

# P M

## PROGRAM MANAGER



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**Carnegie Mellon's Software Engineering Institute Focuses Expertise on Transformation of Army Acquisition**



*Force XXI Battle Command Battalion/Brigade and Below (FBCB2) System*

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**FIRST PRODUCTION GLOBAL HAWK ROLLS OUT**

**DoD RELEASES SELECTED ACQUISITION REPORTS**

**SECAF ANNOUNCES AIR FORCE PEO RESTRUCTURING**

**ARMY ANNOUNCES ANNUAL ACQUISITION COMMANDER & PROJECT/PRODUCT MANAGER OF THE YEAR AWARD WINNERS**



*Program Manager Interviews  
Dr. Ronald M. Sega,  
Director, Defense  
Research & Engineering*

# PROGRAM MANAGER

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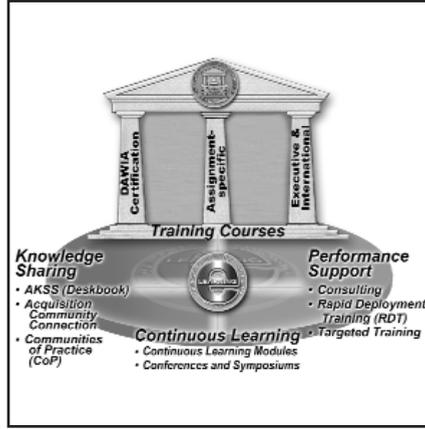


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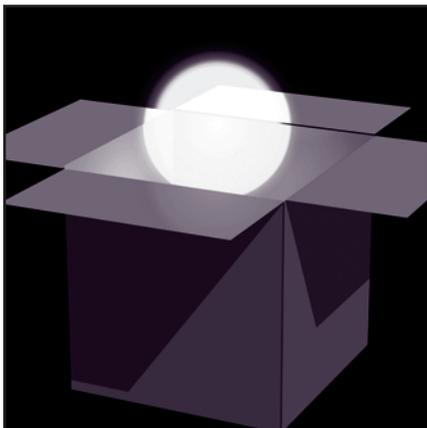


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**Correction:** The photo caption appearing at the bottom of p. 31, July-August 2003 PM, should have read: Symposium chairwoman Maureen Fino; Dr. Glenn Lamartin, director, defense systems, OUSD(AT&L); Kurt Newill, director of government learning partnerships, Raytheon; Nick Kuzemka, vice president, project management process, Lockheed Martin; Robert Bott, vice president, public policy and analysis, Boeing; Larry Auffrey, vice president, contract pricing and task management, Northrop Grumman; and Frank J. Anderson Jr., DAU president. The DAU Press regrets the error.



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# PM Interviews Dr. Ron Sega, Pentagon's Top Research & Engineering Advisor

## The Recognized Challenge of the 21<sup>st</sup> Century is the Uncertainties

**D**r. Ronald M. Sega is more apt to be recognized in a space suit than a business suit. The switch from astronaut to bureaucrat, however, was a natural career progression for the former physics professor, dean of engineering and applied science, Air Force command pilot, and American astronaut, who in his current position as DoD's top advisor for research and engineering, accelerated deployment of the bunker-busting "thermobaric" bomb used by U.S. forces for the first time in Afghanistan.

A man of many talents and interests, from building his own home to bringing the missile shield to life and dominating outer space through hypersonics, he foresees superfast missiles and spaceships that can zap any target. One of his goals is to increase U.S. flight capabilities by one Mach a year until 2012. Sega has truly lived the American dream after his forebears on his father's side first came from Loski potok in Slovenia.

Many of the initiatives emerging from his Pentagon office took on a different focus and form after Sept. 11, 2001—a day that Sega was in the Pentagon when the hijacked airplane struck. Sega and his staff have refocused the Pentagon's research and engineering efforts on taking an integrated approach to technology and moving those tools quickly to warfighters.

For 2004, Sega is working hard to keep basic research programs funded as more and more dollars are focused on operational capabilities related to the war on terrorism and the current conflict in Iraq.



**It's important that we be aware not only of the advances in technology outside the areas we're developing for our own purposes, but also of the potential use by adversaries.**

On Aug. 6, DAU Professor of Systems Engineering Dr. Marty Falk interviewed Sega on behalf of *Program Manager*. Sega spoke with Falk from his Pentagon office, sharing his personal perspective on transforming the department's research and engineering capabilities.

**Q** *I'd just like to start out talking a little bit about 9/11. We all know that it had a significant impact on our defense posture. One of the things that came out of it was creation of the Combating Terrorism Technology Task Force drawing representatives from the Services and various defense agencies. Can you tell us a little about what has come out of that task force so far—perhaps what some of the focus areas are and how they relate to your office?*

**A** After 9/11, we were focusing on what we could offer in terms of support to upcoming research and development efforts. I thought it was important to bring together the leadership on the technical side of the Department of Defense to determine if there were technologies that could be accelerated to be ready in a month or so, in a year, in five years. So we came together on September 19, 2001, with the task to try to address those challenges, especially the near-term one.

On September 21, we had roughly 150 candidate technologies for near-term availability. Working with the users, primarily CENTCOM [Central Command] and SOCOM [Special Operations Command], we identified three of those for

acceleration that very evening. They included the nuclear quadruple resonance system that's currently used for DoD and, I believe, the FAA [Federal Aviation Administration] as well. We created a penetrating system in the CALCM [Conventional Air Launched Cruise Missile], and the thermobaric bomb that is a conversion of BLU-109, and then designated BLU-118B. All were completed within 90 days.

The thermobaric bomb is an interesting story from a couple of perspectives. We started from basic chemistry. In October 2001, through collaborative efforts of DTRA [Defense Threat Reduction Agency], the Air Force, the Navy, and the Department of Energy, we took the lab work and the computer models, selected a leading candidate at the end of October, integrated it into a bomb body and performed static test in Nevada in November, then flight testing on December 14, 2001. The process, from start to finish, was completed in 90 days. So one: there was an additional capability available to the warfighter. And two: it's an example of how we can bring together the expertise from various Services and agencies and bring a system to a fielded state in a very short period of time.

The Combating Terrorism Technology Task Force continues to look at other efforts inside and across the Services and other agencies that would be very useful to accelerate. In Operation Iraqi Freedom, we looked at potential CENTCOM and SOCOM needs, and in some cases we identified technologies that would receive additional funding to accelerate the development and test. And 100 percent of those were successfully completed and delivered. That was a tribute to the folks in the Services and agencies who were working hard with the users to bring technology forward in a rapid and efficient way.

**Q** *How were these projects handled from a funding standpoint? Did the individual military activities fund them, or is there some central funding that is used to accelerate these things?*



**We have had a joint warfighting science and technology plan for a number of years. It continues to improve as we involve our end user, the warfighter, in the process.**

**A** Well, a little of both. Funding for some of the projects was in the Services. There was some reprogramming, and other projects received additional funding from supplementals or other types of funding vehicles. We actually received quick-reaction mission funds dedicated money in fiscal year 2002, right at the end of the congressional session—about \$15 million—and we applied \$13 million of that toward the Thermobaric Hellfire effort. Roughly a

year later, we had gone through the development of a replacement for the warhead on the Hellfire missile that was much more effective in enclosed structures and still met all the requirements of the model that we had started with—the Mike (MK) model of the thermobaric bomb. In this case, the Marine Corps participated in the development with support from other Services. This is a good example of bringing things forward once a funding source is identified.

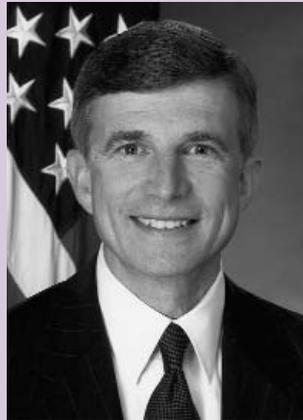
**Q** *The terrorists rely on things like surprise, deception, and asymmetric warfare. As a matter of fact, I recently read in the papers that there have been attempts to conceal weapons in consumer electronic products, like boom boxes. How do we go about determining what capabilities we need to be able to counter this kind of asymmetric threat?*

**A** The recognized challenge of the 21<sup>st</sup> century is the uncertainties—recognizing the rate of change in technology that will be increasing as we go forward. The availability of this technology is not only for us but potentially for adversaries. It's important that we be aware not only of the advances in technology outside the areas we're developing for our own purposes, but also of the potential use by adversaries. It is indeed a challenge, and we cannot stop pushing the frontiers of technology, both in application of commercial products and understanding of their possible uses, and in development of technologies that we build on our own or with industry.

**Q** *Sort of a related question: with the new JCSI3170 [Chairman of the Joint Chiefs of Staff Instruction 3170.01C] and the new JCIDS [Joint Capabilities Integration and Development System] process, we're now focusing on the capabilities-based requirements system as opposed to the old traditional threat-based scenario where we were looking at specific threats. What impact does that have on what we do in the S&T [science and technology] arena? How do we derive what those ca-*

## RONALD M. SEGA, DIRECTOR, DEFENSE RESEARCH AND ENGINEERING

**D**r. Ronald M. Sega, director of defense research and engineering, is the chief technical advisor to the secretary of defense and the under secretary of defense for acquisition, technology, and logistics on scientific and technical matters, basic and applied research, and advanced technology development. Sega also has management oversight for the Defense Advanced Research Projects Agency.



Sega has had an extensive career in academia, research, and government service. He began his academic career as a faculty member in the Department of Physics at the U.S. Air Force Academy. His research activities in electromagnetic fields led to a doctorate in electrical engineering from the University of Colorado. He was appointed assistant professor in the Department of Electrical and Computer Engineering at the University of Colorado at Colorado Springs in 1982. In addition to teaching and research activities, he also served as the technical director of the Laser and Aerospace Mechanics Directorate at the F.J. Seiler Research Laboratory, and at the University of Houston as the assistant director of flight programs and program manager for the Wake Shield facility. In 1996, Sega became the dean, College of Engineering and Applied Science, University of Colorado at Colorado Springs. He has authored or co-authored over 100 technical publications and was promoted to professor in 1990. He is also a Fellow of the Institute of Electrical and Electronics Engineers and of the Institute for the Advancement of Engineering.

In 1990, Sega joined the National Aeronautics and Space Administration (NASA), becoming an astronaut in July 1991. He served as a mission specialist on two space shuttle flights: STS-60 in 1994, the first joint U.S.-Russian space shuttle mission; and the first flight of the Wake Shield facility; and STS-76 in 1996, the third docking mission to the Russian space station Mir where he was the payload commander. He was also the co-principal investigator for the Wake Shield facility and the director of operations for NASA activities at the Gagarin Cosmonaut Training Center, Russia, in 1994-95.

Sega has also been active in the Air Force Reserves. A command pilot in the Air Force with over 4,000 hours, he has served in various operational flying assignments, including a tour of duty as an instructor pilot. From 1984 to 2001, as a reservist assigned to Air Force Space Command, he held positions in planning analysis and operational activities, including mission ready crew commander for Satellite Operations-Global Positioning System-Defense Support Program, and Midcourse Space Experiment, among others. Sega was promoted to the rank of major general in the Air Force Reserves in July 2001.

*pabilities are and focus our S&T efforts in those areas?*

**A**The science and technology work becomes increasingly important in a capabilities-based approach to the future. We need not only look at a capability that we want to have in the near term, but also recognize that it is a journey in time and that we want to have the technological edge into the future. The in-

vestments that we need to make are not only for the current generation, but for the next generation, next generation, and next generation. So a strong fundamental technology base is also important for maintaining a capabilities-based edge in the future. We need to be looking at and bringing forward the near-, mid-, and long-term capabilities. The breadth of work is quite extensive in terms of the different technologies; and making decisions as to which of

them to fund and turn into operational capabilities of the future is quite difficult.

We have increased interaction with the warfighters—the user community—in order to bring our development activity in line with the work done at Joint Staff as well as combatant commands, Services, and agencies. That linkage is important to establish from day one and must continue throughout the life of a capability or system. That involvement also includes acquisition and logistics professionals. Everybody needs to be engaged from day one to the end. As we look at the spiraling of technology into systems, it is implied that we understand the system as well as the technologies that could be available to spiral into the systems. We try to provide mechanisms that allow that transition of those technologies to occur.



*It seems to me looking at the new JCIDS process, that there's going to be more up-front activity. It almost seems like the Joint Staff is going to be responsible for some pretty significant decision making. How are we going to get the labs and the technologists involved in that process?*



We have had a joint warfighting science and technology plan for a number of years. It continues to improve as we involve our end user, the warfighter, in the process. We are now aligning with those functional areas. We need to make sure that the technologies, the direction of the Joint Staff, and our planning process will be aligned. We will also be paying attention to the technology base because that's what we will be drawing from. If we have a strong research and engineering base, then when we do the analysis of alternatives, we will have a robust set of options to select from. We need to look not only at the pull, but also continue some of the push on the technology side.



*We've seen some discussion here again in the press recently that possibly the terrorists are not so much going to focus on*

*the individuals as perhaps try to focus on our economy, try to bring it down. Much of what impacts our economy—the power, communications infrastructure, our financial systems, our transportations systems—is in private hands. What kind of things can the Department of Defense do to help prevent accidents in terms of attacks to that infrastructure?*

**A**

One of the cross-cutting initiatives that we have been engaged in is surveillance technology, and that's a set of technologies being pursued from basic research and so forth, that provides an underpinning for C4ISR—command, control, communications, computers, intelligence, surveillance, and reconnaissance. And in that are the technical pieces that bring information assurance back to the battlespace and allow a network-centric approach to warfare.

We also want to have awareness of the battlespace, so sensor technologies will be needed in the future. Many of the technology efforts will have not only direct application to our warfighting missions, but they also have similar technologies that could be applied to the cases that you mentioned. We collaborate with the DHS—the Department of Homeland Security. One of the principal interfaces to support the DHS is through Northern Command. So we work with them to provide the technologies that they would need to do their job.

**Q**

*I heard somebody in a speech a few weeks ago raise the issue that we had a lot of focus on interoperability from a Joint Coalition perspective, but I'm thinking that interoperability with the civilian world is a real issue.*

**A**

It is, and through a series of exercises, the Northern Command is trying to understand exactly where we are. In the future, we'd like to start with a view toward an integrated approach so that systems are really tied together early from a systems engineering point of view, ver-



**After 9/11, we were focusing on what we could offer in terms of support to upcoming research and development efforts. I thought it was important to bring together the leadership on the technical side of the Department of Defense to determine if there were technologies that could be accelerated to be ready in a month or so, in a year, in five years.**

sus waiting until later and trying to have the ability to connect them.

**Q**

*We've been aware of a few other items that were put on the fast track. For example, there was a hand-held device that converts images from UAVs [unmanned aerial vehicles], a language translator, a pen-size device that disinfects water. How are these kinds of programs being brought forward? How are we able to transition some of them? Another question is what is being done about the supportability issues. A lot of these quick-reaction projects get fielded, they're an immediate success, but then they fall into disrepair or misuse because in the rush to get them out there, we haven't thought about the downstream support issues. How are we dealing with that on some of these projects?*

**A**

The transition of technology is an important issue. We've focused on it from day one, and we continue to work on it. Now we have additional mechanisms in place to aid the transition of technology, and we are involving the warfighter much earlier in the process. We have a quick reaction special projects activity that has three parts. One is to look at varied and new ideas, new technologies in the quick-reaction special projects fund. Another is the Technology Transition Initiative [TTI] that provides support for testing a system and making sure it would provide value and that the transition to the Services takes place. And third is the DAC [Defense Acquisition Challenge] program that looks at technologies that may be out there that can enhance a current subsystem and must have buy-in from the program manager and OEM [original equipment manufacturer] of the affected system.

I think that involvement of S&T personnel within the Services, agencies, and combatant commands early on in the process is important in order to understand what is technically possible in the near-term, mid-term, or long-term and to understand the needs that are there. This is probably the most important aspect of bringing technology transition

forward: having communication between all the players.

**Q**

*You mentioned the quick reaction fund. How much money is in that? How do projects get funded. And have you been doing it long enough to have any success stories?*

**A**

This is the first year of the quick reaction special projects fund. The larger part of that was the Defense Acquisition Challenge, and that just closed out. We had a review process that was run, to a great extent, out of AS&C [Advanced Systems and Concepts], which is deputy under secretary of defense AS&C Sue Payton's area, to look at the technologies. The proposals that were the best ones went forward for award this month.

The TTI's purpose is to bridge the "valley of death"—to help technologies coming out of defense science and technology labs survive and get to acquisition faster than previously. The program provides current-year funds that otherwise wouldn't be available to facilitate some aspect of this transition.

To give you a few examples, these funds may be used to integrate a technology into existing combat systems, to rapidly assess its viability in a demonstration, or to execute low-rate initial production. To initiate the program this year, the Services and defense agencies were solicited for key projects needing assistance in transition. The projects were then rated and ranked in accordance with mandated criteria. Thirteen were selected for funding. Those projects represent a diverse field of technologies serving the military services and joint combatant commanders.

**Q**

*Are these proposals submitted by the Services, or do contractors come in directly and propose technologies?*

**A**

For the TTI program, the selection process is guided by a technology transition council that meets semi-annually. It is composed of the Services' acquisi-



**Probably the most important aspect of bringing technology transition forward [is] having communication between all the players.**

tion executives, their science and technology executives, and the Joint Requirements Oversight Council. It addresses technologies that are ready for transition and the need for transitions, and it provides advice to the technology transition manager, Sue Payton, who then makes final selections.

Review of initial DAC program project submittals for fiscal year 2003 funding progressed at a rapid pace with initial assessments at the military services and USSOCOM for comment. Nearly 120 military service program offices were contacted for technologies that could potentially benefit their programs of

record, and nearly 80 program offices submitted final proposals.

**Q**

*The ACTD [Advanced Concept Technology Demonstration] projects have been ongoing for quite a few years. They have demonstrated a lot of interest in technology, but it seems that often they don't become formal projects. I think a lot of that goes back to the supportability issues too. Are we doing a better job at getting some of those things to transition, or do we have any recent ACTD successes that we can point to?*

**A**

I believe we are doing a better job. We are involving the Services and combatant commanders, who are the requirement sponsors in the ACTD process. We are looking at the funding profiles to make sure the technology transition is possible from the very beginning.

In the early years of the ACTD program, the emphasis was placed on initiating projects that blended emergent technology and innovative operation employment concepts. This commitment to bold transformational efforts continues and is now matched by a commitment of efforts and resources for transition to sustained capabilities for our joint combatant commander customers. The partnership structure of each ACTD now adds a transition manager to the technical manager and operational manager team. Provision for some transition costs inside ACTD management plans also encourages the move from a compelling demonstration to a sustained capability. These elements are added at the same time that the time line for individual ACTDs is being compressed, to speed delivery of capabilities while embedded technologies can provide a decisive operational edge.

Many ACTD products were employed in Operation Enduring Freedom and Operation Iraqi Freedom. Here are a few examples: Theater Precision Strike Operations, which provides joint commanders with the automation needed to plan and direct counterfire and precision strike operations; LASER [Lan-

guage and Speech Exploitation Resources], which provides improved interoperability, accuracy, and timeliness of translation for speech and document exploitation and translingual retrieval capabilities and products; JMOT [Joint Medical Operations-Telemedicine], which will provide the ability to integrate the Services' deployable theater medical telepresence in remote locations; ACMD [Area Cruise Missile Defense], which integrates various civilian and military sensors into a single, common air-defense operational picture, and is being used by the U.S. Air Force in the JBECC [Joint-Based Expeditionary Connectivity Center]; CASPOD [Contamination Avoidance at Seaports of Debarcation], which provides a fly-away package that fills the gap in chemical and biological defense capability that exists at seaports of debarcation; and finally, HUMINT [human intelligence] and counter intel support tools, which are providing a mature commercial and government off-the-shelf technology to human intelligence and counterintelligence personnel.

**Q** *Could you tell us a little bit about the National Aerospace Initiative? I know that it is, in your eyes, a very important initiative that's looking at hypersonics, space access, and so forth. I wonder if you can tell us why it is so critical to national security.*

**A** When I arrived here in August of 2001, I was given a stack of things that were in progress, drafts of studies that were ongoing, and recently completed reports from the Services and agencies on the technologies that were being looked at or suggested in the areas of high-speed flight, including turbine-based ramjet and scramjet types of propulsion options, rocket-based areas, and the space technologies that were in the process of implementing part of the Rumsfeld space commission findings.

We took a look at these areas, and we worked on the integration of the current efforts and did an assessment on the state of technology and the oppor-



**The technologies we pursue may be decades away but we must invest in them today to ensure their availability for future warfighters.**

tunities in these areas. We also looked forward to the future and saw a synergy that would be a very positive force enabling us to have greater capabilities relatively near-term as we increase the speed of systems, give ourselves more options for access to space, and potentially even look in a different way at our space architecture to accomplish the assured, responsive access to space in a more important way. We are focusing on the coordination and integration of the technical efforts not only within the Department of Defense, but also with the key partner in this area—NASA.

**Q** *I know you've got some challenges. You have a goal I think of a Mach per year to increase in speed.*

**A** The programs that were in place and those that we have adjusted were on roughly the trajectory to continue the flight programs. We've been working on some of these technologies for decades. Approximately 300 ground tests of various engines have taken place in the last few years, so we're at a point in our development phase of propulsion systems that it's time to fly. We'll gain a great deal of knowledge from doing that, which helps in terms of ground testing programs and modeling and fundamental work as well.

**Q** *In your career you had two missions on the space shuttle, both of which involved the Russians. You were also the director of operations for NASA activities at the Gagarin Cosmonaut Training Centers, Russia, in 1994-95. Do you have any comments you'd like to share with us on the Russian space program then and now?*

**A** Yes. The Russians have had some remarkable successes in the space program. My experience was positive with respect to the engineering, the professionalism of the Cosmonaut Corps, the training folks, and the people in the operations centers; the strong capabilities in areas such as propulsion, metallurgy, and in mechanical systems, such as welding. They're very, very good. It was a great and very positive experience.

**Q** *People—how do you plan to attract (or retain) the innovative thinkers you need? Could you comment on the perceived gray-ing of the workforce and how it will affect your mission?*

**A** The Defense laboratories are seeking to attract and retain top scientists and engineers [S&Es] to support the DoD laboratory missions. The DoD is developing a new personnel system that will permit us greater flexibility to hire and retain the very best. One good aspect is that the new system will permit direct appointment of new graduates having excellent academic records. This will

allow us to be more competitive with industry in hiring the best and brightest. The process of hiring senior level people will also be streamlined and will allow the payment of significant bonuses to attract the more experienced and qualified S&Es.

Additionally, we have begun to incorporate long-term strategies and guide investments that reshape the S&E supply chain, assuring a quality pipeline of personnel resources.

The DoD laboratory workforce is indeed graying, with many of the S&Es becoming eligible to retire in the next few years. Depending on the particular laboratory, between 25 and 50 percent of the S&Es will be eligible to retire in the next five years. However, this does not mean that they *will* retire. Many are opting to continue to work beyond their retirement eligibility dates. And some are opting to retire from government service, go to work for industrial firms, and return to perform the same or similar duties as contractors.

Many of these individuals are the recognized experts in their scientific and engineering fields, so their loss will impact the laboratories' capabilities. This is why we are asking many of our senior people to mentor the young, new engineers and scientists. One of the DoD laboratory workforce enhancements we are requesting in fiscal 04 is a new DoD laboratory mentoring and new hire development program, which will provide support to senior level researchers to mentor new hires and to collaborate on research projects.

**Q** *What's being done to revitalize DoD's laboratories and their infrastructure?*

**A** We have recently revitalized and redirected a major effort to improve laboratory quality. This new effort is the Laboratory Quality Enhancement Program, which involves senior executives from the Services and is chaired by the deputy under secretary of defense for laboratories and basic sciences. This effort in-



**The DoD is developing a new personnel system that will permit us greater flexibility to hire and retain the very best [scientists and engineers]. ... This will allow us to be more competitive with industry in hiring the best and brightest.**

volves working groups in four areas: personnel, education, exemplary practices, and enterprise assessment. There will be initiatives in each of these areas that will lead to improvements and innovations in laboratory quality, productivity, relevance, and leadership.

**Q** *Are there differences in how industry conducts its S&T efforts compared with DoD? Can you give us some examples?*

**A** Yes. The fundamental difference is that industry must focus on minimizing risk and maximizing the bottom line. Industry, therefore, focuses on near-term S&T. DoD, on the other hand, focuses on maintaining technological superiority for future generations. The technologies we pursue may be decades away, but we must invest in them today to ensure their availability for future warfighters. Yet we must also stand ready to provide solutions to near-term problems.

Another difference is the breadth of the DoD's S&T program. The DoD uses commercial technology wherever possible; however, there are many areas in which national security needs are unique. We must stay at the front of fast-moving commercial technologies such as information technology and biotechnology, and we must continue efforts in areas where industry has lost interest or has little interest.

A third difference is the DoD investment in basic research. Historically, the greatest investment in our nation's basic research has come from the federal government, and a large portion of that investment is through the DoD. Because most basic research is conducted in our colleges and universities, the DoD S&T Program has been important in developing the scientists and engineers who are key to the success of industry and the DoD.

**Q** *Secretary Aldridge's goal was to have 3 percent of the fiscal 2003 budget allotted for science and technology issues—and he almost made it. Will that trend of increased funding continue?*

**A** The 3 percent goal was actually set by Secretary of Defense Rumsfeld in the September 2001 Quadrennial Defense Review. It remains the Department's goal to

continuously grow the S&T investment toward 3 percent of the total defense budget.

As you noted, we have been making progress towards achieving this goal in our recent budget requests.

**Q**

*Can you tell us what you are doing to focus DoD S&T on Secretary Rumsfeld's transformational goals?*

**A**

In the summer 2002, my staff worked with the military departments and defense agencies to ensure that sufficient funding was being directed toward pro-

jects that advance the six Quadrennial Defense Review transformation operational goals. In September 2002, the Linking Science and Technology to Transformation report was completed, and one of the major findings was that the DoD S&T program was mostly aligned with the transformation operational goals, with nearly 80 percent of the program in direct support of these goals. This finding was verified by the recent study that looked at the actual S&T budget contained in the fiscal 2004 presidential budget request.

**Q**

*One last quick question just to wrap up: I wonder if you could share with us the*

*best piece of advice you were ever given and what you think your greatest success has been in your career.*

**A**

The best advice? Probably from my parents: "Do your very best and work hard." I try to do that. And success—my current job. I couldn't ask for anything more important—great people and a very, very important mission for a great country. I'll continue to work hard and do the best I can. Thank you very much.

**Editor's Note:** To learn more about DDR&E initiatives and programs, visit <http://www.dod.mil/ddre/>.



Air Force Reserve Major General Ron Segal (center), former American astronaut, is shown aboard the Russian Space Station Mir in 1996. Astronauts Linda Godwin (left) and Rich Clifford (right) are preparing for the first spacewalk ever to take place while the Space Shuttle was docked with Russia's Mir Space Station during the STS-76 mission, the third docking mission to the Russian Space Station. Both are already wearing their space suits, called extravehicular mobility units (EMU), while Payload Commander Segal assists them in getting suited-up and during final checks of the equipment. The picture was taken inside the airlock, and the upper parts of the EMUs are still mounted to the walls of the airlock.

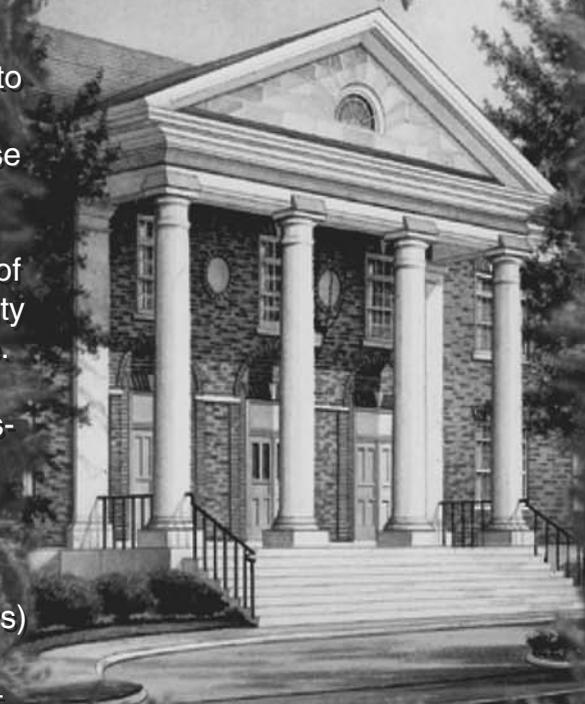
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**All DAU Course Graduates  
Gain Full Membership Status!**

*Industry & Government Employees  
Who Are **Not** DAU-DSMC Graduates  
Are Eligible for **Associate** Membership!*



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In the past, defense industry organizations and personnel have needed, but not always received, the same acquisition training and education opportunities that are currently offered by the Defense Acquisition University (DAU) to government employees. The DAU Alumni Association (DAUAA) has recently begun a Corporate Sponsorship program to help DAU fill that gap. This program envisions a more balanced approach to education and training that will be mutually beneficial to both industry and the government.

Raytheon, Lockheed-Martin, Northrop Grumman, Boeing, and Rockwell-Collins have already become DAUAA Corporate Sponsors. We hope to add you as a sponsor in 2003.

Corporate Sponsorship of the DAUAA is open to any defense industry firm that practices business according to federal and state laws that prohibit discriminatory practices. Sponsors cannot be companies with whom U.S. law prohibits conducting DoD business. Foreign governments or their agents cannot participate in DAUAA sponsorship.

For a nominal consideration/fee, your company receives these benefits:

- Up to 20 annual memberships are allocated for each Corporate Sponsor. Employees chosen by the sponsor will receive an annual DAUAA Associate Membership at no extra cost.
- Preferential formal and social opportunities at DAUAA's Annual Acquisition Symposium at the Capital and Northeast Region campus, Fort Belvoir, Va.

- Employees of a sponsor may attend the symposium at the discounted member rates.
- Sponsors will receive a reserved exhibit space at no cost.
- Program participation opportunities for both individual speakers and panel participation is offered preferentially to sponsors, although the DAUAA reserves the right to select program speakers based on the overall structure of the symposium.
- Sponsoring companies may have their name and logo in the annual symposium program and/or handouts.
- Sponsor executives will be offered seating in proximity to invited DoD officials at plenary sessions and meals.
- Your company is featured on the DAUAA Web site (<http://www.dauaa.org>), with a one-page description of your company, its products and services. (Note: DAUAA is prohibited by IRS rules from advertising or endorsing specific products or services, so it reserves the right to withhold all or part of the description not compliant with IRS rules.)

Sponsorship status becomes effective the date of receipt of your application, along with the nominal consideration/fee. DAUAA is a non-profit organization, and sponsorship contributions are tax deductible. DAUAA reserves the right to change or expand benefits at any time when approved by the governing DAUAA Board of Directors.

Although this sponsorship program is still in its early stages, companies are already inputting ideas and suggestions into planning for the June 2004 DAUAA Symposium.

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**JUNE 15-16, 2004, SCOTT HALL, FORT BELVOIR, VA.**



# Knowledge Sharing System and Communities of Practice

## Supporting DAU's Performance Learning Model

SYLWIA GASIOREK-NELSON

In March 2002, the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (OUSD [AT&L]) authorized the Defense Acquisition University (DAU), Fort Belvoir, Va., to facilitate the transformation of the legacy Defense Acquisition Deskbook, hosted at Wright-Patterson Air Force Base, Dayton, Ohio, to a new AT&L Knowledge Sharing System (AKSS) that provides a more robust and capable support system for the DoD AT&L workforce (Figure 1).

### About the AKSS

AKSS was launched in October 2002. Like its predecessor, the Deskbook, it continues to provide acquisition information for all government and industry workforce members, covering all functional disciplines (Figure 2, p. 17). AKSS serves as the central point of access for all AT&L resources and information as well as communications regarding new acquisition initiatives. As the primary reference tool for the Defense AT&L workforce, it provides a means to link together information and reference assets from various disciplines into an integrated, but decentralized, information source.

### AKSS Vision

The vision for AKSS is not only to provide a reference source for policy documents, but also to foster and facilitate the growth and sustainment of AT&L-related knowledge communities, commonly referred to as communities of practice (CoPs). CoPs are an integral part of the AKSS vision and serve to promote sharing of discretionary assets

**The sharing environment created by AKSS [<http://deskbook.dau.mil>] and communities [<http://acc.dau.mil>] will provide the workforce with the capability to continuously evolve ... and to foster an environment of continuous learning and innovation.**

(lessons learned, best practices, templates, etc.) on a continuing basis. CoPs do this by bringing together individuals who have a common interest in a particular topic and who find value in connecting to peers and increasing their knowledge and understanding of the subject matter so as to better perform their jobs.

Commenting on the AKSS, John Hickok, DAU director of knowledge

management, said, "The purpose of AKSS is to provide the members of the AT&L workforce, both government and industry, a 24/7 place on the Web where they can get the knowledge and expertise needed to support their work activity in developing, producing, acquiring, and supporting our weapons and support systems." Hickok emphasized that the vision is for the AKSS to be a gateway to the DoD "enterprise" knowledge residing in the OUSD, the Services, agencies, and industry, so that it is shared to the maximum extent possible. This includes sharing human tacit "working" knowledge and providing the tools to collaborate on critical issues affecting the workforce on a real-time basis. "AKSS," he continued, "should make it easy for the user to get to mandatory policy/process in documents like the FAR/DFARS, 5000, and JCIDS [Joint Capabilities Integration and Development System] and even easier to get to discretionary best practices, lessons learned, performance support tools, and subject matter experts."

According to Hickok, AKSS can be described as a transformed Defense Acquisition Deskbook. The Deskbook was initiated in 1995 as a centralized database of the best information available at that time to support the workforce. "AKSS builds on the Deskbook but enhances it with a new 'golden source' concept that ensures that knowledge offered up through AKSS is owned and managed by local organizations that are dedicated to keeping the content accurate and current. The golden source concept is embraced by knowledge management professionals from the OSD [Office of the Secretary of Defense], the Services, Defense Agencies, and industry that

*Gasiorek-Nelson is a former editor for PM Magazine, DAU Press, Fort Belvoir, Va.*

make up a knowledge providers' network community, facilitated by DAU," said Hickok. He also noted that AKSS adds the whole new dimension of on-line knowledge communities.

Highlighting the importance of AKSS, Dave Brown, DAU lead for the Systems Engineering Community of Practice, said, "AKSS provides the expansion in capability required to assist the acquisition workforce to do a better job in less time. Deskbook has always been an excellent source of explicit knowledge for the acquisition workforce. However, most tasks require both explicit knowledge (things that can be recorded in documents) and implicit knowledge (how to do a particular task). Communities of practice complement Deskbook by adding implicit knowledge to AKSS in the form of the yellow pages of contacts, job aids, templates, and examples."

### How can AKSS help you do your job?

AKSS is designed to ensure that the information it provides is the most up to date available. The new philosophy of directing users to the official source for references and documents assures them that they are accessing the most currently published version of policy documents and references.

AKSS provides a single entry point to AT&L resources. Its goal is to:

- Save time by providing direct access to policy, guidance, templates, training, and peer discussions for those in the acquisition workforce to use in their daily work.
- Increase productivity by guiding workers to the best practices and lessons learned within the DoD AT&L community and industry.
- Improve worker effectiveness by finding and using proven practices and

by sharing lessons learned across the AT&L workforce.

- Accelerate problem solving by improving access to relevant, current, authoritative, and validated information sources.
- Leverage the expertise and experience of others in the AT&L workforce and its industry partners.
- Facilitate peer communication in AT&L career field areas to share experiences and resources.
- Provide access to training and learning resources to help workers grow within career fields.
- Provide access to performance support tools to aid workers with productivity.

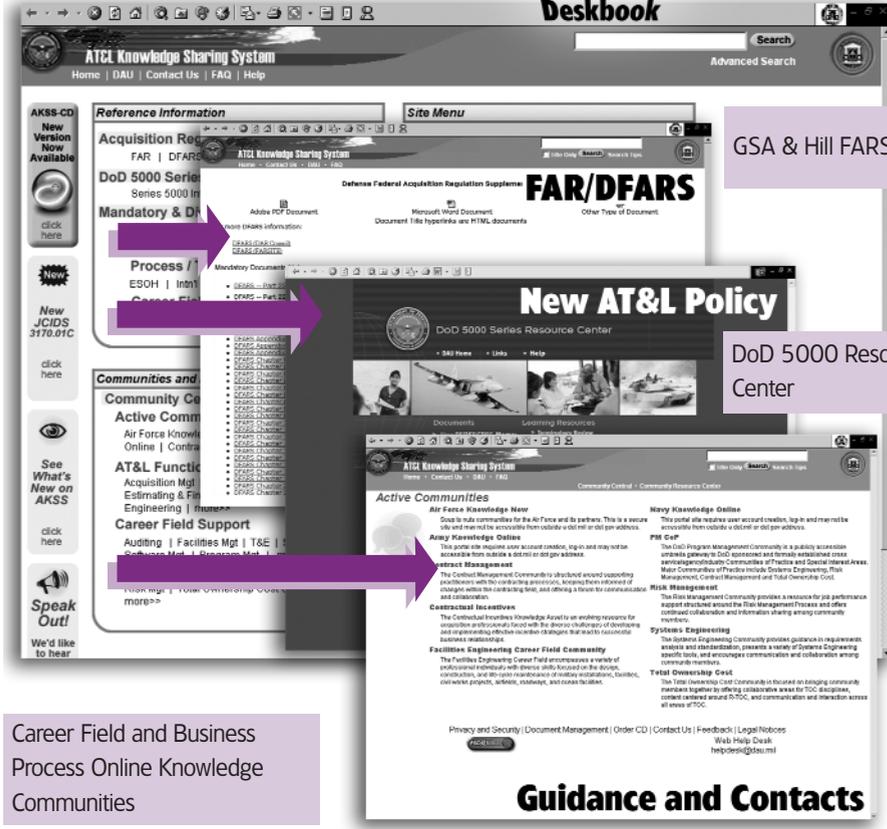
### What's new with AKSS?

On July 1, 2003, AKSS launched a major upgrade, providing the following new or improved functions:

- Expanded education, training, and career development information—links to DoD professional development; leadership training; DoD schools and school catalogs; AT&L career field certification; Defense Acquisition Workforce Improvement Act (DAWIA); AT&L professional continuous learning and continuous learning resources; professional development courses; degree programs, developmental/exchange assignments; professional organizations; and resources for career advancement.
- Expanded software tools list—a list of acquisition-related software tool providers and details about the software applications. Links are provided to acquisition software tools or to the owners of software tools so that users can download or order applications.
- Guidebooks and handbooks—links to over 120 different guidebooks and handbooks providing discretionary guidance, templates, and examples for top level functional areas like acquisition logistics, to detailed topics like performance based payments.
- Search engine expansion options and reference libraries—ability to selectively search certain libraries (DoD

Gateway to Policy, Processes, Tools, and Experts

**Expands upon and replaces DoD Deskbook**



Career Field and Business Process Online Knowledge Communities

FIGURE 1. DoD AT&L Knowledge Sharing System—AKSS

## Essential Models Project

The AT&L Program Management Community of Practice (PM CoP) has established the “Essential Program Management Models and Enduring Principles Project: What Every Weapons Acquisition Program Manager Should Understand.” The Essential Models Project (for short) is an effort to identify a relatively short list of what program managers (PMs) should read and understand to be successful. We are looking for papers that run the gamut of the weapons system acquisition disciplines. From leadership principles of empowerment of integrated product teams, to fly before you buy, to streamlined decision process, we are interested in those principles that have endured the test of time and are applicable across most programs. Models run from general business, such as the balanced score card and levers of control, to earned value, integrated product and process development and capability maturity models. Again, we are looking for those models that have endured the test of time and are applicable across most programs. What do you consider the essential and enduring?

There are many ways to categorize what one might see as essential models or enduring principles. A program office functional view listing by engineering, logistics, and financial management could be an approach. A view across product, processes, people, and politics is another. We are also looking for various overall frameworks in which to categorize the essential models and enduring principles. What is your program management framework?

The project through the PMCoP encourages your participation. At the Acquisition Community Connection Web page for the Essential Models Project (<<http://acc.dau.mil/emp>>) you can submit your opinion (by taking the survey) and/or start a discussion thread on the site.

You can also participate in the 2004 DAU Alumni Association (<<http://www.dauaa.org>>) conference special track during the 21<sup>st</sup> Annual Acquisition Symposium to be held at DAU, Ft Belvoir, Jun 15–16, 2004. The special track will consist of panel discussions based on submitted academic papers (follow *Acquisition Review Quarterly* Guidelines for Contributors available at <<http://www.dau.mil/pubs/arq/arqart.asp>>). The accepted papers should have a high level of readability, be relevant to the Essential Models Project, and be reliable in conclusions such that conclusions can be reasonably inferred from the arguments. Papers need to include a description of a principle and/or model, examples of its successful application, and the concluding takeaway from real experience. Papers that address a category of models and principles utilized in an integrated manner will have the best chance for incorporation into the conference schedule.

All conference papers will be published on the ACC Web site, where details on requirements for papers are posted.

To inquire about the Essential Models Project, contact the DAU project leaders: John Driessnack at [john.driessnack@dau.mil](mailto:john.driessnack@dau.mil), or Mary-jo Hall at [mary-jo.hall@dau.mil](mailto:mary-jo.hall@dau.mil).

5000 Library, FAR/DFARS Library, Ask A Professor Library, the Reference Library, or the Glossary and Acronym Library) and the ability to search within the results.

- Mandatory and discretionary references—links to policies by topics/processes, by organization, or by career fields.
- Ask a Professor—DoD resource for asking questions concerning policies and practices that will be answered by a team of professors and senior acquisition professionals.
- DoD forms list—link to DoD-sponsored forms that are available online.
- Improved AT&L Web site list—access through both alphabetical and career topic listings.
- AKSS CD—link to online CD ordering capability.
- Popular information—interlinked set of 5000 documents, information on the new Joint Capabilities and Integrated Development System (JCIDS), and other documents.
- Communities and knowledge areas—links to Community Central and Community Resource Center areas. Community Central is the hub for all AT&L-related communities of practice and knowledge areas. It provides the AT&L workforce with access to timely and accurate information and proven practices, and it allows individuals to connect and collaborate with peers on topics and processes that matter to them. The Community Resource Center contains information about AKSS communities, including AT&L community vision, community FAQs, and educational resources to learn more about the organizational benefits of communities and how they work.

### AKSS Future

AKSS is continuously responding to feedback from users to enhance the content and functions, such as search. “Major strides have been made in developing the search capability in the last year and ensuring that the reference library is complete and accurate,” said Bill Hechmer, DAU's project manager for AKSS. “The present focus is on developing a set of interactive 5000 doc-

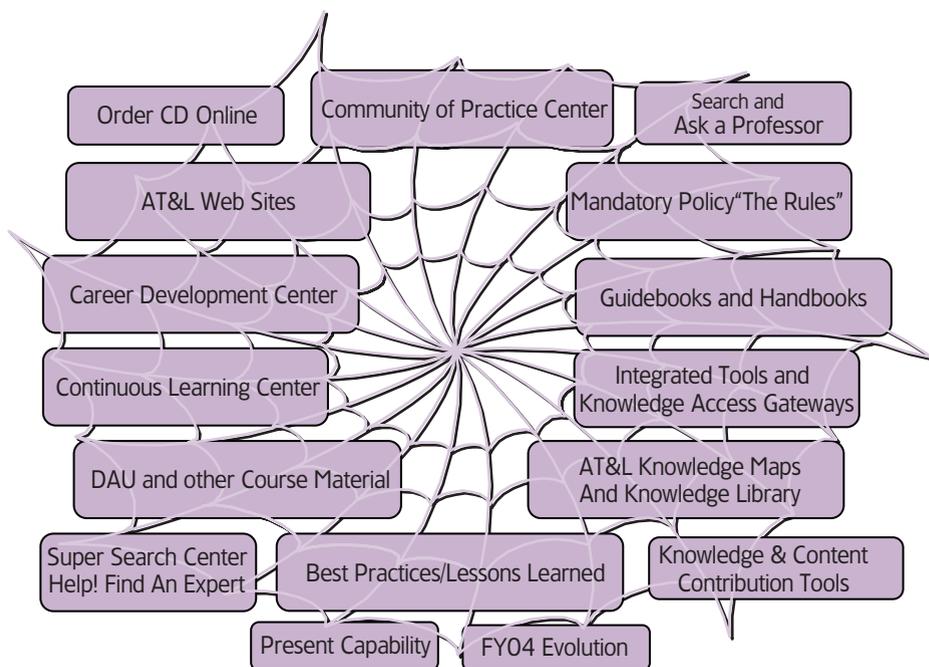


FIGURE 2. AKSS Functions

uments that help users move seamlessly from policy to process to references and product formats. This same concept will be used to develop an interactive set of JCIDS documents that have replaced the old Requirements Generation Process.” Hechmer also emphasized that the biggest future enhancement to the AKSS in late fiscal 2004 will be access to DAU’s new digital object repository (Figure 3). The new repository will house all of the learning and performance support content developed by DAU for its certification courses, continuous learning courses, guidebooks/handbooks, rapid deployment training materials, and other performance support tools. Through this Web-based repository, DAU will publicly share its corporate knowledge with the workforce.

### What’s new with Communities of Practice?

In July 2003, the name of the Program Management Community of Practice (PM CoP) Web site changed to the Acquisition Community Connection (ACC) to better describe the site as an umbrella for all AT&L-related knowledge communities that are focused on sharing across DoD, including DoD’s industry partners. The Program Management Community of Practice is still an active career field community; the

name change to ACC is meant to reinforce the vision of the site as a place where the entire AT&L workforce and its industry partners interact and share resources and experiences to support job performance, to avoid duplication of effort, and to advance the physical and virtual connection of people and ideas.

Commenting on communities of practice, Jill Garcia, DAU’s expert in CoP development, and knowledge project officer for logistics, said, “DAU is facilitating the development of online CoPs to cover all the functional disciplines of acquisition, technology, and logistics as well as critical cross-cutting business processes like risk management. These CoPs will provide the discretionary knowledge and links to community-member subject matter experts from both government and industry.”

The ACC was designed to provide the acquisition workforce with the ability to locate knowledge and experts on demand, at any time, from any location, with confidence that the information is valid and relevant. Program teams can work in specific communities within the ACC to find and share policies, regulations, guidance, examples, templates, lessons learned, and other relevant knowledge. They can also establish pri-

orate team and personal workspaces where specific program products can be developed and issues resolved. Additionally, ACC offers users the ability to interact online with other community members who have expertise in a particular subject area. According to Mike Dorohovich, DAU’s chief editor for ACC, “Creating a successful ACC requires more than just a business case: it requires careful planning, implementation, and working the ‘people’ side of the equation. The ACC does not just happen by throwing technology at a group of people. The quality and dedication of the core implementation team plays a critical role.”

Now that the ACC is steadily growing and the value can be seen, it is much easier to find others to take on the roles that previously had to be provided as an additional initial investment. That so many individuals of different backgrounds are voluntarily participating in ACC, that members are actively recruiting peers, and that even facilitator/editor roles are being filled by individuals outside of the supporting organizations all emphasize the success of early community development.

CoPs are a vital method of providing context to the information and process knowledge contained within an organization. They are available whenever you need them, offering anywhere, anytime support. CoPs help to improve job performance by developing individual skills and competencies and by increasing access to expertise to find answers, solve problems, and accomplish tasks.

To gain full access to and benefit from the site, you must be a member of the ACC (or a legacy member of PM CoP) and log in with a username and password. Membership allows access to other members’ contact information and allows members to participate in discussion threads, request workspace areas, and take advantage of a free personal Web space. To join the Acquisition Community Connection, goto <<http://acc.dau.mil>> and find the “Join” link located on the right side of the screen.

## Logistics Community of Practice

The Logistics Community of Practice (LOG CoP) was launched on July 21, 2003. Logistics is a fundamental component and a key enabler of the warfighter's ability to project force. The LOG CoP is intended to provide logisticians with a means to communicate, share resources, and interact with each other to support job performance in all aspects of the defense acquisition system and life cycle support (Figure 4). The LOG CoP is expected to provide the logistics workforce with access to the best available sources of information to enhance job performance. The LOG CoP is located at <http://log.dau.mil>.

Highlighting the importance of the LOG CoP, DAU Director of the Center for Logistics and Sustainment Randy Fowler stated, "This is a tool needed by both the DAWIA and non-DAWIA logistics workforce. It's a great reference in the DAU classroom, and their classroom experience becomes a great resource for workforce members to take back to the job site. Logistics and program management workforce members are especially anxious to use the LOG CoP's PBL [performance-based logistics] resources and collaboration power." Summarizing the potential for LOG CoP, Lou Kratz, deputy under secretary of defense (Logistics and Materiel Readiness) and functional advisor for Life Cycle Logistics, noted, "LOG CoP could become a Center of Excellence for contemporary logistics tools and best practices."

If you have any questions or are interested in actively participating in the LOG CoP as a content area editor or facilitator, contact Jill Garcia, DAU knowledge project officer, at [jill.garcia@dau.mil](mailto:jill.garcia@dau.mil).

## Other Active Communities

**Program Management**—the Program Management Community is focused to support the unique responsibilities and functions of the program manager and deputy program manager. According to Air Force Maj. James Ashworth, DAU program director for the program management career field, "The Program Management Community is being de-

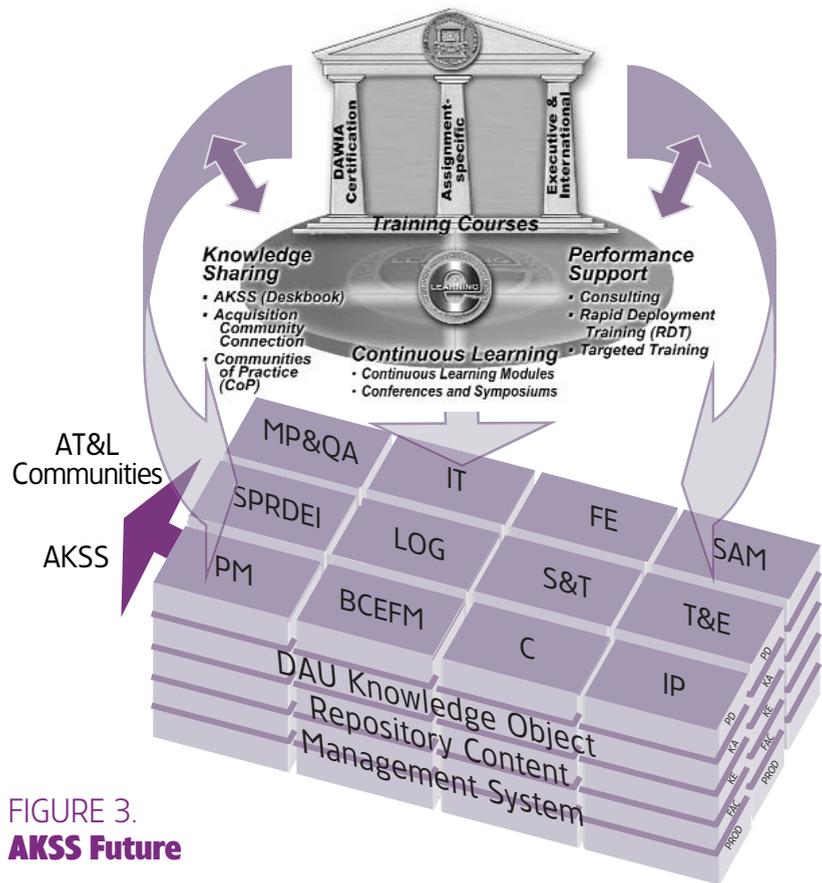


FIGURE 3.  
AKSS Future

veloped around a unique organizational knowledge structure to make it easier and more intuitive to find appropriate policy, processes, and tools." He added, "The structure breaks down into 'internal' processes/products (those activities typically conducted inside the Program Office); 'external' interfaces (activities between the program managers and outside organizations such as OSD, Congress, Defense Contracting and Management Agency, and industry); and special topics."

The community has a major effort called the "Essential Model Project" found at <http://acc.dau.mil/emp>. John Driessnack, DAU risk subject matter expert and one of the CoP's editors, explained, "The community will run the project over the next year with the goal of identifying the essential models and enduring principles for weapons program management. The DAU Alumni Association will host a special track in its conference next summer for the presentation of papers. It is a great example of how all facets of the university come together to develop knowledge."

**Contract Management**—the Contract Management (CM) Community is structured around supporting practitioners with the contracting processes, keeping them informed of changes within the contracting field, and offering a forum for communication and collaboration. The Contracting Community of Practice is being enhanced to provide specific areas of interest to include contingency contracting, performance-based service acquisition, and small business. The goal of the community is to add value in the acquisition process by providing the contracting workforce with the knowledge, resources, and collaboration tools to better support warfighters and their mission. Lyle Eesley, DAU director, Center for Contracting, said, "As members of the AT&L contracting profession and serving as business advisors, our goal is to support the warfighters and their mission. This is our focus as we restructure the contracting curriculum at all levels and facilitate the evolution of the Contracting Community of Practice."

If you have any questions or are interested in actively participating in the CM

CoP as an area manager/editor, please contact Jeff Birch, DAU knowledge project officer at [jeffrey.birch@dau.mil](mailto:jeffrey.birch@dau.mil).

**Systems Engineering**—the Systems Engineering (SE) Community provides guidance in the SE process, including requirements analysis and standardization, presents a variety of SE-specific tools, and encourages communication and collaboration among community members. The SE area currently has the largest number of postings: 180. The site contains a number of free job aids, such as the DAU and Air Force Space and Missile Command Systems Engineering guides. It also contains free software tools, such as the probability consequence software, risk management software, and the technology readiness level calculator. The SE Community of Practice is currently training editors to begin stand-up of sub areas of systems engineering. For more information, see the article “Building Communities of Practice” in the November-December 2002 issue of *Program Manager*, or go to [http://www.dau.mil/pubs/pm/pmpdf02/Nov\\_Dec/bro-jf3.pdf](http://www.dau.mil/pubs/pm/pmpdf02/Nov_Dec/bro-jf3.pdf).

**Risk Management**—the Risk Management Community provides a resource for job performance support structured around risk management. Driessnack

noted, “The [risk] community just finished pulling together experts in the field and produced a special edition of the *Acquisition Review Quarterly* journal (Spring 2003, Edition 33, (<http://www.dau.mil/pubs/arqtoc.asp>)). The edition has been a great success, with many requests coming in for additional copies. The community is currently tackling the various definitions used in risk management with the goal of producing a common standard. Our group got together on August 19 to outline the issues. The issues and a discussion thread can be found under the Risk CoP Community Connections. The results of our next meeting will likely evolve into a complete update to the DAU Risk Guide.”

**Facilities Engineering**—the Facilities Engineering career field encompasses a variety of professional individuals with diverse skills focused on the design, construction, and life-cycle maintenance of military installations, facilities, civil works projects, airfields, roadways, and ocean facilities.

#### Value of Communities

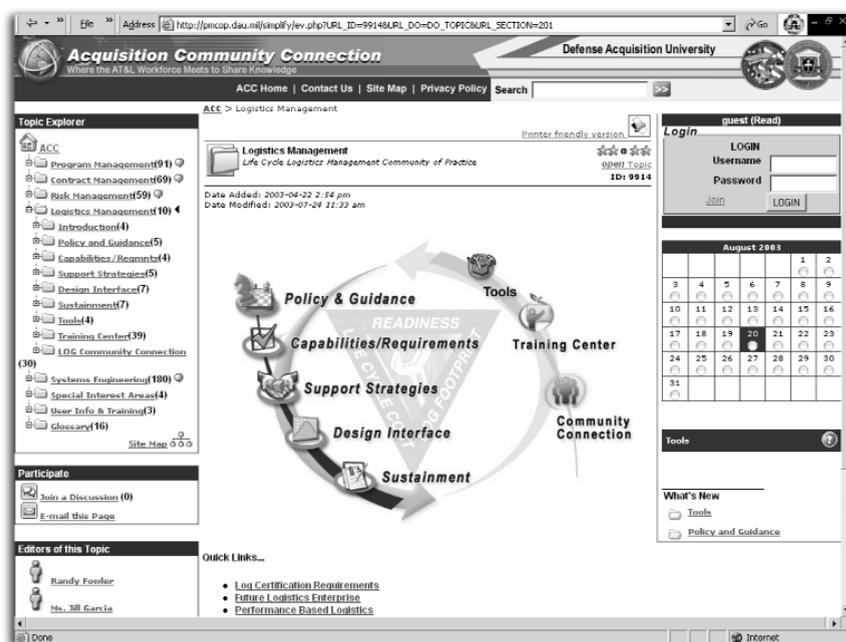
The value and usefulness of communities of practice rely on active community participation and the accuracy, time-

liness, accessibility, and applicability of community content.

“The value of the ACC is proven every day as more and more acquisition workers join and contribute their knowledge,” said Leesa Lafferre-Thomas, assistant chief editor for ACC. “The ACC has more than doubled in size during the past six months, based almost solely on word-of-mouth recommendation among co-workers. We frequently see comments from new users about the benefits of communities of practice, and ACC in particular,” she added.

**The new philosophy of directing users to the official source for references and documents assures them that they are accessing the most currently published version of policy documents and references.**

FIGURE 4. Logistics Community of Practice



You can help to make CoPs successful by contributing your knowledge and providing insight, feedback, lessons learned, and best practices, as well as by spreading the word to help the community grow.

#### CoPs—Future Plans

DAU is in the process of facilitating the establishment of communities of practice in all acquisition career field areas: total ownership cost, contractual in-

## EFFECTIVENESS OF CoPs

CoPs offer a collaborative structure that has proven to be extremely effective in the creation and transfer of knowledge within organizations. CoPs provide value to organizations by:

- Fostering interaction between new/more junior employees and senior/more experienced practitioners.
- Facilitating the building of mentor-protégé relationships.
- Fostering a broader organizational perspective among employees, providing a better understanding of how individual tasks fit into the larger organizational picture.
- Facilitating the rapid identification of individuals with specific knowledge or skills.
- Fostering knowledge sharing across organizational boundaries (boundary spanning).
- Promoting and facilitating the capture and re-use of existing knowledge assets and retention of organizational memory.
- Providing a safe environment to share problems and challenges and test new ideas.
- Facilitating collaboration across different time zones.

centives, software acquisition management, test and evaluation, financial management, business and cost estimating, information technology, earned value management, and manufacturing and quality. To date, DAU has developed a *CoP Implementation Guide* to assist in establishing and nurturing communities of practice. The guide outlines the processes and critical roles needed to foster and sustain communities. Several career field communities are in the early stages of development and will eventually become part of the ACC. As DAU continues to build and evolve the ACC, look for other communities of practice to be part of the Acquisition Community Connection.

### DAU and AKSS

DAU is working to provide products and services that foster and facilitate knowledge sharing and collaboration throughout the Department of Defense and industry. To support the AT&L workforce, DAU has adopted a new total learning environment approach under a performance learning model (PLM). The model shifts focus from the traditional classroom environment of the 20<sup>th</sup> century to learning resources available 24/7. This transformation is being accomplished by means of robust distance

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their knowledge.**

learning and continuous learning (CL) curricula, performance support, rapid deployment training, and the establishment of communities of practice and collaborative knowledge areas centered on AT&L career fields and business processes. DAU is focused on becoming more closely aligned with supporting the workforce on a real time basis. Through performance support and CoPs, DAU's schoolhouse interaction with the workforce will increase and offer a source of support and expertise previously untapped.

“AKSS and the CoPs in the Acquisition Community Connection Web site are being developed to support the entire AT&L workforce—the government and industry teams working together to provide the weapons and support systems,”

said Hickok. “AKSS and its link to CoPs,” he continued, “support all elements of DAU's PLM. AKSS and CoPs are the 'go-to' sites for detailed knowledge sources to support course curricula, both for online distance learning courses and those in the classroom.” Hickok also emphasized that AKSS links to the DAU CL Center and the index of all CL modules. CL modules are contributed to applicable CoPs as “learning objects.”

The overall assets in AKSS are available to support DAU's performance support (PS) and rapid deployment training (RDT) missions. Through DAU CoPs, PS and RDT resources are stored and shared. PS and RDT presentations and documents are contributed to applicable CoPs. AKSS and CoPs provide 24/7 resources for job performance support and informal continuous learning, and the mechanisms for DAU to share DAU resources in partnership with OSD, the Services, Defense Agencies, and industry.

Commenting on the importance of input from the AKSS users, Hechmer said, “We appreciate all of the feedback we have received to date. We are acting on that feedback to continue to improve this site and provide you with a true golden source of all acquisition-related content.”

### Final Thoughts

As the AKSS matures, and the buildup of communities evolves, so too will grow the richness of content and interaction associated with each community. The sharing environment created by AKSS and communities will provide the workforce with the capability to continuously evolve, refresh the AT&L knowledgebase to support new issues, overcome new challenges, and to foster an environment of continuous learning and innovation.

**Editor's Note:** More information on AKSS and Communities of Practice is available at <[www.dau.mil](http://www.dau.mil)>.

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# Capability-Based Acquisition: Key Factor in Meeting 21st Century Threats

## Restructured Missile Defense Agency Steps up to the Challenge

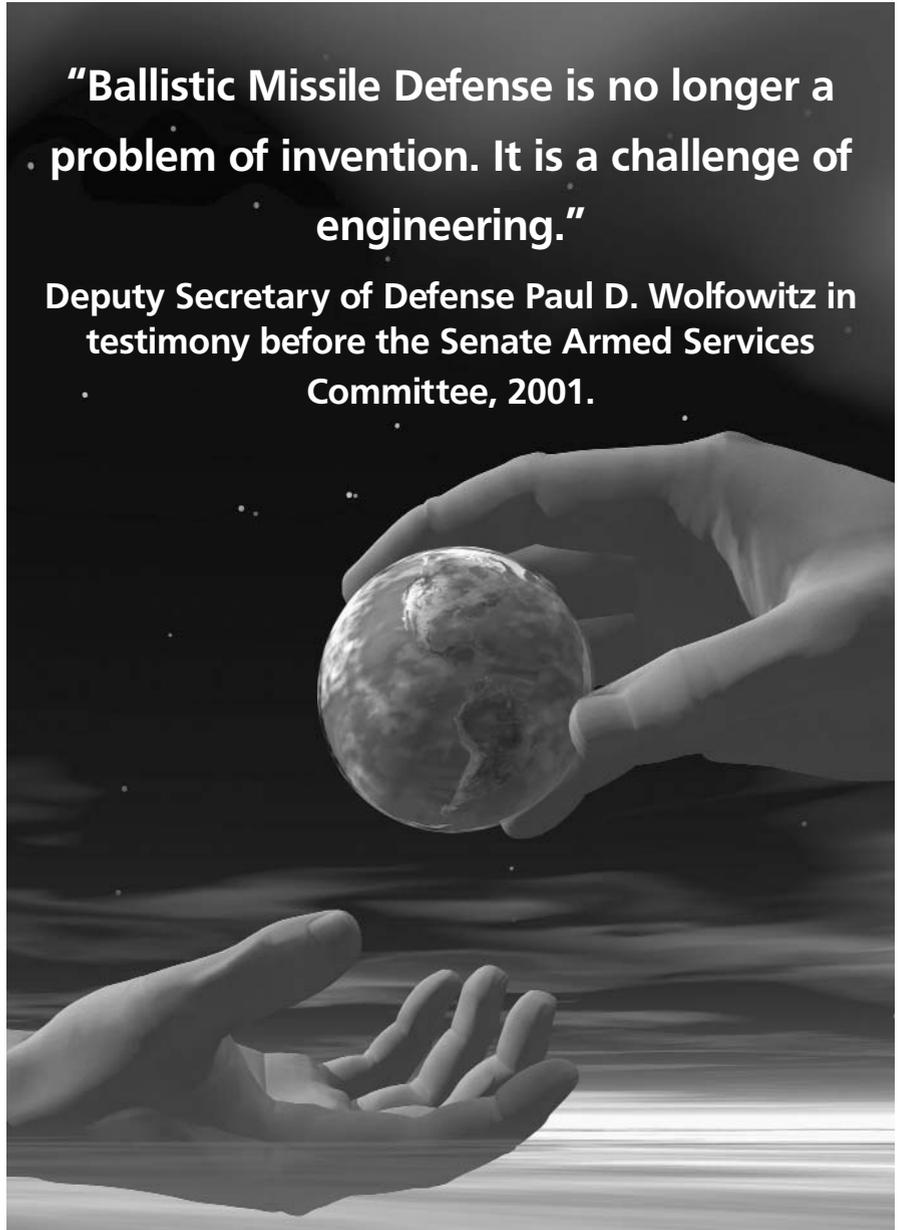
TIMOTHY J. BIGGS • RAYMOND V. STUCHELL

**D**espite the continued proliferation of intercontinental medium- and short-range ballistic missiles, the missile defense program was hampered in the past by political constraints and an unwieldy management structure. Since former President Reagan first declared his vision for a Strategic Defense Initiative (SDI), changes in the perceived threat have outpaced the development of an operational system to protect the homeland and our military troops in combat. Recent media accounts indicate that China is transitioning silo-based ICBMs to mobile launch capability; North Korea possesses a nuclear weapons development program and may be planning flight testing of the Taepo Dong 2 missile, which is capable of reaching the west coast of the United States.

Using the traditional weapons acquisition processes, the military services were tasked with developing missile defense systems peculiar to their own missions (sea, land, air, and space) and were responsible for developing operational requirements documents (ORDs) in coordination with the Ballistic Missile Defense Organization (BMDO), now the Missile Defense Agency (MDA). The current administration, the secretary of defense (SECDEF), and leadership in the MDA recognized that only a departure from the status quo will accelerate development of a missile defense system

**“Ballistic Missile Defense is no longer a problem of invention. It is a challenge of engineering.”**

**Deputy Secretary of Defense Paul D. Wolfowitz in testimony before the Senate Armed Services Committee, 2001.**



*Biggs is a senior analyst with SPARTA, Inc., under contract to support the Missile Defense Agency's Force Structure Integration and Deployment Directorate. He has served as an intelligence analyst in the U.S. Navy. Stuchell is a senior systems analyst in the Targets and Countermeasures Directorate of the Missile Defense Agency. His career includes seven years on the faculty of the Defense Systems Management College, culminating in his retirement from the U.S. Navy.*

and provide an operational system in the near term.

### **Platform-Centric to Network-Centric: Building the System of Systems**

The MDA has embarked on one of the most complicated and demanding systems engineering and program management tasks ever undertaken: to provide a capability to defeat ballistic missiles in all stages of flight using a single architecture of fully integrated elements and components. The MDA's approach is a radical departure from past Department of Defense acquisition programs. It is, however, the only path that can successfully bring together disparate Air Force, Navy, and Army ballistic missile defense elements and components to achieve the coordinated and sophisticated layered defenses necessary to meet the short engagement time lines of ballistic missile flight.

As a corollary to MDA's embrace of a capabilities-based acquisition approach, the agency has also reorganized its program to reflect the framework of network-centric warfare (NCW). NCW principles, such as sensor fusion and self-synchronization, will serve as underlying precepts for designing a ballistic missile defense (BMD) system of systems. In the past, missile defense development relied on a platform-centric approach in which sensors, shooters, and decision makers are logistically and physically linked. The new direction, however, emphasizes building not specific platforms, but rather missile defense capabilities in which a military service's weapons systems are single elements in a larger organic whole. For missile defense to be successful, it requires the fusion of sensor data from space, airborne, sea, and ground elements. Only the NCW concept of networking sensors, decision makers, and shooters into a collaborative synchronized effort will allow this to be successful. And only the capabilities-based acquisition approach now being undertaken by MDA can provide the programmatic framework for NCW concepts to be put into place. If the MDA approach proves successful, it could pro-

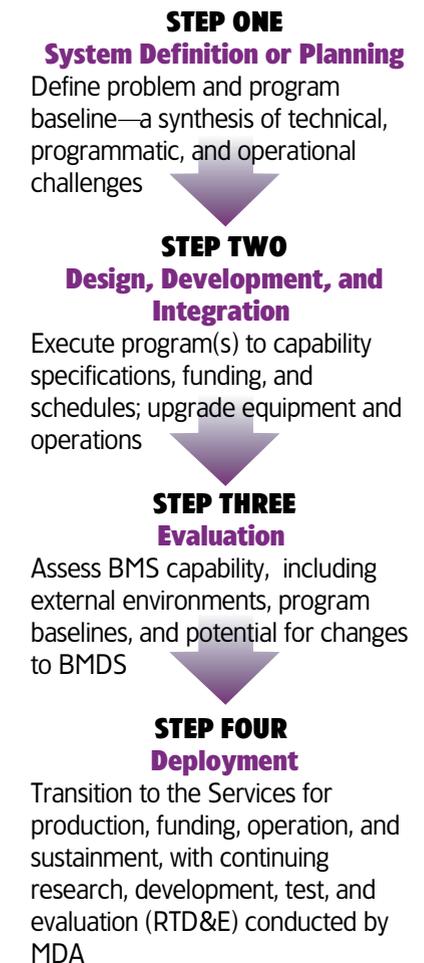
vide an impetus for change in the way the DoD develops, procures, and supports military forces and capabilities.

Rather than discussing the formidable technological issues that face missile defense, our goal in this article is to explore the management and organizational approaches that MDA is taking. It is our belief that the progress made in hit-to-kill technology has reached such a stage of maturity that the management and organizational issues are becoming just as important as the technological ones. Hindsight, we believe, will show that the redirection of MDA towards a capabilities-based approach in January 2002 was the turning point in achieving a missile defense system with a fully netted capability.

### **Shortcomings of the Requirements Generation Process**

Although seen by many today as cumbersome and paperwork-intensive, the traditional requirements process worked fairly well for single-service, stand-alone systems. However, the success of a system like missile defense depends on a multitude of sensors from a variety of air, sea, and ground platforms. It was, therefore, necessary to move away from the traditional requirements generation system, which did not emphasize the possible benefits of fully netted systems. While the requirements-based approach emphasized building a system to discrete standards to defeat known adversary capabilities, the capabilities-based approach recognizes that the pace, as well as the utility and extent of the capability itself, is not known. This is not the next generation fighter, but an entirely new system of systems architecture from the ground up.

The traditional requirements generation approach rested on the premise that the operational community could identify—years out—a needed capability and that a system could be built to defeat a specific, predictable, and identifiable threat. A very formalized structure was in place to describe the threat, justify the mission need, and describe the shortcomings of the existing systems. Specific per-



**FIGURE 1. The Four-Step Approach to Building a Capabilities-Based Program**

formance levels had to be established against specific threats.

Reality was, however, that it was very difficult to arrive at adequate knowledge of adversaries' intentions and programs. The North Korean Taepo Dong-1 is the best example. On August 31, 1998, North Korea surprised the U.S. intelligence community when it launched a Taepo Dong-1 ballistic missile over Japan and demonstrated the apparent ability to achieve intercontinental range. The event itself was anticipated, but the sophistication of the missile—a three-stage solid fuel rocket that could be modified to reach Alaska and Hawaii—was not. The intelligence community had judged that this missile would have medium-range capability and that its follow-on, the Taepo Dong-2, would be the one to provide North Korea with the inter-

continental range it sought. The launch of the Taepo Dong-1, however, demonstrated the potential of North Korea to deliver a lethal chemical or biological warhead to a target outside Asia. This was in direct contradiction to intelligence estimates that North Korea could not threaten the United States for another 15 years and illustrates the limits and potential dangers of relying on very finite and predictable measures to build weapon systems.

The MDA now relies instead on an adversary capabilities document (ACD) as a guide to building the system. The ACD describes the threat using overall technical parameters and does not adhere to a single-point design threat assessment as used in the past.

### Technology and Timeframes Impede Development

Rapidly evolving technology and uncertain deployment timeframes were also an impediment. When the traditionally developed system was finally delivered, technology had frequently advanced beyond the system design, leaving the original requirements and solution outdated. In addition, the process of review and coordination was long, and even after requirements were approved, they were often frozen for many years before the system was actually deployed. Through this long period, the threat might have changed and

certainly the technology had become more advanced.

The MDA program addresses these issues by relying on a set of two-year reviews and block upgrades that will build upon core capabilities to meet rapidly emerging and evolving threats. To address the dilemma of changing threats, MDA has adopted a more physics-based approach that looks at what is physically possible. This links with the evolutionary acquisition approach of aiming to deploy an initial operational capability as soon as possible and upgrading it at two-year intervals with integrated block improvements. The block upgrade approach should allow the operational community a more immediate stake in the system being deployed than was possible in the past.

### The Case for Capability-Based Acquisition

A capabilities-based approach is necessary because the ballistic missile threat is not nearly as predictable now as in the past, and our current knowledge of ballistic missile proliferation intentions among our adversaries is inadequate. In addition, the operating forces lack the expertise to develop operational requirements in an emerging field like missile defense. The attacks of September 11, 2001, showed that the current environment is—as some have dubbed it—one of “unknown unknowns.” We

can no longer forecast with certainty what combinations of nations or non-state organizations might pose a threat to U.S. interests. The MDA is responding to this dynamic and unpredictable strategic atmosphere by developing a single BMD program. The goal is to deploy an initial capability as soon as technologically practical and then build and improve upon this baseline through incremental enhancements.

In traditional acquisition programs, one of the military services typically investigates a concept or idea for a new weapons system to address an emerging threat and develops an ORD to define system requirements and top-level performance parameters. The process can be lengthy and unwieldy, and in some cases it delays system acquisition to the point where the threat overtakes the ORD. Further, the ORD often envisions an “end-state” requirement that is far ahead of existing technological capability and that fails to recognize the evolution of technology and the changing nature of warfare.

Another often-heard criticism is that program managers (PMs) fail to stay in touch with the operational community and lose touch with changes in operational concepts. In a speech given at the U.S. Naval Institute/Armed Forces Communications and Electronics Association Western Conference 2002, Adm. Dennis C. Blair, commander-in-chief, Pacific Command, said, “Many individual pockets in the armed forces do connect developers and operators closely. Generally they are the smaller specialized communities like special operations, or some of the smaller aircraft communities, or individual commanders with initiative.

“However, the big, big money in acquisition goes to the long-term replacement programs that are detached at a very early stage from the dynamic reality of operations and warfare. They emerge decades later with new generations of systems. Yes, these new systems are better than what they replace. But they are not as good as they could be in meeting the needs of the warrior, which will

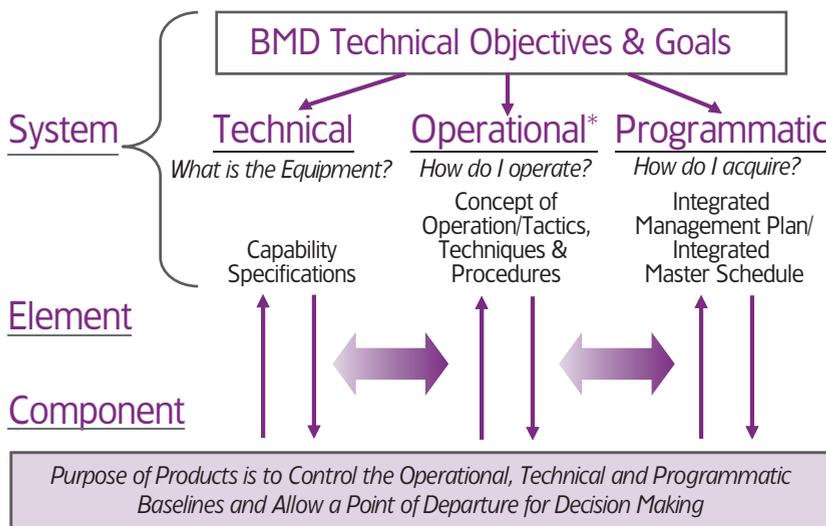


FIGURE 2. Implementation of Capability-Based Acquisition

have changed significantly since the original requirements for the program were established.”

The key to a capabilities-based approach lies in viewing a threat not as coming from a specific weapon system or from a specific geographic region, but rather as emanating from the capabilities that an adversary might develop or deploy. Using a capabilities-based approach, a joint DoD agency would not be organizationally and programmatically centered around specific Service weapons platforms, but rather it would be organized to focus on the ability to integrate the effective military capability of those platforms into a larger whole.

### **Structure of Former Agency Precluded Holistic View of BMD**

In pre-MDA days, the BMD mission was hampered by a number of issues. The MDA's predecessor, the Ballistic Missile Defense Organization (BMDO), was not structured in a way that allowed it to take a holistic view of BMD. The BMDO was organized under a family-of-systems framework of an upper- and lower-tier theater missile defense (TMD) system and a separate and distinct national missile defense (NMD) program. The lower tier, made up of the Army PAC-3 and the Navy Area Defense System, was designed to defeat short-range ballistic missiles; the upper tier, made up of the Theater High Altitude Area Defense (THAAD) and the Navy Theater Wide (NTW) programs, was designed to defeat the mid- to long-range threat. Although these four programs had certain commonalities in mission and performance, each was separately managed by its respective military service PM. Although they were managing BMD programs, the service PMs for PAC-3, Navy Area Defense, THAAD, and NTW did not report through the BMDO chain of command; their military responsibilities (and perceived success) were thus more tied to the success and advocacy of their Service-sponsored BMD platforms than to achieving a fully interoperable family of BMD systems.

Additionally, these TMD programs were not organizationally or programmati-



**Hindsight ... will show that the redirection of MDA towards a capabilities-based approach ... was the turning point in achieving a missile defense system with a fully netted capability.**

cally connected to BMDO's NMD program. While the lower- and upper-tier programs aimed to defeat short- to long-range ballistic missiles, the NMD program was aimed at the ICBM threat. Although the constraints of the 1972 Anti-Ballistic Missile (ABM) Treaty were the major reason for this disconnect between TMD and NMD, there was no concentrated effort to see BMD as a whole.

A further hindrance to the BMD mission was the unclear management responsibility for meeting the air breather (aircraft and cruise missile) threat. While BMDO had the systems engineering lead against the theater air and missile defense (TAMD) threat, and the Services' BMD systems had an air defense role in addition to their BMD role, BMDO's concentration was—rightly—on the formidable task of single-handedly defeating ballistic missiles.

All these factors resulted in a BMD management and programmatic structure that was platform-centric with clear organizational divisions between various Service-managed sensor and interceptor systems. Numerous boards were commissioned, and various documents were drafted dealing with the key issue of ensuring that each Service-managed missile defense system was interoperable with the others. However, because of BMDO's unclear management role over Service functions, the concentration of these efforts was on merely documenting deficiencies and not on building a battle management framework that would see Service missile defense systems and sensors as one large systems of systems.

### **MDA Has Flexibility for Restructured Missile Defense Program**

On January 2, 2002, Secretary of Defense Donald H. Rumsfeld refocused and reorganized the BMD program to emphasize the need to see the BMD battle as a synergistic whole. While the former BMDO lacked the necessary authority to manage BMD platforms as elements of a larger system, the newly formed MDA was given that broad mandate and authority (as other DoD organizations, such as the Strategic Systems Program and National Reconnaissance Office, had been in the past).

BMD was restructured not into platform elements but into capabilities to defeat ballistic missiles in all three stages of flight (boost, midcourse, and terminal). Funding lines now correspond to the systems that will defeat the threat in these stages of flight—a dramatic difference from the previous practice of funding individual Service BMD weapon systems. The number of BMDO research and development program elements (the major DoD budgetary element) was reduced from 20 individual segments to nine. This gave MDA more flexibility to transfer resources between systems, to maximize capabilities, and to reduce time delays. MDA is currently pursuing implementation of a single Program Element (PE) in the fiscal 2004 budget enactment.

Even more significantly, Service BMD ORDs were cancelled and all the Service programs came under the direct management control of MDA. All BMD programs, including the airborne laser program and the sensor program SBIRS-Low, are now treated as a single unit. No longer is there unclear management responsibility for missile defense: all programs, whether sensor or weapon system, have one ultimate PM. It is of paramount importance to this effort that government and industry work together as one entity to assure disciplined engineering and decision making. The bottom line is always to buy and evolve what is executable.

### **Deliver What is Possible**

The basis of capability-based acquisition is to identify what is possible; determine if development is executable; then plan, design, develop, and integrate the concept into the BMDS system when it is ready for production and transition to the military services (Figure 1, p. 23). This is an iterative process that is designed to provide a defensive system in the short term based on available, militarily useful capability; and to concurrently evolve systems, elements, and components over a period of years, enhancing capability and performance as new technologies emerge. The benefit of the approach is that we don't get to the end of development and then identify all that is wrong with the product. Rather, we assess and correct as we go. The new operational test and evaluation mantra is to be able to characterize just what capability is being fielded (and to agree that it is useful).

Implementation of capability-based acquisition is based on BMD technical objectives and goals (TOGs) (Figure 2, p. 24). The TOG has three sections at the system level: technical (*what*); operational (*how employed*); and programmatic (*how acquired*). At the element and component levels, technical capability specifications, concepts of operations and tactics, and integrated master plan and schedules are required to develop products. Assessment metrics are then designed to monitor progress of development against cost,

schedule, and performance requirements. Potential adversarial capabilities (threat) are defined along with a characterization of the current programs in place to meet these threats. Over time, the capability-based approach should make us less susceptible to "surprises" from intelligence and should demonstrate that our knowledge of what is achievable will always be greater than the ability of intelligence to predict potential threats.

### **Real World Considerations**

Another advantage of the capabilities-based approach is that it recognizes an uncomfortable reality: although formal requirements based on threat and mission needs may be established, weapon systems are often acquired based on more intangible and changeable factors, such as politics, budgetary constraints, and the public's perception of the nature and level of the threat. With missile defense technology still under development, it is not practical to build to a certain set of finite numbers established through the traditional requirements approach. So MDA's capability-based program has resulted in a movement away from major inventory objectives to an approach that emphasizes research, development, test and evaluation (RDT&E) activity and shorter-term block buys; that concentrates on continuous systems enhancement by applying spiral development techniques; and that maximizes yearly buys rather than concentrating on a long-term objective.

The PAC-3, the most developed of the BMD systems, is also most representative of this practice. Though the system is already fielded in limited numbers, the MDA has hesitated to make a decision on full-rate production. The Army objective is 1,159 missiles; however, MDA has questioned firm decisions to acquire that quantity. The MDA strategy is to concentrate on acquiring inventory numbers in a serial procurement method and to emphasize achieving a capability, however limited, without making a firm commitment to a long period of procurement and acquisition.

The advantages of achieving an integrated air picture among BMD systems have been recognized and codified in appropriate BMD requirements and acquisition documents. The Joint Theater Air and Missile Defense (JTAMD) Operational Concept for 2010 envisions a sophisticated sensor and information-sharing construct that would enable such advanced firing concepts as "engage on remote" and "precision cue." These concepts would provide significant improvements in several important areas: they extend the range of weapons platforms beyond the range of individual sensors, decrease weapons wastage, increase probability of kill, and allow multiple shot opportunities.

The BMD battle can be won only by using the NCW-derived integrated fire control techniques found in the 2010 JTAMD Operational Concept. Precision cue allows an external sensor to detect and track a ballistic missile, enabling an organic fire control sensor to perform a more focused search than it could in an autonomous mode. Engage on remote uses an external sensor to detect and track a threat ballistic missile and additionally enables a BMD element to launch its interceptor before its own organic fire control sensor detects the target.

### **Need for Psychological Adjustment**

While the technical challenges of achieving these concepts are daunting, there are also significant doctrinal and even psychological obstacles to accomplishing the advanced operational concepts. For example, it would take a high degree of confidence in another Service's sensor for a battery commander to engage a target that he cannot see with his own sensor; however, this confidence is core to the engage on remote concept. One could understand the reluctance of a PAC-3 commander to act on tracking data from Navy SPY-1 radar or an airborne sensor. In the opposite scenario, will that same battery commander be confident enough in the netted air picture to withhold fire when the target TBM is in his range in order to allow another platform the first shot opportu-

nity? Even if that level of confidence is achieved, will it survive the first friendly fire incident?

The concept of engage on remote brings into play legal and doctrinal questions that have yet to be addressed. Will any commander have enough confidence in a netted air picture to allow integrated joint fire control with other Services' platforms? There are some scenarios where the commander will have no choice. Only through strict adherence to joint doctrine and to robust, repeated joint exercise opportunities will a commander be able to achieve the degree of confidence necessary to fully use these concepts.

Figure 3 depicts an ICBM missile attack scenario from North Korea to the continental United States, showing the complexity required for a successful engagement. The first indication of a launch would be from a space-based sensor. The missile, if pre-stationed in the Sea of Japan, could be tracked by an AEGIS vessel, and under some scenarios, the AEGIS could attempt a boost or ascent phase intercept. An airborne laser operating in the same area would

also have an opportunity for a boost phase engagement. If these systems are unavailable or their operations unsuccessful, the missile would enter its midcourse trajectory, and the ground-based midcourse system would engage. This engagement scenario would last only a few minutes. In order for an intercept to be successful, close command and control relationships and operational handoff concepts would need to exist between the U.S. Forces Korea, U.S. Forces Japan, Pacific Command, Northern Command, and Strategic Command.

### 1950s Provide Precedent for New Approach to BMD

The missile defense reprogramming approach is not totally unprecedented. There are striking similarities between the MDA program of 2001-2002 and the ICBM program of the mid-1950s. Gen. Bernard Schriever was given exceptional latitude to manage the extremely challenging role of devising a systems engineering and management structure capable of developing an ICBM program. Schriever realized early on that he had to manage outside the established Air Force reporting chains. In *Rescuing Prometheus*, Thomas P. Hughes writes

that Schriever found "Air Force and Pentagon bureaucracy could overwhelm and delay his project with endless complications introduced at many tiered approval levels of bureaucratic compliance for each special interest in the system and by a maze of budgetary review requirements." A situation much like that was created by the management structure of the BMDO in the late 1990s.

In 1954, the management structure was streamlined. A Defense Ballistic Missile Committee led by the deputy secretary of defense (DEPSECDEF) and including assistant Service secretaries was formed and served as the single review authority for the ICBM program. Schriever instituted concurrent development and parallel development to reduce risk and to enhance competition. Like Air Force Lt. Gen. Ron Kadish in 2002, Schriever could have done this only with the active support of the SECDEF, and it could have been done only during a time of what was seen as immediate crisis. In 1955, in an observation that could prove particularly relevant to the missile defense program, Schriever said that "major operating commands are strongly oriented toward

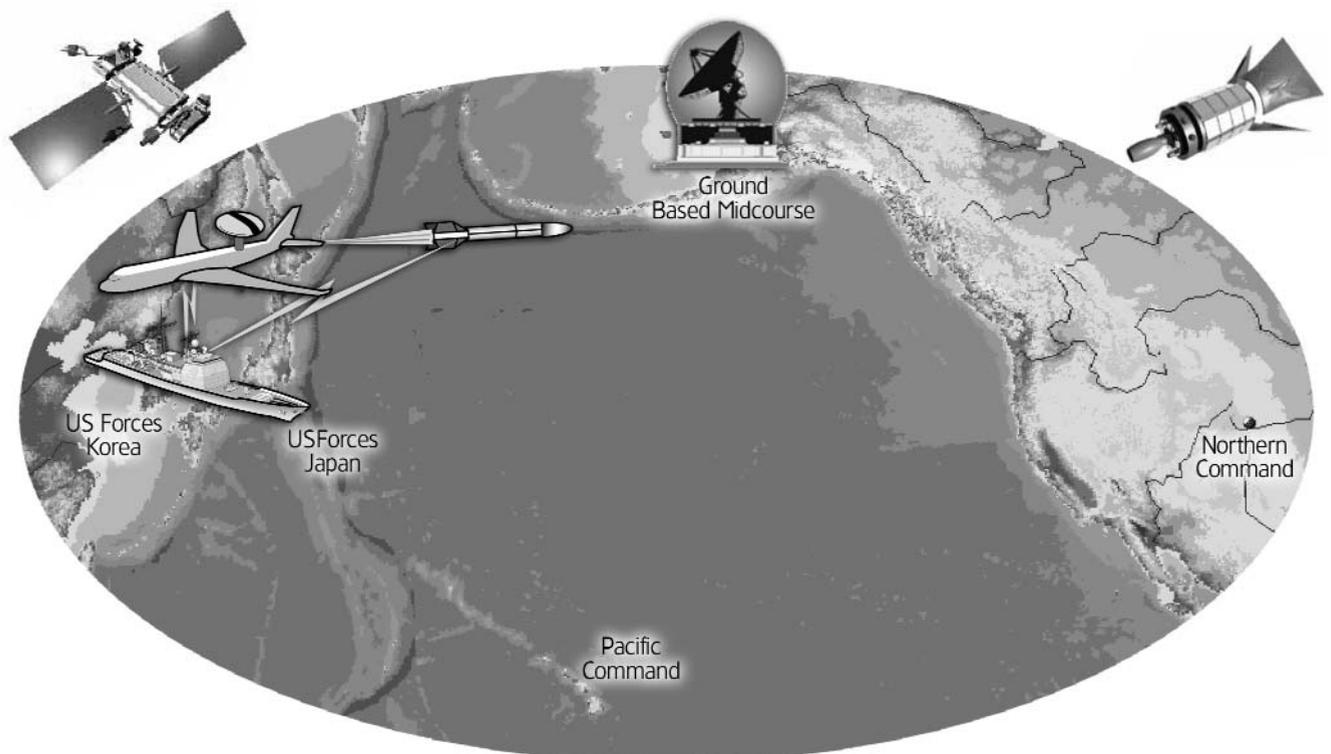


FIGURE 3. North Korean ICBM Attack Scenario

DoD Missile Defense Agency photograph

near-term programs ... [and] the action levels in the Air Staff and in Commands will not (despite priorities and directives) be inclined to volunteer first attention to difficult problems of inter-command coordination" (quoted by Edmund Beard in *Developing the ICBM*).

### Senior Executive Council

The current MDA approach has undertaken initiatives similar to the ICBM program of the 1950s. The only real missile defense reporting and decision-making body is the Senior Executive Council (SEC) (analogous to the Defense Ballistic Missiles Committee) made up of the DEPSECDEF, the under secretary of defense for acquisition, technology and logistics, and the individual military service secretaries. The SEC oversees all BMDS activities and is the final decision-making authority for missile defense procurement and fielding recommendations. The Missile Defense Support Group, made up of 13 OSD offices and agencies, provides a DoD review and advisement role. The closely structured contractual arrangement that the ICBM program used is mirrored by MDA's "National Team" approach, whereby two teams will perform the technical management of the BMDS. One team, led by Boeing, performs the systems engineering function, and the other, led by Lockheed Martin, performs the battle management, command, and control (BMC2).

### Many Challenges Ahead for MDA

One of the most significant challenges for MDA will be how to define a new relationship with the Joint Chiefs of Staff (JCS), the Office of Test and Evaluation, Congress, and the operational community. In a broad critique of missile defense testing and financial accountability, the Project on Government Oversight indicated that MDA's management of all the elements of BMD is seen by some as a significant threat to normal, established processes for weapons acquisition.

### Military Services

Service concerns rest on whether MDA can fully represent a service BMD pro-

gram and recognize the unique contributions that a particular weapon brings to the battlefield.

### JCS

The Office of the JCS has concerns regarding the waiver for MDA to bypass the traditional Defense Acquisition Board and Joint Requirements Oversight Council process.

### T&E Community

Some in the T&E community have questioned whether firm testing standards and metrics can be established using a capabilities-based program.

### Congress

Congress has expressed concern about its oversight role and is wary of efforts to view weapons as part of larger system capabilities rather than as individual platforms with easily identifiable production facilities and contractors.

### Public Interests

And last, convincing the public and such organizations as the Union of Concerned Scientists will require considerable effort and a rigorous testing program.

### Coordination with SIAP SE

An additional framework that needs to be further clarified is the MDA relationship with the Single Integrated Air Picture (SIAP) Systems Engineer (SE). This office was established in 1999 through a series of annual Flag Officer TAMD Capstone Requirements Document workshops that identified concerns with progress in addressing deficiencies in DoD's approach to TAMD interoperability. The SIAP SE's purpose is to implement a disciplined systems engineering process that yields recommendations for fielding an SIAP. MDA's goal of establishing a seamless BMC2 network to track missiles in all phases of flight obviously needs to be closely coordinated with the work of the SIAP SE. It is unclear at present whether MDA is fully considering SIAP SE recommendations in the planning for an integrated BMC2 network.

In addition, the new MDA program approach calls into question the utility and

relevance of other traditional acquisition initiatives such as the integrated product team (IPT) construct. The tight management and control structure that MDA has established over the BMD elements is not conducive to the consensus-building that underlies the IPT concept. The IPT approach brings users and acquisition communities together into a collaborative process that is, perhaps, suitable for single weapon systems and firm sets of requirements. The current MDA approach of treating various Army, Navy, and Air Force sensors and weapons systems as a single system does not lend itself to an IPT approach. Additionally, a capabilities-based approach, which de-emphasizes firm requirements in favor of fielding achievable block capabilities, will be difficult using an IPT process.

### Only Path to Integrated Missile Defense

The path that the MDA is presently following is the only one that can result in the kind of system-of-systems approach that would make a fully integrated missile defense system practical. A capabilities-based acquisition approach using a network-centric systems framework is a prerequisite for achieving success in missile defense. With missile tests becoming more routine, and with the cancellation of the ABM Treaty, the missile defense debate has changed direction. It has moved away from technological arguments regarding the practicality of hit-to-kill technology toward more of a discussion of the DoD management and systems engineering approaches that MDA is undertaking. Although there are still significant managerial and programmatic challenges to meet, MDA is on firm ground in defending its unique and unprecedented approach.

**Editor's Note:** The authors welcome comments and questions on this article. Biggs can be reached at [timothy.biggs-contractor@mda.osd.mil](mailto:timothy.biggs-contractor@mda.osd.mil) and Stuchell at [raymond.stuchell-contractor@mda.osd.mil](mailto:raymond.stuchell-contractor@mda.osd.mil).

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# Carnegie Mellon's Software Engineering Institute Focuses Expertise on the Transformation of Army Acquisition

STEPHEN BLANCHETTE, JR.

In 1999, the U.S. Army embarked on one of its most ambitious missions to date: completely reinventing itself. In his 1999 statement to the House Armed Services Committee, then Army Chief of Staff Eric Shinseki called it "transforming the most respected Army in the world" into one that is "dominant at every point on the spectrum of operations." Much of the focus since then has been on revolutionary weapons concepts such as the Future Combat Systems and Future Warrior. The now famous "pitchfork" diagram (Figure 1), which symbolized the fusion of legacy and interim forces with science and technology to produce the Objective Force, became the ubiquitous symbol of transformation and a *de rigueur* element of every industry briefing aimed at winning Army business.

Media interest is inevitably concentrated on remarkable new technologies (see sidebar "Technology: The Public Face of Army Transformation"); however, the real substance of Army transformation lies in changing the fundamental way the service operates at all levels and adapting everything it does to meet the challenges of the new millennium. As General Kevin Byrnes, commander of the Army's Training and Doctrine Command, noted in his February 2003 article in *Army*, change is required in "our organizations, our methods, our materiel, our structure and our institutions." One of the key elements of transformation is to improve the way that software



Force XXI Battle Command Battalion/Brigade and Below (FBCB2) System

Photo courtesy Northrup Grumman

intensive systems (SIS) are procured for our warfighters. This is especially important as software becomes the pervasive element in everything from aircraft to bullets. The Bob Stump National Defense Authorization Act for fiscal year 2003 underscores the importance of improving acquisitions involving software: Section 804 requires the military to establish process improvement programs specifically targeted at software acquisition for systems with a significant software component.

In 2002, the Software Engineering Institute (SEI<sup>SM</sup>) at Carnegie Mellon University established the Acquisition Support Program (ASP) as a means of helping all the military services manage the acquisition of SIS effectively.

The goal of the ASP is to apply good practices from all sources in order to ameliorate the acquisition challenges of increasingly complex systems and ensure that the U.S. military has agile and robust procurement processes to meet the needs of 21st century warfighters. "By taking advantage of the science and technology investment in the SEI over the past 17 years, we are able to apply new and improved software engineering and acquisition practices to provide direct assistance to challenging DoD acquisition programs like FCS, Joint Strike Fighter, DD(X), and a whole host of others," says Brian Gallagher, director of ASP. (DD(X) is the new multi-mission surface combatant ship currently under development for the Navy.)

*Blanchette is senior member of the technical staff at the Software Engineering Institute in Pittsburgh, where he specializes in acquisition improvement initiatives for the U.S. Army. He is a graduate of Embry-Riddle Aeronautical University and has over 16 years of experience working in software development and management for Army systems.*

## Army Strategic Software Improvement Program

Even before Congress wrote the Section 804 language, Claude Bolton, assistant secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)) and the Army's acquisition executive, recognized the challenges facing Army acquisition and proactively entered into a partnership with the SEI to create the Army Strategic Software Improvement Program (ASSIP). The ASSIP is a long-

plement the SSIMP. Organized as the ASSIP Action Group (AAG) and actively engaged in making the ASSIP a success are the SEI, the PEO representatives, the Army Materiel Command's software engineering directorates and centers, and other organizations closely tied to Army acquisition. A senior steering group, consisting of the PEOs and chaired by the military deputy to the ASA(ALT), will review and approve yearly updates of the SSIMP and fund its ongoing initiatives.

professionals. All acquisition category (ACAT) I and II programs will eventually participate in the benchmarking process. The goal is to help individual programs now, while simultaneously identifying improvement opportunities

**Through hands-on participation, application of good practices, piloting of new approaches, collaboration, and training, the SEI is ensuring the U.S. military can acquire high-quality, software-intensive systems rapidly and efficiently to support the warfighter.**



term, broad-reaching program designed to improve the quality of software developed for Army SIS. With its focus on programs, people, production, and continuous improvement, ASSIP will create a predictable, quantitative, experience-based, and repeatable process that enables successful SIS acquisition.

Bolton tasked the SEI to be “on point”—in other words, to play a key role in defining the infrastructure needed to support the ASSIP—as well as to take the lead in developing the Strategic Software Improvement Master Plan (SSIMP). The SSIMP is a fundamental element of the ASSIP, identifying the improvement initiatives to be undertaken in each fiscal year and thereby providing the roadmap for program execution.

The SEI is working closely with representatives of the Army's program executive officers (PEOs) to develop and im-

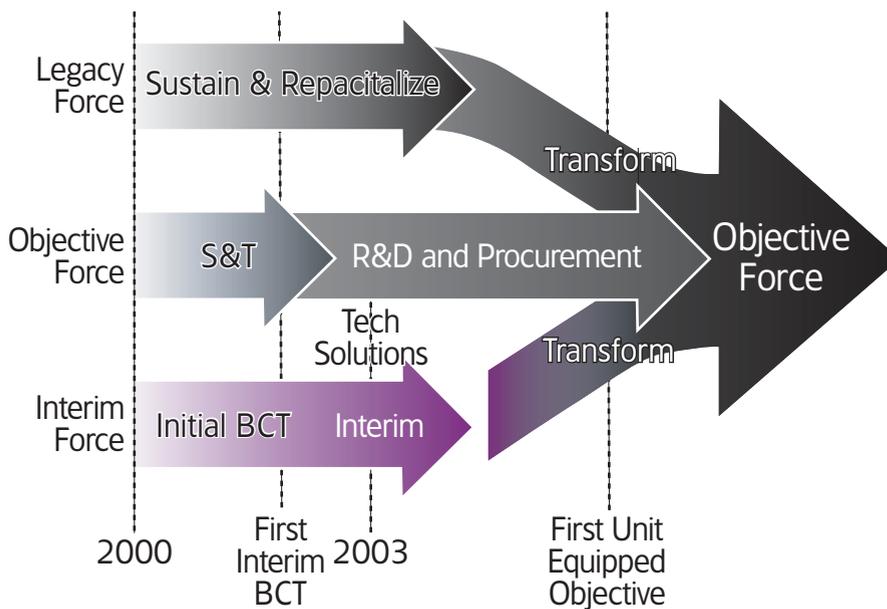
The SEI acts as a catalyst to identify potential initiatives and bring them before the AAG for discussion. Initiatives may take the form of pilot programs to validate promising ideas in an actual acquisition context or implementation of mature, proven techniques on a broader scale. Government, the SEI, industry, and academia are all potential sources of initiatives.

### **A Key ASSIP Initiative: Baseline Army SIS Acquisition**

As one of the key initiatives of ASSIP, the SEI is actively cultivating an understanding of Army acquisition practices in order to develop a baseline state of Army SIS acquisition. This baseline will, in turn, be used to determine where and how to focus other improvement efforts across Army acquisition. Techniques used in the baselining process include direct engagements with programs and surveys of key Army acquisition pro-

(called benchmarks) for the broader Army acquisition enterprise.

Armed with an understanding of the baseline state, the SEI will research the most promising technologies available industry-wide to foster improvements to the Army acquisition system. The programs participating in direct engagements receive a triple benefit: first, immediate feedback about their current practices; second, early adoption of improvement strategies; and third, the opportunity to critique to higher levels the policies that affect how they accomplish their missions. Through an ongoing relationship with the SEI, the programs also benefit from continued expert con-



**FIGURE 1. Army Transformation into the Objective Force**

sultation to monitor the successes and shortcomings of improvement strategies. In addition, the SEI will assist all ACAT I and II programs in setting up their own acquisition process improvement plans.

ASSIP represents the Army's comprehensive and far-reaching response to Section 804. It also provides an umbrella under which other equally important work is carried out. The SEI has several direct engagements that are ongoing to help individual programs in the near term.

### Future Combat Systems

From a warfighting perspective, the Future Combat Systems (FCS) will be the centerpiece of tomorrow's battlefield. The FCS vision is not just a single vehicle or even a family of vehicles, but a network-centric force composed of platforms of many types able to fight in a unified and coordinated manner. The program—a collaborative effort between the Army, the Defense Advanced Research Projects Agency (DARPA), and industry—seeks to acquire a “system of systems” in which software will play a significant and vital role. An industry-based lead system integrator (LSI) team will handle many tasks traditionally performed by a government program office. Managing the technology alone

would be difficult enough, but the scope and complexity of this bold program introduce acquisition challenges many times greater than those experienced in previous Army programs.

The Army asked the SEI to take a hands-on role in a number of areas. The SEI participates in the FCS Software Steering Committee, collaborating with the LSI team, the government, and other organizations to identify and resolve program issues that impact on, or may be impacted by, software. As part of the steering committee, the SEI also provides consultation on FCS software risks and risk management and supports the LSI's efforts to develop a variety of documents, including the software development plan. Although it does not participate as a voting member in source selection activities, the SEI does provide expert review of requests for proposal prior to their release. In addition, the SEI assists both the LSI and the Army's FCS program office in establishing and improving software acquisition management processes for the program. One notable example is the Software Acquisition Capability Maturity Model® (SACMM®) training provided to program participants in June 2003.

During the concept and technology development (CTD) phase of the program,

the SEI supported the LSI in evaluating and applying a number of SEI-developed technologies, including product line approaches for FCS software development, strategies for including commercial off-the-shelf (COTS) products in the designs, and architecture evaluation using the Architecture Tradeoff Analysis Method<sup>SM</sup> (ATAM<sup>SM</sup>). One of the direct benefits of this work has been the inclusion of an 18-month architecture development effort during the recently authorized system development and demonstration (SDD) phase of the program. An integral part of the program's plan for SDD, periodic ATAM evaluations ensure that the FCS architecture will meet its quality attribute goals in addition to its technical requirements. The SEI also plays a continuing role on the program's Software Architecture Working Group.

Since the program intends to maximize software reuse to help meet its demanding schedule, the SEI conducted a pilot program to investigate the feasibility of software reuse on FCS. The SEI's Options Analysis for Reengineering<sup>SM</sup> (OAR<sup>SM</sup>) method seeks to evaluate the risks, costs, and benefits of reusing software for large, complex systems. For FCS, this method was adapted to allow the LSI to make decisions across the supplier base about abilities to contribute reusable assets to the program effectively. Employing the modified OAR process allows the LSI to obtain more realistic estimates for the amount of reusable software available, which in turn builds confidence in overall software size and effort estimations for the program.

### Objective Force Leader: Comanche Helicopter Program

The Comanche helicopter is the lead system in the Army's transformation to the Objective Force. Designed to be the Army's next generation scout/reconnaissance and attack platform, Comanche will bring revolutionary capability to the warfighter through a suite of sophisticated integrated sensors that will facilitate enemy engagements in day, night, and adverse weather conditions. Its low-observable features will allow Comanche to operate with a level of

stealth not previously possible for a helicopter.

The Comanche program manager (PM) engaged the SEI to work directly with the staff of the program management office (PMO) to improve its acquisition processes and capabilities. The goal of this work is to develop improved practices for systems acquisition and life cycle systems engineering as well as to expand workforce competencies in systems acquisition. To that end, the SEI is evaluating the applicability to Comanche's needs of certain elements of its Capability Maturity Model® (CMM®) frameworks for software acquisition and systems engineering and its CMM Integration® (CMMI®) framework (see sidebar "Process Models: One Size Does Not Fit All"). The SEI is also participating in the formation of the PMO's acquisition improvement group (AIG) and is providing coaching to its members. Together, the PMO AIG and the SEI have developed a plan for the process improvement effort and are putting that plan into action. As the effort continues, the SEI will provide training in several key areas, including managing technological change, planning for strategic improvement, metrics and measurement, and elements of maturity models appropriate to integrated product teams. The PMO's goal, beyond formal assessment at Level 3 of the CMM for software acquisition, is to demonstrate improved acquisition capability while delivering one of the cornerstone systems of the Objective Force.

### **The Digital Battlefield: Force XXI Battle Command, Brigade and Below**

The Force XXI Battle Command Battalion/Brigade and Below (FBCB2) program is the backbone of the Army's digital battlefield for brigade and lower-level echelons. Providing command and control and situational awareness, FBCB2 gives the advantage to U.S. commanders, enabling decisive action through superior battlefield information as the fight develops. The system also gives commanders an enhanced ability to tell friend from foe in the fog of war—an ability so crucial that even before un-

dergoing operational testing, FBCB2 software was deployed to support Operation Iraqi Freedom.

To help ensure that FBCB2 will meet the force's needs into the future, the Army called upon the SEI to evaluate the system's software architecture and make recommendations. Working with the FBCB2 program office and its prime contractor, the SEI assisted with near-term architectural improvements to enhance the flexibility of the FBCB2 product to meet new short-term requirements that have evolved from its tremendous success to date. The SEI is also participating in the definition of an objective architecture that, once implemented, will allow FBCB2 to grow and adapt to meet expanding Army needs, both foreseen and unforeseen.

### **Technology Transition**

In September 2002, the SEI opened an on-site impact center in Huntsville, Ala. The center is co-located with the Software Engineering Directorate (SED) of the U.S. Army Aviation and Missile Command (AMCOM) Research Development and Engineering Center. SED is a software powerhouse in its own right: it is one of the few government agencies to have achieved Level 4 of the Software Capability Maturity Model® (SW-CMM®) framework. As such, the partnership between the SEI and AMCOM is ideally suited to forward the missions of both organizations.

The goal of SEI's Huntsville center—consistent with the missions of both the SEI and SED—is technology transition. The Huntsville area provides fertile ground for the success of the partnership. In addition to AMCOM, Huntsville is home to the Army's Space and Missile Defense Command; the PEOs for aviation, tactical missiles, and air, space, and missile defense; NASA's Marshall Space Flight Center; and an ever-expanding group of aerospace/defense contractors and high-tech companies. Together with SED, the SEI will deliver mature software development technologies to the local community as well as to the Army Materiel Command and the overall Army acquisition community. The expected

## **Technology: The Public Face of Army Transformation**

### **Army High-Tech in the Media**

"The Spinner Could Turn Tank Combat Upside-Down"

By Preston Lerner

*Popular Science*, January 2003

"Soldiers of the Future"

By Jessica Rappaport

*TechTV*, March 15, 2002

"A Smarter Rifle: Advanced Technology May Give Foot Soldiers a Fighting Edge"

By Paul Eng

*ABC News*, September 26, 2001

"Soldier of the Future: With New Technology, He Might Fight Like Robocop, Drive Like James Bond"

*ABC News*, June 26, 2001

"You've Got Bang! Move Over, M-16. Here Comes The U.S. Army's New Chip-Based, Laser-Guided Gun"

By Chana R. Schoenberger

*Forbes*, June 11, 2001

"Army's New Ride: Fast, Light And Lethal, The U.S. Army's New Wheeled Armored Vehicles Will Take Tanks Off The Battlefield"

By Scott Gourley

*Popular Mechanics*, February 2001

outcome is the establishment of organizations that are better able to adapt as development and acquisition technologies change and evolve.

### **Other SEI Endeavors**

In another effort underway for Bolton, the SEI is developing acquisition planning guidelines for programs with sig-

nificant software content. The aim of this endeavor is to distill a set of guidelines that can form a basis for planning future acquisition efforts by monitoring contracting processes on representative programs and then combining the knowledge gained with the breadth of the SEI's acquisition experience. Once the guidelines have been developed, they will be piloted on another program to prove-out the concepts and ensure the effects are beneficial. The SEI also will use the pilot results to refine the guidelines before finalizing them. The Army plans to use the finished product to help PMs develop effective plans for addressing the challenges posed by software in their system acquisitions.

A further avenue of endeavor that the SEI is undertaking in support of Army acquisition is the development of a "software survival" course. Originally requested by Army Maj. Gen. Joseph Yakovac, PEO for Ground Combat Systems, the course covers a wide range of software-related issues that directly or indirectly influence the planning and management of acquisition programs. PEOs and PMs make up the target audience for the course, and the intent is to provide them with the knowledge they need to make informed decisions about the software aspects of the programs they control. The curriculum addresses topics that span the system life cycle, beginning with pre-award activities. Included are resources and references that acquisition managers can bring to bear on problems, as well as a discussion of problems that frequently plague the acquisition process.

### Tying It All Together: Army Strategic Impact Program

The Army Strategic Impact Program (SIP) is the overarching strategy that binds all these efforts together in a coherent manner. Fully embraced by the Army, the program is overseen by an SEI sector manager and a chief engineer, who are dedicated full time to the Army customer. The SIP provides a three-pronged approach toward improving Army acquisition. First, by working with strategic acquisition partners, the SEI strives to build lasting relationships and

develop long-term answers to Army-wide acquisition challenges (as exemplified by the ASSIP and Acquisition Guidelines efforts). Second, the SEI employs strategic transition partners, such as AMCOM SED, to broaden the reach of relevant technologies to the widest possible audience. Third, the SEI exploits current techniques to achieve near-term gains for its individual tactical transition customers like PM Comanche. The Army chief engineer ensures delivery of consistent and harmonized solutions, governs all technical activities, and works closely with the SEI's chief engineers for the other services to maximize the cross-pollination of ideas.

### Beyond Army Acquisition

The work described in this article represents only a fraction of the acquisition activities that the SEI conducts on behalf of the U.S. Government. The SEI supports all branches of the service in their quest to transform in order to meet the combat needs of the future. The SEI is also developing strategic impact programs, similar to those already in place

for the Army, for each of the other military services. In addition, the SEI is actively engaged with non-defense agencies, including the Coast Guard, the National Reconnaissance Office, the Internal Revenue Service, U.S. Customs, the National Security Agency, and the National Imagery and Mapping Agency, to help them improve their SIS acquisition efforts. Through hands-on participation, application of good practices, piloting of new approaches, collaboration, and training, the SEI is ensuring the U.S. military can acquire high-quality, software-intensive systems rapidly and efficiently to support the warfighter.

**Editor's Note:** The author welcomes comments and questions on this article. He can be reached at [sblanche@sei.cmu.edu](mailto:sblanche@sei.cmu.edu). To inquire further about becoming involved with the Acquisition Support Program, contact the program director, Brian Gallagher, at [bg@sei.cmu.edu](mailto:bg@sei.cmu.edu).

## Process Models: One Size Does Not Fit All

SW-CMM®	SA-CMM®	CMMI®
Focused on software development	Focused on software acquisition	Focused on product development
Considers process areas from a software development perspective	Considers process areas from a software acquisition or program office perspective	Considers process areas from a cross-functional perspective (specifically, software development, systems engineering, and product development disciplines)
Practices are those that tend to increase the likelihood of a successful <i>development</i> effort	Practices are those that tend to increase the likelihood of a successful <i>acquisition</i> effort	Practices are those that tend to increase the likelihood of a successful <i>development</i> effort

Years of experience working with acquisition organizations show that many project offices have significant technical responsibilities (e.g., systems engineering) in addition to acquisition management tasks. Since none of the above models accurately reflects such a mode of business operation, the Comanche program and the Air Force's Space and Missile Systems Center are exploring hybrid CMMI/SA-CMM frameworks as part of their process improvement efforts.

®CMMI and CMM are registered in the U.S. Patent and Trademark Office by Carnegie Mellon University.

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# Air Force Academy Launches New Majors

## Systems Engineering and Systems Engineering Management

MAJ. BRETT SCOTT, USAF • CAPT. JASON BARTOLOMEI, USAF

The U.S. Air Force desperately needs “airmen and a vibrant civilian workforce with science, technology, and systems-engineering skills.”

—Dr. James Roche, Secretary of the Air Force

**W**ith these words from the Secretary of the Air Force in the summer of 2002, the Air Force Academy took up the challenge. In true systems engineering fashion, Academy professors formed an interdisciplinary tiger team to determine customer requirements and constraints, evaluate curriculum alternatives, and develop a forward-looking concept of operations. The team surveyed the finest system engineering programs in the nation, including the majors currently in place at West Point and the Naval Academy. Under the close mentorship of Air Force Chief Scientist Dr. Alex Levis, together with a lineup of world renowned systems engineering educators and leaders, the team crafted two new majors: *Systems Engineering* and *Systems Engineering Management*.



Cadets in Engineering 100 prepare to test one of their first systems, a boost-glide concept demonstrator.

Both programs will emphasize a system-of-systems approach consisting of a rigorous systems engineering program augmented with studies in human systems, operations research, and program management. Both programs will also leverage the Air Force Academy's robust and

broad-based 85-semester hour core program consisting of required courses in humanities, social sciences, basic sciences, and engineering. All freshman cadets now take Engineering 100—a brand new engineering core course entitled Introduction to Engineering Sys-

*Scott is an assistant professor of management at the U.S. Air Force Academy. Bartolomei is an assistant professor of engineering mechanics at the U.S. Air Force Academy.*

Cadet-built FALCONSAT 2 satellite being hoisted onto a test bed at Kirtland Air Force Base, N.M. The U.S. Air Force Academy small satellite program was featured in the article "Learning Space by Doing Space" in the 2002 July-August issue of *Program Manager*.



tems. Cadet teams learn systems engineering processes and tools while designing, building, and flying a boost-glide concept demonstrator system.

Cadets who choose to major in systems engineering will expand their technical knowledge in one of several engineering options to include aeronautical systems, communication systems, computer systems, control systems, human systems, information systems, mechanical systems, or space systems. Systems engineering management majors will hone their program management skills through courses in project management, managerial accounting, finance, organizational behavior, information systems, and operations research.

Both programs also include a four-course sequence covering systems engineering theory and application that culminates in a year-long capstone engineering design experience. Cadets majoring in Systems engineering or systems engineering management will work alongside other engineering majors to form true interdisciplinary teams. Commenting on the program, Col. Cary Fisher, engineering division chair and chair of the Systems Engineering Steering Group, says, "To me, the heart of this program

will be the cadet's capstone design experience. We plan to leverage our existing engineering capstone projects such as our unmanned aerial vehicle work for the Air Force, our SAE [Society of Automotive Engineers] Formula race car, and ASME [American Society of Mechanical Engineers] Human Powered Vehicle student competitions as well as our unique small satellite program, to name just a few. All cadets participating in

Steering Group, says, "Our Air Force leadership is committed to the development of officers who are capable of taking a systems view—officers who will be able to address cost, schedule, performance, and risk simultaneously."

The Air Force Academy is looking for officers to help teach and further develop the systems engineering curricula. Those with both a technical and a management education, with at least a master's degree and several years of systems engineering/program management experience, contact Maj. Brett Scott at [brett.scott@usafa.af.mil](mailto:brett.scott@usafa.af.mil); those with a master's degree or higher in systems engineering or engineering, and systems engineering experience, contact Capt. Jason Bartolomei at [jake.bartolomei@usafa.af.mil](mailto:jake.bartolomei@usafa.af.mil); those with a master's

Cadet competing in SAE Formula Race Car competition.



these programs will directly benefit from the addition of systems engineering and systems engineering management majors to these design teams."

Emphasizing the importance of the two new programs, Col. Kevin Davis, head of the department of management and a member of the Systems Engineering

degree or higher specializing in human systems or human factors engineering, contact Lt. Col. Stu Turner at [stu.turner@usafa.af.mil](mailto:stu.turner@usafa.af.mil).

**Editor's Note:** More information on programs offered by the Air Force Academy is available at < <http://www.usafa.af.mil> >.

# PROGRAM MANAGER TO MORPH

The original predecessor of *Program Manager* magazine was the *Program Manager's Newsletter*, started by the Defense Systems Management School (DSMS) in 1972. Published quarterly, each issue consisted of eight pages. From its inception, the *Newsletter* quickly became the principal means of communicating with the acquisition community. Within two years, its distribution reached 7,000 copies per issue, with an average of 32 pages. Though the target audience was originally envisioned as mainly the graduates of DSMS courses, other acquisition professionals soon began requesting copies.

In 1976, DSMS was realigned, reorganized, and renamed the Defense Systems Management College (DSMC). The *Newsletter*, now under the auspices of DSMC, was changed in 1978 from a quarterly to a bimonthly publication with an enhanced format and image, and an increased number of pages. In 1979, the name became *Program Manager: the Defense Systems Management College Newsletter*. It contained a more reader-friendly, two-color format, and is the immediate ancestor of today's magazine.

In September 2000, *Program Manager* became the bimonthly magazine of the Defense Acquisition University, averaging 80 to 120 pages and reaching around 22,000 domestic and international readers in hard copy, and a growing readership in cyberspace.

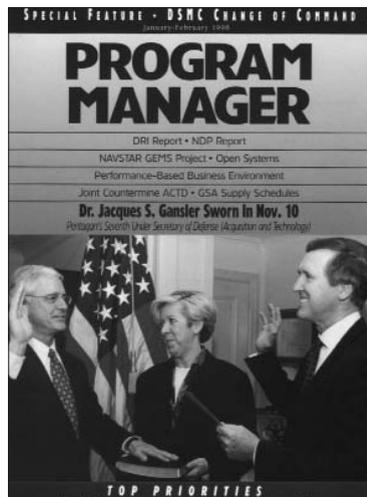
Effective Jan. 1, 2004, *Program Manager* will morph into *Defense AT&L* to reflect the broader audience and expanded scope of the articles published by the Defense Acquisition University Press on behalf of the DoD Acquisition, Technology, and Logistics workforce.



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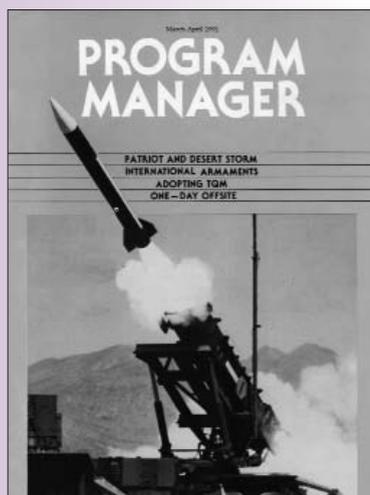
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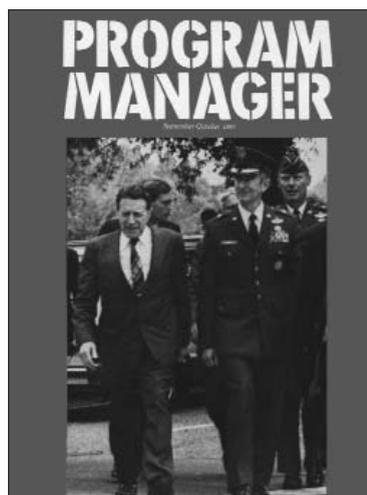
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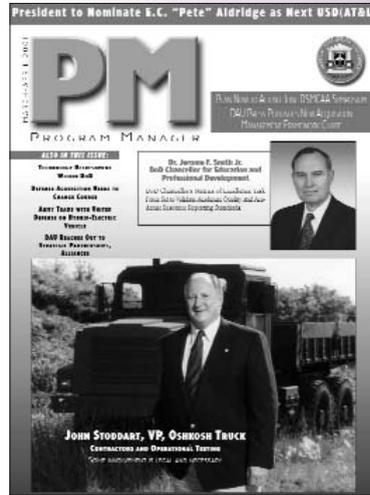
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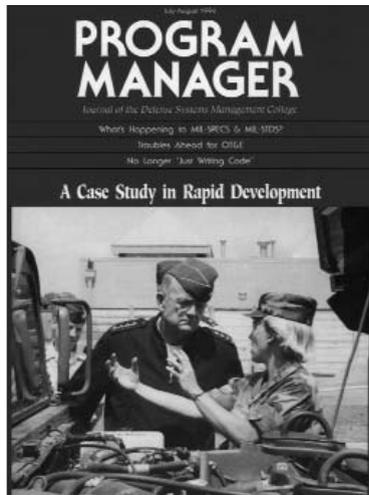
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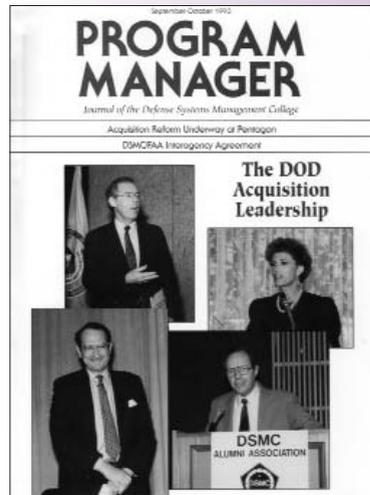
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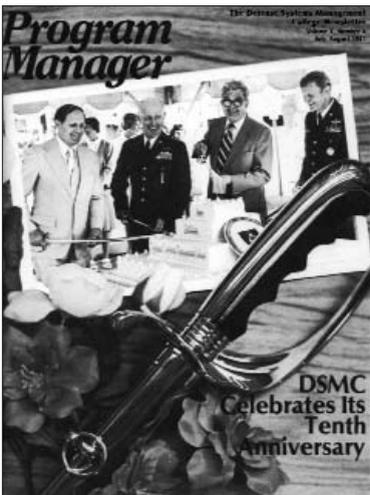
March-April 1995



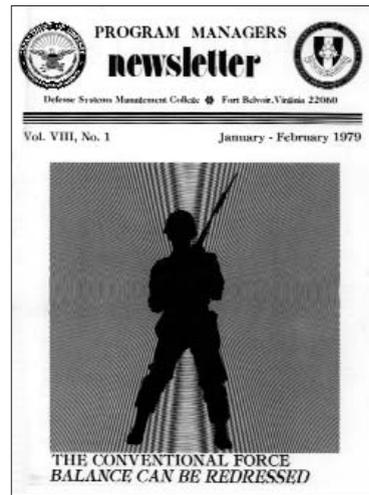
July-August 1994



September-October 1993



July-August 1981



January-February 1979



April 1972

# Guarding the Crown Jewels

## Identifying Critical Program Information

ARION N. "PAT" PATTAKOS

Program managers and other key personnel who make decisions as part of the acquisition management framework are very sensitive to the imperatives associated with cost, schedule, and performance. But the principal consideration when fielding a system should be its performance in the hands of the warfighter. Determining the potential for success in battle emphasizes the notion that opposing forces not have the capability to counter, kill, or reduce the effective combat life of a fielded system.

DoDI 5000.2, Operation of the Defense Acquisition System (May 12, 2003), makes clear in several places that programs with critical technologies/systems must develop plans to protect their "crown jewels," more officially labeled "critical program information" (CPI) during both development and sustainment.

PMs must examine their programs critically to determine if they have CPI. If they do, a program protection plan with an anti-tamper annex is required and must be summarized in the acquisition strategy no later than Milestone B. (If PMs determine that their programs have no CPI, this must be certified in writing to the Milestone Decision Authority.) It is certainly to a PM's advantage to identify CPI as early as possible before Milestone B, given the potentially profound impact that failure to protect CPI might have on schedule, cost, and performance. As a side note, technology protection is a specific inspection item of the DoD inspector general.

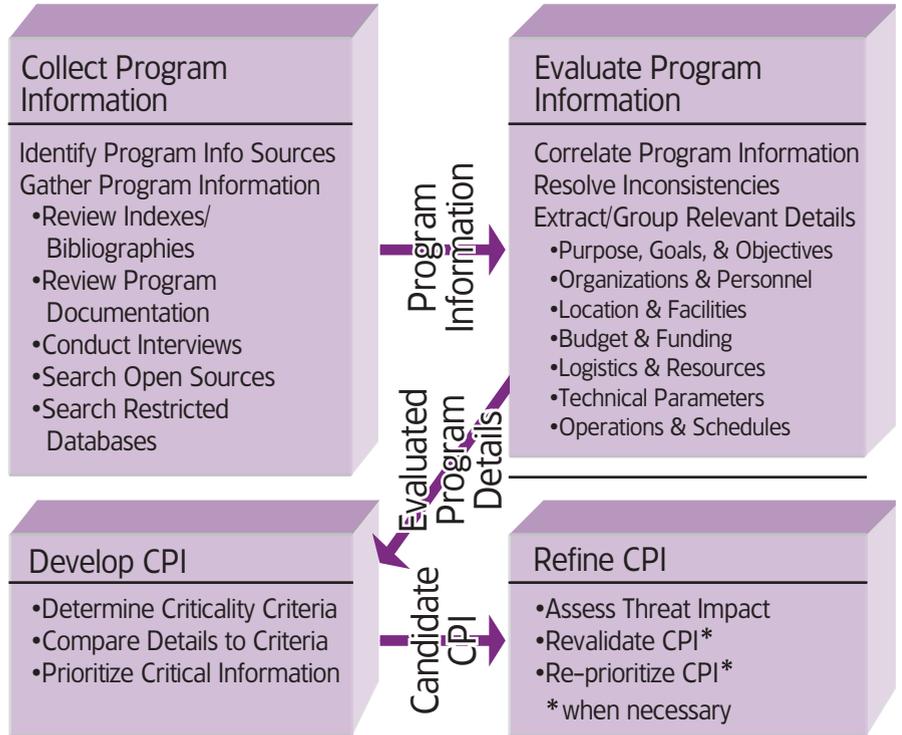


FIGURE 1. The process for Identifying Critical Program Information

### Determining CPI

So what are the criteria for determining CPI? Three were mentioned in the first paragraph: the capability of an adversary to counter, kill, or reduce the effective combat life of the system. To that list are added two more. The fourth criterion is "clone"—in other words, sufficient information for an adversary to develop a like system or even skip a generation and develop one that is superior. Obviously not a good situation for our forces to face when deployed. The fifth criterion is the requirement for additional research and development (R&D)—and hence dollars—to achieve the capability required by the warfighter

in the event that it is determined that an adversary has exploited system CPI. Figure 1 gives a graphical view of the overall process for determining CPI.

PMs need to identify and prioritize CPI for any component, subsystem, technology, demonstrator, or even independent research program, the results of which may later be incorporated into their programs. This last may prove difficult, as it raises concerns associated with basic, advanced, and applied research and protecting related information. Most researchers believe—and rightly so—that technology is advanced by openness and retarded by secrecy; however, there exists a gray zone between the two that must be determined if we are to field successful systems (Fig-

*Pattakos is the senior advisor to the president/CEO of Beta Analytics International, Inc. He is a certified protection professional (CPP) and an operations security professional (OSP).*

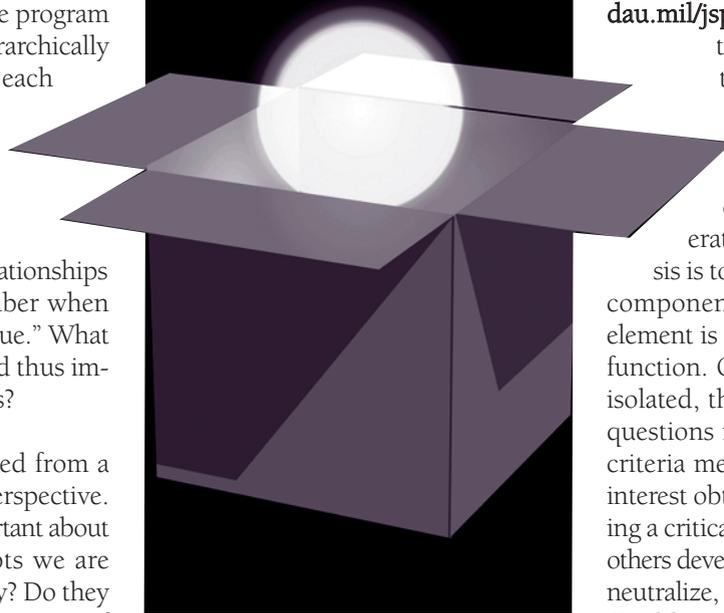
ure 2). It makes sense for the R&D community to ask if a technology is likely to end up in a system used by the warfighter and if that technology is likely to be designated as CPI.

### **Blue/Red Analysis**

A blue/red analytical approach is suggested for the identification of CPI. The blue analysis addresses CPI from a U.S. perspective. What do we think are the key/critical elements of the program (and thus CPI) and why? The analytical process includes performing a "functional decomposition" of the system to isolate what is central to its success. A potentially good beginning in decomposing a system may be found in a review of the Militarily Critical Technologies List (MCTL). The MCTL is the systematic, ongoing assessment and analysis of technologies to determine which are militarily critical. Another source is a well-executed work breakdown structure (WBS). While a PM is not required to have a WBS, the Defense Acquisition University (DAU) advises that it is a derived requirement and a "best practice." Per MIL Handbook 881, the WBS provides the framework for specifying the objective of the program and defines it in terms of hierarchically product-oriented elements, each providing logical summary points for assessing technical accomplishment. One objective of the WBS is to separate component parts to make relationships clear. A key word to remember when doing a CPI analysis is "unique." What makes the system unique and thus important to our military forces?

The red analysis is conducted from a foreign interest/adversary perspective. What do "they" think is important about the technologies or concepts we are using or plan to use, and why? Do they have similar systems in some stage of development? More specifically, the intelligence community should be asked to determine foreign interest targets associated with or relevant to a program. Here too the MCTL is a useful document, since it provides a foreign technology assessment. Another source that

**It is certainly to a PM's advantage to identify CPI as early as possible ... given the potentially profound impact that failure to protect CPI might have on schedule, cost, and performance.**



program personnel can use to develop questions for the intelligence community is the unclassified version of the annual *Technology Collection Trends in the U.S. Defense Industry* prepared by the Defense Security Service.

The goal of the blue/red analysis is to determine if there are asymmetries in the conclusions. If there are, then these asymmetries require resolution. Why is or is not an adversary targeting relevant technologies? Do they already have the information they need? Why are they targeting something we have not selected as possible CPI? Did we overlook something? Answers to these and related questions will help refine our selections.

### **Team Approach: the Role of a Security WIPT**

Determining CPI is not a one-person effort. A security working integrated product or process team (WIPT) reporting to the PM is recommended to support the entire program protection planning process. The team should include engineers, scientists, users, logisticians, other program personnel, as well as security, counterintelligence (CI), and intelligence personnel all of whom make distinct contributions to the necessary analyses.

A 1999 document supporting technology protection located in the legacy Defense Acquisition Deskbook (accessible at <http://deskbook.dau.mil/jsp/legacy.jsp>) suggests that

the WIPT conduct the functional decomposition by analyzing specific components or attributes that give the system under examination its unique operational capability. This analysis is to be performed on each sub-component until a specific critical element is associated with each system function. Once these components are isolated, the WIPT can ask a series of questions related to the CPI selection criteria mentioned above. If a foreign interest obtained information concerning a critical element: (1) Could they or others develop a method to kill, degrade, neutralize, or clone the U.S. system? (2) Could an advanced method (second generation) be developed that exceeds the first generation capability of the U.S. system? (3) Would the U.S. system need major modification to maintain the strategic or tactical advantage on the battlefield for the system's projected operational lifetime? An answer of "yes" to

any of these questions will qualify the item as a candidate CPI. Other questions require a response: What is the extent to which the CPI could benefit a foreign interest? How difficult is it for a foreign interest to exploit the information?

These questions do not preclude the WIPT's establishing additional criteria. For example, will exploitation of information associated with a critical element permit a foreign interest to seize control of the system? To violate confidentiality, integrity, availability (assured service) considerations? Are there authentication and non-repudiation issues?

The system under development needs to be considered in its total acquisition environment. The WIPT, and thus the PM, must consider the engineering processes, fabrication techniques, diagnostics equipment, simulators, or support equipment for possible CPI. A hard look is required when unique processes are involved to identify any activity unique to the U.S. industrial or technology base that may limit the ability of a foreign interest to reproduce or counter the system. With the decrease in the number of defense contractors, limited sources for the manufacture and production of components for our system may be a consideration.

In the "old days" the term "dual use technology" raised issues of military technologies that were useful for civilian (commercial) applications. Today, it is more likely that technologies developed for the commercial world may have military applications. Thus it is very possible that a system will incorporate unclassified or unclassifiable technologies that nonetheless meet CPI criteria. The quandary is, how do you protect this type of information? After all, if the information can kill, counter, etc., the system, and if foreign interests/adversaries have access to the technology and know that we are using it in our system—we have a problem. A possible approach to solve the dilemma associated with this scenario is to protect the fact of such use in a system. Another possibility is to

**It is certainly to a PM's advantage to identify CPI as early as possible ... given the potentially profound impact that failure to protect CPI might have on schedule, cost, and performance.**

protect the way we integrate the technology into the system or the fabrication process.

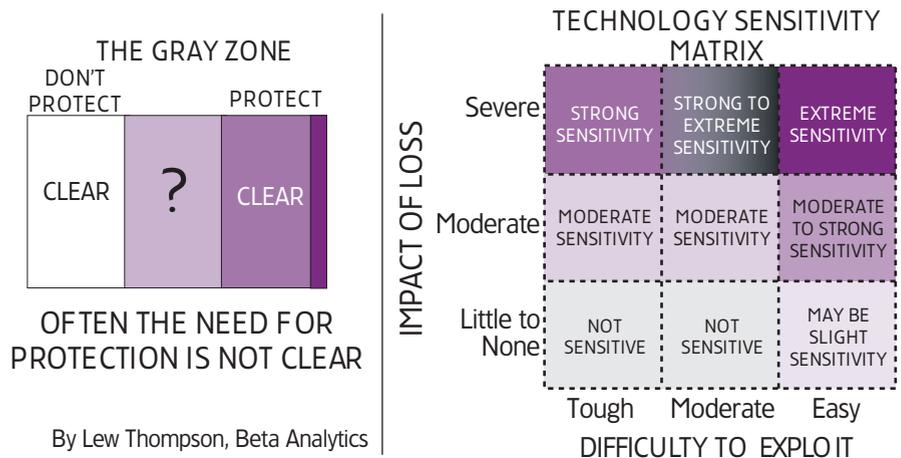
### Prioritizing CPI

As one can infer from the previous discussion, all CPI do not carry equal weighting. The analyses supporting responses to the questions noted previously should permit the PM to list CPI in priority order. Such prioritization is necessary to perform an effective security risk assessment based on an analysis of assets (CPI), threats, and vulnerabilities. By assessing risk and establishing the relative order of risk to our CPI, we can better apply protection resources. Here is one of many possible ways to establish a linguistic scale for determining relative CPI priorities:

**High/Critical (H/C):** Information compromise degrades system combat effectiveness >75 percent or alters significantly program direction to meet mission needs or enables an adversary to copy the system or to skip a generation.

**Medium/Critical (M/C):** Information compromise degrades system combat effectiveness >50 percent or requires additional RDT&E resources to counter the impact of compromise.

**Low/Critical (L/C):** Information compromise would degrade system combat effectiveness >25 percent or would



**FIGURE 2. The Gray Zone: Identifying When Research Requires Protection**

shorten its expected combat-effective life by three or more years.

### Horizontal Protection

According to DoD 5200.39, Security, Intelligence, and Counterintelligence Support to Acquisition Program Protection (10 September 1997), CPI must be protected to the same level in one program as in another (called horizontal protection) lest we have a significant exploitable protection weakness. Concerns with the requirement for interoperability further emphasize the need for across-the-board protection. Thus, a common language is needed to identify associated technologies and processes. It is recommended that the MCTL be used as the data dictionary for CPI identification. The MCTL describes technologies critical to maintaining a U.S. military advantage and provides information on the status of those technologies in foreign countries. Unfortunately, no centralized database has been created to match and/or compare research and technology information associated with more than one scientific and technical activity or acquisition program. The CI/security community has planned this—for a number of years—as a future undertaking and is making strides in establishing data elements.

### In Conclusion

CPI represents the jewels in the crown of our defense system. Identifying these jewels is a critical first step in a security risk management/program protection planning process. It is key to developing a multi-discipline counterintelligence threat assessment to the CPI and, indeed, to determining its vulnerability to foreign interest collection. As is true of the military commander, the PM is responsible for what his/her program does or fails to do. Fielding a system capable of success in battle is the principal criterion for establishing the success of a PM. Our military forces expect and should receive no less.

**Editor's Note:** The author welcomes comments and questions about this article. Pattakos can be reached at [pattakos@mail.betaanalytics.com](mailto:pattakos@mail.betaanalytics.com).

## MCDANIEL APPEARS ON TV, SPEAKS OF THE POWER OF FELLOWSHIP

Judith M. Greig

“A lot of what bothers people—weather, food, clothes, and so on—just isn't significant.” These were the words of Norm McDaniel, associate dean for outreach and performance support, DAU-C/NE, to Dr. Robert H. Schuller, host of the *Hour of Power* TV show, and to viewers nationwide on August 10, 2003. Almost seven years as a prisoner of war during the Viet Nam conflict, suffering torture and deprivation, gave McDaniel a deeper appreciation of what is truly important: having a source of internal strength on which to draw; being able to put one's own situation into the perspective of the cosmic picture; and knowing that one isn't alone, that there is fellowship.

After his introduction to a standing ovation, and before speaking of his own experiences, McDaniel, a much-decorated (see photo caption) retired Air Force colonel with 28 ½ years active duty, recognized his fellow NAM-POWs (Vietnam Prisoners of War) on the 30-year anniversary of their release from captivity under “Operation Homecoming.”

Later he described how he and his fellow POWs had kept each other's spirits up using the “tap code,” a system of communication learned by some of the captive Navy fliers in survival training and soon picked up by the others, including McDaniel, after being imprisoned. The first message he was able to understand was a great source of strength because it was a link with home, McDaniel said. The message identified the prisoner in the next cell as being from North Carolina—McDaniel's own home state.

Tap code communication—indeed, all communication—was covert. If prisoners were discovered, they were punished by torture. Stressing the power of



Norm McDaniel with *Hour of Power* host, Dr. Robert H. Schuller. Among McDaniel's many decorations and awards are the Air Force Silver Star, Defense Superior Service Medal, three Legions of Merit, Purple Heart, Prisoner of War Medal, and Vietnam Service Medal with 14 Bronze Stars.

Photo by Jean Carol (Breeze) McDaniel.

fellowship, McDaniel said, “The enemy knew the strength of prisoners' staying in touch and encouraging each other.”

A strong believer in teamwork and having the right values and view of life, McDaniel encourages everyone he meets to make the most of each day by enjoying the day, helping others, and being thankful for the opportunities and freedoms we have in the United States.

McDaniel's inspiring presentation will be available in text and video formats for a limited time at <<http://www.hourofpower.org>>.

Greig is managing editor of *PM Magazine*, DAU Press, Fort Belvoir, Va.

# Pentagon Renovations Continue

K.L. VANTRAN

**W**ASHINGTON (AFP) — Sept. 10, 2003. Reflective arrows sit at crawl-level, about a foot up from the floor, hugging the lightly colored walls. Sparkling floors lead to escalators, elevators, and well-lit hallways. Renovations, completed nearly a year ago, still give the Pentagon's Wedge 1 a fresh look. Yet, for all its newness, this area will carry the scars of Sept. 11, 2001, forever.

Maj. John Beaulieu, from the Air Force history office, said he often thinks about that morning, especially when he is near the Pentagon's chapel that honors the victims.

"You can't help but think about it," he said. "There are photos of people who worked here and of children from the plane. It's a sober [reminder] of what happened."

Beaulieu and some co-workers were watching the horrific events unfold in New York City on a small television in their office when they felt the building shake and heard the alarms sound.

"It was like being on the side of a road when a tractor-trailer goes by," he said. "We didn't know what had happened. At first, we thought it was a bomb. We just didn't make a connection [to what had happened in New York]."

The major said it was not until later, when he ventured outside and the acrid smoke filled his lungs, that he realized how tragic the story was.

"There was black soot everywhere, and you could smell the burned wreckage," he said.

Beaulieu's office sits across the courtyard from the impact area and was in line



After the Sept. 11 attack on the Pentagon, modifications were made to the existing renovation project. The addition of half corridors between rings of the Pentagon will provide more escape routes in case of an emergency. The glass causeways can withstand hurricane-force winds.

with the path the plane took. He said that he is "very thankful" the Boeing 757 stopped when it did. He credits the stronger construction of the newly renovated Wedge 1 with saving his life.

A \$2.1 billion renovation of the 60-year-old Pentagon began in 1993, and Wedge 1 was nearly completed when American Airlines Flight 77 crashed into the building that fateful morning.

The Pentagon, dedicated in 1943, is laid out in five concentric pentagonal “rings,” the “E” being the outermost and “A” the innermost. The plane hit the renovated wedge as well as an adjoining section before stopping at “B” ring.

Renovations that included structural improvements such as blast-resistant windows and steel framing saved many lives, according to Brett Eaton, communications team leader for the Pentagon’s renovation program.

The renovated area had a new sprinkler system that Eaton also credits with saving lives. The fire in Wedge 1 burned out in a matter of hours, while Wedge 2, which had no sprinklers, burned for more than two days.

Work began on Wedge 1 in 1998, and the final touchups were being done, he said.

“We were five days away from completion,” he said. “After 9-11, we basically had to start all over again.”

What just days before had been a routine renovation became known as the Phoenix Project. Construction crews worked tirelessly to rebuild Wedge 1 by Sept. 11, 2002. In February, the last group of employees returned to work in this area. In July, part of Wedge 2 was finished, and employees have returned to offices there as well.

“Before 9-11, I think [workers] were proud to be part of the Pentagon Renovation,” said Eaton. “After 9-11, it took on a whole new meaning—to make America’s military headquarters safe.”

After Sept. 11, Eaton said, there was a need to modify ongoing construction. Additions include reflective arrows on walls and doors that can help people reach exits.

“There was oily, thick smoke, and people couldn’t see [in the aftermath of the attack],” said Eaton. “The brightly-colored exit signs (above the doors) might as well have been a mile away.”

Boxes containing emergency escape masks are now available in the renovated hallways.

Another addition is the creation of “half corridors.” The glass causeways connect Pentagon rings, and can withstand hurricane-force winds. Renovated areas also contain backup water pipes to help ensure sprinkler systems will operate in the event of an emergency.

Today work continues, although the pace is not quite as fervent as during the Phoenix Project.

Construction workers are rebuilding the second phase of Wedge 2. As this near completion, work will begin sequentially on Wedges 3, 4 and 5. Each area will be demolished, taken down to bare

bones, said Eaton. Work includes removal of hazardous materials, replacement of building systems, addition of elevators and escalators, and installation of new security and telecommunications systems.

In an effort to get life-saving measures in place as soon as possible, the remaining renovation has an aggressive schedule, with a completion projected in 2010. The installation of “smart walls” about every 20 feet for phone and data lines will save some time, Eaton said.

“We have the same goal—to be on cost, on schedule,” said Eaton. “It’s not quite the same urgency [as with Phoenix] but it’s an aggressive schedule. We’ll do what we need to and overcome challenges as we meet them.”

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# ICAF Industry Fellows Program

## Building a Better Relationship between Government and the Private Sector

Each year, the National Defense University can accept up to 10 non-government civilian students into the ICAF student body through the Industry Fellows Program. These students add an extremely valuable element to the Industrial College of the Armed Forces (ICAF) student body. Their business experiences and perspectives enhance the learning experience for all students, and the relationships established during the academic year pave the way for greater understanding between industry and the Department of Defense.

### American Industry Representation at ICAF

The industry fellows complete the full executive-level course of study at ICAF and graduate with a master of science degree in national resource strategy. ICAF's industry fellow graduates include personnel from the following companies:

- DaimlerChrysler Aerospace
- European Aeronautic Defense and Space Company (EADS)
- General Dynamics
- General Motors Corporation
- GTE Government Systems
- Hughes Aircraft Company
- KPMG
- Lockheed Martin
- McDonnell Douglas
- Raytheon
- Sikorsky Aircraft
- TRW
- Boeing

Feedback from these graduates and their sponsoring companies confirms that all involved have found the educational experience immensely valuable. Indeed, many ICAF Industry Fellow graduates, like their U.S. military, U.S. government, and International Fellow classmates,



**ICAF strongly holds the view that the Industry Fellows program serves to build a better relationship between government and the private sector, a relationship so critical to our future national security needs.**

have risen to senior executive positions with their firms.

The ICAF student body of senior military officers, federal government civilians, and international fellows from 20 nations has extensive experience in defense operations, acquisition, program management, contracting, logistics, supply chain management, and other related areas. During the year, our military and government students explore with our private sector students a broad range of issues that are common in the defense industry. They are led in this endeavor by an outstanding faculty. ICAF

maintains a faculty/student ratio of one-to-three—unprecedented in postgraduate education. Personal contacts established at ICAF have helped foster long-term friendships that are mutually beneficial to industry, government and international agencies, and the military.

### 20-Seminar Curriculum

The ICAF class of approximately 300 students is divided into 20 seminars, with 15 military and civilian students in each seminar. The curriculum includes studies in leadership, economics, acquisition, strategic planning, and ethics. During the spring semester, each seminar will study and analyze one of the following industries:

- agribusiness
- aircraft
- advanced manufacturing
- biotechnology
- construction
- education
- electronics
- energy
- environment
- financial services
- health care
- information systems
- land combat systems
- weapons
- news media
- shipbuilding
- space
- strategic materials
- strategic supply
- transportation

### Merit Selection Process

The attendance of private sector students at ICAF enhances both military and civilian students' understanding of the private sector as well as its clear linkage and relationship to the national security process. Admission of private sector students is limited to 10 students per academic year and based on a merit

selection process. Their presence offers a greater divergence of thought and a wider spectrum of valuable experience and dialogue. In turn, the college program expands and enhances the private sector students' knowledge of national security issues and sharpens their analytical skills. We strongly hold the view that this program serves to build a better relationship between government and the private sector, a relationship so critical to our future national security needs.

Tuition cost is \$56,000 for the academic year. This cost includes extensive domestic and international travel (totaling approximately 30 days), primarily during spring semester. Travel supports the Industry Study program and forges relationships with private industry.

Private sector industry candidates must:

- Be nominated by corporate/division vice president/equivalent, or higher
- Submit a nomination package that adequately addresses the nominee's leadership potential and reflects his or her

position in a comprehensive corporate leadership development program

- Be from an industry or service segment that is relevant and pertinent to ICAF's mission of developing strategic leaders for resource management as it affects U.S. national security strategy
- Possess a bachelor's degree from an accredited college/university
- Possess a Secret security clearance
- Be available/cleared for worldwide travel in conjunction with the ICAF curriculum

#### **Application Review Process**

- Nomination Packages will be reviewed by the dean of students and the director of the Industry Fellows Program
- The ICAF dean of students has the final decision authority. The final selection of students will be based on the review process, which considers Officer Professional Military Education Program (OPMEP) guidance; and selections will be made on a "most qualified" basis per the criteria previously described.
- Selected applicants will be notified immediately as part of a rolling ad-

missions process until the industry fellow quota has been filled for the coming academic year.

- Qualified applicants not selected for the coming academic year will be offered "alternate" status on the same "most qualified" basis
- Qualified applicants not selected for the coming academic year will be encouraged to reapply for the following year, although no guarantees can be made regarding subsequent admission.

**Editor's Note:** Air Force Col. Mike Falvey, associate dean of faculty, and retired Navy Capt. Phil Kasky, dean of students, are available to discuss the program in greater detail with you or your representative. Please contact them at (202) 685-4758/77 if you have any questions regarding this program.

**The National Defense University  
Industrial College of the Armed  
Forces is located in Building 59,  
408 4<sup>th</sup> Avenue, Fort McNair,  
Washington, D.C. 20319-5062.**

## **David Packard Award Submissions for 2004**

**T**he office of the director, Defense Procurement and Acquisition Policy, is in the process of reviewing the time table for submissions of the David Packard Award nominations for 2004. They are working to develop a time table that will coincide with, and allow presentations of, these awards at the annual Program Executive Officers/Systems Command (PEO/SYSCOM) Commanders' Conference. The fall conference is currently scheduled for Dec. 3-5, 2003, at Scott Hall, Fort Belvoir,

Va. Once again, it will be hosted by the Defense Acquisition University.

At this time, they are not accepting submissions but will announce the due date for applications in the near future. The formal announcement requesting submissions will be provided to the Service Acquisition Executives and also placed on the Defense Procurement and Acquisition Policy Web site at:

**[HTTP://WWW.ACQ.OSD.MIL/DPAP/](http://www.acq.osd.mil/dpap/)**

# Heroics, Process, and Program Management

## Superheroes In The Organization

CAPT. DANIEL WARD, USAF • CAPT. CHRISTOPHER QUAID, USAF

In Terry Gilliam's hilarious but underrated 1989 film *The Adventures of Baron Munchausen*, an army officer is brought before his commanding general, in the middle of a pitched battle, for what appears to be a promotion or reward. The general's assistant tells a tale of the officer's battlefield heroics, of his courage under fire, and his willingness to accept personal risk to secure his unit's objectives. When the story has been told, the general instructs his assistant to take the heroic officer out back and shoot him because such extraordinary behavior "damages the morale of ordinary soldiers."

The scene came to mind at a recent meeting. A dozen people were discussing a process improvement activity, and one of the group's explicit assumptions was that due to a lack of well-documented processes, most of the things that get done are the result of "heroic efforts." This was considered unfortunate and undesirable. In fact, a Power-Point chart was displayed that included the line "Getting things done by heroic efforts without sufficient resources is Level 1 behavior." Our objective was to get to Level 2, where things apparently get done by people who always have sufficient resources and never resort to heroism. This disparaging of heroics and preference for procedural homogeneity is metaphorically and morally equivalent to shooting the hero.

Few would argue that repeatable, well-documented, robust processes have

value. It is important to learn from experiences and avoid reinventing the wheel. But as Robert Townsend observed in *Further Up The Organization*, it is better to have champions working for (and with) you than zombies. If most of the accomplishments within an organization are the result of heroic effort, could it be there are simply a lot of heroes in that organization? Similarly, if every activity is the result of following an established procedure, is that not the definition of a mindless, inhuman, zombie-filled bureaucracy? Where's the innovation? Where's the life?

The truth is, getting things done through heroic efforts without sufficient resources is admirable, and we mere mortals need to be heroes and heroines for the sake of our organizations as well as for ourselves.

### The Case for Heroes

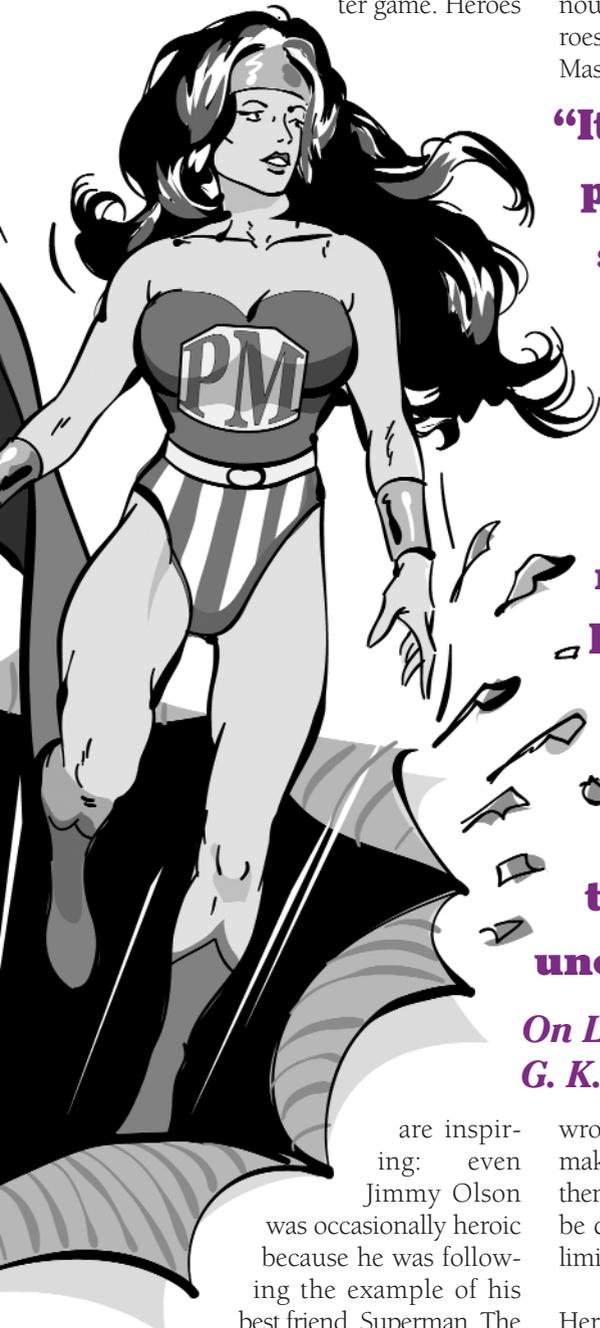
Why are heroes—and from here on, we use the word to embrace heroes and heroines—necessary? To point back to



*Ward is the chief of Intelligence Systems Integration Engineering for the Horizontal Integration Branch, National Imagery and Mapping Agency (NIMA), in Reston, Va. He is Level-III certified in SPRDE and Level-I certified in PM and T&E. Quaid is the chief of Ops & Intel Systems Integration for the Horizontal Integration branch of NIMA's InnoVision Directorate. He is a Level-II certified Contracting Officer's Technical Representative. Neither Captain wears a red cape.*

the meeting that sparked this idea, heroes are necessary precisely *because* sometimes there are not sufficient resources (for whatever reason), and the only way anything will get done is if a hero comes along. Heroes can save the day. Would we really be better off without them?

Acts of heroic behavior are infectious. They inspire groups, raise the benchmark on performance, and drive individuals to be better people or play a better game. Heroes



are inspiring: even Jimmy Olson was occasionally heroic because he was following the example of his best friend, Superman. The same thing happens in the real world, even when the inspirational hero isn't

wearing a red cape. In the trenches in World War I, a Marine famously asked, "Do you want to live forever?" The catchphrase inspired the American Forces to sweep rapidly through the fields of battle, pushing the front back toward Germany and driving the war to its conclusion.

In addition to their value in times of crisis, we also need heroes when everything is going well, when all activities and results are predictable, homogeneous, and dull. In such situations, heroes often uncover villains in disguise. Mason Cooley summed it up when he

**"It is the great peril of our society that all its mechanisms may grow more fixed while its spirit grows more fickle. ... Let us pay a little more attention to ... [the] possibilities of the heroic and unexpected."**

***On Lying In Bed*  
G. K. Chesterton**

wrote "heroes are born to be troublemakers." They shake things up and set them right, showing the world what can be done if we are willing to push the limits and explore possibilities.

Heroes bring truth to an organization, and in the words of a well-known hero, "the truth will set you free."

It comes down to this: heroes are necessary for the life, vitality, and continued success of any organization. If heroism is routinely disparaged, or—worse yet—if heroes are routinely taken out back and shot by their supervisors, there is little reason to believe the organization will survive.

### **Believe It Or Not—The Opposition**

In the "tragic but true" category, there are people who reject the idea of heroics as admirable. What are their objections?

#### **NUMBER ONE:**

##### **HEROES ARE UNPREDICTABLE.**

Since they don't follow a formally established process, it's difficult to know for sure if a hero will indeed save the day. Such uncertainty can be unnerving to the unimaginative or those without faith, and so they seek refuge and comfort in the so-called certainties provided by processes.

The response to this objection couldn't be simpler: baloney! What is more consistent than (insert hero name here) saving the day? Heroes may not come with a guarantee—but neither does a process. Even occasional heroics are frequently a sign of more to come. It's important to recognize that while heroes may not be around every time we want them, they do tend to show up—in the spirit of just-in-time logistics—right when we *really* need one.

#### **NUMBER TWO:**

##### **HEROES ARE ONE-DEEP.**

They take vacations, occasionally get sick, get transferred, get dead, or are otherwise unavailable at critical times. How can an organization count on heroes if they aren't around all the time? This objection is based on the self-fulfilling belief that heroes are rare. Indeed, if Baron Munchausen's stories are true (and they all are, I'm told), then the shortage of heroes may be caused more by the way we treat them than by the inherent nature of heroics. We need organizations that foster not discourage heroes. There are plenty of models to follow: the X-Men, The Justice League

of America, and the United States Marine Corps, to name just a few. What these organizations, fictional and real, do well is create environments where heroic efforts are expected as a matter of course from all their members.

#### NUMBER THREE:

##### HEROES HAVE FEET OF CLAY.

This objection, unlike the others, has some truth, and there's no getting around it. Even in the comics, superheroes have limitations: Superman has to avoid kryptonite; Wonder Woman is nothing without her golden belt; Green Lantern can't deal with the color yellow; Ironman worries about rust.

Similarly, real life heroes have real life limitations, and our heroes will inevitably let us down at some point. This doesn't negate the good they have done, nor does it necessarily prevent their future feats of strength. But whether on the comics page or in the conference room, we ought to take a clear-eyed look at our heroes and understand that underneath the mask they are human too. A similarly clear-eyed look at ourselves just might uncover a caped crusader lurking beneath our ordinary selves, waiting to don a mask and be revealed.

#### Heroism and the Program Manager

Program managers (like other human beings) have a responsibility to recognize, reward, encourage, and nurture the heroic tendencies in themselves and the people around them. Tom Peters argues this point loudly and often as he describes the War for Talent (and its corollary, the War For Attitude). It turns out people really *are* the most important component of any organization, heroic people in particular.

Much of the PM's responsibility involves forecasting cost, schedule, and performance metrics. Such fortune telling is an inexact science at best, and wise PMs learn to prepare for the unexpected. An excellent way for PMs to get ready to respond to negative surprises—be they cost overruns, super-villains, or test failures—is to make sure there's a hero or two on the team. At the very least, a PM

**PMs ought to regard heroes as their weapons of choice in a chaotic world.**

**The unpredictable variables, problems, and challenges that plague the cost, schedule, and performance of programs are exactly what the hero is on alert for.**

needs a Bat Signal or some other mechanism to call in heroic support when it's needed.

PMs ought to regard heroes as their weapons of choice in a chaotic world. The unpredictable variables, problems, and challenges that plague the cost, schedule, and performance of programs are exactly what the hero is on alert for. This type of chaos is candy for heroes, who are often themselves "unknown variables" in a positive sense and can deftly match external chaos with their own internal flexibility and unpredictability. A PM is more easily able to counteract unforeseen, unpredictable problem variables with an unforeseen, unpredictable hero on hand.

PMs with a Machiavellian streak will appreciate the fact that heroes tend to catch bullets. They can act as a human shield and help PMs identify both pitfalls and goldmines. A hero's services allow for

"PM preservation," as the hero navigates a minefield or engages in a velocity contest with a speeding bullet. What our Machiavellian PM may not appreciate is that heroes don't always survive these interactions. A kinder, gentler, wiser PM would do well to protect the heroes, to keep in mind that they aren't all bullet-proof, and to resist the urge to shoot them down even if their extraordinary deeds do make "ordinary soldiers" feel bad.

#### Chinese Proverb: Heroes Create Circumstances; Circumstances Create Heroes

From an organizational standpoint, heroics can be a sign of a robust organization or a sign of a disorganized mess. In either case, heroes are vital and heroics are good. Repeatable processes are important and useful, but heroes are essential and irreplaceable, if for no other reason than that things occasionally go wrong in unanticipated ways. A person with the ability to respond quickly and fix these unexpected problems richly deserves the title "hero."

Heroes do amazing things. They are carriers of truth and paragons of excellence. But as Baron Munchausen showed, they are also vulnerable to the vagaries of human jealousy and small-mindedness. Successful PMs will recognize the value of heroism and nurture such tendencies in the people around them. If we are to be good stewards of the blood and treasure entrusted to us by this country's taxpayers and warfighters, we need to recognize, protect, and encourage the heroes in our midst.

**Editor's Note:** The authors welcome comments and questions. Quaid can be reached at [QuaidC@nima.mil](mailto:QuaidC@nima.mil) and Ward at [WardD@nima.mil](mailto:WardD@nima.mil).

*Readers who are interested in learning more about Baron Munchausen's exploits can access the full text of Rudolph Erich Raspe's The Travels and Surprising Adventures of Baron Munchausen at <<http://www.rickwalton.com/authtale/munch.htm>>.*

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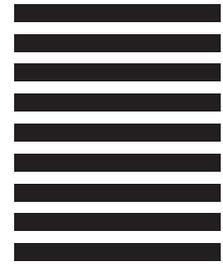
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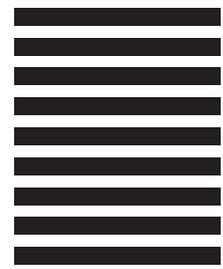
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# Measuring Project Management Maturity

## A Comparison Sampling of Project Managers in Huntsville, Ala.

MARK HARRISON • MARK SWEENEY • LATOYA TAYLOR • ANITA WOOD

In *Strategic Planning for Project Management Using a Project Management Maturity Model* (John Wiley & Sons, Inc., 2001), Harold Kerzner identifies five levels for achieving excellence in project management (PM). They are depicted graphically opposite.

**Level 1: Common Language** is the basic knowledge of PM and the terminology used.

**Level 2: Common Processes** defined and developed are applicable and repeatable.

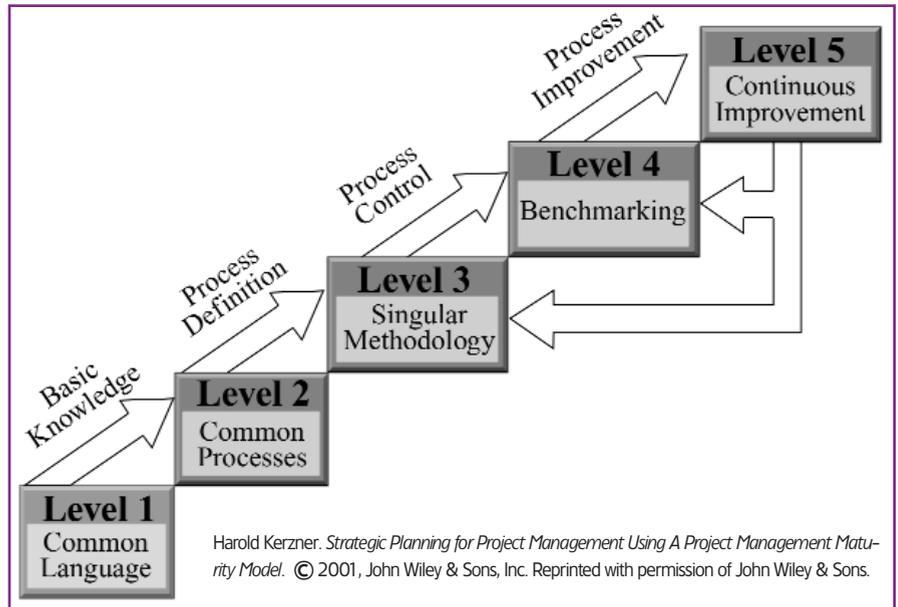
**Level 3: Singular Methodology** is the synergistic effect of combining all corporate methodologies.

**Level 4: Benchmarking** process improvement is required to maintain a competitive advantage.

**Level 5: Continuous Improvement** evaluates the enhancement to PM from each improvement.

Kerzner developed the PM maturity roadmap by studying project management efforts and lessons learned in hundreds of organizations. In his project management maturity model (PMMM), certain levels can and do overlap, but each level must be completed before moving up to the next level.

Kerzner describes maturity in PM as the development of systems and processes that are repetitive in nature and provide a high probability that each project will be a success. After Level 3 is achieved, Levels 3, 4, and 5 form a continuous,



### Project Management Maturity Model (PMMM): Five Levels of Maturity

repetitive cycle through which an organization achieves PM excellence. Management must recognize the need for, benefits of, and applications of PM and must clearly understand that since excellence in PM will affect the organizational outcome, it is essential for survival. Organizations that transform to PM rarely give it up—because it works.

#### The Research Sampling

The workforce in the Huntsville, Alabama area is no stranger to the principles of PM. The city is home to the nation's second largest industrial research park and offers a large and diverse PM population that includes the Army's Red-

stone Arsenal (RSA) and the Marshall Space Flight Center (MSFC) of the National Aeronautics and Space Administration (NASA). For over 50 years, organizations in Huntsville have managed highly technical, multi-million dollar programs associated with the Army, NASA, and private industry.

As a Florida Institute of Technology (FIT) graduate-level research project, we applied the PMMM in each of the three sectors and evaluated the data to determine how they measured up to Kerzner's standards, as well as how they compared to each other. To complete the research within the semester, we ex-

*Harrison*, an engineer with Teledyne Browne Engineering, provides technical services to NASA. *Sweeney* is an operations research analyst in the Army Tactical Missiles PEO. *Taylor* works in business development at Teledyne Brown and holds a master's degree in project management. *Wood*, an engineer with Torch Technologies, provides technical services in Army Tactical Missiles PEO and will receive her master's in project management from FIT in December 2003. (The authors were graduate students pursuing master's degrees at Florida Institute of Technology when this study was conducted.)



*It is important to remember that the value of change and improvement is usually acknowledged in retrospect, but while the process is going on, it can often be painful and can wreak temporary havoc on a project's operation.*

amined a limited sampling of PMs from three Army project offices, one NASA project, and one private industry company.

## **Research Results**

### **Level 1— Common Language**

Basic knowledge of the principles of PM is required and consists of eight Level 1 management categories:

- Scope/Integration
- Time
- Cost
- Human Resource
- Procurement
- Quality
- Risk
- Communication

Completion of Level 1 is based on an organization's gaining knowledge of the fundamental principles of PM and its associated terminology. In our research, each sample population experienced difficulty with Kerzner's terminology; however, we provided no further terminology clarification in order to maintain impartiality between groups.

According to Kerzner's standards, a score of 600 out of a possible 800 (80 questions worth 10 points each) indicates completion of Level 1. Scores of less than 600 indicate project-driven pockets of PM knowledge. This was the situation with the groups researched in the Huntsville area. No group met Kerzner's score to complete Level 1, indicating that there are some management categories that do not apply, which affected the overall total score. Another relevant data point is the varying years of PM experience across the sampling. The Army group had the advantage with an average of 18 years of formal PM training and experience.

Receiving a score of greater than or equal to 60 in each of the eight Level 1 categories provides a reasonable knowledge of the basic principles. Scores of less than 60 indicate that these basic principles do not apply directly to the organization. If the score is less than 60, a deficiency exists and training is required.

Data revealed that the Huntsville area groups have project-driven pockets of PM knowledge and that the local PMs' specialty is Scope and Procurement Management, in which all three groups exceeded the norm of 60. Although the groups' total scores fell below 600, they demonstrated maturity in five of the eight categories. Relatively low scores in the Cost and Human Resource categories could be explained by the fact that they may not be part of PM in the research groups. [Editor's Note: Space precludes our printing tables of detailed scores for each level examined. Complete data are available from the authors.]

### Level 2 – Common Processes

The organization moves beyond a basic knowledge by applying PM principles and standardizing its processes and methodologies at Level 2, allowing successes on one project to be repeated on another. Survival in a competitive market is typically the motivating force behind an organization's effort to mature to this level. Kerzner's assessment for Level 2 is divided into five life cycle phases:

- Embryonic—basic recognition of the need for and benefits of PM.
- Executive Management Acceptance—executive support in utilizing PM.
- Line Management Acceptance—line/functional management support in utilizing PM.
- Growth—development of a PM methodology.
- Initial Maturity—development and usage of a cost and schedule control system; ongoing PM education/training program.

This portion of the questionnaire consists of four questions for each life cycle phase. Responses range from "strongly disagree" with a point value of -3, to "strongly agree" with a point value of +3. The points for each phase are summed, and a score of 6 or more indicates maturity in that particular phase.

According to our data, the Army has achieved maturity at each phase of Level 2, and industry indicates near maturity in each phase. The NASA scoring presents an unexplainable anomaly: the

Change can be viewed either positively as offering windows of opportunity leading to growth and success, or negatively as opening doors to obstacles and frustration. The deciding factors are the mindset of management, a flexible operations strategy plan, and a culture that is open to change.

scores show maturity in the Embryonic, Line Management Acceptance, and Initial Maturity phases; however, the scores point toward marginal Executive Management Acceptance and indicate that NASA has not completed the Growth phase. The Growth phase, according to Kerzner, is critical, and its completion is predicated upon the completion of the first three phases. Overall, the scores demonstrate that the groups surveyed are very cognizant of the need for PM and that definite steps have been taken to implement the principles of PM.

In the Huntsville area, there are differing approaches for PM qualification. The Army project managers are considered

PM professionals and have distinct job descriptions and charters (authority for strategic planning). They provide the liaison between the prime contractors and government requirements. The group surveyed for this project consisted entirely of military participants in the Acquisition Corps, which has strict requirements regarding continuous PM education, training, and experience. Our data revealed that all project managers have been formally trained (project-driven pocket). The Army scored high in Level 2 because of the stringent and methodical Acquisition Corps requirements. Conversely, industry provides limited formal education/training specific to PM principles, generally relying on on-the-job training through mentorships and corporate culture.

### Level 3 – Singular Methodology

Singular Methodology marks the commitment of an organization to PM. Dis-jointed processes and methodologies are merged into a single methodology, which can be measured by the following six traits:

- Integrated Processes—multiple possible processes have been combined into one.
- Cultural Support—corporate culture encourages collaborative efforts to promote PM.
- Management Support—each level of management supports the methodology in their roles.
- Informal Project Management—methodology supported by informal means.
- Training and Education—acknowledgement that PM training and education reaps rewards.
- Behavioral Excellence—training for PM to replace line management mentality.

Kerzner designates scores in Level 3 as indicating (in descending order) an organization moving toward or achieving excellence; an organization making progress along the right path with work to be done; an organization recognizing the importance of PM but yet to understand the steps necessary for its implementation.

In Level 3, the Huntsville area group averages again fell short of the PMMM mark of excellence. High scores within each group show the Army moving toward excellence; NASA and industry, while pointed in the right direction, still have a lot of work to do. Lower scores can be attributed, at least in part, to participants' struggle with the terminology presented in the questionnaire. For each group, the highest score was seen in Integrated Processes, clearly indicating successful integration of the PM Level 1 management concepts.

Low scores varied. NASA scored low on Informal PM, possibly as a result of the strict formal processes used in managing their unique programs. For the Army, Management Support was the low score, attributable, perhaps, to the military's three-year rotation cycle within the project office versus the permanence of the civilian division managers (line managers). Industry's low score in Training and Education confirms the Level 2 observations on this topic.

Overall, all three groups seem to grasp the concept of Singular Methodology; nonetheless, each has sub-categories that require improvement.

#### Level 4 – Benchmarking

Benchmarking can be a powerful tool for assessing cycle time, quality, resource allocation, training practices, sales productivity, and other business-related issues. In order for a benchmarking program to succeed, it must evaluate the right metrics, measure those metrics accurately and relevantly, and report the metrics clearly in a timely fashion. This process requires input from experts in the sector to be benchmarked; an independent/confidential third party to collect the data; well-designed data collection instruments; thorough data quality control; and informative, user-friendly reports. Benchmarking for PM can be accomplished through surveys and questionnaires and through attendance at local chapter meetings, conferences, and symposia. Personal contacts often offer the most valued sources of information.

Competitive benchmarking and process benchmarking are the criteria for attaining Level 5, Continuous Improvement. Competitive benchmarking concentrates on deliverables and quantitative critical success factors. Process benchmarking focuses on performance and functionality. In this research study, the focus was on process benchmarking, which can be further broken down into quantitative and qualitative process improvement opportunities.

An organization must meet four key Level 4 requirements in order to advance to Level 5:

- Create an organization dedicated to benchmarking.
- Develop a project management benchmarking process.
- Decide what to benchmark and against whom to benchmark.
- Recognize the benefits of benchmarking.

For the PMMM Level 4, there are 25 benchmarking questions. Kerzner ranks quantitative benchmarking scores as representing excellence; some benchmarking taking place; and lack of commitment to, or lack of understanding of, the process. Our groups' scores showed that some quantitative benchmarking is taking place in Army and industry.

Qualitative process improvements focus on applications and further changes to the corporate culture. Kerzner ranks qualitative benchmarking scores as excellent, marginally acceptable, and not demonstrable of enough emphasis on "soft side" benchmarking within the organization.

NASA and Army scores, on average, indicated low emphasis on qualitative benchmarking. However, it is clear—because they elected not to complete this portion of the survey—that some of the participants didn't fully understand the concept and application of benchmarking in their respective organizations. (Benchmarking process examples are such things as having regu-

larly scheduled staff meetings and periodic budget reviews. While each group probably holds these types of meetings on a regular basis, they apparently failed to recognize them as benchmarking processes.)

#### Level 5 – Continuous Improvement

At Level 5, the organization evaluates and analyzes all the lessons learned from the previous levels and implements required changes to improve PM processes. Achieving excellence in PM is an ongoing process and implies that Levels 3, 4, and 5 are repeated over and over again. It also requires that the corporate culture remain flexible and able to adapt to continual improvements.

In this research, there were 16 subjective Level 5 questions concerning the maturity of the organization based upon continuous improvement changes over the past 12 months only. Kerzner's scoring hierarchy indicates organizations with a commitment to benchmarking and continuous improvements; organizations with some forms of continuous improvement in place; and organizations exhibiting strong resistance to change or simply a lack of senior management support for continuous improvement.

The range values of the research groups continue to support project-driven pockets with full support from senior management. Fifty-four percent of the individuals across all three groups felt that some form of continuous improvement had taken place within their respective organizations during the past 12 months. However, on a group basis, Army scores showed that continuous improvements are in place, but NASA and Industry results indicated that there is significant resistance to change.

While no group achieved Kerzner's PMMM scores on every level, it is the consensus of this research team that PM principles are widely applied in the Huntsville area. Combining our peripheral knowledge of each organiza-

tional group's operations with data from the questionnaires, the NASA and Industry groups appear to be Level 3 organizations, and the Army can be seen as completing Level 4. All three groups show evidence of Level 4 activity in parts of the organizations at least, and the Army shows efforts in Level 5.

It is likely, however, that the level of maturity is higher than indicated by this sampling. The length of the semester (14 weeks) necessarily limited the sample size of each group and the scope of the project. While assertions can be made from the data collected, a true portrait of PM maturity within these groups would require further research and analysis over a larger and more varied sampling (different groups from within NASA, more Army project offices, and a wider industry range).

### **PMMM and the Acquisition Workforce**

The acquisition community is currently undergoing significant change (evidenced, for example, by the rewriting of the Department of Defense guidance and the conversion to performance-based acquisitions). It is important to remember that the value of change and improvement is usually acknowledged in retrospect, but while the process is going on, it can often be painful and can wreak temporary havoc on a project's operation. Change can be viewed either positively as offering windows of opportunity leading to growth and success, or negatively as opening doors to obstacles and frustration. The deciding factors are the mindset of management, a flexible operations strategy plan, and a culture that is open to change. The bottom line is that taking the positive

view—embracing ongoing improvement and change—is the key to providing the highest level of support to the warfighter.

*The FIT research team would like to recognize the many participants who spent their personal time to complete the lengthy PMMM questionnaire (the "test," as they affectionately referred to it). The research would not have been possible without their support and timely responses.*

**Editor's Note:** The authors welcome comments and questions on this research project. Harrison can be reached at [markharrison@yahoo.com](mailto:markharrison@yahoo.com), Sweeney at [mark.sweeney@msl.army.mil](mailto:mark.sweeney@msl.army.mil), Taylor at [latoya.taylor@tbe.com](mailto:latoya.taylor@tbe.com), and Wood at [anita.wood@torchtechnologies.com](mailto:anita.wood@torchtechnologies.com).

## **PM Magazine Introducing Regular "Lessons Learned" Feature in 2004**

*How would you like to  
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## **KERN DESCRIBES BEHIND-THE-SCENES LOGISTICS SUPPORT OF CONFLICTS IN AFGHANISTAN & IRAQ**

*Operation Enduring Freedom  
Operation Iraqi Freedom*

**A**rmy Gen. Paul J. Kern, commanding general of the Army Materiel Command (AMC), recently presented a detailed description of the behind-the-scenes logistics effort that took place in the weeks and months leading up to Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom. This is a story, according to Kern, "that's not too well known or too well publicized, but it is a fascinating story of what's happened over the last two years. It's not over yet. The workload surrounding this story is still increasing as opposed to decreasing."



His presentation on "resetting the Army," captured at a Pentagon media roundtable discussion on Aug. 22, can be downloaded from the Army Public Affairs Web site at <http://www4.army.mil/ocpa/press/index.php>. Click on "Media Roundtable Discussion on Resetting the Army," at the bottom of the screen.

AIR FORCE PRINT NEWS  
(AUG. 8, 2003)

**FIRST PRODUCTION GLOBAL HAWK ROLLS OUT**

Sue Baker

**W**RIGHT-PATTERSON AIR FORCE BASE, Ohio (AFPN)—The first production RQ-4A Global Hawk unmanned aerial vehicle rolled out in ceremonies held Aug. 1 at prime contractor Northrop Grumman's Antelope Valley Manufacturing Center at Air Force Plant 42 in Palmdale, Calif.

"The fact that we have hardware now rolling out of the factory a little over two years after the start of the formal acquisition program shows that we are realizing the vision of evolutionary acquisition," said Col. Scott Coale, director of the Global Hawk program office at the Aeronautical Systems Center. "It's proof that we are shortening the normal 10- to 15-year acquisition cycle, and fielding this system that much sooner to support warfighter needs."

The Air Force plans to purchase 51 Global Hawks.

Global Hawk is a high-altitude, long-endurance system that provides battlefield commanders near-real-time intelligence, surveillance and reconnaissance information in day or night and all weather conditions. It operates autonomously at altitudes up to 65,000 feet for more than 36 hours. The Global Hawk has a range of 13,500 nautical miles and can image an area the size of Illinois in just 24 hours.

The first production Global Hawk is the eighth air vehicle built. Northrop Grumman produced the first seven under the advanced concept technology demonstration phase of the program.

The new production vehicle will complete a final series of system tests before its first flight later this month. Following a flight test program at Edwards Air Force Base, Calif., it will be delivered to the Air Force's 9<sup>th</sup> Reconnaissance Wing at Beale AFB, Calif.



The first production RQ-4A Global Hawk unmanned aerial vehicle rolled out in ceremonies held Aug. 1 at prime contractor Northrop Grumman's Antelope Valley Manufacturing Center at Air Force Plant 42 in Palmdale, Calif.

Photo courtesy Aeronautical Systems Center

DEPARTMENT OF DEFENSE NEWS RELEASE  
(AUGUST 15, 2003)

**DOD RELEASES SELECTED ACQUISITION REPORTS**

The Department of Defense has released details on major defense acquisition program cost and schedule changes since the December 2002 reporting period. This information is based on the Selected Acquisition Reports (SARs) submitted to the Congress for the June 30, 2003, reporting period.

SARs summarize the latest estimates of cost, schedule, and technical status. These reports are prepared annually in conjunction with the president's budget. Subsequent quarterly exception reports are required only for those programs experiencing unit cost increases of at least 15 percent or schedule delays of at least six months. Quarterly SARs are also submitted for initial reports, final reports, and for programs that are rebaselined at major milestone decisions.

The total program cost estimates provided in the SARs include research and development, procurement, military construction, and acquisition-related operation and maintenance (except for pre-Milestone B programs, which are limited to development costs pursuant to 10 USC §2432). Total program costs reflect actual costs to date as well as future anticipated costs. All estimates include anticipated inflation allowances.

The current estimate of program acquisition costs for programs covered by SARs for the prior reporting period (December 2002) was \$1,129,668.4 million. After adding the costs for new programs that were reported in the December 2002 reporting period and subtracting the costs for final reports that were reported in the December 2002 reporting period, the adjusted current estimate of program acquisition costs was \$1,135,595.0 million. There was a net cost increase of \$111.5 million (+0.01 percent) during the current reporting period (June 2003). This increase was due primarily to the addition of a unitary variant for Guided Multiple Launch Rocket System (GMLRS) and increased weapon support costs for the High Mobility Artillery Rocket System (HIMARS) conversion from organic to life cycle contractor support. Details of the changes for all 10 programs are shown at the top of the opposite column.

For the June 2003 reporting period, there were 10 quarterly exception SARs submitted. The reports for Land Warrior, CVN 21, and Wideband Gapfiller Satellites reported schedule delays of six months or more. Initial reports were submitted for Future Combat Systems (FCS), AGM-88E Advanced Anti-Radiation Guided Missile, Advanced SEAL Delivery System (ASDS), and E-2 Advanced Hawkeye. Also,

	<b>Current Estimate (\$ in Millions)</b>
<b>December 2002 (72 programs)</b> . . . . .	<b>\$1,129,668.4</b>
Plus five new programs (Excalibur, GCSS Army, HIMARS, Land Warrior, and SSGN)	+17,543.9
Less final reports (ATACMS-BAT, AV-8B Remanufacture, JSIMS, SMART-T, the CVN-76 portion of the CVN68 program, and the DSUP portion of the B-1B CMUP program)	-11,617.3
<b>December 2002 Adjusted (73 programs)</b> . . . . .	<b>\$1,135,595.0</b>
<b>Changes Since Last Report:</b>	
Economic . . . . .	\$ 0.0
Quantity . . . . .	0.0
Schedule . . . . .	+0.0
Engineering . . . . .	+315.9
Estimating . . . . .	-276.9
Other . . . . .	0.0
Support . . . . .	+72.5
Net Cost Change . . . . .	\$+111.5
<b>June 2003 (73 programs)</b> . . . . .	<b>\$1,135,706.5</b>

GMLRS, HIMARS, and B-1B Conventional Mission Upgrade Program (CMUP) rebaselined their SAR from a development estimate to a production estimate to reflect approval of recent production decisions.

**Army**

**Future Combat Systems (FCS)**—An initial SAR was submitted for FCS following approval of System Development and Demonstration (Milestone B) in May 2003.

**Guided Multiple Launch Rocket System (GMLRS)**—The SAR was submitted to rebaseline the program from a development estimate to a production estimate following approval of Low Rate Initial Production (Milestone C) in March 2003. Program costs increased \$21.2 million (+0.2 percent) from \$11,831.9 million to \$11,853.1 million, due primarily to the addition of a Unitary variant (+\$315.9 million). This increase was partially offset by a reduced estimate based on a revised Army Cost Position (-\$280.8 million).

**High Mobility Artillery Rocket System (HIMARS)**—The SAR was submitted to rebaseline the program from a development estimate to a production estimate following approval of Low Rate Initial Production (Milestone C) in March 2003. Program costs increased \$78.5 million (+1.8 percent) from \$4,312.9 million to \$4,391.4 million, due primarily to increased weapon support costs for the conversion from organic to life cycle contractor support.

**Land Warrior**—The SAR was submitted to report a schedule slip of 24 months (from December 2003 to December 2005) in Low Rate Initial Production (Milestone C). This delay was due to a program restructure that allows additional time for development, integration, and testing for the Land Warrior-Stryker Interoperable system. There were no cost changes reported.

**Navy**

**AGM-88E Advanced Anti-Radiation Guided Missile**—An initial SAR was submitted for AGM-88E following approval of System Development and Demonstration (Milestone B) in June 2003.

**Advanced SEAL Delivery System (ASDS)**—An initial SAR was submitted for ASDS following designation as a Major Defense Acquisition Program (MDAP) in April 2003.

**CVN 21**—The SAR was submitted to report schedule slips of more than six months to the Early Operational Assessment (EOA) (from June 2003 to March 2004) and to Milestone II (from June 2003 to April 2004). These delays resulted from the restructure of the CVN 21 program (previously CVNX) that pulled forward technologies originally planned for CVNX 2. EOA and Milestone II were delayed to allow adequate time to update the Operational Requirements Document (ORD) and the Independent Cost Estimate (ICE). Other program milestones such as construction contract award in FY 2007 and ship delivery in FY 2014 remain unchanged.

**E-2 Advanced Hawkeye**—An initial SAR was submitted for E-2 Advanced Hawkeye following approval of System Development and Demonstration (Milestone B) in June 2003.

**Air Force**

**B-1B Conventional Mission Upgrade Program (CMUP)**—The SAR was submitted to rebaseline the program from a development estimate to a production estimate following approval of Full Rate Production for the Computer Upgrade in April 2003. Program costs increased \$11.8 million (+1.8 percent) from \$663.6 million to \$675.4 million, due primarily to a revision in the Program Office estimate.

**Wideband Gapfiller Satellites**—The SAR was submitted to report schedule slips to the Initial Operational Capability, from June 2005 to April 2006, and to Full Operational Capability, from June 2006 to February 2007, due primarily to manufacturing difficulties by the contractor. There were no cost changes reported.

**New SARs**

(As of June 30, 2003)

The Department of Defense has submitted initial SARs for Future Combat Systems (FCS), AGM-88E Advanced Anti-Radiation Guided Missile, Advanced SEAL Delivery System (ASDS), and E-2 Advanced Hawkeye. These reports do not represent cost growth. Baselines established on these programs will be the point from which future changes will be measured. The current cost estimates are provided below:

<b>Program</b>	<b>Current Estimate (\$ in Millions)</b>
Future Combat Systems (FCS) . . . . .	\$92,200.0
AGM-88E Advanced Anti-Radiation Guided Missile . . . . .	1,510.9
Advanced SEAL Delivery System . . . . . (ASDS)	1,969.3
E-2 Advanced Hawkeye . . . . .	14,979.6
<b>Total</b>	<b>\$ 110,659.8</b>

DEPARTMENT OF DEFENSE NEWS RELEASE  
(AUG. 14, 2003)

**NAVY ANNOUNCES VIRGINIA CLASS  
SUBMARINE CONTRACT AWARD**

**G**eneral Dynamics Electric Boat Corp., in partnership with Northrop Grumman's Newport News Shipbuilding, is being awarded a block-buy contract worth up to \$8.7 billion for construction of six Virginia Class submarines. Upon congressional authorization and appropriation, the contract will award one submarine per year from 2003 through 2006 and two submarines in 2007.

Speaking about the agreement, Assistant Secretary of the Navy for Research, Development and Acquisition John J. Young, Jr., said, "The Navy and industry negotiating teams have done an exceptional job." They have produced an affordable agreement that sets a realistic, achievable target price and provides fair profits for our industry.

"The contract represents a step forward for shipbuilding contracts because it provides positive incentives to underrun the target price, ties a portion of the fees to specific performance objectives, and reduces the profitability if the target is exceeded.

"The agreement also allows us to transition to a multi-year contract, should Congress approve that authority. The multi-year agreement is truly unique in providing the flexibility to

adjust the quantity, but allowing that decision to be held until January of 2006, when the outyear budget picture is clear. Multi-year will reduce the overall cost of each submarine compared to annual or block buys. Conversion of this contract to a multi-year is critical to the taxpayer because it will reduce the overall cost of each submarine compared to annual or block buys. Executing the full multi-year can provide savings of up to \$1 billion," added Young.

The terms of the contract allow for the transition to multi-year procurement beginning in 2004. The multi-year would apply to as many as seven submarines to be authorized from 2004 through 2008. Should Congress approve a multi-year procurement strategy, the Navy can unilaterally execute that contract option.

The major difference between the block-buy and the multi-year is that the multi-year includes funding for economic order quantity purchases that would allow the Navy to realize savings by buying submarine components in bulk.

Both the block-buy and multi-year contract conditions provide significant incentives for the contractor to deliver the submarines for less than the target price. Both also include a first-of-its-kind incentive targeted at expanding the submarine industrial base by encouraging the participation of small businesses.

U.S. ARMY NEWS RELEASE  
(AUG. 28, 2003)

**ARMY LSI TEAM COMPLETES IMPORTANT MILESTONE IN ARMY TRANSFORMATION**

**T**oday, the Army's Future Combat System (FCS) Lead Systems Integrator (LSI) team of Boeing and Science Applications International Corporation (SAIC) announced the third and final round of subcontractor selections designed to bring the "best of industry" into the System Development and Demonstration (SDD) phase of the Future Combat System (FCS) program.

"The LSI process is an excellent example of how the Army is transforming itself to meet the security challenges of the 21<sup>st</sup> century," said Claude M. Bolton Jr., Assistant Secretary of the Army for Acquisition, Logistics, and Technology.

"By use of the LSI concept, the Army is able to harness the tremendous energy and capabilities of American industry from the very beginning of the acquisition process. The source selection was designed to be open, fair, and transparent for all competitors. The Army congratulates the LSI on their progress in making FCS a reality. We look forward to our continued partnership with the LSI as we transform our Army," Bolton said.

The selection of the SDD subcontractors represents yet another step forward in realizing the Army Vision of a transformed Army that is more responsive, deployable, survivable, agile, versatile, lethal, and sustainable. This will allow the Army to see first, understand first, act first, and finish decisively.

The FCS is a key part of that transformation, a transformation that is fully nested within DoD efforts. It is a "system of systems" of 18 manned and unmanned ground vehicles and unmanned air vehicles plus the integrated network, plus the most important element—the soldier—that is currently being developed as the follow-on to our current heavy armored and mechanized forces.

For more information please contact Maj. Gary Tallman at 703-697-4314 or [gary.tallman@hqda.army.mil](mailto:gary.tallman@hqda.army.mil).

DEPARTMENT OF DEFENSE NEWS RELEASE  
(SEPT. 4, 2003)

**DOD SELECTS HISPANIC SERVING INSTITUTIONS FOR GRANTS**

**T**he Department of Defense announced today plans to award instrumentation and research grants totaling \$4.67 million to 17 Hispanic Serving Institutions (HSIs). These grants will be made under the fiscal 2003 DoD Historically Black Colleges and Universities and Minority Institutions Infrastructure Support Program. The grants will enhance programs and capabilities at these HSIs in scientific disciplines critical to national security and the DoD.

This announcement is the result of merit competition for infrastructure support funding conducted for the Office of Defense Research and Engineering by the Army Research Office. The fiscal 2003 HSIs program solicitation received 23 proposals in response to a broad agency announcement issued in March 2003. The Army Research Office plans to award 17 equipment grants ranging from \$108,000 to \$400,000 and will have a 12-month performance period.

Awards will be made only after written agreements are reached between the Department and the institutions.

The list of recipients is available on the Web at <http://www.defenselink.mil/news/Sep2003/d20030904hsi.pdf>.

DEPARTMENT OF DEFENSE NEWS RELEASE  
(SEPT. 5, 2003)

**GENERAL OFFICER ASSIGNMENTS**

**A**rmy Chief of Staff Gen. Peter J. Schoomaker announced today the following general officer assignments:

Army Brig. Gen. Jeffrey A. Sorenson, program executive officer, Tactical Missiles, Redstone Arsenal, Ala., to deputy for systems management and horizontal technology integration, Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology), Washington, D.C., with a report date to be determined.

Army Brig. Gen. (promotable) Samuel M. Cannon, assistant deputy for systems management and horizontal technology integration, Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology), Washington, D.C., to program executive officer, Tactical Missiles, Redstone Arsenal, Ala., with a report date to be determined.

DEPARTMENT OF DEFENSE NEWS RELEASE  
(SEPT. 23, 2003)

**GENERAL OFFICER ASSIGNMENT**

Secretary of Defense Donald H. Rumsfeld announced today that the president has nominated Army Maj. Gen. Joseph L. Yakovac Jr., for appointment to the rank of lieutenant general and assignment as military deputy/director, Army Acquisition Corps, Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology), Washington, D.C. Yakovac is currently serving as the program executive officer, Ground Combat Systems, with duty in Washington, D.C.

DEPARTMENT OF DEFENSE NEWS RELEASE  
(SEPT. 25, 2003)

**GENERAL OFFICER ASSIGNMENT**

Army Chief of Staff Gen. Peter J. Schoomaker announced today the assignment of the following general officer: Army Brig. Gen. Roger A. Nadeau, program executive officer, Combat Support/Combat Service Support, Warren, Mich., to program executive officer, Ground Combat Systems, Washington, D.C., with a report date to be determined.

DEPARTMENT OF DEFENSE NEWS RELEASE  
(SEPT. 25, 2003)

**U.S. TRANSPORTATION COMMAND APPOINTED AS DEFENSE DISTRIBUTION PROCESS OWNER**

The Department of Defense announced today the appointment of the Commander, U.S. Transportation Command, as the Distribution Process Owner. In this capacity, U.S. TransCom is tasked with developing efficient and effective distribution solutions to enhance strategic support to worldwide customers.

With this appointment, the DoD will now have one entity to revolutionize this system, working with the services and combatant commanders in synchronizing the distribution of personnel and equipment from factory to foxhole. Des-

ignating a U.S. TransCom process owner to lead strategic distribution is another step in transformation and will ensure the best support for our combatant commanders and troops.

The consolidation of authority under one process owner is aimed at realizing logistics efficiencies:

- Eliminate existing seams between current distribution processes and standardize the policies, vision, and performance goals in DoD's supply chain.
- Drive interoperable information technology solutions and enhance total asset visibility to distribution customers.
- Institutionalize sustainment planning into our contingency processes.
- Streamline distribution accountability under a single combatant commander (provide one single accountable person for the combatant commander to contact for distribution needs).

The Distribution Process Owner will work with the services and combatant commanders, using the best transformational concepts and ideas available, and subsequently drive revolutionary changes.

For more information, contact Navy Capt. Stephen Honda, U.S. TransCom Public Affairs, at (618) 229-4828.

PROGRAM EXECUTIVE OFFICER, ENTERPRISE INFORMATION SYSTEMS (PEO EIS) NEWS RELEASE (OCT. 1, 2003)

**KEVIN CARROLL WELCOMES NEW PEO EIS SYSTEMS**

FORT BELVOIR, Va.—Program Executive Office, Enterprise Information Systems (PEO EIS) acquires new responsibilities on Oct. 1, 2003. PEO EIS will assume responsibility for four new systems and projects. "We're pleased to have these new systems and programs in PEO EIS. With them, we'll continue to provide vital IT support for the warfighter," said Program Executive Officer Kevin Carroll.

The four new projects and systems are the Standard Procurement System (SPS), Reserve Component Automation System (RCAS), Distributive Training Technology Project (DTTP), and Force Management System (FMS).

PEO EIS provides business information systems and IT support to the U.S. Army. The four new systems will help support the PEO EIS mission to provide network-centric knowledge-based business and combat service support systems and technology solutions to assure the Army victory through information dominance. For more information about PEO EIS, please contact Kelly Tapp at (703) 806-3705.

AGILE ACQUISITION—AIR FORCE  
ACQUISITION NEWSLETTER  
(SEPT/OCT 2003)

**SECRETARY OF AIR FORCE & CHIEF OF STAFF  
ANNOUNCE PEO RESTRUCTURING**

**W**ASHINGTON—Air Force officials have announced a major reorganization of the Air Force's acquisition management structure. With an eye toward streamlined decision making, improved speed and credibility, and increased accountability, Air Force Secretary Dr. James Roche and Chief of Staff Gen. John Jumper approved the reorganization of the service's aircraft, weapons and command, control and combat support acquisition programs.

As part of the reorganization the service will:

- Move Program Executive Offices closer to the programs they oversee by dual-hatting the Air Force's three product center commanders as Program Executive Officers. The primary responsibility of the center commanders will be program execution.
- Gather all but two of the Air Force's aircraft programs under a single PEO. Continue to have a separate PEO for the Joint Strike Fighter and create a PEO for the F/A-22 Raptor.
- Bring all non-space Air Force acquisition programs under the new, streamlined PEO structure and eliminate the position of Designated Acquisition Commander at the product and logistics centers.
- Assign a general officer or civilian member of the Senior Executive Service to be the deputy for acquisition execution for each of the three PEOs who also will be serving as product center commanders. A separate flag officer or SES deputy for support will manage the day-to-day operations of the center.

The plan approved by Roche and Jumper maintains the PEO office for the Joint Strike Fighter and the PEO for Services in Washington, along with the new PEO for F/A-22. The PEO for Aircraft (combining the current PEO for Fighter and Bomber Programs and the PEO for Airlift and Trainers) will be the Commander, Aeronautical Systems Center, Wright Patterson Air Force Base, Ohio.

The PEO for Command, Control and Combat Support (C2&CS) will be the Commander, Electronic Systems Center, Hanscom Air Force Base, Mass. The PEO for Weapons will be the Commander, Air Armament Center, Eglin Air Force Base, Fla.

"This realignment clarifies PEO and product center commander responsibilities, removes inherent organizational conflicts, and builds off of Air Force Materiel Command's evolving acquisition enterprise concept fostering greater interaction between programs," the secretary and chief of staff said in their memorandum announcing the changes.

Under the realignment, Dr. Marvin Sambur, Assistant Secretary of the Air Force for Acquisition, remains the Service Acquisition Executive for all non-space programs. PEOs continue to report to him. In their role as center commanders the three product center commanders will continue to report to Gen. Martin, Commander of Air Force Materiel Command. Under Secretary of the Air Force Peter B. Teets has the responsibility for the acquisition of space programs.

When the new organization is fully implemented, AFMC's Air Logistics Center commanders will no longer be Designated Acquisition Commanders. The ALC commanders will remain highly engaged in the acquisition process because of the important maintenance and supply planning needed for support of new systems. The ALCs will remain key players in sustainment planning as new systems are developed and acquired and will retain their traditional and central roles in the sustainment, maintenance, overhaul, and repair of our fielded weapons systems as well as management of the Air Force purchasing and supply chain.

"Our acquisition system—fueled by our great acquisition professionals—has produced the best weapon systems in the world," Sambur said, pointing to successes in the Balkans, Afghanistan, and Iraq. "But, the processes we use to acquire these systems can and must be improved to reduce cycle times and to increase the credibility of our cost, schedule, and performance promises. I'm convinced this new alignment will help us get where we need to go."

Lyles echoed Sambur's sentiments. "It has been more than a decade since the current structure was put in place, and while it's served us well, it simply is not agile enough to meet today's rapidly changing and unpredictable threats," Lyles said. "This new structure will allow us to deliver capabilities more quickly and to look across our acquisition enterprise to ensure that we are making the best use of our resources."

The new structure is expected to be in place in approximately two months. The development of an implementation plan is under way. It will identify any required movement of PEO staff to the product centers and other logistical and organizational issues.

## COURSES

### BCF-209 REVISED IN FISCAL 2004

**B**CF-209, DAU's Selected Acquisition Report (SAR) Course, has been revised for fiscal 2004. Instead of one 5-day classroom course, BCF-209 will be split out to include a Web portion and an in-classroom portion in fiscal 2004. In addition, the course title has been changed to "Acquisition Reporting Course."

- BCF-209A will be two hours of Web course material, delivered via Atlas (DAU Virtual Campus). Designed for students requiring knowledge of acquisition reports and those who prepare and review reports, BCF-209A is a prerequisite for BCF-209B and BCF-209C.
- BCF-209B and 209C are run together at the same time, in the same classroom. Those students who apply for 209B will attend only the first 2 days to learn the Acquisition Program Baseline (APB) and Defense Acquisition Executive Summary (DAES) reports using the Consolidated Acquisition Reporting System (CARS) for Major Acquisition Information Systems (MAIS) programs. The 209B students will leave after the second day.
- Students who are in the BCF-209 B and 209C class, who are registered as "209C" students, must remain for the entire 4 days. BCF-209C is designed for students who prepare the APB and DAES reports, and the Selected Acquisition Report using the CARS for Major Defense Acquisition Programs (MDAPs). (BCF-209C includes everything taught in BCF-209B and more.)

Certificates will be provided based upon the class in which students enrolled—BCF-209B or 209C. BCF 209A/B/C are all assignment-specific courses. The BCF-209A schedule is expected to be loaded by early October 2003. The BCF-209B and BCF-209C schedules have been loaded and are available for registration; however, applications will not be processed until BCF-209A is released.

For more information on registering for DAU courses, visit the DAU Web site at <http://www.dau.mil/registrar/apply.asp>.

### DAU TO SPLIT HYBRID COURSES IN FISCAL 2004

**B**eginning with the loading of the fiscal 2004 schedule, students will be required to register separately for each part of any DAU hybrid course. These courses are ACQ-201A, ACQ-201B, BCF-211A, BCF-211B, CON-104A, CON-104B (CON-104A/B are due to be replaced; however, the new courses are not yet ready to go online), LOG-201A, LOG-201B, LOG-235A, LOG-235B, PMT-352A, PMT-352B, PQM-201A, PQM-201B, SYS-201A, and SYS-201B. The Part A (WEB) of each course will become a rolling admission format and students may take it at any time, as long as the required prerequisites have been completed. There is no

longer a time period requirement in which both parts must be completed. However, Part A (WEB) must be completed before a reservation in Part B (RESIDENT) will be approved for any hybrid course.

Students will be required to complete both parts of any hybrid course in order to receive credit for the course toward certification. (Note: The LOG-201A course is delivered in a correspondence format rather than a Web-based delivery.)

### NDIA TO SPONSOR DSAM OFFERINGS FOR INDUSTRY MANAGERS

**T**he National Defense Industrial Association will sponsor an offering of DAU's Defense Systems Acquisition Management (DSAM) course to interested industry managers Nov. 17-21, 2003, at the Adam's Mark Hotel in Orlando, Fla; Jan. 12-16, 2004, at the Wyndham North in Dallas, Texas; and March 8-12, 2004, at the Wyndham Hotel Salt Lake City in Salt Lake City, Utah.

DSAM uses the same acquisition policy information provided to DoD students who attend DAU courses for formal acquisition certification. It is designed to meet the needs of defense industry acquisition managers in today's dynamic environment, providing the latest information related to:

- Defense acquisition policy for weapons and information technology systems including discussion of the new DoD 5000 series (directive, instruction, and guidebook).
- Defense acquisition and logistics excellence initiatives.
- Defense acquisition procedures and processes.
- The Planning, Programming, and Budgeting System and the congressional budget process.
- The relationship between requirements generation, resource allocation, science and technology activities, and acquisition programs.

For further information, contact Christy O'Hara (703) 247-2586 or e-mail [cohara@ndia.org](mailto:cohara@ndia.org). Prospective government students must first contact Air Force Maj. Jim Ashworth at (703) 805-5809 or e-mail [james.ashworth@dau.mil](mailto:james.ashworth@dau.mil).

### MASTER OF SCIENCE IN PROGRAM MANAGEMENT (MSPM) DEGREE

Sandra Duerinck-Ribón

**T**he Naval Postgraduate School (NPS), Master of Science in Program Management (MSPM) degree is coming to Fort Monmouth, N.J. The MSPM program is a great Acquisition Education, Training & Education (AET&E) opportunity. The curriculum is designed to provide federal civilian employees with the knowledge, skills, and abilities to manage and lead effectively in the federal government acquisition environment. It focuses on problem solving and decision making within the acquisition environment utiliz-

ing case studies, teaming exercises, hands-on applications, active participation, and other similar activities. You may find additional information on the MSPM program, as well as the Naval Postgraduate School, by visiting their Web site at <http://www.nps.navy.mil>.

The MSPM program is nine quarters in duration and consists of a combination of video-teleconferencing (VTC) and one-week resident session at NPS, in Monterey, Calif.

The MSPM program satisfies the mandatory DAU program management and acquisition logistics course requirements of the Defense Acquisition Workforce Improvement Act (DAWIA) through Level III. It also provides course equivalency through Level II in Test & Evaluation, Systems Engineering, Manufacturing/Production/Quality Assurance, and Software Acquisition. The NPS will accept up to 12 quarter hours (eight semester hours) of transfer credit for graduate courses taken at an accredited college/university that have been evaluated as satisfying one or more of the graduate courses in the MSPM curriculum.

The point of contact for this program at Fort Monmouth is Sandra Duerinck-Ribón, (732) 427-1695, DSN 987-1695. For more information, please visit the Acquisition Support Center Web site: <http://asc.rdaisa.army.mil/>.

### ACQUISITION CERTIFICATION POSITION CATEGORY DESCRIPTIONS & EXPERIENCE, EDUCATION & TRAINING REQUIREMENTS FOR FISCAL YEAR 2004

**R**ichard K. Sylvester, Deputy Director, Defense Procurement and Acquisition Policy (Acquisition Workforce and Career Management) has released the fiscal 2004 approved position category descriptions and career field experience, education, and training requirements. The requirements are effective Oct. 1, 2003.

Unless designated as **DESIRED**, the requirements are **MANDATORY** for certification. The lists also include training requirements that will change during the fiscal year as new courses are deployed; each new course is listed with a projected deployment date. The career fields with projected changes include: Contracting; Industrial/Contract Property Management; Purchasing; and Life Cycle Logistics (Sustainment path).

The descriptions and requirements can be downloaded from the Defense Procurement and Acquisition Policy Web site at <http://www.acq.osd.mil/dpap>. Should you have any questions, please contact Karla Merritt at (703) 681-3444 or e-mail [karla.merritt@osd.mil](mailto:karla.merritt@osd.mil).

### PUBLICATIONS ACQUISITION TODAY

The Fall 2003 edition of *Acquisition Today*, published on behalf of the Office of the Under Secretary of Defense (Acquisition, Technology and Logistics) is now posted to the Director, Defense Procurement and Acquisition Policy Web site at <http://www.acq.osd.mil/dpap/>.

### 2004 DAU CATALOG

**T**he FY 2004 Defense Acquisition University Catalog is now available online at the following link: <http://www.dau.mil/catalog/default.asp>. Watch this section of *Defense AT&L Magazine* for an announcement on the catalog's availability in hard copy.

### SPECIAL ANNOUNCEMENT ACQUISITION CAREER PROGRAM DEVELOPMENTAL ASSIGNMENT

**T**he Army has issued a special announcement of developmental assignments in multiple functional areas at Headquarters Department of the Army (HQDA) supporting the Department of Defense and/or Army Business Initiative Council (BIC).

**POSITION:** GS 12-15 or military equivalents in any occupational series in Resource Management; Acquisition Management; Test and Evaluation; Manpower and Personnel; Installation Management; Logistics, and Information Management.

**ASSIGNMENT DESCRIPTION/DUTIES:** This will be a training assignment in one of the functional areas of the Army or DoD Business Initiative Council (BIC) support team. The BIC is chartered to improve the efficiency of business operations by implementing reforms throughout the DoD or Army that allow savings to be reallocated to higher priority efforts. The BIC serves as the corporate board of directors for these reforms. It is chaired by the Under Secretary of Defense for Acquisition, Technology and Logistics, and comprises the Service Secretaries and OSD and OJCS representatives. The developmental assignments will be primarily in support of the Process Function Boards (PFBs) that support the DoD and Army BIC processes. These boards are: Manpower and Personnel, Resource Management, Information Technology, Acquisition Management, Test and Evaluation, and Installations and Logistics. The Installations and Logistics board has three functional components: ASA I&E, ACSIM, and G4. Duties will include managing administrative actions of the individual boards, helping to analyze and coordinate technical information related to functional areas,

and working as a liaison between the support team, the functional boards, and the BIC initiative champions.

**AREA OF CONSIDERATION:** Department of the Army employees in the following categories (selectees will be assigned at present permanent grade level):

- On permanent appointment to the competitive service.
- Excepted service or non-appropriated fund employees with competitive status.
- Eligible for competitive conversion or appointment to the competitive service, e.g., family members eligible under EO 12362 as amended.

**TOTAL NUMBER OF POSITIONS:** up to 15

**LENGTH OF PROGRAM:** 3-12 months

**LOCATION OF ASSIGNMENT:** HQDA, Pentagon, in various staff support elements. If a selectee is from outside the commuting area of the developmental assignment, the costs of the travel and up to 55 percent of the maximum payable local per diem will be centrally funded.

To read the full announcement, go to the Army Acquisition Support Center Web site at <http://asc.rdaisa.army.mil> and scroll down to the bottom of the page.

### **STRATEGIC PARTNERSHIPS OLD DOMINION UNIVERSITY OFFERS MASTER'S CERTIFICATE PROGRAM IN GOVERNMENT CONTRACTING**

Old Dominion University (ODU) is offering a new master's certificate program in government contracting at its Center for Global Business and Executive Education, College of Business and Public Administration, located in Hampton Roads, Va.

ODU President Roseanne Runte and Barbara J. Smith, Dean, DAU Mid-Atlantic Region signed a Memorandum of Understanding on Sept. 26, 2003, facilitating the award of Continuing Education Units and certificates of completion to DoD AT&L students who successfully complete all course requirements.

The master's certificate program in government contracting provides a practical, well-rounded understanding of government contracting and prepares individuals to master the core principles, regulations, and procedures that govern today's acquisition and procurement contracts.

To download a brochure describing the new master's certificate program in government contracting, go to <http://www.cgbee.com/webnew/cgbee.html>. For more information about ODU educational programs and credit for

DAU courses, visit the organization's Web site at [www.cppd-odu.com](http://www.cppd-odu.com) or call (757) 683-4603. For more information on course equivalency or registering for a DAU course, go to <http://www.dau.mil>.

### **UNIVERSITY OF MARYLAND UNIVERSITY COLLEGE REACHES OUT TO DAU STUDENTS**

Military officers, federal civilians, and defense industry civilians can now transfer credits from a program at the Defense Acquisition University (DAU) to resident and online certificate, undergraduate, and graduate degree programs offered by the University of Maryland University College (UMUC).

UMUC President Gerald A. Heeger and DAU President Frank J. Anderson Jr., signed a Memorandum of Agreement on Sept. 18, 2003, facilitating the transfer of DAU course credits that have been certified by the American Council on Education (ACE) toward fulfilling UMUC educational requirements. The signing ceremony took place at DAU Headquarters, Fort Belvoir, Va.

The strategic partnership designates UMUC degrees and certificates that will help meet mandatory Acquisition Corps education standards in several of the 13 acquisition career fields. For more information about UMUC educational programs and credit for DAU courses, visit the organization's Web site at <http://www.umuc.edu/mil>. For more information on course equivalency or registering for a DAU course, go to <http://www.dau.mil>.

### **RATIONAL BRAND SERVICES AND DAU FORM STRATEGIC PARTNERSHIP**

On Oct. 1, 2003, the Defense Acquisition University and Rational Brand Services, a division of IBM, signed a Memorandum of Understanding (MOU) establishing a strategic partnership whereby DAU and Rational committed to work collaboratively and to their reciprocal advantage in the areas of information technology and software acquisition management best practices. Army Col. Ronald C. Flom, DAU commandant, and Walker Royce, vice president, Rational Brand Services, signed the MOU at a signing ceremony held at Fort Belvoir, Va.

The partnership aims to improve overall program performance specifically by enhancing understanding and transparency of government and contractor roles and by improving acquisition processes. Joint endeavors are expected to include regular information exchange on tools and processes, a common training strategy, and regular exchange of Rational and DAU personnel at meetings conferences, and seminars.

## AWARDS

### DAE CERTIFICATES PRESENTED TO ARMY WINNERS

The Defense Acquisition Executive Certificate of Achievement (DAE Certificate) was established to enable the Defense Acquisition Executive to provide personal recognition to individuals, groups, or teams who have made exceptional contributions to the Department's acquisition programs and systems or the improvement of life cycle costs. The ideas, processes, and methods of each recipient promote acquisition reform goals and help achieve best value for the government and our nation's warfighters.

Five Army teams were selected to receive the DAE Certificate for Calendar Year 2002. Claude M. Bolton Jr., Assistant Secretary of the Army (Acquisition Logistics and Technology) and Army Acquisition Executive, with the U.S. Army Acquisition Support Center (ASC) as agent, presented these awards on August 14, 2003, at the Acquisition Senior Leaders' Conference in Seattle, Wash.

- The **Product Management Office, Telecommunications Systems** of Program Executive Office Enterprise Information Systems (PEO EIS), was the recipient of two certificates. Team members were heavily involved in the Pentagon renovation project, greatly contributing to the successful restoration of the Pentagon information technology infrastructure by the one-year anniversary of the attack on 9-11. In the Program Management category, the **Telecommunications Systems Team** embraced the challenge of moving Pentagon personnel back into their offices and helping restore critical communications operations.
- The PEO EIS Team from the **Product Management Office, Defense Message System**, was recognized in the Program Management category and achieved the radical redesign of the Army's Tactical Message System—taking it from concept through test in just six months. The result was program transformation to a reliable, on-time system that will directly benefit soldiers in the field. The redesign also saves more than \$85 million in life cycle costs for the Army.
- The **M45 Chemical Biological Mask Team, Joint Program Executive Office for Chemical and Biological Defense**, was recognized for achievements that directly benefit soldiers in the field. The M45 Team was recognized in the category of Program Management for incorporating new technologies and designs to address the previous mask's performance limitations via innovative partnerships with parts vendors and other product improvement strategies. Their efforts reduced life cycle costs by more than \$2.6 million.

- The **Armament Retooling and Manufacturing Support (ARMS) Team** was recognized in the Industrial Property Management category. The ARMS Team used innovative acquisition reform policies to save the Army approximately \$40 million by attracting commercial tenants into Army Acquisition Plants. They have lowered disposal costs of facilities, created and sustained more than 3,000 jobs, and provided approximately \$395 million in economic impact to local communities.

The DAE Certificate of Achievement can be awarded at any time of the year at the DAE's discretion, and is the appropriate award to highlight and reward individuals and teams that have made outstanding contributions to the acquisition system through innovative acquisition management techniques.

### OASA(ALT)

#### BRIGADE COMBAT TEAM ACQUISITION SUPPORT DIVISION HONORED WITH ARMY AWARD FOR CONTRACTING EXCELLENCE

On Aug. 11, 2003, the Brigade Combat Team (BCT) Acquisition Support Division was awarded the Secretary of the Army Award for Excellence in Systems Contracting at a special ceremony during the PARC [Principal Assistant Responsible for Contracting] Conference in Seattle, Wash. This Team award for Systems Contracting also includes counterparts from the General Dynamics Land Systems' (GDLS) Contracting office. The government-contractor team works closely with contractors and other government personnel across the country and Canada. This is the second straight year that the team has won the Secretary of the Army Award for Excellence in Contracting.

The Secretary of Army recognition is awarded annually to teams and individuals selected from those nominated for their exceptional contracting efforts in support of their particular missions. The criteria for the team contracting awards include the following:

- Outstanding mission accomplishment - demonstrated customer service
- Contracting efficiency—reducing contract costs
- Human resource management—certification, training, and recognition programs
- Contracting innovation and process improvement—implementation of Acquisition Reform and streamlining (reducing cycle times and non-value-added processes)

The members of the BCT Acquisition Support Division met the challenge of ever accelerating expectations demanded by a program concurrently moving through development,

test, and fielding. Contracts normally done sequentially had to be coordinated concurrently under the umbrella of the Stryker Requirements Contract and the various Delivery Orders covering the 10 vehicle configurations and associated requirements. Eight vehicles are in production. Two vehicles are in development, and planned Block Mods will be added to the Third Brigade. New contracts had to be developed to implement the logistics program.

As of July 3, 2003, 600 vehicles had been accepted. In the past year, the first brigade of vehicles has completed fielding at Ft. Lewis, Wash. Simultaneously, Performance Verification Test was ongoing. The second brigade has begun. Training has been ongoing since the first vehicle hand-off. Fielded vehicles have been maintained at an Operational Readiness Rate at or above 90 percent. The first brigade is currently preparing for its first deployment to Iraq, relying heavily on support provided by the contractor under the Interim Logistics Contractor Support (ICLS) contract.

The BCT Acquisition Support Division is available 24 hours a day, seven days a week, and on holidays to execute up-to-the-minute contract actions in support of customers. At the time of nomination, the team had issued, in less than a year, 341 Procuring Contracting Officer (PCO) letters, in excess of 200 contract modifications, and 25 new, additional contracts, and 51 Purchase Orders, GSA orders, and BPA orders. Contracting requirements have continued to accelerate. In the last year (FY03), more than 750 formal PCO letters and more than 250 contract modifications were issued.

In addition to achieving, and in many cases surpassing, program requirements, the BCT has found many methods for reducing contract costs by increasing communication and coordination between government and contractor personnel at all BCT locations, thereby eliminating redundant workloads and increasing efficiency. All contracts and modifications are posted in real-time online for access from any Internet-capable computer, and automatic notifications are sent to all.

With the Army's sights set on having six Stryker Brigade Combat Teams fielded and operational by 2009, the pace required for the acquisition and support of the program is unprecedented. As a result, a number of innovative contracting processes have been developed to reduce the time necessary to carry out traditional contracting practices. Performance-based contracting and logistics have been adopted as the primary methods because they allow tremendous flexibility and adaptability.

(Constance Tucker/SFAE-GCS-BCT-P/DSN 786-2020/[tuckerc@tacom.army.mil](mailto:tuckerc@tacom.army.mil))

## AIR FORCE ASSOCIATION NAMES OUTSTANDING CIVILIAN PROGRAM MANAGER FOR 2003

Megan Horn, Chief, Financial Management Branch, Program Integration Division, Office of the Assistant Secretary of the Air Force for Acquisition, received the Air Force Association's highest national award on Sept. 15, 2003. Horn was named the Outstanding Civilian Program Manager of the Year at a ceremony held in conjunction with the AFA's National Convention in Washington, D.C.

## DEPARTMENT OF DEFENSE NEWS RELEASE (SEPT. 10, 2003)

### 2003 MAINTENANCE AWARD WINNERS ANNOUNCED

The Department of Defense today announced the recipients of the 2003 Defense Maintenance Awards. Each year the Secretary of Defense Maintenance Awards Program recognizes outstanding achievements in military equipment and weapon systems maintenance by organizations of the military services. Awards are presented in the categories of small, medium, and large units.

As part of the 2003 DoD Maintenance Symposium and Exhibition, the awards were presented at the Secretary of Defense Maintenance Awards Banquet on Oct. 29, 2003, at the Valley Forge Convention Center, King of Prussia, Pa.

The recipients of this year's Secretary of Defense maintenance awards are as follows:

**Small category:** Strike Fighter Squadron Eight One, Naval Air Station, Oceana, Va.; 74th Fighter Squadron, Pope Air Force Base, Fayetteville, N.C.

**Medium category:** Shore Intermediate Maintenance Activity Mayport, Naval Station, Mayport, Fla.; Marine Aviation Logistics Squadron 12, Marine Corps Air Station, Iwakuni, Japan.

**Large category:** 3rd Battalion, 7th Infantry Regiment, 3rd Infantry Division (Mechanized), Fort Stewart, Ga.; Marine Aviation Logistics Squadron 14, Marine Corps Air Station, Cherry Point, N.C.

Additional information regarding the 2003 DoD Maintenance Symposium and Exhibition can be found at <http://www.sae.org/dod>.

DEPARTMENT OF DEFENSE NEWS RELEASE  
(SEPT. 11, 2003)

## MODELING & SIMULATION AWARD WINNERS ANNOUNCED

The Department of Defense today announced the recipients of the 2003 Defense Modeling and Simulation (M&S) Awards. Each year, the DoD M&S Awards Program recognizes units, organizational elements, and individuals (civilian employees and active duty servicemembers) of the DoD components for excellence, innovation, and achievement in advancement of state-of-the-art M&S.

The awards program is sponsored by the Under Secretary of Defense for Acquisition, Technology and Logistics. This year's awards ceremony was held at the Pentagon, Sept. 29, 2003. Awards were presented by Dr. Ronald Sega, director of defense research and engineering and chair of the DoD Executive Council for Modeling and Simulation. The recipients of this year's DoD M&S Awards are as follows:

- **Acquisition category:** The Missile Defense Agency, Washington, D.C., for its "Enterprise Strategy for Modeling and Simulation."
- **Analysis category:** The Threat Signal Processor-in-the-Loop (T-SPIL) Team, Naval Air Warfare Weapons Division, Naval Air Systems Command, China Lake, Calif.
- **Training category:** The Training Systems Technology Team, Warfighter Training Research Division, Air Force Research Laboratory, Mesa, Ariz.
- **Cross-function category:** Dr. Gene E. Layman, Naval Research Laboratory, Washington, D.C.

Additional information regarding the M&S Awards Program can be found at <http://www.dmsi.mil/public/community/awards/> or contact the Defense Modeling and Simulation Office at (703) 824-3437 or [pao@dmsi.mil](mailto:pao@dmsi.mil).

## DAU WINS BRANDON HALL GOLD MEDAL AWARD FOR EXCELLENCE IN E-LEARNING BEST PRACTICES.

On Sept. 23, 2003, DAU received the Brandon Hall Gold Medal Award for Excellence in e-Learning Best Practices at a ceremony in Los Angeles, Calif. DAU competed against 189 other applicants in the Best Practices category, with each entry being analyzed by a panel of 56 subject matter experts. DAU earned a Gold Medal for the "AT&L Performance Learning Model," an enterprise-wide learning strategy that uses e-learning techniques to deliver career-long training through formal courses, rapid deployment

training on emerging initiatives, continuous learning modules, and knowledge sharing resources to the members of the DoD Acquisition, Technology and Logistics workforce.

The 2003 Excellence in E-Learning Awards were awarded to organizations that are setting the pace in e-learning best practices; custom content; and innovative technology. This year's winning entries were announced and recognized at an awards ceremony at the Online Learning 2003 Conference & Expo in Los Angeles. The Excellence in E-Learning Awards recognize outstanding examples of e-learning throughout the industry. This year marked the seventh year for the awards program. The Best Practices category is designed to recognize those organizations that have implemented a particular aspect of e-learning that stands out as a superior process.

## ACQDEMO PM RECEIVES MERITORIOUS CIVILIAN SERVICE AWARD

Anthony D. Echols recently received the Secretary of Defense Meritorious Civilian Service Award for his contributions as the program manager for the Department of Defense Civilian Acquisition Workforce Personnel Demonstration Project (AcqDemo), Office of the Under Secretary of Defense (Acquisition, Technology & Logistics) from August 1999 through July 2003.

This Defense-level award is the second highest civilian service award given to recognize individuals who have distinguished themselves by exceptional meritorious service of major significance to the Department of Defense. Echols was credited for leading the way to enhancing the quality, professionalism, and management of the acquisition workforce through improvements in the efficiency and effectiveness of the human resources management system.

## RECOGNITION AND AWARDS FOR ACQUISITION PERSONNEL

The civilian and military personnel who support the Defense acquisition system for both new and fielded systems are the DoD AT&L community's most valuable assets. To reinforce the continuing importance of acquisition and logistics excellence and innovation, the USD(AT&L) policy on "Recognition and Awards for Acquisition Personnel," provides guidance on several methods for formally and informally recognizing and rewarding the professional acquisition workforce.

For more information, download the USD(AT&L) policy memorandum with attachment from the Director, Defense Procurement and Acquisition Policy Web site at <http://www.acq.osd.mil/dpap/Docs/awardpolicy.pdf>.

U.S. HOUSE OF REPRESENTATIVES COMMITTEE  
ON APPROPRIATIONS NEWS ROOM

**CONFEREES APPROVE FISCAL YEAR 2004  
DEFENSE APPROPRIATIONS CONFERENCE  
AGREEMENT**

**W**ASH D.C. (Sept. 18, 2003)—The bill reported by the Defense Subcommittee conferees provides a total of \$368.2 billion in new discretionary spending authority for the Department of Defense for fiscal year 2004. This amount is \$3.8 billion more than was appropriated for fiscal year 2003 (excluding the amounts provided in the Iraq supplemental in April 2003), and is \$3.5 billion below the President's fiscal year 2004 budget request.

**MAJOR CONFERENCE RECOMMENDATIONS**

**BALLISTIC MISSILE DEFENSE**

The conference agreement provides total funding (Procurement and RD&TE) of \$9.1 billion for Ballistic Missile Defense, an increase of \$1.4 billion over fiscal year 2003 levels and a net decrease of \$5.1 million from the fiscal year 2004 budget request.

- These amounts provide an increase of \$181 million above the budget request for the Ground-Based Midcourse Segment (\$3.6 billion) to support continued development of a national missile defense with an initial operational capability in fiscal year 2004, as proposed by the President.
- Provides \$621.6 million, an increase of \$60 million over the request, for production of Patriot PAC-3 missiles.

**SPECIAL OPERATIONS FORCES**

- \$4.5 billion is provided for the Special Operations Command, an increase of \$97 million over the budget request and an overall increase of over 47 percent from levels approved in the fiscal year 2003 Defense Appropriations Act.

**GROUND FORCES MODERNIZATION**

- \$417.7 million over the request is provided to continue modernization of the Army's Counterattack Corps. These funds will be used for procurement of 144 upgraded Bradley Fighting Vehicles, 43 M1A2 Abrams tanks, and other equipment needed for modernization of the 3rd Armored Cavalry regiment.
- The conference agreement fully funds procurement of Stryker for the fourth Stryker Medium Brigade, and includes \$35 million above the budget request in advance funding for the fifth and sixth brigades. \$1.7 billion, the requested amount, is allotted for further development of the Army's Future Combat System (FCS).

**UNMANNED AERIAL VEHICLES**

- \$1.4 billion is recommended for procurement and continued development of unmanned aerial vehicles, nearly a \$225 million increase from fiscal year 2003 levels. Included in this amount are funds for the procurement of four Global Hawk UAVs, 16 Predator UAVs, 2 Predator B UAVs, 8 Shadow UAVs, and 8 Firescout UAVs. The Committee also provides \$270 million for continued development of Navy and Air Force Unmanned Aerial Combat Vehicles (UCAVs).

**SHIPBUILDING PROGRAMS**

- \$11.5 billion, an increase of \$2.4 billion over fiscal year 2003 levels, is proposed for shipbuilding programs. This level fully funds amounts requested for fiscal year 2004 production ships, including one Virginia-class submarine, two Trident SSGN conversions, and three DDG-51 destroyers.
- The conference agreement includes an additional two submarine refueling overhauls and \$103 million for Cruiser modernization.
- The conference agreement includes the Navy's request for multi-year contract authority for the Virginia-class submarine, as modified by the Senate for one ship per year.
- The conference agreement includes the Navy's request for construction of two T-AKE container ships.
- Advance funding of \$135 million over the request is provided to support procurement of an LPD-17 class amphibious ship in fiscal year 2005.
- For future ship development, the following is recommended:
  - \$1.5 billion, as requested, for the next-generation CVN-21 carrier;
  - \$168 million for the Littoral Combat Ship;
  - \$1 billion for the DD(X) program;
  - \$65 million for LHA(R).

**CHEMICAL AND BIOLOGICAL DEFENSE INITIATIVES**

- The Committee provides over \$1 billion, an increase of \$135 million over the request, for procurement and development of chemical and biological defenses under the Defense-wide appropriations, with additional funding for mobile chemical agent detection, air contaminant monitoring systems, early warning and detection programs, and miniature chemical and biological detectors.

**OTHER SUBCOMMITTEE RECOMMENDATIONS BY  
MAJOR CATEGORY**

**MILITARY PERSONNEL**

\$98.5 billion (an increase of \$4.9 billion over the fiscal year 2003 enacted level).

- The conference agreement supports the President's budget request of 1.388 million active duty military personnel.
- Funds 863,300 Selected Reserve and National Guard personnel.
- Fully funds an average 4.1 percent military personnel pay raise requested in the budget and selected targeted pay raises for mid-career officers and senior non-commissioned officers.
- Approves housing allowances for the buy down of servicemembers' out-of-pocket housing expenses from 7.5 percent in fiscal year 2003 to 3.5 percent in fiscal year 2004.
- Provides \$128 million for the continuation of increased rates for Imminent Danger Pay and Family Separation Allowances.
- Provides a total of \$88.2 million for 12 additional WMD Civil Support Teams.

### OPERATIONS AND MAINTENANCE

\$115.9 billion (an increase of \$1.206 billion over the fiscal year 2003 enacted level).

- Provides the requested levels of funding for land forces training, tank training miles, helicopter flying hours, ship steaming days, and Air Force and Navy flying hour programs, and supports the Department of Defense goal to fund facilities sustainment at not less than 93 percent in all branches of the Armed Forces.

### PROCUREMENT

\$74.7 Billion (an increase of \$3.1 billion over the fiscal year 2003 enacted level).

- Provides \$228 million for 19 Army Blackhawk helicopters.
- Provides \$2.9 billion for 42 Navy F/A-18E/F fighter aircraft.
- Provides \$1.5 billion for 11 V-22 aircraft (9 Marine Corps, 2 Air Force).
- Provides \$355 million for 350 Navy Tactical Tomahawk cruise missiles.
- Provides \$724 million for Navy and Air Force Joint Direct Attack Munitions (JDAM).
- Provides \$3.6 billion for 22 F-22 Air Force fighter aircraft.
- Provides \$2.1 billion for 11 Air Force C-17 airlift aircraft.
- Provides \$85 million for the procurement of 200 Joint Air-to-Surface Standoff Missiles (JASSM).
- Provides an increase of \$400 million for equipment for the National Guard and Reserves.

### RESEARCH AND DEVELOPMENT

\$65.2 billion (an increase of \$7.0 billion over the fiscal year 2003 enacted level).

- Provides \$1.1 billion for the Army's Comanche helicopter.
- Provides \$4.3 billion for the Joint Strike Fighter.

- Provides \$364 million for the Air Force's MC2C command and control constellation.
- Provides \$617 million for the Space-Based Infra-Red System (SBIRS).
- Provides \$339 million for Advanced Wideband Satellite laser communications.
- Provides \$174 million for Space-Based Radar.

### DEFENSE HEALTH PROGRAM

\$15.7 billion (an increase of \$886 million over the fiscal year 2003 enacted level).

**Editor's Note:** On Sept. 25, 2003, the Senate approved and forwarded to the president the FY2004 Defense Appropriations Act. The 2004 Appropriations Act was approved by a vote of 95-0, following a 407-15 House vote the day before. All indications are that the president will sign it. The Appropriations Act comes in at a total cost of \$368.2 billion, a figure only slightly different from earlier proposals.

### FEDERAL ACQUISITION REGULATION (FAR) TEAMS

In a memorandum to Army, Navy, Air Force, and DoD acquisition and logistics directors, Deidre Lee, director, defense procurement and acquisition policy announced the restructuring of the current 28 FAR committees into five teams. DoD, she noted in the Oct. 3 memorandum, currently chairs 24 of the 28 committees and provides nearly 150 representatives from the Services and Defense Agencies to support the process.

"While we are committed to excellence in the FAR process," she stated, "we can no longer support the process to these levels. This initiative will significantly reduce DoD's resource commitment and enhance interagency involvement in the development and maintenance of the FAR."

DoD, according to Lee, must commit to 23 positions: 16 that are core and 7 that are rotational, shared by multiple individuals. To support the new team structure, she called for the continued support of DFARS committee chairs as well as nomination of top notch individuals for core and rotational positions. She urged defense agencies that have not participated on FAR committees in the past to submit nominees for the teams.

To learn more about each team's membership requirements and structure, download the attachment to Lee's memorandum from the Director, Defense Procurement and Acquisition Policy Web site at [http://www.acq.osd.mil/dpap/Docs/Federal%20Acquisition%20Regulation%20\(FAR\)%20Teams.pdf](http://www.acq.osd.mil/dpap/Docs/Federal%20Acquisition%20Regulation%20(FAR)%20Teams.pdf).



ACQUISITION,  
TECHNOLOGY AND  
LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-3000

SEP 9 2003



DPAP/P

MEMORANDUM FOR DIRECTORS, DEFENSE AGENCIES  
DEPUTY ASSISTANT SECRETARY OF THE ARMY  
(POLICY AND PROCUREMENT), ASA(ALT)  
DEPUTY ASSISTANT SECRETARY OF THE NAVY  
(ACQUISITION MANAGEMENT), ASN(RD&A)  
DEPUTY ASSISTANT SECRETARY OF THE AIR  
FORCE (CONTRACTING), SAF/AQC  
EXECUTIVE DIRECTOR, ACQUISITION, TECHNOLOGY,  
AND SUPPLY DIRECTORATE (DLA)  
DIRECTOR, ADMINISTRATION AND MANAGEMENT

SUBJECT: DoD Contract Payments—DFARS 204.7107(e)(3)(i)

A recent GAO review of two contracts (GAO report dated August 8, 2003, GAO Code 192069) asserted that one of those contracts did **not** contain specific payment instructions on how to allocate payment amounts to Accounting Classification Reference Numbers (ACRNs) as required by DFARS 204.7107(e)(3)(i). The review also asserted that, after initial contract award, payment instructions were **not** modified to reflect ACRNs subsequently added to the contract.

The requirements at DFARS 204.7107(e)(3)(i) read as follows:

When a contract line item is funded by multiple accounting classification citations, the contracting officer shall provide adequate instructions in section G (Contract Administration Data), under the heading "Payment Instructions for Multiple Accounting Classification Citations," to permit the paying office to charge the accounting classification citations assigned to that contract line item (see 204.7104-1(a)) in a manner that reflects the performance of work on the contract. If additional accounting classification citations are subsequently added, the payment instructions must be modified to include the additional accounting classification citations.

Contracting officers **must ensure** that all contracts containing multi-funded contract line items include adequate payment instructions to permit the paying office to charge the accounting classification citations assigned to that contract line item. In addition, contracting officers **must ensure** that these instructions are revised if additional ACRNs are subsequently added to the contract.



Please ensure this memorandum receives wide distribution to your contracting leaders, contracting officers, and buyers that affect these contracts. Any questions regarding this memorandum should be referred to Mr. David J. Capitano, Defense Procurement & Acquisition Policy/Policy, at (703) 847-7486 or [david.capitano@osd.mil](mailto:david.capitano@osd.mil).



Deidre A. Lee  
Director, Defense Procurement and  
Acquisition Policy



ACQUISITION,  
TECHNOLOGY AND  
LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-3000

OCT 2 2003

DPAP/P

MEMORANDUM FOR DIRECTORS, DEFENSE AGENCIES

DEPUTY ASSISTANT SECRETARY OF THE ARMY  
(POLICY AND PROCUREMENT), ASA(ALT)  
DEPUTY ASSISTANT SECRETARY OF THE NAVY  
(ACQUISITION MANAGEMENT), ASN(RDA)  
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE  
(CONTRACTING), SAF/AQC  
DEPUTY DIRECTOR FOR LOGISTICS OPERATIONS (DLA)  
DIRECTOR, ADMINISTRATION AND MANAGEMENT  
DIRECTOR, ARMY CONTRACTING AGENCY

SUBJECT: Contracting for Services

In order to address issues revealed during a Department of Defense Inspector General review of your organizations on "Contracts for Professional, Administrative, and Management Support Services," please take the following actions:

- (1) Report to me by December 31, 2003, on your efforts to establish centers of excellence for service contracting, how the centers are used, and the experience gained at the centers.
- (2) Review your acquisition organizations' practices to ensure that:
  - a. Contracting officers appoint all representatives in writing in accordance with DFARS 201.602-2(5). Such written appointments should include a description of the authority, duties, and limitations of the representative.
  - b. All contracting officer representatives are appropriately trained to perform their duties in accordance with DFARS 201.602-2(2).
  - c. The appropriate contract type is used when acquiring services based on the criteria specified in FAR Part 16 and DFARS Part 216.

Please furnish the outcome of these actions by March 31, 2004.

If you have any questions on this matter, please contact Mr. William Timperley at [william.timperley@osd.mil](mailto:william.timperley@osd.mil), telephone (703) 797-8336.

Deidre A. Lee  
Director, Defense Procurement and  
Acquisition Policy



ACQUISITION,  
TECHNOLOGY AND  
LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON  
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OCT 2 2003

DPAP/EB

MEMORANDUM FOR DIRECTORS, DEFENSE AGENCIES  
ACTING DEPUTY ASSISTANT SECRETARY OF THE ARMY  
(POLICY AND PROCUREMENT), ASA(ALT)  
DIRECTOR, ARMY CONTRACTING AGENCY  
DEPUTY ASSISTANT SECRETARY OF THE NAVY  
(ACQUISITION MANAGEMENT), ASN(RDA)  
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE  
(CONTRACTING), SAF/AQC  
DIRECTOR, DEFENSE CONTRACT MANAGEMENT AGENCY  
DEPUTY DIRECTOR FOR LOGISTICS OPERATIONS (DLA)  
DIRECTOR, ADMINISTRATION AND MANAGEMENT

SUBJECT: Use of Department of Defense Activity Address Code (DoDAAC)  
in Contracting

This is to remind you of changes effective October 1, 2003, regarding how contracts and orders are numbered and reported (refer to my memorandum dated June 9, 2003). Specifically, the contracting activity's Department of Defense Activity Address Code (DoDAAC) is to be used as the first six characters of all procurement instrument identification numbers and supplementary numbers. The Defense Federal Acquisition Regulation Supplement (DFARS) Part 204 is being changed to reflect this requirement and should be published within the next few weeks. Appendix G will be removed from the DFARS, but an archived version will be available through the DFARS web page for reference purposes to assist in identifying prior year's identification numbers. The two position order codes, used when placing orders against another activity's contract or agreement, will also be maintained on the DFARS web page.

As indicated in my earlier memorandum, the DoDAAC will eliminate the current codes used to identify contracting offices for purposes of contract reporting starting October 1, 2004. The Department of the Army and the Defense Agencies reporting through the Army data collection point, plan to institute this change effective October 1, 2003.



Finally, please also be advised that DoDAACs are now also being used to track DoD entities for intra-governmental transactions across the Federal Government. Non-DoD agencies are required to use Dun & Bradstreet Data Universal Numbering System (DUNS) numbers to identify their entities. Should a Federal Agency request your DUNS or trading partner number, provide the appropriate DoDAAC with the prefix "DoD." Additional instructions on this issue are forthcoming.

My action officers regarding this subject are Ms. Lisa Romney, (703) 614-3883, [lisa.romney@osd.mil](mailto:lisa.romney@osd.mil), regarding electronic business implications; and Mr. Ray Morris, (703) 604-4572, [morrisr@dior.whs.mil](mailto:morrisr@dior.whs.mil), regarding technical and associated DFARS changes.



Deidre A. Lee  
Director, Defense Procurement and  
Acquisition Policy

### 7TH ANNUAL ARMY SMALL BUSINESS CONFERENCE

The 7th Annual Army Small Business Conference was held at the Hilton McLean Tyson's Corner, Tyson's Corner, Va., Nov. 4-5, 2003. This yearly event, specifically directed at all of the Army's Small Business Contractors, provided a unique opportunity for members of the small business community to meet with government decision makers (Army and SBA) to discuss timely topics, including recent changes affecting small businesses. All of the Army's major commands throughout the United States were represented. The conference began mid afternoon on Nov. 4 and continued through 4:00 p.m. on Nov. 5. For more information call Phyllis Edmonson at (703) 247-2588 or e-mail: [pedmonson@ndia.org](mailto:pedmonson@ndia.org).

### JOINT NON-LETHAL WEAPONS PROGRAM INDUSTRY DAY

The Joint Non-Lethal Weapons Program (JNLWP) Industry Day was held Nov. 4, 2003, at the Hyatt Regency Crystal City, in Arlington, Va. This event was organized to be especially valuable to those technical managers, business development managers, program managers, planners, scientists, and engineers in industry who are interested in participating in the development and acquisition of advanced Non-Lethal Weapons systems. The JNLWP Industry Day provided an excellent opportunity for the exploration of requirements and developmental opportunities between service and industry representatives.

For questions regarding the JNLWP Industry Day event, please contact Naomi Mundy at (703) 247-9476 or via e-mail: [nmundy@ndia.org](mailto:nmundy@ndia.org).

### 3RD ANNUAL CMMI TECHNOLOGY CONFERENCE & USER GROUP

The Systems Engineering Division of the National Defense Industrial Association, in conjunction with the Software Engineering Institute, Carnegie Mellon University, is pleased to announce the Third Annual CMMI® (Capability Maturity Model® Integration) Technology Conference and User Group. This important conference was held Nov. 17-20, 2003, at the Hyatt Regency Tech Center, in Denver, Colo.

The CMMI Project is a cooperative effort of the Department of Defense, Industry, and the Software Engineering Institute to develop an integrated Capability Maturity Model that encompasses Systems Engineering, Software Engineering, Integrated Product & Process Development, and Supplier Sourcing. Even though sponsored by the Department of Defense and NDIA, it is intended for use by commercial as well as aerospace/defense organizations, and this Conference ad-

ressed all applications. The purpose of the project is to provide for improvements in cost, schedule, and overall quality of projects in engineering development by eliminating "stovepipe" maturity models and allowing organizations to integrate their process improvement and engineering development efforts and strengthen the systems engineering component of all development programs.

For questions regarding the conference contact Dania Khan at (703) 247-2587, [dkhan@ndia.org](mailto:dkhan@ndia.org) or Bob Rassa (310) 334-0764, [rcrassa@raytheon.com](mailto:rcrassa@raytheon.com).

### PROGRAM EXECUTIVE OFFICER/SYSTEM COMMANDERS' (PEO/SYSCOM) CONFERENCE

The PEO/SYSCOM Conferences/Workshops are a series of senior-level, invitation-only, non-attribution events that host approximately 400 Department of Defense and industry participants at each event. These fora provide a good opportunity for senior leadership from the Department of Defense and industry to meet and share their views and priorities. The Thirteenth PEO/SYSCOM Commanders' Conference, hosted by the Defense Acquisition University, will be held Dec. 3-5, 2003, at Scott Hall, Fort Belvoir, Va.

For more information on PEO/SYSCOM past and upcoming events, visit the PEO/SYSCOM Conference Web site at <http://www.acq.osd.mil/dpap/Conferences/peoindex.htm>.

### INTERSERVICE/INDUSTRY TRAINING, SIMULATION & EDUCATION CONFERENCE (I/ITSEC 2003)

The Interservice/Industry Training, Simulation & Education Conference (I/ITSEC 2003) will be held Dec. 1-4, 2003, in Orlando, Fla. This 25-year anniversary event represents the premier annual conference for the simulation, training, and education communities of industry, government, and education. The I/ITSEC promotes cooperation among the armed services, industry, academia, and various government agencies in pursuit of improved training and education programs, identification of common issues, and development of multi-service programs. I/ITSEC also promotes the use of technology that will enable the services to better and more efficiently train soldiers, sailors, airmen, and marines to enhance their readiness to go in harm's way. This year's conference theme is *25 Years: Enhancing Warfighter Performance Through Advanced Learning Technology*.

To learn more about the conference or register, visit the conference Web site at <http://register.ndia.org/interview/register.ndia?#December2003>.

**R**ussell Lenz, Army Chair, DAU Executive Institute, departed the university on Sept 20, 2003, to accept an Army senior executive reassignment as director, Simulation and Training Technology Center in Orlando, Fla. The organization is part of the Army Materiel Command's new Research, Development and Engineering Command (RDECOM). Lenz joined the DAU as Army Chair in November 2001. In that role he reported to Assistant Secretary of the Army for Acquisition, Logistics, and Technology Claude Bolton, as well as to DAU President Frank Anderson. Previously, he served as the senior executive service director of the Joint Program Office for Test and Evaluation. His career includes a variety of management and engineering positions at the Air Force Flight Test Center, the office of the director for test and evaluation in OSD, Martin-Marietta Corporation's Aerospace Division, and the Air Force Strategic Air Command's Space Systems Operations Group.



## AS WE GO TO PRESS

### ARMY PRESENTS ANNUAL ACQUISITION COMMANDER & PROJECT & PRODUCT MANAGER OF THE YEAR AWARDS

(ARMY ACQUISITION SUPPORT CENTER NEWS RELEASE, OCT. 7, 2003)

**F**ORT BELVOIR, Va.—The Honorable Claude M. Bolton Jr., the Army Acquisition Executive and Assistant Secretary of the Army for Acquisition, Logistics and Technology, and Army Lt. Gen. John S. Caldwell Jr., Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics and Technology, presented the annual Acquisition Commander and Project & Product Manager of the Year Awards at the 2003 Army Acquisition Corps Ball October 5<sup>th</sup> at the Grand Hyatt Regency, Crystal City, Va.

“These award winners have been selected from an elite group of nominees,” Bolton remarked. “The challenges and complexities faced by these awardees in a year characterized by change, deployments, unit rotations, and high operations tempo were truly amazing. It is a testament to both the Army and Acquisition Corps that so many excellent people and teams are nominated and recognized each year for remarkable service above and beyond the call of duty,” Bolton continued.

“This year's award winners are outstanding representatives of the Army Acquisition workforce whose collective expertise and abilities to research, manage, develop, test, evaluate, contract, field, and sustain our warfighting systems ensure that our soldiers have the materiel they need to fight with greater lethality, survivability, and sustainability—regardless of where the battlefield or mission takes them,” Bolton concluded.

#### PROJECT MANAGER OF THE YEAR AWARD, COLONEL/GS-15

The Project Manager of the Year Award for Colonel/GS-15 level was presented to Col. David Ogg from the Interim Brigade

Combat Team, Program Executive Office Ground Combat Systems. The Interim Brigade Combat Team plans, manages, and directs the development, testing, production, fielding, and sustainment of a full range of systems, including 10 variants of the Stryker Family of Vehicles. Despite the complexity and requirement to meet tighter deadlines than in other more traditional Army Acquisition programs, Ogg's program exceeded a 90 percent Operational Readiness Rate, delivering products on time and meeting or exceeding Soldier requirements.

#### ACQUISITION COMMANDER OF THE YEAR, COLONEL/GS-15

The Acquisition Commander of the Year for Colonel/GS-15 level was presented to Col. Mary Brown from the Army Test & Evaluation Command, Aberdeen Test Center. As the Aberdeen Test Center Commander, Brown manages 60-plus acres of test ranges and 73 major test facilities. She also oversees operations involving nearly 1,600 military, civilian, and contractor personnel and is responsible for developmental testing of combat and combat support systems; ammunition, including small rockets and missiles; and Navy ship structures. Brown's organization is committed to ensuring that the Soldiers receive the safest and best equipment available.

#### PRODUCT MANAGER OF THE YEAR AWARD FOR LIEUTENANT COLONEL/GS-14

The Product Manager of the Year Award for Lieutenant Colonel/GS-14 was presented to Lt. Col. Dave Lockhart, Product Manager for Joint Tactical Radio Communications Systems (JTRS) Army-Ground and Air, from Program Executive Office Command, Control & Communications-Tactical. Lockhart and his team were able to identify and effectively minimize contractor cost and schedule overruns via aggressive program reviews and relentless application of earned-value management. He spear-headed streamlined, innovative measures that enabled the JTRS team to maintain objective sched-

ule momentum and deliver exceptional results for five JTRS clusters and responsibility for fielding more than 100,000 systems with a \$23 billion budget.

### **ACQUISITION COMMANDER OF THE YEAR AWARD, LIEUTENANT COLONEL/GS-14**

The Acquisition Commander of the Year Award for Lieutenant Colonel/GS-14 was presented to Lt. Col. Jack Cunnane, U.S. Army Contracting Agency, Southern Region. Cunnane's command was directly responsible to the U.S. Army III Corps for missions and quality of life support at Fort Hood and in supporting force projection and rapid deployment contingency operations. His support enabled III Corps to complete 100 percent of its mission requirements. Cunnane further demonstrated his dedication by volunteering to serve in Iraq to establish the joint contracting element that supported ongoing warfighter operations in theater.

*(For additional information about ASC, visit <http://asc.rdausa.army.mil>. Media Contact: Mike Roddin, Director, Strategic Communications, (703) 805-1035 or e-mail [michael.roddin@asc.belvoir.army.mil](mailto:michael.roddin@asc.belvoir.army.mil))*

### **ARMY PRESENTS ANNUAL RESEARCH AND DEVELOPMENT LABORATORY AWARDS** (ARMY ACQUISITION SUPPORT CENTER NEWS RELEASE, OCT. 7, 2003)

**F**ORT BELVOIR, Va.—The Honorable Claude M. Bolton Jr., the Army Acquisition Executive and Assistant Secretary of the Army for Acquisition, Logistics and Technology, and Army Lt. Gen. John S. Caldwell Jr., Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics and Technology, presented the annual Research and Development Laboratory (RDL) Awards at the 2003 Army Acquisition Corps Ball October 5th at the Grand Hyatt Regency, Crystal City, Va.

“All 15 Army labs competed in this year's competition and are to be commended for their outstanding research efforts and warfighter focus, as well as their support to Soldiers during Operations Enduring Freedom and Iraqi Freedom and national Homeland Defense,” Secretary Bolton remarked.

“The rankings were close and the selection committee had an especially difficult time choosing this year's winners,” Bolton continued. “This is a tremendous testament to the health and strength of the Army's labs and the significant contributions their people are making to Army transformation and readiness.”

### **RESEARCH AND DEVELOPMENT LABORATORY OF THE YEAR (SMALL LAB CATEGORY)**

The Research and Development Laboratory of the Year (Small Lab Category) Award was presented to the Natick Soldier Center (NSC) for technology generation, application, transition, and rapid fielding of equipment, and technology acceleration through strategic partnering and leveraging. NSC developed the Scorpion Soldier Platform achieving major breakthroughs in human factors engineering, biomechanics, anthropometrics, and technology integration into the human platform.

### **RESEARCH AND DEVELOPMENT LABORATORY OF EXCELLENCE (LARGE LAB CATEGORY)**

The Research and Development Laboratory of Excellence (Large Lab Category) Award was presented to the U.S. Army Armament Research, Development and Engineering Center (ARDEC) for its advanced warhead development. ARDEC created a single liner Explosively Formed Penetrator resulting in a 60 percent increase in armor penetration over current warheads. ARDEC also implemented Lean/Six Sigma processes that resulted in more than \$700 million in life cycle cost savings from completed projects.

### **RESEARCH AND DEVELOPMENT LABORATORY OF THE YEAR (LARGE LAB CATEGORY)**

The Research and Development Laboratory of the Year (Large Lab Category) Award was presented to the U.S. Army Aviation and Missile Research, Development and Engineering Center (AMRDEC) for one-stop life cycle engineering, technical and scientific support for aviation and missile weapon systems and their support systems, including Unmanned Aviation Vehicle platforms, robotic ground vehicles, and various other systems.

Specifically, AMRDEC's Low-Cost Precision Kill Advanced Technology Demonstration, a low-cost conversion, using commercially available components, transformed the current HYDRA-70 unguided rocket into a precision strike weapon providing HELLFIRE level of accuracy with a cost reduction factor of 86 percent.

In addition, AMRDEC's implementation of an innovative, highly responsive Prototype Integration Facility helped it quickly develop and rapidly exploit technology, transitioning to fielded solutions in hours, days, or weeks rather than years.

“The Army's labs are the enablers for the achievement of the Army Vision, its objectives and the Army's transformation to the Future Force,” Caldwell stated. “These exceptional research and development organizations, like those recognized here tonight, will continue to provide the unmatched technical advantage in support of our non-negotiable contract

with the American people to fight and win our Nation's wars," he concluded.

The RDL awards program was established in 1975 to honor Army research and development labs that have made outstanding contributions in science and technology, providing the Army's warfighters with the best capabilities in the world. The RDL awards recognize labs for their outstanding contributions and their impact on enhancing the capability of Army operational forces worldwide.

(For additional information about ASC, visit <http://asc.rdaisa.army.mil>. Media Contact: Mike Roddin, Director, Strategic Communications, (703) 805-1035 or e-mail [michael.roddin@asc.belvoir.army.mil](mailto:michael.roddin@asc.belvoir.army.mil))

## INTERMEDIATE FACILITIES ENGINEERING COURSE (FE-201)

**D**AU has tentatively scheduled release of the new FE-201 Intermediate Facilities Engineering course for late November 2003. Watch the DAU Web site at <http://www.dau.mil> for information on when the course will actually be available for enrollment.

## CON-100 NOW REQUIRED FOR AIR FORCE 64P OFFICERS AND 6C0 ENLISTED CONTRACTING MEMBERS

**P**er SAF/AQC memorandum, dated Sept. 16, 2003, 64P officers and 6C0 enlisted contracting members are required to complete CON-100, Shaping Smart Business Arrangements, or complete a fulfillment package prior to applying for Level I Acquisition Professional Development Program (APDP) certification. Students must complete CON-100 or fax a copy of the approved DD Form 2518 (fulfillment) to DSN 487-1348 prior to applying for CON-104A. To review the memorandum, visit <http://www.safaq.hq.af.mil/contracting/newevents/pdf/con100.pdf>. For questions, please contact your unit or major command training manager.

## ACQUISITION COMMUNITY CONNECTION AND COMMUNITIES OF PRACTICE

**T**he Defense Acquisition University has been working hard to establish Communities of Practice (CoPs) and collaborative knowledge areas centered on AT&L career fields and business processes. CoPs are a key component of DAU's Performance Learning Model and offer a way for DAU to be more actively engaged in supporting the AT&L workforce on a real-time basis. A huge step in moving toward this goal took place on March 1, 2003, when DAU took over full responsibility for the operation of PM CoP, now known as Acquisition Community Connection (ACC). Since that time, DAU has established over 50 collaboration workspaces supporting a variety of groups and projects; launched two new

career field CoPs, Logistics Management and Facilities Engineering; and introduced two new special interest areas, Acquisition Research and Clinger-Cohen Act Implementation. In that same period of time, the registered membership of Acquisition Community Connection has grown from 2,259 to 4,000 plus (a 56 percent increase), and contributions have grown by 68 percent.

To support the community of practice building effort, DAU's e-Learning and Technologies Center has developed the *DAU Community of Practice Implementation Guide* to support the operation of communities, and the *ACC Users Guide* to assist users with basic tool functionality. The Implementation Guide provides an important foundational piece for communicating how DAU will operate and foster CoPs, special interest areas, and collaboration workspaces for the AT&L community, using a collaborative tool to facilitate the capture of community knowledge, and community collaboration and interaction. The Implementation Guide is intended for those individuals or groups interested in standing up knowledge bases and collaborative environments, and will assist individuals in working through the steps of launching a viable community, creating relevant knowledge, building a knowledge base, and providing for the "care and feeding" of communities.

To view the *DAU Community of Practice Implementation Guide*, the *ACC Users Guide*, or the Acquisition Research and Clinger-Cohen Act Implementation special interest areas, visit the ACC Web site at <http://acc.dau.mil/simplify/ev.php>.

## DEPARTMENT OF DEFENSE NEWS RELEASE (OCT. 16, 2003)

### FLAG OFFICER ANNOUNCEMENT

**N**avy Rear Adm. (lower half) Charles S. Hamilton II, has been nominated for appointment to the rank of rear admiral. Hamilton is currently serving as deputy Program Executive Officer for Ships, Naval Sea Systems Command, Washington, D.C.

## AIR FORCE 2004 ACQUISITION TRAINING MANAGERS CONFERENCE

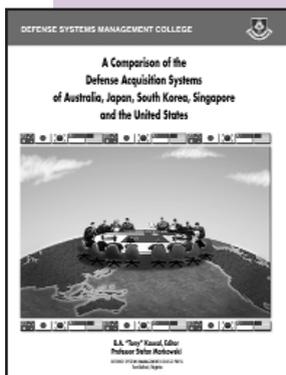
**S**AF/AQXD will be sponsoring the 2004 Acquisition Training Managers Conference on March 23-26, 2004, at the Southbridge Hotel & Conference Center in Southbridge, Mass. This conference is a chance for all Air Force acquisition training managers to get hands-on computer training on all of the acquisition tools available to Air Force acquisition training managers and to the acquisition workforce. This year's conference will focus on Continuous Learning. Please check the Conference Web site at [http://www.safaq.hq.af.mil/acq\\_workf/training/conference/index.htm](http://www.safaq.hq.af.mil/acq_workf/training/conference/index.htm) for more information and updates.

# DAU Guidebooks Available At No Cost to Government Employees

## A COMPARISON OF THE DEFENSE ACQUISITION SYSTEMS OF AUSTRALIA, JAPAN, SOUTH KOREA, SINGAPORE, AND THE UNITED STATES

Author: Stefan Markowski

Editor: Tony Kausal



This guidebook describes the national armament systems of Australia, Japan, South Korea, Singapore, and the United States. Beginning with an introduction to the political environment, the acquisition organizations, systems, and processes involved, Kausal and Markowski describe the effects of differences in national culture and traditions, time zones, currencies, fiscal year schedules, and language barriers. Tying these differences to each nation's national armament system, the authors make the case that international armaments cooperation is a difficult but rewarding challenge.

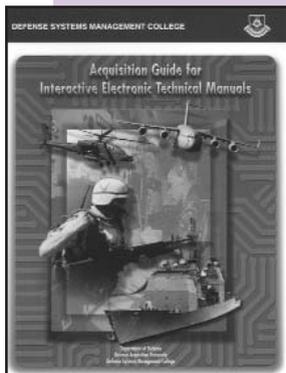
### Online

<http://www.dau.mil/pubs/misc/acq-comp-pac00.asp>

### Printed Copy

To request a printed copy of *A Comparison of the Defense Acquisition Systems of Australia, Japan, South Korea, Singapore, and the United States*, choose one of three options: 1) Fax a written request to the DAU Publications Distribution Center at (703) 805-3726; 2) mail your request to Defense Acquisition University, Attn: AS-CI, 9820 Belvoir Road, Suite 3, Fort Belvoir VA 22060-5565; or 3) e-mail [jeff.turner@dau.mil](mailto:jeff.turner@dau.mil).

## ACQUISITION GUIDE FOR INTERACTIVE ELECTRONIC TECHNICAL MANUALS



This guidebook is designed as the primary desk reference for acquisition personnel who must acquire, develop, deliver, and manage Interactive Electronic Technical Manuals (IETMs). It incorporates the status of existing/planned DoD and Service-unique policy guidance, discusses current and projected technologies related to the production of IETMs, analyzes the relationships between IETMs and training, and addresses delivery vehicles, including the World Wide Web.

### Online

<http://http://www.dau.mil/pubs/misc/ietm.asp>

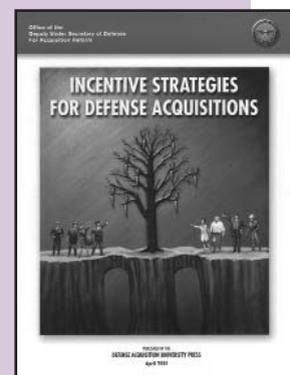
### Printed Copy

To request a printed copy of *Acquisition Guide for Interactive Electronic Technical Manuals* (September 1999), choose one of three options: 1) Fax a written request to the DAU Publications Distribution Center at (703) 805-3726; 2) mail your request to Defense Acquisition University, Attn: AS-CI, 9820 Belvoir Road, Suite 3, Fort Belvoir VA 22060-5565; or 3) e-mail [jeff.turner@dau.mil](mailto:jeff.turner@dau.mil).

## INCENTIVE STRATEGIES FOR DEFENSE ACQUISITIONS GUIDE

Printed on behalf of the Office of the Deputy Under Secretary of Defense for Acquisition Initiatives by the Defense Acquisition University Press

Incentives should exist in every business arrangement because they maximize value for all parties. DoD needs to adopt strategies that attract, motivate, and reward contractors to encourage successful performance. Using commercial practices will enhance DoD's ability to attract nontraditional contractors. This guide amplifies existing policy regarding use of incentives in defense acquisitions. It explores cost-based and non-cost-based incentive strategies. It clearly defines use of performance objectives or product functionality vs. detailed requirements to seek best value acquisitions. It answers these questions:



- Why are we concerned with contractual incentives?
- What elements contribute to an effective incentive strategy?
- How can we build and maintain an effective environment for a successful business relationship?
- How can we build the acquisition business case?
- How can we build an incentive strategy that maximizes value?

### Online

<http://www.dau.mil/pubs/misc/incentive.asp>

### Printed Copy

To request a printed copy of *Incentive Strategies for Defense Acquisitions* (April 2001), choose one of three options: 1) Fax a written request to the DAU Publications Distribution Center at (703) 805-3726; 2) mail your request to Defense Acquisition University, Attn: AS-CI, 9820 Belvoir Road, Suite 3, Fort Belvoir VA 22060-5565; or 3) e-mail [jeff.turner@dau.mil](mailto:jeff.turner@dau.mil).

# Acquisition & Logistics Excellence

An Internet Listing Tailored to the Professional Acquisition Workforce

## Surfing the Net

### Department of Defense

#### Under Secretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L))

<http://www.acq.osd.mil/>

ACQWeb offers a library of USD(AT&L) documents, a means to view streaming videos, and jump points to many other valuable sites.

#### 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 Inspector General

<http://www.dodig.osd.mil/pubs/index.html>

Search for audit and evaluation reports, Inspector General testimony, and planned and ongoing audit projects of interest to the acquisition community.

#### 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.

#### USD(AT&L) Knowledge Sharing System (formerly Defense Acquisition Deskbook)

<http://deskbook.dau.mil>

Automated acquisition reference tool covering mandatory and discretionary practices.

#### Defense Acquisition University (DAU)

<http://www.dau.mil>

DAU Course Catalog, Program Manager magazine and Acquisition Review Quarterly journal; course schedule; policy documents; guidebooks; and training and education news for the Defense Acquisition Workforce.

#### Defense Acquisition University Distance Learning Courses

<https://dau.mil/registrar/apply.asp>

Take DAU courses online at your desk, at home, at your convenience!

#### Army Acquisition Support Center

<http://asc.rdaisa.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; ASAALT Bulletin; digital documents library; ASA(ALT) organization; quick links to other Army acquisition sites.

#### Navy Acquisition Reform

<http://www.ar.navy.mil>

Acquisition policy and guidance; World-class Practices; Acquisition Center of Excellence; training opportunities.

#### Navy Acquisition, Research and Development Information Center

[http://www.onr.navy.mil/sci\\_tech/industrial/nardic/](http://www.onr.navy.mil/sci_tech/industrial/nardic/)

News and announcements; acronyms; publications and regulations; technical reports; "How to Do Business with the Navy"; much more!

#### Naval Sea Systems Command

<http://www.navsea.navy.mil>

Total Ownership Cost (TOC); documentation and policy; Reduction Plan; Implementation Timeline; TOC reporting templates; Frequently Asked Questions.

#### Navy Acquisition and Business Management

<http://www.abm.rda.hq.navy.mil>

Policy documents; training opportunities; guides on areas such as risk management, acquisition environmental issues, past performance, and more; news and assistance for the Standardized Procurement System (SPS) community; notices of upcoming events.

#### Navy Best Manufacturing Practices Center of Excellence

<http://www.bmpcoe.org>

A national resource to identify and share best manufacturing and business practices being used throughout industry, government, and academia.

#### Naval Air Systems Command (NAVAIR)

<http://navair.navy.mil>

Provides advanced warfare technology through the efforts of seamless, integrated, worldwide network of aviation technology experts.

#### Space and Naval Warfare Systems Command (SPAWAR)

<https://e-commerce.spawar.navy.mil>

Your source for SPAWAR business opportunities, acquisition news, solicitations, and small business information.

#### Joint Interoperability Test Command (JITC)

<http://jitc.fhu.disa.mil>

Policies and procedures for interoperability certification. Access to lessons learned; link for requesting support.

#### 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.

#### Defense Systems Management College (DSMC)

<http://www.dau.mil>

DSMC educational products and services; course schedules; job opportunities.

#### Defense Advanced Research Projects Agency (DARPA)

<http://www.darpa.mil>

News releases; current solicitations; "Doing Business with DARPA."

#### 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; much more!

#### National Imagery and Mapping Agency

<http://www.nima.mil>

Imagery; maps and geodata; Freedom of Information Act resources; publications.

#### Defense Modeling and Simulation Office (DMSO)

<http://www.dmsomil>

DoD Modeling and Simulation Master Plan; document library; events; services.

#### Defense Technical Information Center (DTIC)

<http://www.dtic.mil/>

Technical reports; products and services; registration with DTIC; special programs; acronyms; DTIC FAQs.

#### Defense Electronic Business Program Office (DEBPO)

<http://www.defenselink.mil/acq/ebusiness/>

Policy; newsletters; Central Contractor Registration; Assistance Centers; DoD EC Partners.

#### 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.

#### Government-Industry Data Exchange Program (GIDEP)

<http://www.gidep.org/>

Federally funded co-op of government-industry participants, providing an electronic forum to exchange technical information essential to research, design, development, production, and operational phases of the life cycle of systems, facilities, and equipment.



# Acquisition & Logistics Excellence

An Internet Listing Tailored to the Professional Acquisition Workforce

## Surfing the Net

### Federal Civilian Agencies

#### Acquisition Reform Network (ARNET)

<http://www.arnet.gov/>

Virtual library; federal acquisition and procurement opportunities; best practices; electronic forums; business opportunities; acquisition training; Excluded Parties List.

#### Committee for Purchase from People Who are Blind or Severely Disabled

<http://www.jwod.gov>

Provides information and guidance to federal customers on the requirements of the Javits-Wagner-O'Day (JWOD) Act.

#### Federal Acquisition Institute (FAI)

<http://www.faionline.com>

Virtual campus for learning opportunities as well as information access and performance support.

#### Federal Acquisition Jump Station

<http://prod.nais.nasa.gov/pub/fedproc/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.

#### General Accounting Office (GAO)

<http://www.gao.gov>

Access to GAO reports, policy and guidance, and FAQs.

#### General Services Administration (GSA)

<http://www.gsa.gov>

Online shopping for commercial items to support government interests.

#### Library of Congress

<http://www.loc.gov>

Research services; Congress at Work; Copyright Office; FAQs.

#### National Technical Information Service (NTIS)

<http://www.ntis.gov/>

Online service for purchasing technical reports, computer products, videotapes, audiocassettes, and more!

#### Small Business Administration (SBA)

<http://www.SBAonline.SBA.gov>

Communications network for small businesses.

#### 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/>

Provides information and guidance on the requirements for shipping cargo on U.S. flag vessels.

### Topical Listings

#### Commerce Business Daily

<http://www.govcon.com/>

Access to current and back issues with search capabilities; business opportunities; interactive yellow pages.

#### DoD Specifications and Standards Home Page

<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.

#### Earned Value Management

<http://www.acq.osd.mil/pm>

Implementation of Earned Value Management; latest policy changes; standards; international developments; active noteboard.

#### Fedworld Information

<http://www.fedworld.gov>

Comprehensive central access point for searching, locating, ordering, and acquiring government and business information.

#### GSA Federal Supply Service

<http://www.gsa.gov>

The No. 1 resource for the latest services and products industry has to offer.

#### Joint Advanced Distributed Simulation (JADS) Joint Test Force

<http://www.jads.abq.com>

JADS is a one-stop shop for complete information on distributed simulation and its applicability to test and evaluation and acquisition.

#### 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; as well as briefings on the MANPRINT program.

#### Acquisition Community Connection (ACC)

<http://www.pmcop.dau.mil>

Includes risk management, contracting, system engineering, total ownership cost (TOC) policies, procedures, tools, references, publications, Web links, and lessons learned.

If you would like to add your acquisition or acquisition and logistics excellence-related Web site to this list, please put your request in writing and fax it to Collie Johnson, (703) 805-2917.

### Industry and Professional Organizations

#### Association of Old Crows (AOC)

<http://www.crows.org>

Association news; conventions, conferences and courses; Journal of Electronic Defense magazine.

#### DAU Alumni Association

<http://www.dauaa.org>

Acquisition tools and resources; government and related links; career opportunities; member forums.

#### Computer Assisted Technology Transfer (CATT) Program

<http://catt.bus.okstate.edu/asset/index.html>

Collaborative effort between government, industry, and academia. Learn about CATT and how to participate.

#### Electronic Industries Alliance (EIA)

<http://www.eia.org>

Government Relations Department; includes links to issue councils; market research assistance.

#### International Society of Logistics.

<http://www.sole.org/>

Online desk references that link to logistics problem-solving advice; Certified Professional Logistician certification.

#### 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.

#### Project Management Institute.

<http://www.pmi.org>

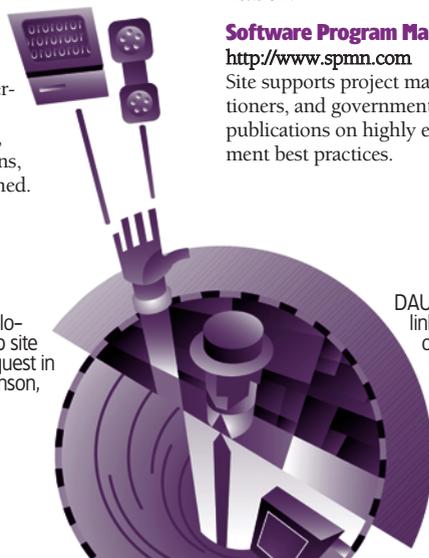
Program management publications, information resources, professional practices, and career certification.

#### Software Program Managers Network

<http://www.spmn.com>

Site supports project managers, software practitioners, and government contractors. Contains publications on highly effective software development best practices.

DAU encourages the reciprocal linking of its Home Page to other interested agencies. Contact the DAU Webmaster at: [webmaster@dau.mil](mailto:webmaster@dau.mil).



# Program Manager Writer's Guidelines in Brief

## (<http://www.dau.mil/pubs/pm/articles.asp>)

### Purpose

The purpose of *Program Manager* 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

Subjects may include, but are not restricted to, all aspects of program management; professional and educational development of DoD's AT&L Workforce; acquisition and logistics excellence; Defense industrial base; research and development; test and evaluation; modeling and simulation; commercial best business practices; and interviews with Government-Industry Defense executives.

*Program Manager* is not a forum for academic papers, fact sheets, technical papers, or white papers (these are typically recognized by their structured packaging, e.g., Introduction, Background, Discussion, Methodology, Recommendations, Conclusions). Those papers are more suited for DAU's journal, *Acquisition Review Quarterly*. *Program Manager* Magazine publishes, for the most part, 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.

Good writing sounds like comfortable conversation. Write naturally and avoid stiltedness. Except for a rare change of pace, most sentences should be 25 words or less, and paragraphs should be six sentences. Vary your syntax. Avoid falling into the trap of writing one declarative sentence after another. Package your article with liberal use of subheads.

### Length of Articles

*Program Manager* is flexible regarding length, but articles most likely to be published are generally 2,000–3,000 words or about 10 double-spaced pages, each page having a 1-inch border on all sides. However, do not be constrained by length requirements; tell your story in the most direct way, regardless of length. Do not submit articles in a layout format, nor should articles include any footnotes, endnotes, or references. *Be sure to define all acronyms.*

### Photos and Illustrations

Articles may include figures, charts, and photographs. They must, however, be in a separate file from the article. Photos must be black and white or color. *Program Manager* does not guarantee the return of photographs. Include brief, numbered captions keyed to the photographs. Place a cor-

responding number on the lower left corner, reverse side of the photographs. Also, be sure to include the *source* of the photograph. *Program Manager* publishes no photos from outside the Department of Defense without express permission. Photocopies of photographs are not acceptable.

With the increase in digital media capabilities, authors can now provide digital files of photos/illustrations. (Our author guidelines at <http://www.dau.mil/pubs/pm/articles.asp> contain complete instructions on transferring these files.) Note that they must meet the following publication standards set for *Program Manager*: color and greyscale (if possible); EPS files generated from Illustrator (preferred) or Corel Draw (if in another format, provide program format as well as EPS file); TIFF files with a resolution of 300 pixels per inch measuring 5 inches by 7 inches; or other files in original program format (i.e., Powerpoint).

### Biographical Sketch

Include a short biographical sketch of the author(s)—about 25 words—including current position and educational background.

### Clearance

All articles written by authors employed by or on contract with the U.S. Government must be cleared by the author's public affairs or security office prior to submission. In addition, each author must certify that the article is a "Work of the U.S. Government." This form is found at the end of the PM Author Guidance. Click on "Copyright Forms" and print the last page only, sign, and submit with the article. Since all articles appearing in *Program Manager* are in the public domain and posted to the DAU Web site, no copyrighted articles will be accepted. This is in keeping with DAU's policy of widest dissemination of its published products.

### Submission Dates

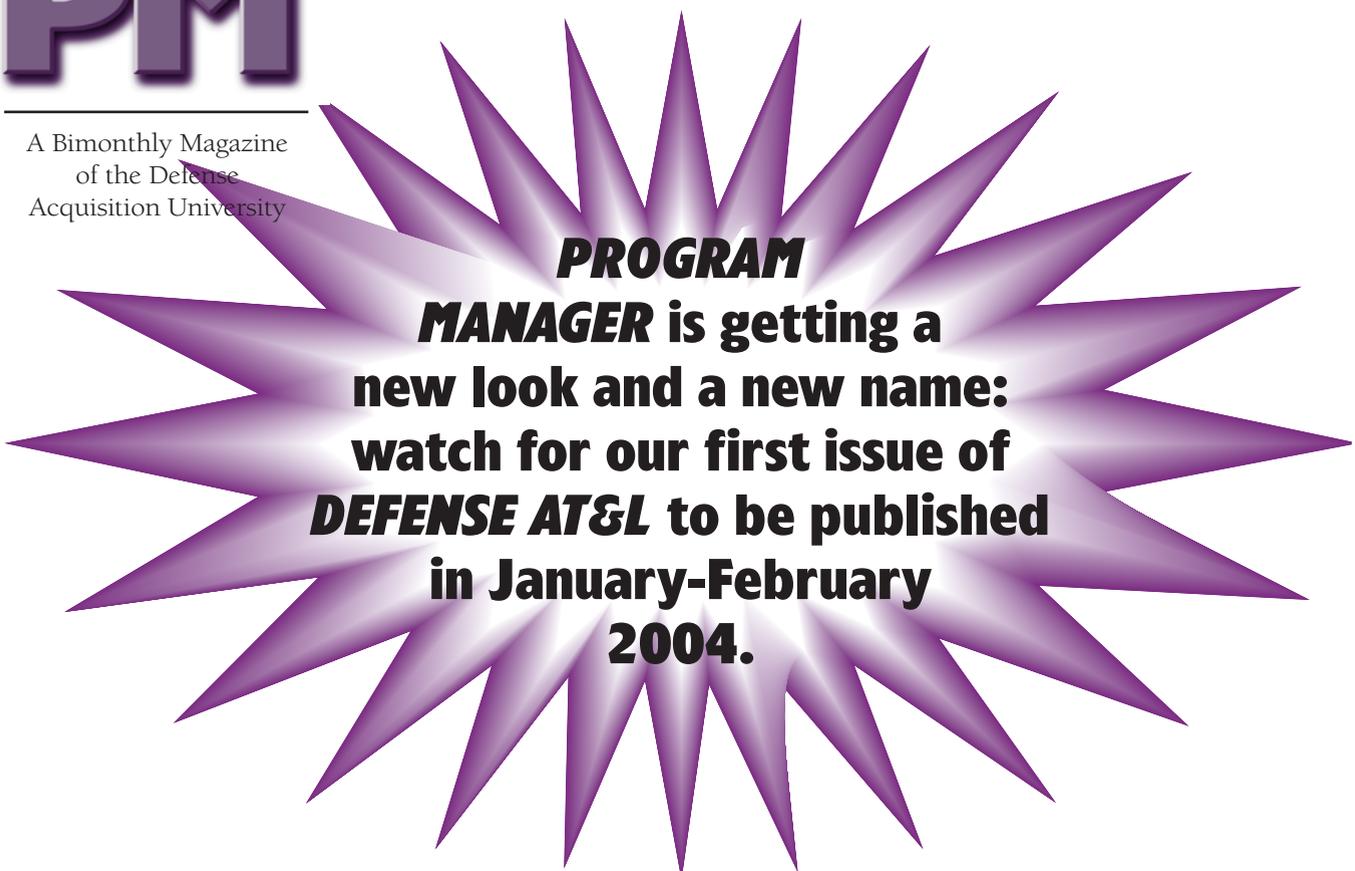
Issue	Author's Deadline
January–February	1 December
March–April	1 February
May–June	1 April
July–August	1 June
September–October	1 August
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### Submission Procedures

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