIA), Acquisition Corps eligibility requires meeting all of the following standards:

- Minimum grade of major or GS-13
- Acquisition Professional Development Program (APDP) Level II certification
- A bachelor's degree at an accredited educational institution
- Four years of acquisition experience
- At least 24 semester credit hours (or the equivalent) of study from an accredited college or university in the following disciplines: accounting, business finance, law, contracts, purchasing, economics, industrial man-

agement, marketing, quantitative methods, and organization and management; or at least 24 semester credit hours (or the equivalent) from an accredited college in the individual's career field and 12 semester credit hours (or the equivalent) from such an institution from among the disciplines listed here, or equivalent training as prescribed by the secretary to ensure proficiency in those disciplines.

Acquisition Corps eligibility is a prerequisite for serving in a critical acquisition position (CAP). CAPs are positions of significant responsibility, primarily involving supervisory or management duties in the DoD acquisition system. CAPs vary in scope and span of control but must be filled by corps members. For more information on acquisition corps eligibility and certification, browse the AT&L Knowledge Sharing System (AKSS) Web site at <http://deskbook.dau.mil/jsp/DawiaTraining.jsp>.

## DEFENSE ACQUISITION UNIVERSITY PARTNER ADDS NEW DEGREE PROGRAM

Penn State University has added a new degree program to the existing strategic partnership between DAU and Penn State: a Master of Program Management degree. For more information on this degree program, visit the Penn State Web site at <http://www.worldcampus.psu.edu/pub/pmpo/index.shtml>.

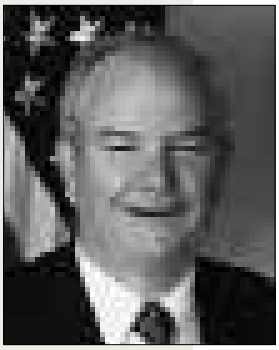
## DEFENSE ACQUISITION UNIVERSITY DISTANCE LEARNING COURSES

Seventeen exclusively online courses are currently provided by the Defense Acquisition University. Ten more courses that are a combination of distance learning and resident training are also offered. These hybrid courses usually consist of online (Part A), followed by resident or local offerings (Part B). For hybrid courses, attendance in the classroom portion is dependent on successful completion of the distance learning portion, and completion of both parts is required to obtain full credit for career field certification.

A list of the 27 courses currently conducted wholly or in part through distance learning is shown to the right. For course requirements and other related course information, consult the *DAU 2005 Catalog* at <http://www.dau.mil/catalog/default.aspx>.

| DAU DISTANCE LEARNING COURSES | |
|---|---|
| ACQ 101 | Fundamentals of Systems Acquisition Management |
| ACQ 201A | Intermediate Systems Acquisition, Part A |
| BCF 102 | Fundamentals of Earned Value Management |
| BCF 103 | Fundamentals of Business Financial Management |
| BCF 209A | Acquisition Reporting Course, Part A |
| BCF 211A | Acquisition Business Management, Part A |
| CON 104A | Principles of Contract Pricing, Part A |
| CON 110 | Mission Support Planning |
| CON 111 | Mission Strategy Execution |
| CON 112 | Mission Performance Assessment |
| CON 237 | Simplified Acquisition Procedures |
| CON 260A | The Small Business Program |
| FE 201 | Intermediate Facilities Engineering |
| IND 103 | Contract Property Systems Analysis Fundamentals |
| IRM 101 | Basic Information Systems Acquisition |
| LOG 101 | Acquisition Logistics Fundamentals |
| LOG 102 | Systems Sustainment Management Fundamentals |
| LOG 201A | Intermediate Acquisition Logistics, Part A |
| LOG 203 | Reliability and Maintainability |
| LOG 235A | Performance Based Logistics, Part A |
| PMT 250 | Program Management Tools |
| PMT 352A | Program Management Office Course, Part A |
| PQM 101 | Production, Quality and Manufacturing Fundamentals |
| PQM 201A | Intermediate Production, Quality and Manufacturing, Part A |
| SAM 101 | Basic Software Acquisition Management |
| SYS 201A | Intermediate Systems Planning, Research, Development and Engineering, Part A |
| TST 101 | Introduction to Acquisition Workforce Test and Evaluation |

**THE UNDER SECRETARY OF DEFENSE**
**3010 DEFENSE PENTAGON**
**WASHINGTON, D.C. 20301-3010**



SEP 23 2004

MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: Defense Acquisition System Safety

On July 3, 2003, the Secretary of Defense established the Defense Oversight Council (DSOC) and tasked them with the goal of reducing DoD mishap and accident rates by 50% in two years. Subsequently, the Strategic Planning Guidance (SPG) was modified to institutionalize this goal. We can contribute substantially to meeting SPG guidance by following an informed and structured risk assessment and acceptance process, which manages and minimizes system safety risks throughout the acquisition process. Our intent is to design safety into our weapons systems, not add it afterwards as an operational consideration.

Therefore, in order to increase the emphasis on system safety within our acquisition process, I direct addressees to ensure that:

a. Program Managers (PMs), regardless of the Acquisition Category of their programs, integrate system safety risk management into their overall systems engineering and risk management processes.

b. PMs use the government and industry Standard Practice for System Safety, MIL-STD-882D, in all developmental and sustaining engineering activities.

c. PMs ensure the DoDI 5000.2 requirement to integrate the Environmental, Safety, and Occupational Health (ESOH) risk management strategy into the systems engineering process is incorporated in the Systems Engineering Plan.

d. PMs identify ESOH hazards, assess the risks, mitigate the risks to acceptable levels, and then report on the status of residual risk acceptance decisions at technical reviews and at the appropriate management levels in the Program Review process in accordance with MIL-STD-882D.

I need your help to implement these actions to integrate system safety risk management more effectively into our acquisition process. Active collaboration between system safety and acquisition communities as we execute our programs will help achieve the goals the Secretary of Defense has established. It will also save lives, preserve assets, and enhance our overall warfighting capability by increasing readiness through system safety improvements.

Michael W. Wynne
Acting

**Editor's note**: View the distribution to this memorandum at <http://akss.dau.mil/servlet/ActionController?screen=Policies&Organization=21&Career=10 >.

**OFFICE OF THE UNDER SECRETARY OF DEFENSE**
**3000 DEFENSE PENTAGON**
**WASHINGTON, D.C. 20301-3000**

ACQUISITION, TECHNOLOGY AND LOGISTICS

NOV 24 2004

DPAP/P

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY
(ACQUISITION, LOGISTICS AND TECHNOLOGY)
ASSISTANT SECRETARY OF THE NAVY
(RESEARCH, DEVELOPMENT AND ACQUISITION)
ASSISTANT SECRETARY OF THE AIR FORCE
(ACQUISITION)
DIRECTORS OF DEFENSE AGENCIES

SUBJECT: Immediate Increase in the Dollar Threshold for Simplified Acquisition Procedures and in the Dollar Threshold for Senior Procurement Executive Approval of Justifications and Approvals

Section 822 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (the Act) sets out increases in both the micro-purchase threshold and the simplified acquisition threshold for certain procurements and purchases. Effective immediately, the micro-purchase threshold outside the United States is $25,000 and the simplified acquisition threshold outside the United States is $1,000,000. These thresholds are applicable only for contracts to be awarded and performed, or purchases to be made, outside the United States in support of a contingency operation or to facilitate the defense against or recovery from nuclear, biological, chemical, or radiological attack.

The Act also increases the dollar threshold for certain Justification and Approval (J&A) authority. Effective immediately, Senior Procurement Executive approval is required only for a J&A for a proposed contract in excess of $75M.

These changes are being incorporated in the Defense Federal Acquisition Regulation Supplement. If you have any questions regarding this memorandum, please contact Angelena Moy at 703-602-1302.

Deidre A. Lee
Director, Defense Procurement
and Acquisition Policy

**OFFICE OF THE UNDER SECRETARY OF DEFENSE**
**3000 DEFENSE PENTAGON**
**WASHINGTON, D.C. 20301-3000**

ACQUISITION, TECHNOLOGY AND LOGISTICS

NOV 29 2004

DPAP/EB

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY
(ACQUISITION, LOGISTICS AND TECHNOLOGY)
ASSISTANT SECRETARY OF THE NAVY
(RESEARCH, DEVELOPMENT AND ACQUISITION)
ASSISTANT SECRETARY OF THE AIR FORCE
(ACQUISITION)
DIRECTORS, DEFENSE AGENCIES

SUBJECT: Transition Planning Guidance and Metrics

As part of the ongoing effort to achieve the Acquisition Domain's interim state for procurement systems and to comply with the Fiscal Year 2005 National Defense Authorization Act, section 332, the Domain is continuing its transition planning activities. To date, we have received initial documentation from the Components on their high-level plans to transition to the interim procurement state.

To effectively manage transition planning activities, the Acquisition Domain developed guidance and metrics to provide visibility into the status of transition and migration activities. The attached draft "Acquisition Domain Transition Planning Guidance & Metrics" is posted on the Acquisition Domain portal at https://portal.acq.osd.mil within the "Acquisition Domain Transition Planning" project documents section. The Acquisition Domain will determine the completeness of the Component plans using the guidance as the objective standard. Once the Component transition and system migration plans have been approved by the acquisition governance structure, we will track progress relative to plan.

Please provide comments on the planning guidance and the proposed metrics on the Acquisition Domain portal through the project discussions named "Comments on Draft Transition Planning Guidance" and "Comments on Transition Planning Metrics" by December 10, 2004. Upon issuance of the final transition planning guidance, you will be expected to update transition plans and submit migration plans in accordance with the guidance and the due dates provided by the Acquisition Domain.

My action officer for this effort is Diane M. Morrison. She may be reached by e-mail at Diane.Morrison@osd.mil or by telephone at 703-614-3883.

Deidre A. Lee
Director, Defense Procurement
and Acquisition Policy

**Editor's note**: View the attachments to this memorandum at <http://www.acq.osd.mil/dpap/policy/policyvault/eb_1.htm >.

Attachment:
As stated

## DEFENSE FAR SUPPLEMENT (DFARS) CHANGE NOTICE 20041101

DoD published the following changes to the DFARS on Nov. 1, 2004. In addition, DoD launched its new DFARS companion resource, *Procedures, Guidance, and Information (PGI)*, available at <http://www.acq.osd.mil/dpap/dars/pgi >.

### Interim Rule

**Transition of Weapons-Related Prototype Projects to Follow-On Contracts (DFARS Case 2003-D106)**

Establishes a pilot program that permits contracting officers to use FAR Part 12 (Acquisition of Commercial Items) procedures to award follow-on contracts for the production of items begun as prototype projects under other transaction agreements.The follow-on contract must be awarded to a nontraditional defense contractor; must not exceed $50,000,000; and must be either firm-fixed-price or fixed-price with economic price adjustment.This change implements Section 847 of the National Defense Authorization Act for Fiscal Year 2004 and is intended to ease the transition of nontraditional defense contractors from prototype transactions to standard contracts. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003d106f.txt >.

### Final Rules—DFARS Transformation

The following changes are a result of DFARS Transformation, which is a major DoD initiative to dramatically change the purpose and content of the DFARS.The transformed DFARS will contain only requirements of law, DoD-wide policies, delegations of FAR authorities, deviations from FAR requirements, and policies/procedures that have a significant effect on the public.The objective is to improve the efficiency and effectiveness of the acquisition process, while allowing the acquisition workforce the flexibility to innovate. Additional information on the DFARS Transformation initiative is available at <http://www.acq.osd.mil/dpap/dfars/transf.htm >.

**Procedures, Guidance, and Information (DFARS Case 2003-D090)**

Defines a new DFARS companion resource, *Procedures, Guidance, and Information (PGI)*, which contains mandatory and non-mandatory internal DoD procedures, nonmandatory guidance, and supplemental information. Use of PGI will enable DoD to more rapidly convey internal administrative and procedural information to the acquisition workforce.PGI will not contain policy or procedures that significantly affect the public and, therefore, will not be published in the *Federal Register* or the Code of Federal Regulations. PGI is available at <http://www.acq.osd.mil/dpap/dars/pgi >. The HTML version of the DFARS, available at <http://www.acq.osd.mil/dpap/dfars >, contains links to PGI. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003d090f.txt >.

**Publicizing Contract Actions (DFARS Case 2003-D016)**

Deletes unnecessary text on cooperative agreement holders, paid advertisements, and synopsis requirements; and relocates a synopsis format to PGI. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003d016f.txt >.

**Cost Principles and Procedures (DFARS Case 2003-D036)**

Deletes obsolete and duplicative text on contract cost principles; and relocates procedural text on government responsibilities relating to contractor restructuring costs to PGI. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003d036f.txt >.

**Laws Inapplicable to Commercial Subcontracts (DFARS Case 2003-D018)**

Clarifies a potential source of confusion in the DFARS over the application of the Buy American Act and the Trade Agreements Act to subcontracts. The FAR clauses that implement the acts are only required for prime contracts and apply the restrictions on the end item delivered to the government. Prime contractors are not required to further apply the acts' restrictions to individual components purchased under subcontracts. However, prior to this DFARS change, the Trade Agreements Act and the Buy American Act were listed as laws inapplicable to subcontracts for commercial items. While the DFARS was technically correct, it was unnecessary to state this exception because the laws only apply at the prime contract level for end items, not to individual components. By stating that the laws are inapplicable to subcontracts for commercial items, the DFARS may be misinterpreted to mean that commercial components do not count in the calculation of whether domestic components exceed 50 percent of the value of the components of an end item. Additionally, the DFARS could further be misinterpreted to mean the prime contractor need not comply with the acts for a subcontracted item delivered to the government as the end item. The prime contractor is responsible for providing an end product that meets the requirements of the acts.

To correct this potential source of confusion, this DFARS change removes the Buy American Act and the Trade Agreements Act from the list of laws inapplicable to subcontracts for commercial items. This change will not impact the proper implementation of the Buy American Act and the Trade Agreements Act. However, contracting officers and prime contractors should be aware of the potential for confusion in this area. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003d018f.txt>.

**Final Rule**

**Purchases from Federal Prison Industries (DFARS Case 2004-D005)**

Deletes DFARS text on purchase of products from Federal Prison Industries.The DFARS text is no longer necessary as a result of FAR policy on this subject that was published in Federal Acquisition Circular 2001-21 on March 26, 2004. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2004d005f.txt>.

**Technical Amendments**

Updates Internet addresses for DoD activity address codes and order code assignments and adds a link to PGI for information on use of Federal Supply Schedules. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/techamend20041101.txt>.

## DEFENSE FAR SUPPLEMENT (DFARS) CHANGE NOTICE 20041110

DoD published the following changes and proposed changes to the DFARS on Nov. 10, 2004.

**Final Rules—DFARS Transformation**

The following changes are a result of DFARS Transformation, which is a major DoD initiative to dramatically change the purpose and content of the DFARS. Additional information on the DFARS Transformation initiative is available at <http://www.acq.osd.mil/dpap/dfars/transf.htm>. Three of the following changes relocate text to the new DFARS companion resource, *Procedures, Guidance, and Information (PGI)*, available at <http://www.acq.osd.mil/dpap/dars/pgi>.

**Contractor Qualifications Relating to Contract Placement (DFARS Case 2003-D011)**

Deletes obsolete text pertaining to Intermediate Range Nuclear Forces Treaty inspections; deletes unnecessary first article testing and approval requirements; and relocates procedures for requesting pre-award surveys and obtaining approval for product qualification requirements to PGI. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D011f.txt>.

**Insurance (DFARS Case 2003-D037)**

Relocates procedural text on risk-pooling insurance arrangements and requests for waiver of overseas workers' compensation requirements to PGI. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D037f.txt>.

**Research and Development Contracting (DFARS Case 2003-D067)**

Deletes unnecessary text on solicitation and contract content; updates statutory references; updates a clause pertaining to contractor submission of scientific and technical reports; and relocates procedures for maintenance of scientific and technical reports to PGI. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D067f.txt>.

**Acquisition of Commercial Items (DFARS Case 2003-D074)**

Deletes unnecessary text pertaining to structuring of contracts; and updates a FAR reference. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D074f.txt>.

**Sealed Bidding (DFARS Case 2003-D076)**

Deletes unnecessary text on structuring of contracts, providing copies of documents, and preparation of solicitations; and updates the list of officials authorized to permit correction of mistakes in bid. The *Federal Register* notice for this rule is at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D076f.txt>.

**Proposed Rule**

**Geographic Use of the Term "United States" (DFARS Case 2001-D003)**

Proposes to update references to the "United States" and other geographic terms throughout the DFARS. The proposed changes clarify the meaning of these terms and provide consistency with definitions found in FAR 2.101. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2001-D003p.txt>.

## DEFENSE FAR SUPPLEMENT (DFARS) CHANGE NOTICE 20041122

DoD published the following changes and proposed changes to the DFARS on Nov. 22, 2004.

### Final Rules—DFARS Transformation

The following changes are a result of DFARS Transformation, which is a major DoD initiative to dramatically change the purpose and content of the DFARS. Additional information on the DFARS Transformation initiative is available at <http://www.acq.osd.mil/dpap/dfars/transf.htm >.

#### Protection of Privacy and Freedom of Information (DFARS Case 2003-D038)

Deletes text pertaining to the applicability of the Privacy Act to certain contractor records. This subject is adequately addressed in DoD Regulation 5400.11-R, *Department of Defense Privacy Program*, which is referenced in the DFARS. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D038.txt >.

#### Contractor Use of Government Supply Sources (DFARS Case 2003-D045)

Clarifies contractor requirements for payment of invoices from government supply sources; and relocates procedures for authorizing contractor use of government supply sources to the new DFARS companion resource, *Procedures, Guidance, and Information (PGI)*, available at <http://www.acq.osd.mil/dpap/dars/pgi >. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D045.txt >.

#### Removal of Obsolete Research and Development Contracting Procedures (DFARS Case 2003-D058)

Deletes a standard format previously used for research and development solicitations and contracts. The format has become obsolete due to further advances in technology since its creation. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D058.txt >.

#### Small Disadvantaged Businesses and Leader Company Contracting (DFARS Case 2003-D092)

Lowers the approval level for subcontracting plans that contain a small disadvantaged business goal of less than five percent, from two levels above the contracting officer to one level above the contracting officer. Also deletes text addressing the participation of small disadvantaged business concerns in leader company contracting. DoD rarely uses leader company contracting and, instead, provides incentives for major DoD contractors to assist small disadvantaged business concerns through the DoD Pilot Mentor-Protégé Program. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D092.txt >.

### Final Rules—Legislative

#### Written Assurance of Technical Data Conformity (DFARS Case 2003-D104)

Finalizes, without change, an interim rule published on June 8, 2004 (DFARS Change Notice 20040608), to implement Section 844 of the National Defense Authorization Act for Fiscal Year 2004. Section 844 eliminated the requirement for a contractor to furnish written assurance that delivered technical data are complete and accurate and comply with contract requirements. The rule reduces paperwork for contractors but does not diminish the contractor's obligation to provide technical data that are complete, accurate, and in compliance with contract requirements. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D104.txt >.

#### Contracting for Architect-Engineer Services (DFARS Case 2003-D105)

Finalizes, without change, an interim rule published on June 8, 2004 (DFARS Change Notice 20040608), to implement Section 1427 of the National Defense Authorization Act for Fiscal Year 2004. Section 1427 increased, from $85,000 to $300,000, the threshold below which acquisitions for architect-engineer services for military construction or family housing projects are set aside for small business concerns. The rule increases opportunities for small business concerns to provide architect-engineer services to DoD. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003d105i.txt >.

#### Technical Amendments

Updates the Internet address for DoD specifications and standards. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/techamend20041122.txt >.

### Proposed Rules—DFARS Transformation

#### Basic Agreements for Telecommunications Services (DFARS Case 2003-D056)

Proposed change relocates procedures for use of basic agreements for telecommunications services to the new DFARS companion resource, *Procedures, Guidance, and Information (PGI)*. Basic agreements are used in conjunction with communication service authorizations.

The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D056.txt >.

### Update of Clauses for Telecommunications Services (DFARS Case 2003-D053)

Proposed change deletes an obsolete clause and revises the applicability of certain clauses used in telecommunications services contracts. The clauses being revised are presently applicable only to common carriers (those subject to Federal Communications Commission or other governmental regulation). The proposed change will make the clauses applicable to both common and noncommon carriers, since the differences between common and noncommon carriers have become less distinct. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D053.txt >.

### Information Technology Equipment—Screening of Government Inventory (DFARS Case 2003-D054)

Proposed change deletes obsolete procedures for screening of government inventory before authorizing a contractor to purchase information technology equipment. DoD now manages information technology equipment in the same manner as other government property, in accordance with FAR Part 45 and DFARS Part 245. The *Federal Register* notice for this rule is available at <http://www.acq.osd.mil/dpap/dars/dars/fedregs/2003-D054p.txt >.

## GAO REPORTS

The following Government Accountability Office (GAO) reports may be downloaded from the GAO Web site at <http://www.gao.gov >:

Best Practices: Using Spend Analysis to Help Agencies Take a More Strategic Approach to Procurement, GAO-04-870, Sept. 16, 2004

Defense Acquisitions: Better Information Could Improve Visibility over Adjustments to DoD's Research and Development Funds, GAO-04-944, Sept. 17, 2004

Defense Acquisitions: Challenges Facing the DD(X) Destroyer Program, GAO-04-973, Sept. 3, 2004

Defense Inventory: Improvements Needed in DoD's Implementation of Its Long-Term Strategy for Total Asset Visibility of Its Inventory GAO-05-15, Dec. 6, 2004

Defense Management: Tools for Measuring and Managing Defense Agency Performance Could Be Strengthened, GAO-04-919, Sept. 13, 2004

Department of Defense: Further Actions Are Needed to Effectively Address Business Management Problems and Overcome Key Business Transformation Challenges, GAO-05-140T, Nov. 18, 2004

Depot Maintenance: DoD Needs Plan to Ensure Compliance with Public- and Private-Sector Funding Allocation, GAO-04-871, Sept. 29, 2004

Electronic Government: Smart Card Usage is Advancing Among Federal Agencies, Including the Department of Veterans Affairs, GAO-05-84T, Oct. 6, 2004

Foreign Military Sales: DoD Needs to Take Additional Actions to Prevent Unauthorized Shipments of Spare Parts, GAO-05-17, Nov. 9, 2004

Information on Options for Naval Surface Fire Support, GAO-05-39R, Nov. 19, 2004

Polar-Orbiting Environmental Satellites: Information on Program Cost and Schedule Changes, GAO-04-1054, Sept. 30, 2004

Telecommunications: Intelsat Privatization and the Implementation of the ORBIT Act, GAO-04-891, Sept. 13, 2004

Unmanned Aerial Vehicles: Changes in Global Hawk's Acquisition Strategy Are Needed to Reduce Program Risks, GAO-05-6, Nov. 5, 2004

## UTILITIES PRIVATIZATION—CONTRACT PRICING

In an Oct. 9, 2002 memorandum, the deputy secretary of defense stated that utilities privatization is the preferred method for improving utility systems and services. Defense Procurement and Acquisition Policy (DPAP) Director Deidre Lee published on Oct. 20, 2004, a memorandum providing instructions for contracting officers to apply in pricing contracts for privatization of utilities. The memorandum further references the provisions of 10 U.S.C. §2688, "Utility Systems, Conveyance Authority." To read Lee's memorandum with Enclosures 1 and 2, go to the DPAP Web site (Policy Vault) at <http://www.http://www.acq.osd.mil/dpap/policy/policyvault/policy_1.htm >.

# Conferences, Workshops & Symposia

## ANNUAL SUMMIT ON UNIQUE IDENTIFICATION

*Heather Vaughan*

On Nov. 17, 2004, Michael Wynne, acting undersecretary of defense for acquisition, technology and logistics, kicked off the first annual summit on Unique Identification and Radio Frequency Identification. The summit provided a forum for program managers, industry partners, and the military services to discuss challenges, benefits, and lessons learned.

Wynne began the discussion with a policy update and an implementation timeline for UID. His vision is for a fully integrated situational knowledge of people, places, and items by 2010. For example, a quick computer search of comprehensive registries could yield a listing of items such as spare parts or weaponry at nearby bases, along with the location of those bases and a listing of troops available there. Thus, both people and items can be identified and located for rapid deployment response.

Wynne's remarks were followed by presentations from the Navy, Army, and Air Force about their overarching concepts of operations specific to UID for items. Each Service is embracing UID as an agent of change that will increase its logistics efficiency. Although adoption is initially focused on new acquisitions, all the Services are using maintenance as a trigger for legacy item marking and are making a point of ensuring that all automated information systems acquired in the future are designed to exploit the possible applications of UID.

The CH-47 is the Army's pilot program, and it is rapidly implementing and utilizing UID in daily operations. Having gone beyond the requirements of only marking items and sub-assemblies valued at over $5,000, the CH-47 program has targeted 1,175 separate parts for marking. Legacy parts are being marked in the field during scheduled and unscheduled maintenance, and over 780 parts have already been marked in this manner. Col. Tim Crosby, presenter for the CH-47 program, stressed that the focus of UID must not be on marking parts, but rather on developing intelligent data, and this will only be accomplished once the registry is fully operational.

Navy also presented a concept of operations that went beyond the DoD requirements. Navy considers UID a strategic imperative that is critical in the transformation to a proactive, predictive fleet-readiness culture. Navy faces challenges in implementation standardization and UID integration but is forging ahead with its F/A-18 program. Its goal is to begin legacy marking by October of 2005, with full UID compliance by October of 2010.

The Air Force is using the C-17 as its model program and is in the process of finalizing its implementation plan. Since May of 2004, all C-17s have had their landing gear marked during retrofitting, and 100 percent of the drawings for support equipment have been updated to include Unique Item Identifiers (UIIs).

Air Force Col. Greg Sparks, speaking about his experience with the C-17 program, said that serialized item management enhanced by UID has already begun to show its potential. It recently became necessary to locate all aircraft containing a part from a specific lot. The part was located under the dashboard, and without a listing of marked parts, it would have been necessary to disassemble the entire dashboard to view the part and its lot number. Because the parts had been catalogued, the registry could be scanned for all parts from that lot. The corresponding aircraft were identified, and it was possible to ground only the affected aircraft instead of the whole fleet.

Following the presentations, LeAntha Sumpter, program manager for UID, provided a roadmap of the next steps for UID, including developing a policy for the marking of legacy items, marking items with virtual UIIs and incorporating them into the registry, and integrating UII with real property UIDs.

## DOD E-BUSINESS/STANDARD PROCUREMENT SYSTEM JOINT USERS' CONFERENCE
## TRANSFORMING THE ACQUISITION DOMAIN

*Linda Polonsky-Hillmer*

More than 850 Department of Defense acquisition and procurement professionals attended the DoD E-Business/Standard Procurement System Joint Users' Conference in Houston, Texas, Nov. 15–19, 2004.

Entitled, "Transforming the Acquisition Domain," the five-day conference emphasized the changing role for contracting professionals in DoD and the automated systems, such as the Standard Procurement System (SPS),

Deidre Lee, director of defense procurement and acquisition policy, leads the crowd in a round of applause for the organizers of the E-Business/SPS Joint Users' Conference. "SPS is no longer just a contract writing system," she said. "It has evolved into a business intelligence system, making it possible for us to be strategic business advisors." Photographs courtesy Corp-Comm, Inc.

that support that change. Automated tools such as SPS will provide tomorrow's professionals a more strategic business focus, becoming business brokers through the use of automated tools such as SPS.

The general session drew DoD leaders like Kay Cole James, director, Office of Personnel Management; Deidre A. Lee, director of Defense Procurement and Acquisition Policy (DPAP); Mark E. Krzysko, deputy director, DPAP, E-Business; Ronald Poussard, deputy director, DPAP, Defense Acquisition Regulations System; Army Col. Jacob Haynes, SPS program manager; and Army Col. Victoria Diego-Allard, commander of the U.S. Army Contracting Command, Europe.

The focus of the conference was on how acquisition and procurement professionals support the warfighter, and it was a theme many speakers honed in on, including Lee. "Sometimes it's probably hard for us, in the safety of our cubicles, to see how we connect with the warfighter. But when you see one of these heroes, ask for a story, because they'll look in your eyes and tell you how important business arrangements are to make sure everything works," said Lee.

"We learned a lot in Iraq—we now deploy shoulder-to-shoulder with contractors. Behind every success is a contract officer's initials," she added.

Approximately 50 separate breakout sessions were held, covering everything from the new Federal Procurement Data System-Next Generation reporting process, to SPS Version 4.2 Increment 2 report writing. Exhibitors gave users generous opportunities for hands-on demonstrations, including the opportunity to use the new Web-based SPS Version 4.2 Increment 3. This new version introduces a new, more open architecture; allows DoD to migrate its business systems to the Web; and has the scalability to consolidate server support.

Deputy Director, Defense Procurement and Acquisition Policy, Electronic Business Mark Krzysko (forefront) and Standard Procurement System (SPS) Program Manager Army Col. Jacob Haynes co-sponsored the Department of Defense E-Business/SPS Joint Users' Conference.

## DEFENSE ACQUISITION 2005 (MARCH 1–2, 2005)

The Institute for Defense and Government Advancement (IDGA) is sponsoring *Defense Acquisition 2005*, March 1–2, at the Watergate Hotel in Washington, D.C. This year's theme will be "Transforming the Acquisition Process for More Efficient Contracting, Faster Implementation, and Reduced Costs." Featured speakers will include executives from National Aeronautics and Space Administration Headquarters; Defense Acquisition Regulations Directorate; Army Acquisition Support Center; Office of the Assistant Secretary of the Navy (Research, Development and Acquisition); Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology); and Office of the Under Secretary of Defense (Acquisition, Technology and Logistics)/Systems Engineering Enterprise Development.

Topics for discussion will include:

- Encourage Competition Among Contractors
- Assure Maximized Production Quality
- Decrease Equipment Delivery Time
- Reduce Acquisition Costs
- Improve the Acquisition Rulemaking Process

To register or learn more about this event, go to the IDGA Web site at <http://www.iqpc.com/cgi-bin/templates/genevent.html?event=6121&topic=222>.

## 21ST ANNUAL TEST & EVALUATION CONFERENCE & EXHIBITION (MARCH 7–10, 2005)

The 21st Annual Test and Evaluation Conference and Exhibition will be held March 7–10, 2005, in Charlotte, N.C. The pace of technology is accelerating while the cycle times for fielding systems for national defense and homeland security have remained constant or, in some cases, have actually increased. Test and evaluation is at the core of this development process and must serve not only as a vehicle for discovery and a check and balance in the development process, but also as a catalyst to move emerging technology rapidly from the bench to the combat theater.

The commercial marketplace has significant experience in fielding new technology quickly and successfully. This forum will examine various methods being applied in the commercial sector to move technology forward that might be adaptable in the government sector. Various innovative methods being adopted by some defense and homeland security agencies will also be examined for potential application or adaptation to permit our nation to better defend its borders during these times of changing and increasing threats.

For more information on registration go to the National Defense Industrial Association Web site at <http://register.ndia.org/interview/register.ndia?PID=Brochure&SID=_1D00RC2RA&MID=5910>.

## COTS APPLICATION & SUPPORT DEMO (MARCH 8–9, 2005)

On March 8–9, 2005, Intuitive Research and Technology Corporation and Manufacturing Technology, Inc., will host a two-day commercial off-the-shelf (COTS) product demonstration with guest speakers from both government and industry. The demonstration will be held in Dallas, Texas, at the Westin City Center Dallas. Equipment vendors, integrators, and federal activities will discuss implementation of commercial technology and techniques used to assure long-term product availability. To register online, visit the conference Web site at <http://www.hsv-epic.com/agenda.asp>.

## UAV SUMMIT: COMBAT & MICRO (MARCH 22–23, 2005)

The Institute for Defense and Government Advancement (IDGA) is sponsoring an *Unmanned Aerial Vehicle (UAV) Summit*, March 22–23, at the Ronald Reagan Building and International Trade Center in Washington, D.C. This year's theme will be "Weaponizing UAVs, Collecting ISR (Intelligence, Surveillance and Reconnaissance) Data." New to *UAV 2005* will be 19 sessions focusing on issues specific to combat and micro. Hear lessons learned from battle-tested UAVs, build alliances, and meet the corporate military partners/decisions makers you need as your UAV initiatives move forward. To register online, visit the IDGA Web site at <http://www.iqpc.com/cgi-bin/templates/genevent.html?event=6318&topic=221>.

## 4TH C4ISR INTEROPERABILITY TEST & EVALUATION (MARCH 29–31, 2005)

The International Test and Evaluation Association (ITEA) will sponsor the 4th Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance (C4ISR) Interoperability Test and Evaluation Workshop in Oxnard, Calif., on March 29–31, 2005. Conference details and information on registration are on the ITEA Web site <http://www.itea.org> or call Christopher Weal at (805) 989-7947, e-mail christopher.weal@navy.mil.

## DTIC ANNUAL USERS MEETING AND TRAINING CONFERENCE (APRIL 4–6, 2005)

The Defense Technical Information Center will host its Annual Users Meeting and Training Conference April 4–6, 2005, in Alexandria, Va., at the Hilton Alexandria Old Town. DTIC holds this popular conference each spring for its user community, which includes professionals in technical research and information primarily from the Department of Defense, other federal agencies, and their contractors and potential contractors.

This year's agenda will address changing information sources and technologies in the federal research, development, and acquisition communities. There will be training and breakout sessions on rapidly changing defense needs in the technical information environment. Government and commercial exhibitors will be on hand to demonstrate the latest information technology.

With a variety of speakers and sessions on topics of current interest and controversy, participants will be able to meet the experts, ask questions, express opinions, and enhance their professional development, while enjoying learning opportunities and networking with their peers. For more information contact DTIC's conference coordinator at: (703) 767-8236, DSN 427-8236, or e-mail confinfo@dtic.mil.

## DMSMS 2005: DIMINISHING MANUFACTURING SOURCES AND MATERIAL SHORTAGES CONFERENCE (APRIL 11–15, 2005)

The Diminishing Manufacturing Sources and Material Shortages Conference is a unique opportunity for maintainers, designers, and program managers to update their knowledge of the latest tools, techniques, and policies for managing spare parts obsolescence. The objective of *DMSMS 2005* is to focus on the need for proactive DMSMS management to support the warfighter and to promote the use of DoD's newly developed DMSMS Center of Excellence.

The conference will be held at the Gaylord Opryland, Nashville, Tenn., and will feature technical presentations, a poster session, an exhibitor hall, and a formal DMSMS training opportunity. The new DMSMS Fundamentals course will be taught the last day of the conference. For more information, go to <www.dmsms2005.utcdayton.com>.

## DAU ALUMNI ASSOCIATION ANNUAL SYMPOSIUM (APRIL 19–20, 2005)

Mark your calendars now for the Defense Acquisition University Alumni Association (DAUAA) Annual Symposium April 19–20, 2005, at Scott Hall, Fort Belvoir, Va. Next year's theme will be "Best Practices and Solutions for Rapid Acquisition, Technology and Logistics." Watch the DAUAA Web site at <http://www.dauaa.org> for information and online registration.

## 6TH ANNUAL SCIENCE AND ENGINEERING TECHNOLOGY CONFERENCE/DOD TECH EXPOSITION (APRIL 19–21, 2005)

The National Defense Industrial Association will sponsor the 6th Annual Science and Engineering Technology Conference/DoD Technology Exposition April 19–21, 2005, at the Charleston Area Convention Center in North Charleston, S.C. The theme of this year's event will be "Bridging the Gap Between Technology and The Future Warfighter." Register online at <http://register.ndia.org/interview/register.ndia?>.

## INTERNATIONAL TEST & EVALUATION ASSOCIATION (ITEA) 9TH ANNUAL TEST INSTRUMENTATION WORKSHOP (MAY 2–5, 2005)

The 9th Annual Test Instrumentation Workshop, hosted by the ITEA China Lake and Antelope Valley Chapters, will be held May 2–5, 2005, at the Kerr-McGee Center in Ridgecrest, Calif. The theme of the 2005 event will be "Test Instrumentation for the Full Product Life Cycle." For more information, call or e-mail Bettye Moody at (760) 939-7252, bettye.moody@navy.mil.

## DEFENSE PROCUREMENT AND ACQUISITION POLICY, E-BUSINESS CONFERENCE (MAY 24–27, 2005)

The 2005 Defense Procurement and Acquisition Policy e-Business Conference will be held May 24–27, 2005, at the Rosen Centre in Orlando, Fla. Strategic acquisition through electronic systems is the future, and e-Business is leading the journey to achieve this ideal. Hosted by the Office of Defense Procurement and Acquisition Policy, e-Business (DPAP, EB), the e-Business Conference will focus on the approaches, strategies, and initiatives that will make this environment a reality. The conference will cover:

- Enterprise Architecture—a movement away from application silos

- Portfolio Management—an assessment of technical and functional capabilities supporting strategic acquisition
- Transition Planning—a plan to transform the acquisition domain from what is to what should be
- Governance—reflective of both procurement and acquisition processes and strategies.

Who should attend? Acquisition and procurement executives who oversee strategic plans and manage transformation policies. For future details on registering, watch the DPAP Electronic Business Web site: <http://www.acq.osd.mil/dpap/ebiz/index.htm >.

## 2005 ANNUAL INTERNATIONAL TEST & EVALUATION ASSOCIATION (ITEA) INTERNATIONAL SYMPOSIUM (SEPT. 26–29, 2005)

The ITEA Symposium 2005 will be held Sept. 26–29, 2005, at the Albuquerque Convention Center in Albuquerque, N.M. This year's event will provide a forum for addressing the issue of transformational test and evaluation, examining the topic from three perspectives:

- **Programs** that are or will be testing in the Joint Force and Coalition Battlespace
- **Methodologies**, processes, resources, tools, and limitations that enable or hinder our testing in the Joint Force and Coalition Battlespace
- **Lessons Learned**, including recommendations for the way ahead.

For more information on this event, check the ITEA Web site: <http://www.itea.org > or call (703) 631-6220.

## 8TH ANNUAL SYSTEMS ENGINEERING CONFERENCE (OCT. 24–27, 2005)

The 8th Annual Systems Engineering Conference will be held Oct. 24–27, 2005, at the Hyatt Regency Islandia, San Diego, Calif. The call for papers and the conference announcement will be mailed and will be available at <http://register.ndia.org/interview/register.ndia?PID = Brochure&SID = _1D00RC2RA&MID = 6870 >. If you would like to add your information to the mailing list, please contact Phyllis Edmonson at (703) 247-2588 or pedmonson@ndia.org.

## Currently Scheduled Defense Acquisition Board (DAB) Meetings

The following Defense Acquisition Board (DAB) meetings are scheduled through the first half of calendar year 2005. These meetings are subject to change. Check *AcqWeb* at <**http://www.acq.osd.mil/ara/dabs.htm**> for the most recent update.

- E-10A Milestone Decision/MP RTIP Program Review—March 3, 2005
- Global Hawk Program Review—March 8, 2005
- Blackhawk (UH-60M)—March 10, 2005
- F-35 (Joint Strike Fighter) Program Review—March 15, 2005
- Electronic Warfare Capability Area Review—March 17, 2005
- F/A-22 Milestone Decision Review—March 29, 2005
- DD(X) Milestone Decision Review—March 31, 2005
- CH-53X Milestone Decision Review—April 12, 2005
- Small Diameter Bomb (SDB) Milestone Decision—April 14, 2005
- CVN-21 Program Review—May 5, 2005
- JBMC2 Capability Area Review—May 17, 2005
- Future Combat Systems Program Review—May 26, 2005
- MPF(F) Milestone Decision Review—June 9, 2005
- Alliance Ground System Program Review—June 14, 2005
- Stryker Program Review—June 21, 2005
- Armed Recon Helicopter Milestone Decision Review—June 23, 2005

# Acquisition & Logistics Excellence

ARMY ACQUISITION SUPPORT CENTER NEWS RELEASE (NOV. 4, 2004)

## 2004 ARMY ACQUISITION CORPS RECOGNIZES ACQUISITION ACHIEVEMENT

ARLINGTON, Va.—On Oct. 24, 2004, the acquisition community held its 2004 Army Acquisition Corps (AAC) Annual Awards Ceremony in Washington, D.C. The event recognized the accomplishments of the Army acquisition workforce's most extraordinary members and the teams they lead. The ceremony's theme, "Celebrating Our Acquisition Stars," was a fitting tribute to the uniformed and civilian professionals who work tirelessly behind the scenes to provide combatant commanders and their soldiers with the weapons and equipment they need to execute decisive, full-spectrum operations in support of the global war on terrorism.

Army Acquisition Executive and Assistant Secretary of the Army for Acquisition, Logistics & Technology Claude M. Bolton Jr., who hosted the event, remarked, "We are facing some of our greatest challenges. We are serving a nation at war and a military force that is transforming while fighting. It is clear that we have charted the right course—increasing capability, flexibility, and sustainability—and that we must maintain the tremendous momentum we have built. With great challenges, come great opportunities for success."

The U.S. Army Acquisition Support Center director Col. Genaro J. Dellarocco presided over the event as master of ceremonies. Other Army and defense acquisition senior leaders in attendance included Gen. Paul J. Kern, commanding general, U.S. Army Materiel Command; Lt. Gen. Joseph L. Yakovac Jr., military deputy to the ASA(ALT) and director, acquisition career management; Maj. Gen. Darryl A. Scott, director, Defense Contracting Management Agency; and Dr. Thomas H. Killion, deputy assistant secretary for research & technology and chief scientist. Other distinguished guests included former assistant secretary of the Army Paul Hoeper and former military deputy to the ASA(ALT) retired Army Lt. Gen. John S. Caldwell.

The evening's presentations included the Army Research and Development Laboratory (RDL) Awards; the Secretary of the Army Awards for Acquisition Commander, Project and Product Managers of the Year; and the Army Superior Unit Award.

### Army Superior Unit Award

The Army Superior Unit Award, a special presentation, was awarded to the Program Executive Office (PEO) for Command, Control and Communications Tactical (C3T) for its efforts and accomplishments leading up to, and throughout operations Enduring Freedom and Iraqi Freedom. Accepting the organizational award were Maj. Gen. Michael R. Mazzucchi, commanding general, Communications-Electronics Command and PEO C3T, and John C. Perrapato, deputy PEO C3T.

### Army Research and Development Laboratory (RDL) Awards

The Army RDL Award winners were the Army Research Laboratory (ARL), Large Research Lab of the Year; the U.S. Army Armament Research Development and Engineering Center, Large Development Lab of the Year; and the Natick Soldier Center, Small Development Lab of the Year. The HUMVEE Armor Survivability Kit Team, which represents the collaboration between the Tank Automotive Research, Development and Engineering Center and ARL, received the Collaboration Team of the Year Award.

### Acquisition Commander of the Year Awards

Col. Ainsworth Mills, Defense Contract Management Agency (DCMA)-Philadelphia, and Lt. Col. Jack Pellicci Jr., DCMA-New York, both received 2004 Acquisition Commander of the Year Awards.

### Project and Product Manager of the Year Awards

The Project Manager and Product Manager (PM) of the Year Awards were presented to Col. N. Lee S. Price, PM Defense Communications and Army Transmissions Systems, PEO Enterprise Information Systems, and Lt. Col. Joseph Grebe, PM Battle Command Sustainment Support System, PEO C3T.

"People are central to everything we do," Secretary Bolton explained. "Institutions do not transform; people do. Platforms and organizations do not defend the nation; people do. Units do not train, they do not stay ready, they do not grow and develop leaders, they do not sacrifice, and they do not take risks on behalf of the nation; people do. Our job, at its very heart, is to equip and sustain the men and women who volunteer to defend this nation," he concluded.

For more information please contact Maj. Desiree Wineland of Army Public Affairs at 703-697-7592 or by e-mail to Desiree.Wineland@hqda.army.mil.

AMERICAN FORCES PRESS SERVICE (NOV. 30, 2004)

## 'LEAN' TEAM LAUDED FOR MANUFACTURING-TECHNOLOGY ADVANCES

WASHINGTON (AFPN)—The sixth annual Defense Manufacturing Technology Achievement Award was presented Nov. 30 at the Defense Manufacturing Conference in Las Vegas.

John B. Todaro, director of the Department of Defense's technology transition office, presented the award to the Air Force's lean depot repair initiative. The Army's uniform cannon tube reshaping program also received the award.

The award recognizes defense and private sector individuals or small groups responsible for developing innovative manufacturing processes that improve the affordability, cycle time, readiness, and availability of weapon systems and components.

The lean team—consisting of representatives from the Air Force Materiel Command and Air Force Research Laboratory, both at Wright-Patterson Air Force Base, Ohio; Warner Robins Air Logistics Center at Robins Air Force Base, Ga.; and Simpler Consulting, of Ottumwa, Iowa—was recognized for implementing procedures at the logistics center.

"This lean approach revolutionized the programmed depot maintenance lines for F-15 [Eagle] and C-5 [Galaxy] aircraft, generating dramatic payback for the warfighter in the form of reduced repair time, increased on-time return of aircraft to the field, and lower maintenance cost," according to a news release from the deputy undersecretary for advanced systems and concepts.

The release reported that in fiscal 2000, only 25 percent of C-5 aircraft were returned to their units on time. That figure increased to 100 percent in fiscal 2004. Likewise, the on-time return of F-15 aircraft to the active fleet increased from 12 percent in fiscal 2000 to 80 percent in 2004.

"As a result of this remarkable achievement, lean depot practices are being expanded across the defense industrial base, including arsenals, depots, and shipyards," the release stated.

AMERICAN FORCES PRESS SERVICE NOV. 30, 2004)

## RESEARCHERS AWARDED FOR GRAPPLING WITH DOD ENVIRONMENTAL ISSUES

*Sgt. 1st Class Doug Sample, USA*

WASHINGTON—Some of the nation's top researchers were lauded Nov. 30 for their efforts in helping the Defense Department meet environmental challenges that impact military readiness.

Those receiving awards for helping DoD meet its environmental challenges were:

- Alex Becker, Lawrence Berkeley National Laboratory, for developing a multi-sensor system for the detection and characterization of unexploded ordnance
- John Veranath, University of Utah, for the development of a new computational and analytical tool for distinguishing local and regional sources for fugitive dust
- John A. Gillies, Ph.D., Desert Research Institute, for his work in characterizing and quantifying fugitive dust emissions from Department of Defense sources, including unique military activities
- Frank E. Loeffler, Georgia Institute of Technology, for his project on aerobic and anaerobic transformation of cis-dichloroethene and vinyl chloride
- Glen Merfeld, GE Global Research, for developing low-temperature durable, corrosion-protection powder coatings for temperature-sensitive substrates
- Susan L. Ustin, University of California, Department of Land, Air, and Water Resources, for her work in mapping invasive species using imaging spectrometry.

The awards were handed out during the opening session of a three-day symposium sponsored by the Strategic Environment Research Development Program and the Environmental Security Technology Certification Program.

SERDP is DoD's corporate environmental research and development program that focuses on cleanup, compliance, conservation, pollution prevention, and unexploded ordnance technologies. ESTCP, meanwhile, works to identify, demonstrate, and test technologies that address the military's environmental requirements.

Both organizations are working in partnership with DoD to limit environmental challenges that limit use of military training and testing installations, as well as current and future liabilities.

Frank Morrison (center), of Lawrence Berkeley National Laboratory, accepts one of six project-of-the-year awards from Brad Smith, executive director of the Strategic Environment Research Development Program, and Jeff Marqusee, director of the Environmental Security Technology Certification Program, during a symposium held by the two organizations on Nov. 30 in Washington, D.C.
Photo by Sgt. 1st Class Doug Sample, USA

Three of the goals of the two organizations are ensuring long-term use of training and testing ranges, improving detection and discrimination of unexploded ordnance, and accelerating cost-effective cleanup of contaminated defense sites.

Alex A. Beehler, assistant deputy undersecretary of defense for environment, safety and occupational health, and one of the keynote speakers during the symposium, said he shares the concerns of lawmakers who say that the issue of unexploded ordnance on federal land is an "incredible problem."

And while DoD is making "good attempts" to grapple with the problem, he said the department still has "a far way to go."

Beehler told the group that he encourages states to do more to help the military, by partnering with DoD to look at ways to deal with the unexploded ordnance issue and other problems like encroachment that also plague the department.

He said Congress has appropriated money for DoD and military installations to "proactively seek opportunities" with local entities, conservation groups, and states to "operate, manage, and own conservationally desirable lands," thus creating a "buffer zone" near military bases.

"I see this tying into a whole host of opportunities with better cooperation, helping the local governments in effective conservation that will undoubtedly spill over into the other areas of effective land management and how to deal with unexploded ordnance," Beehler said.

Such a balance between the military, the environment, and conservationists would greatly please Marine Brig. Gen. Willie Williams, assistant deputy commandant for installation and logistics (facilities) for the Marine Corps. Addressing the symposium, Williams said that to have an "effective force, the Corps must have an effective environmental program in order to ensure the ranges and space we need is there when we need it.

"We realize that without proper (environmental) management we would not have the ready force that we have today," he said.

## *Leadership Commitment and Strategic Approach to Career-long Learning Distinguish First*

# USD (AT&L) Workforce Development Award Winners

*Russell A. Vacante*

On Nov. 16, 2004, Michael W. Wynne, acting under secretary of defense for acquisition, technology and logistics, presided over the first annual Under Secretary of Defense (Acquisition Technology & Logistics) Learning and Workforce Development Award competition, which was held in conjunction with the PEO SYSCOM Conference (*Defense AT&L*, January-February 2005, 94).

Announced by Wynne in May 2004, the Workforce Development Award is designed to encourage AT&L field organizations to promote career-long workforce learning and development in accordance with USD(AT&L) Goal No. 7, Motivated, Agile Workforce; and to recognize organizations that meet the challenge by developing comprehensive and innovative programs. Best practices identified through the program are shared with other defense AT&L organizations.

Congratulating the winners, Wynne stressed the importance of field organizations' providing world-class development to create superbly trained, well-disciplined communities focused on providing responsive products and services to the warfighter.

"AT&L's success is all about people," he said. "The Workforce Development Award is a critical component of my vision [of ] an agile, motivated workforce. I am determined to create an environment where we can maintain a world-class AT&L workforce."

At Wynne's request, the Defense Acquisition University organized the competition. Twenty-two field organizations submitted award applications. A panel of seven educators and professionals from academia, industry, and corporate learning institutions (see sidebar) evaluated the applications for their scope and innovation to include mentoring, continuous learning, career counseling, job rotation and shadowing, executive coaching, leadership development, and succession planning.

Wynne said that the judges had identified threads of continuity: leadership commitment; a strategic approach to career-long learning; a strong leadership development program; and allocation of resources—both time and dollars—to training and development.

"We must ensure that all of our field organizations are world-class learning organizations," Wynne said. "Today we are recognizing some of our best learning organizations."

### Gold Winner: United States Air Force, Air Armament Center (AAC), Eglin Air Force Base, Fla.

The Air Armament Center develops, tests, acquires, and sustains integrated air armament and provides expeditionary combat support. AAC is responsible for development, acquisition, testing, deployment, and sustainment of all air delivery weapons.

Gold Winner—USAF Air Armament Center (AAC)

**Vacante** *is director, sector leadership at the Defense Acquisition University and formerly served as DAU's director of performance-based logistics. His undergraduate and graduate degrees are from the State University of New York at Buffalo.*

Photographs by Sgt. Mason Lowery, USA

AAC has recently implemented several new and innovative workforce development initiatives to support their strategic objective to "Create and Enable the Workforce":

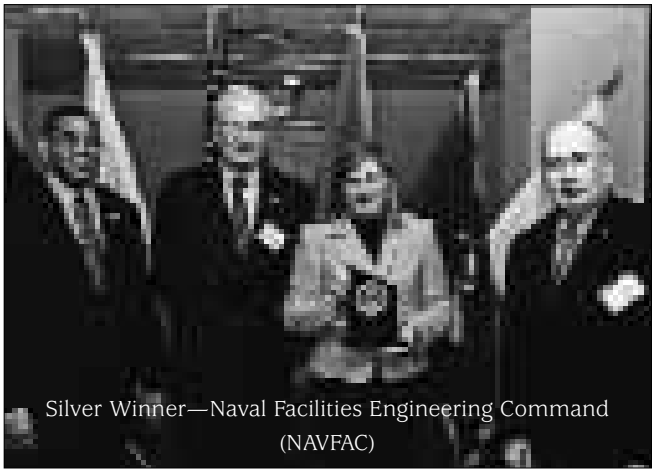
- **Air Armament Academy (A3).** A3's mission is to "sharpen the minds of those who forge the sword." The curriculum focuses on workforce knowledge gaps identified by AAC senior leaders as they execute their mission. Each member of the AAC senior leadership team serves as an A3 faculty member. AAC senior leaders have presented over 300 courses to more than 5,000 personnel.
- Knowledge Now Community of Practice (CoP) for A3. This CoP has transformed training administration from manual to fully automated.
- Leadership Enhancement and Preparation (LEAP) Program. This formal mentoring program is designed to facilitate the development of civilian employees.
- Defense Acquisition University Satellite Program. Partnering with DAU, AAC developed the Eglin Learning Organization (ELO). With many DAU courses taught at AAC, program savings are estimated at $3 million annually.
- Organizational Health Center (OHC). OHC provides executive coaching, organizational consulting, and change management specialist services.
- Training Days/Training Weeks Policy. Every month has designated training days, and every other month contains a designated training week. Training received by AAC personnel has increased by more than 50 percent. These initiatives, along with active internship programs, job rotation, job shadowing, career counseling, supervisor/leadership development, and succession planning, are transforming AAC's culture into one of a learning organization.

### Silver Winner: United States Navy, Naval Facilities Engineering Command, Washington Navy Yard, Washington, D.C.

NAVFAC manages the planning, design, construction, contingency engineering, real estate, environmental, and public works support for U.S. Navy shore facilities around the world. It provides the U.S. Navy forces with operating, expeditionary, support and training bases.

In August 2000, NAVFAC established its Community Management Directorate to oversee all workforce career management programs for the acquisition career fields under its command:

- Human Capital Strategic Planning Process. NAVFAC, working with USD (AT&L), implemented a six-step planning process to appropriately shape its workforce and also develop an audit trail from its strategic plan to its workforce development programs. By using this process to identify appropriate workforce numbers and skills, resources can be best aligned and heavily invested on a strategic basis for the optimal value in intern, education, training, and job rotation programs.
- Establishment of Facilities Engineering Career Field. NAVFAC spearheaded the establishment of the facilities engineering acquisition career field. NAVFAC worked with USD(AT&L) and DAU to field Level I and Level II certification courses. Work is ongoing on the Level III certification course.
- College Credit Bank Transcript Service. By law, anyone assigned to the contracting career field must have 24 semester credits of business education. Many courses at DAU and the Naval Facilities Acquisition Center for Training carry American Council on Education recommendation for credits. Excelsior College consolidates these and other regionally accredited college-level academic credits onto a single official transcript. This has helped NAVFAC employees meet their 24-semester-hour requirement and saved $591,000 in 2003. NAVFAC also makes extensive use of internships, in-house training, continuous learning, and leadership development to diligently ensure each employee recognizes his or her value to the command, the Navy, and the Department of Defense.


Silver Winner—Naval Facilities Engineering Command (NAVFAC)

### Bronze Winner: United States Army Program Executive Office for Simulation, Training, and Instrumentation (PEO STRI), Orlando, Fla.

PEO STRI provides life cycle management of interoperable training, testing, and simulation solutions for soldiers' readiness and the defense community. PEO STRI is responsible for all major test instrumentation and, when requested, provides technical programmatic support to joint and Army agencies.

Because of the complexity of its mission in terms of requisite leadership, technical competence, communica-

tion, and geographical challenges, PEO STRI uses an integrated approach to training and career development activities:

- Total Employee Development. This paperless administrative process has reduced the use of DD Form 1556s from 2,100 a year to 50. The entire request, approval, and scheduling process is electronic and can be accessed by the manager, supervisor, or employee anytime and anywhere in the continental United States.
- The Employee Development Plan (EDP). This database catalogs employees' skills, education, certification levels, and relevant program experiences. The EDP assists PEO STRI in bridging the gap between current and future skill requirements, and supports succession planning to enable knowledge of current competencies to feed future needs. This program ensures that PEO STRI consistently retains, promotes, and hires the best and brightest talent possible.
- Leadership Education and Development (LEAD) Course. The LEAD course assists project directors and team leaders to develop knowledge, skills, and abilities needed to effectively supervise and lead military and civilian personnel. The course also stresses professional and personal ethics and values.
- Creativity Day Camp. This program challenges managers, supervisors, and team leaders to think outside the box, learn how to establish friendly working relationships with subordinates, and learn how to encourage improvement.

Bronze Winner—The Army Program Executive Office for Simulation, Training, & Instrumentation (PEO STRI)

Additionally, PEO STRI's workforce development program includes aggressive use of internships, job rotation, counseling, and job shadowing.

### Significant Return on Investment

In closing, Wynne said, "The leadership commitment to employee development is evident. The time and energy you have placed in creating innovative workforce development programs will reap a significant return on your investment. ... I have great confidence in the future of the AT&L community. Without a doubt, our people will have the right skills, in the right place, at the right time, with the right resources, doing the right things [and] smartly supporting the warfighter."

Guidelines for the 2005 Workforce Development Awards competition are posted on the DAU Web site at <www.dau.mil>.

## *2004 USD(AT&L) Workforce Development Award Judges*

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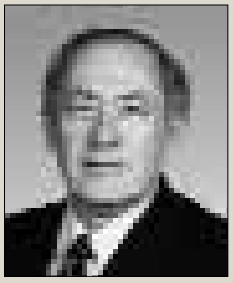
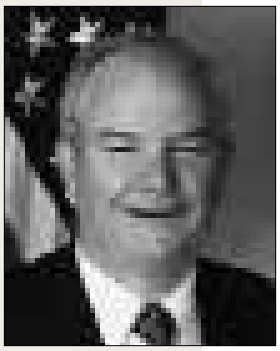


7

1. **Karen Barley**, president and co-founder, Corporate University Enterprise, Inc.
2. **Jeanne C. Meister**, vice president market development, Accenture Learning
3. **Sarah B. Mills**, executive coach
4. **Rear Adm. Leonard Vincent**, USN (ret.), vice president, CACI International
5. **Dr. Robert Ainsley**, director, e-Learning and Technology Center, DAU
6. **Dr. Christopher Hardy**, deputy director, policy planning & leadership support, DAU
7. **Dr. Russell Vacante**, director, sector leadership, DAU

**THE UNDER SECRETARY OF DEFENSE**
**3010 DEFENSE PENTAGON**
**WASHINGTON, D.C. 20301-3010**

ACQUISITION, TECHNOLOGY AND LOGISTICS



OCT 29, 2004

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
ASSISTANT SECRETARIES OF DEFENSE
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
DIRECTOR, OPERATIONAL TEST AND EVALUATION
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE
ASSISTANTS TO THE SECRETARY OF DEFENSE
DIRECTOR, ADMINISTRATION AND MANAGEMENT
DIRECTOR, PROGRAM ANALYSIS AND EVALUATION
DIRECTOR, NET ASSESSMENT
DIRECTOR, FORCE TRANSFORMATION
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTORS OF THE DOD FIELD ACTIVITIES

SUBJECT: Deputy Under Secretary of Defense for Installations and Environment

I am pleased to announce the appointment of Philip W. Grone as the Deputy Under Secretary of Defense for Installations and Environment (DUSD(I&E)) effective on November 1, 2004. Mr. Grone has served for over three years as the Principal Assistant DUSD(I&E) and before that as the Deputy Staff Director of the House Armed Services Committee.

Mr. Grone succeeds Raymond F. DuBois who has served as the DUSD(I&E) since April 2001. Secretary of Defense Donald Rumsfeld has asked Mr. DuBois to continue as a senior member of his staff in his concurrent role as the Director of Administration and Management for the Office of the Secretary of Defense where he has done double duty for the past two years. Mr. DuBois will continue his direct involvement with the Base Realignment and Closure process as an advisor to the Infrastructure Steering Group. Under the leadership of Mr. DuBois, the Installations and Environment team has made significant progress in reducing the total costs of ownership of our military installations while greatly improving housing, safety and environmental stewardship.

Please provide to Phil all the great support that has made the I&E team a success.

Michael W. Wynne
Acting

# Seventeenth International Defense Educational Arrangement (IDEA) Seminar

**June 6-10, 2005**
***To be held in***
**Berlin, Germany**

The Seventeenth International Defense Educational Arrangement (IDEA) Seminar will hosted by the Bundesakademie für Wehrverwaltung und Wehrtechnik (The Federal Academy for Defence Administration and Military Technology).

The seminar will be a theme-based format, to include an industry day; will provide for your individual participation; and will provide you information exchange and feedback.

The seminar is sponsored by IDEA, which consists of defense acquisition educational institutions in Germany, Spain, Sweden, Australia, France, the United States, and the United Kingdom.

Those eligible to attend are Defense Department/Ministry and defense industry employees from the seven sponsoring nations who are actively engaged in international defense education programs. Other nations may participate by invitation.

Invitations, confirmations, and administrative instructions will be issued after May 1, 2005.

Contact an IDEA team member for additional seminar information:
Comm (U.S.): **703-805-5196**
E-mail: **internationalseminars@dau.mil**

Updated information can be found on our Web site: **<http://www.dau.mil/international/international.aspx>.**

# LETTERS. We Like Letters.

You've just finished reading an article in *Defense AT&L*, and you have something to add from your own experience. Or maybe you have an opposing viewpoint.

Don't keep it to yourself—share it with other *Defense AT&L* readers by sending a letter to the editor. We'll print your comments in our "From Our Readers" department and possibly ask the author to respond.

If you don't have time to write an entire article, a letter in *Defense AT&L* is a good way to get your point across to the acquisition, technology, and logistics workforce.

E-mail letters to the managing editor: defenseatl@dau.mil.

*Defense AT&L* reserves the right to edit letters for length and to refuse letters that are deemed unsuitable for publication.

# Acquisition & Logistics Excellence

An Internet Listing Tailored to the Professional Acquisition Workforce

## Surfing the Net

**Acquisition Community Connection (ACC)**
**http://acc.dau.mil**
Policies, procedures, tools, references, publications, Web links, and lessons learned for risk management, contracting, system engineering, total ownership cost (TOC).

**Acquisition Reform Network (AcqNet)**
**http://www.arnet.gov/**
Virtual library; federal acquisition and procurement opportunities; best practices; electronic forums; business opportunities; acquisition training; excluded parties list.

**Advanced Concept Technology Demonstrations (ACTDs)**
**http://www.acq.osd.mil/actd/**
ACTD's accomplishments, articles, speeches, guidelines, and points of contact.

**Aging Systems Sustainment and Enabling Technologies (ASSET)**
**http://catt.bus.okstate.edu/asset/index.html**
A government-academic-industry partnership. Technologies and processes developed in the ASSET program increase the DoD supply base, reduce time and cost associated with parts procurement, and enhance military readiness.

**Air Force (Acquisition)**
**http://www.safaq.hq.af.mil/**
Policy; career development and training opportunities; reducing TOC; library; links.

**Air Force Materiel Command (AFMC) Contracting Laboratory's FAR Site**
**http://farsite.hill.af.mil/**
FAR search tool; Commerce Business Daily announcements (CBDNet); Federal Register; electronic forms library.

**Army Acquisition Support Center**
**http://asc.army.mil**
News; policy; Army AL&T Magazine; programs; career information; events; training opportunities.

**Assistant Secretary of the Army (Acquisition, Logistics & Technology)**
**https://webportal.saalt.army.mil/**
ACAT Listing; ASA(ALT) Bulletin; digital documents library; ASA(ALT) organization; links to other Army acquisition sites.

**Association of Old Crows (AOC)**
**http://www.crows.org**
Association news; conventions, conferences, courses; Journal of Electronic Defense.

**Commerce Business Daily**
**http://cbdnet.gpo.gov**
Access to current and back issues with search capabilities; business opportunities; interactive yellow pages.

**Committee for Purchase from People Who are Blind or Severely Disabled**
**http://www.jwod.gov**
Information and guidance to federal customers on the requirements of the Javits-Wagner-O'Day (JWOD) Act.

**Defense Acquisition University (DAU)**
**http://www.dau.mil**
DAU Course Catalog; Defense AT&L magazine and Defense Acquisition Review journal; course schedule; policy documents; guidebooks; and training and education news for the Defense Acquisition Workforce.

**DAU Alumni Association**
**http://www.dauaa.org**
Acquisition tools and resources; government and related links; career opportunities; member forums.

**DAU Distance Learning Courses**
**http://www.dau.mil/registrar/apply.asp**
Take DAU courses online at your desk, at home, at your convenience.

**Defense Advanced Research Projects Agency (DARPA)**
**http://www.darpa.mil**
News releases; current solicitations; "Doing Business with DARPA."

**Defense Electronic Business Program Office (DEBPO)**
**http://www.acq.osd.mil/dpap/ebiz**
Policy; newsletters; Central Contractor Registration (CCR); assistance centers; DoD EC partners.

**Defense Information Systems Agency (DISA)**
**http://www.disa.mil**
Structure and mission of DISA; Defense Information System Network; Defense Message System; Global Command and Control System.

**Defense Modeling and Simulation Office (DMSO)**
**http://www.dmso.mil**
DoD Modeling and Simulation Master Plan; document library; events; services.

**Defense Systems Management College (DSMC)**
**http://www.dau.mil**
DSMC educational products and services; course schedules; job opportunities.

**Defense Technical Information Center (DTIC)**
**http://www.dtic.mil/**
DTIC's scientific and technical information network (STINET) is one of DoD's largest available repositories of scientific, research, and engineering information. Hosts over 100 DoD Web sites. Register for services.

**Deputy Director, Systems Engineering, USD(AT&L/IO/SE)**
**http://www.acq.osd.mil/io/se/index.htm**
Systems engineering mission; Defense Acquisition Workforce Improvement Act information, training, and related sites; information on key areas of systems engineering responsibility.

**Director, Defense Procurement and Acquisition Policy (DPAP)**
**http://www.acq.osd.mil/dpap**
Procurement and acquisition policy news and events; reference library; DPAP organizational breakout; acquisition education and training policy and guidance.

**DoD Defense Standardization Program**
**http://www.dsp.dla.mil**
All about DoD standardization; key Points of Contact; FAQs; Military Specifications and Standards Reform; newsletters; training; nongovernment standards; links to related sites.

**DoD Enterprise Software Initiative (ESI)**
**http://www.donimit.navy.mil/esi**
Joint project to implement true software enterprise management process within DoD.

**DoD Inspector General Publications**
**http://www.dodig.osd.mil/pubs/index.html**
Audit and evaluation reports; IG testimony; planned and ongoing audit projects of interest to the acquisition community.

**DoD Office of Technology Transition**
**http://www.dtic.mil/ott/**
Information about and links to OTT's programs.

**Dual Use Science & Technology (DUS&T) Program**
**http://www.dtic.mil/dust**
Fact sheet; project information, guidance, and success stories.

**Earned Value Management**
**http://www.acq.osd.mil/pm**
Implementation of Earned Value Management; latest policy changes; standards; international developments; active noteboard.

**Electronic Industries Alliance (EIA)**
**http://www.eia.org**
Government relations department; includes links to issue councils; market research assistance.

**Federal Acquisition Institute (FAI)**
**http://www.faionline.com**
Virtual campus for learning opportunities; information access and performance support.

**Federal Acquisition Jump Station**
**http://prod.nais.nasa.gov/pub/fed-proc/home.html**
Procurement and acquisition servers by contracting activity; CBDNet; reference library.

**Federal Aviation Administration (FAA)**
**http://www.asu.faa.gov**
Online policy and guidance for all aspects of the acquisition process.

**Federal Government Technology Transfer Links**
**http://dtica.dtic.mil/t2/orgt2.html**
Manpower and Training Research Information System (MATRIS) project offers links to federal government tech transfer programs.

**Federal R&D Project Summaries**
**http://www.osti.gov/fedrnd/about.html**
Portal to information on federal research projects; search databases at different agencies.

**Federal Research in Progress (FEDRIP)**
**http://grc.ntis.gov/fedrip.htm**
Information on federally funded projects in the physical sciences, engineering, and life sciences.

**Fedworld Information**
**http://www.fedworld.gov**
Comprehensive central access point for searching, locating, ordering, and acquiring government and business information.

**Government Accountability Office (GAO)**
**http://www.gao.gov**
GAO reports;policy and guidance; FAQs.

**General Services Administration (GSA)**
**http://www.gsa.gov**
Online shopping for commercial items to support government interests.

**Government-Industry Data Exchange Program (GIDEP)**
**http://www.gidep.org/**
Federally funded co-op of government-industry participants, providing electronic forum to exchange technical information

# Acquisition & Logistics Excellence

**An Internet Listing Tailored to the Professional Acquisition Workforce**

## *Surfing the Net*

essential to research, design, development, production, and operational phases of the life cycle of systems, facilities, and equipment.

**GOV.Research_Center**
**http://grc.ntis.gov**
U.S. Dept. of Commerce, National Technical Information Service (NTIS), and National Information Services Corporation (NISC) joint venture single-point access to government information.

**Integrated Dual-Use Commercial Companies (IDCC)**
**http://www.idcc.org**
Information for technology-rich commercial companies on doing business with the federal government.

**International Society of Logistics**
**http://www.sole.org**
Online desk references that link to logistics problem-solving advice; Certified Professional Logistician certification.

**International Test & Evaluation Association (ITEA)**
**http://www.itea.org**
Professional association to further development and application of T&E policy and techniques to assess effectiveness, reliability, and safety of new and existing systems and products.

**Joint Experimentation (JE) Program**
**http://www.jfcom.mil/about/experiment.html**
The U.S. Joint Forces Command (USJFCOM)'s JE campaign plans support improvements in doctrine, interoperability, and integration for more effective use of military forces.

**Joint Interoperability Test Command (JITC)**
**http://jitc.fhu.disa.mil**
Policies and procedures for interoperability certification; lessons learned; support .

**Joint Spectrum Center (JSC)**
**http://www.jsc.mil**
Provides operational spectrum management support to the Joint Staff and COCOMs and conducts R&D into spectrum-efficient technologies.

**Library of Congress**
**http://www.loc.gov**
Research services; Congress at Work; Copyright Office; FAQs.

**MANPRINT (Manpower and Personnel Integration)**
**http://www.manprint.army.mil**
Points of contact for program managers; relevant regulations; policy letters from the Army Acquisition Executive; briefings on the MANPRINT program.

**National Aeronautics and Space Administration (NASA)'s Commercial Technology Office (CTO)**
**http://technology.grc.nasa.gov**
Promotes competitiveness of U.S. industry through commercial use of NASA technologies and expertise.

**National Contract Management Association (NCMA)**
**http://www.ncmahq.org**
"What's New in Contracting?"; educational products catalog; career center.

**National Defense Industrial Association (NDIA)**
**http://www.ndia.org**
Association news; events; government policy; National Defense magazine.

**National Geospatial-Intelligence Agency**
**http://www.nima.mil**
Imagery; maps and geodata; Freedom of Information Act resources; publications.

**National Institute of Standards and Technology (NIST)**
**http://www.nist.gov**
Information about NIST technology, measurements, and standards programs, products, and services.

**National Technical Information Service (NTIS)**
**http://www.ntis.gov/**
Online service for purchasing technical reports, computer products, videotapes, audiocassettes.

**Naval Sea Systems Command**
**http://www.navsea.navy.mil**
Total Ownership Cost (TOC); documentation and policy; reduction plan; implementation timeline; TOC reporting templates; FAQs.

**Navy Acquisition and Business Management**
**http://www.abm.rda.hq.navy.mil**
Policy documents; training opportunities; guides on risk management, acquisition environmental issues, past performance, and more; news and assistance for the Standardized Procurement System (SPS) community; notices of upcoming events.

**Navy Acquisition, Research and Development Information Center**
**http://www.onr.navy.mil/sci_tech**
News and announcements; acronyms; publications and regulations; technical reports; how to do business with the Navy.

**Navy Best Manufacturing Practices Center of Excellence**
**http://www.bmpcoe.org**
National resource to identify and share best manufacturing and business practices in use throughout industry, government, academia.

**Naval Air Systems Command (NAVAIR)**
**http://www.navair.navy.mil**
Provides advanced warfare technology through the efforts of a seamless, integrated, worldwide network of aviation technology experts.

**Office of Force Transformation**
**http://www.oft.osd.mil**
News on transformation policies, programs, and projects throughout the DoD and the Services.

**Open Systems Joint Task Force**
**http://www.acq.osd.mil/osjtf**
Open Systems education and training opportunities; studies and assessments; projects, initiatives and plans; reference library.

**Parts Standardization and Management Committee (PSMC)**
**http://www.dscc.dla.mil/psmc**
Collaborative effort between government and industry for parts management and standardization through commonality of parts and processes.

**Project Management Institute**
**http://www.pmi.org**
Program management publications; information resources; professional practices; career certification.

**RMS Partnership**
**http://www.rmspartnership.org**
Promotes reliability, maintainability, and supportability to enhance communication, coordination, and collaboration between industry and government and encourage adoption of integrated systems engineering approach to RMS- and logistics-related issues.

**Small Business Administration (SBA)**
**http://www.sbaonline.sba.gov**
Communications network for small businesses.

**Small Business Innovation Research (SBIR) Program and Small Business Technology Transfer (SBTT) Program**
**http://www.acq.osd.mil/sadbu**
Program and process information; current solicitations; Help Desk information.

**Software Program Managers Network**
**http://www.spmn.com**
Supports project managers, software practitioners, and government contractors. Contains publications on highly effective software development best practices.

**Space and Naval Warfare Systems Command (SPAWAR)**
**https://e-commerce.spawar.navy.mil**
SPAWAR business opportunities; acquisition news; solicitations; small business information.

**Under Secretary of Defense (Acquisition, Technology and Logistics) (USD[AT&L])**
**http://www.acq.osd.mil/**
USD(AT&L) documents; streaming videos; links to many other valuable sites.

**USD(AT&L) Knowledge Sharing System (formerly Defense Acquisition Deskbook)**
**http://akss.dau.mil**
Automated acquisition reference tool covering mandatory and discretionary practices.

**U.S. Coast Guard**
**http://www.uscg.mil**
News and current events; services; points of contact; FAQs.

**U.S. Department of Transportation MARITIME Administration**
**http://www.marad.dot.gov/**
Information and guidance on the requirements for shipping cargo on U.S. flag vessels.

All links current at press time. To add a non-commercial defense acquisition/acquisition and logistics excellence-related Web site to this list, please fax your request to Judith Greig, (703) 805-2917. DAU encourages the reciprocal linking of its Home Page to other interested agencies. Contact: webmaster@dau.mil.

# *Defense AT&L* Writer's Guidelines in Brief

### Purpose
The purpose of *Defense AT&L* magazine is to instruct members of the DoD acquisition, technology & logistics (AT&L) workforce and defense industry on policies, trends, legislation, senior leadership changes, events, and current thinking affecting program management and defense systems acquisition, and to disseminate other information pertinent to the professional development and education of the DoD Acquisition Workforce.

### Subject Matter
**We do print** feature stories that include real people and events. Stories that appeal to our readers—who are senior military personnel, civilians, and defense industry professionals in the program management/acquisition business—are those taken from real-world experiences vs. pages of researched information. **We don't print** academic papers, fact sheets, technical papers, or white papers. We don't use endnotes or references in our articles. Manuscripts meeting these criteria are more suited for DAU's journal, *Defense Acquisition Review*.

*Defense AT&L* reserves the right to edit manuscripts for clarity, style, and length. Edited copy is cleared with the author before publication.

### Length
Articles should be 1,500 - 2,500 words. For articles that are significantly longer, please query first by sending an abstract.

### Author bio
Include a brief biographical sketch of the author(s)—about 25 words—including current position and educational background. We do not use author photographs.

### Style
Good writing sounds like comfortable conversation. Write naturally; avoid stiltedness and heavy use of passive voice. Except for a rare change of pace, most sentences should be 25 words or less, and paragraphs should be six sentences. Avoid excessive use of capital letters. Be sure to define all acronyms. Consult "Tips for Authors" at <http://www.dau.mil/pubs/damtoc.asp>. Click on "Submit an Article to *Defense AT&L*."

### Presentation
Manuscripts should be submitted as Microsoft Word files. Please use Times Roman or Courier 11 or 12 point. Double space your manuscript and do not use columns or any formatting other than bold, italics, and bullets. *Do not embed or import graphics into the document file*; they must be sent as separate files (see next section).

### Graphics
We use figures, charts, and photographs (black and white or color). Photocopies of photographs are not acceptable. Include brief numbered captions keyed to the figures and photographs. Include the source of the photograph. We publish no photographs or graphics from outside the DoD without written permission from the copyright owner. We do not guarantee the return of original photographs.

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### Submission Dates

| Issue | Author's Deadline |
|---|---|
| January-February | 1 October |
| March-April | 1 December |
| May-June | 1 February |
| July-August | 1 April |
| September-October | 1 June |
| November-December | 1 August |

If the magazine fills before the author deadline, submissions are considered for the following issue.

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Submit articles by e-mail to defenseatl@dau.mil or on disk to: DAU Press, ATTN: Judith Greig, 9820 Belvoir Rd., Suite 3, Fort Belvoir VA 22060-5565. Submissions must include the author's name, mailing address, office phone number (DSN and commercial), e-mail address, and fax number.

Receipt of your submission will be acknowledged in five working days. You will be notified of our publication decision in two to three weeks.

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