Spotlight on DAU Learning Resources

SIX DEGREES OF ACQUISITION INTEGRATION: PART II

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In the last issue of *Defense AT&L*, we described ACQ451–Acquisition Integration, a new 400-level course to be offered by DAU. We devised the course construct called "Six Degrees of Integration." We previously discussed the first two degrees ("Big A" and Functional Specialty integration); this continuation article describes the remaining four degrees.

Life-cycle Integration

The third degree of integration is life-cycle integration—in other words, making choices that integrate near- and long-term consequences of acquisition decisions. In defense acquisitions, managers must frequently make a difficult trade-off between an investment that promises to lower total ownership cost versus their need to deploy quickly and contain current cost. A single right answer to such trade-off decisions is elusive.

The "Kiowa Warrior" case study situates the participants in exactly such a dilemma. The case describes the trade-off the Army had to make in 1999 between funding upgrades to the aging Kiowa Warrior helicopter fleet vs. spending funds to hasten development of the next-generation Comanche. Participants are usually aware that Comanche was later cancelled and that the life of the Kiowa fleet was extended, but we ask them to play the role of a 1999 decision maker. With no foreknowledge of the eventual fate of Comanche, which course of action would they recommend? In the pilot offerings, opinion in the class was almost evenly split. The point, of course, is not to achieve class consensus, but to explain reasoning and expose competing criteria. For that purpose the case works well.

We also ask participants to work through a series of one-paragraph caselets, which address a sequence of life-cycle integration issues of a new generation of night vision goggles encountered sequentially over a period of years. By distributing the caselets one at a time, and asking table groups to analyze each one sequentially, participants gain experience at making life-cycle choices and seeing the repercussions of prior decisions.

SIX DEGREES OF ACQUISITION INTEGRATION

1. **"Big A" Integration**. Integrate the business processes and decision systems, (e.g. requirements generation and procurement).
2. **Functional Specialty Integration**. Integrate professional specialists on an acquisition team (e.g., logisticians and testers).
3. **Life Cycle Integration**. Integrate decision criteria to account for both near- and long-term consequences within and across programs.
4. **System of Systems Integration**. Integrate separate acquisitions to ensure current and future interoperation.
5. **Joint Integration**. Integrate requirements across military services to support the Services with a single joint acquisition.
6. **International Integration**. Integrate U.S. requirements with those of our allies to support multiple nations with a single acquisition.

System of Systems Integration

The fourth degree of integration is integration between separate systems that can operate autonomously but gain synergy by interoperating with one another. This type of integration is a requirement of virtually every complex defense system today. Problems arise trying to achieve the coordination, interface standards, schedule, and budget synchronization necessary to integrate systems that are managed by independent organizations.

To immerse the participants in the thorny technical and management issues surrounding system of systems integration, we use another case study, "Joint Strike Fighter Interoperability." The case describes the long intensive effort to map out the Joint Strike Fighter's position in the network of interoperating systems with which it would share the future battlespace. Issues that the participants analyze are:

- Who generates and enforces system of systems requirements?
- Who maintains the network configuration baseline for current and future interoperating systems?
- How and where are the system-of-systems capabilities tested?

- How does one trade off single-system capabilities against system-of-systems capabilities? That is, how much should the Joint Strike Fighter depend on other external sensors and control systems being available in combat?

Following the case discussion, participants are asked, "Where is your program in a system of systems?" They are asked to draw a diagram of the program they work on (or one with which they are most familiar) within a system of systems framework and explain it to their fellow participants. In workgroups, they share their own personal challenges of operating within this framework. This particular exercise also often exposes ineffective integration. As a participant graphically maps out and describes the interdependencies of his/her program with other programs, it is common to see that the liaison activities among the programs are insufficient and the interoperability risks are correspondingly high.

Joint Integration

The fifth degree of integration is integration of systems for use by multiple Services. Joint programs bring their own unique integration challenges such as varied requirements, competing priorities, funding challenges, testing needs, and cultures between the Services. The case study "Joint Biological Point Detection System" describes the difficulty of harmonizing requirements across the armed services and developing a single joint system for detecting biological attacks. As in the other cases, the myriad of competing criteria and priorities renders this case without a single right answer. However, participants become involved in the debate and soon realize that building one system that will satisfy multiple armed services is a risky undertaking. However, the alternative of developing Service-unique systems has its own problems, including higher cost per Service, duplication of effort, and lost economies of scale. Following the case, participants discuss their own challenges with joint programs and compare strategies applied to cope with them.

International Integration

The sixth and last degree of integration is integration across nations. The United States is increasingly including allies in the development and production of new defense systems, to share the cost, to gain wider access to technologies and skills, and to reinforce international military cooperation among allies. The challenges of international integration are similar to those of joint programs but are complicated by necessary interaction across governments and cultures. The case study used for this course module is the "Rolling Airframe Missile," which was codeveloped and coproduced by the United States and Germany. The case exposes the difficulties of achieving consensus across nations on what a system must do and how it must evolve. Because international program management involves many special players (Department of State, Department of Commerce, etc.) and many unique laws and regulations, a DAU guest instructor who specializes in international program management facilitated this lesson. In the two pilot offerings, the expertise of the guest instructor was vital because class discussion raised subtle and nuanced questions about international acquisition policy and regulations. Future offerings may include a non-DAU guest speaker such as a current program manager of an international program.

Course Wrap-up

The course concludes with reflections on perceptions that have changed during the course and with participants finalizing their integration action plans—actions they will take upon returning to their jobs to foster increased acquisition in their environments. The action plan is the essential take-away for participants. Although every lesson gives participants opportunities to learn by application, applying integration principles back on their jobs will reinforce what they have learned and improve their programs. One unfinished aspect of course design is whether and how to follow up with participants regarding their integration action plans. The Acquisition Community Connection Web site, <https://acc.dau.mil/CommunityBrowser.aspx>, may be an appropriate venue for participants to continue learning from each other as they pursue and share results of their individual action plans.

Early Success

DAU's new triad of 400-level courses appears to be an early success. ACQ451, in particular, appears to be filling a niche in necessary knowledge and skills to achieve effective acquisition integration. By partitioning the course objective of effective integration across six separate degrees and analyzing each degree in turn, participants are left with an appreciation for the full scope and challenge of effective integration. If any of these new 400-level courses interest you, you can find course dates and instructions for registering at <http://www.dau.mil>.

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DAU LEARNING RESOURCES FOR DMSMS PROFESSIONALS AND NEWCOMERS

Bill Kobren

The Defense Acquisition University, working in concert with the Defense Logistics Agency (DLA) and the DoD Diminishing Manufacturing Sources and Material Shortages Working Group, has fielded an extensive set of DMSMS-related training and implementation resources. These include four Web-based continuous learning modules (with a fifth planned); DMSMS, obsolescence, and continuous modernization materials in several of our DAU courses; and comprehensive Web-based materials available on the DAU Logistics Community of Practice (LOG CoP).

The four continuous learning modules are available either for continuous learning credit for the DoD acquisition, technology and logistics workforce, or in a browse mode that allows students to review the content but not receive official credit for completion.

While there are no prerequisites for any of the DMSMS courses, CLL 201, the DMSMS Fundamentals Course, should be taken before attempting CLL 203 or CLL 204.

The modules, which can be accessed on the DAU Continuous Learning site at <http://clc.dau.mil/>, are:

CLL 201–Diminishing Manufacturing Sources and Material Shortages Fundamentals

This three-hour computer-based continuous learning module is designed to provide a working-level overview of DMSMS issues and contains six lessons: Overview of DMSMS; Combating the DMSMS Problem; Reporting, Measuring, and Predicting DMSMS; Guidance and Reference Sources; DMSMS Tools for the Program Manager; and Successful DMSMS Management Models. This is a Service-neutral and discipline-neutral course at the end of which students will have a good basic working knowledge of DMSMS history, issues, tools, and current initiatives; and they will have seen real examples of successful proactive DMSMS programs. Students will understand why standardization of policy and procedure within the DMSMS community is so important and will be familiar with many other related topics. One of the most important tools covered is the DoD DMSMS Center of Excellence. Upon completion of this module students receive three continuous learning points.

CLL 202 - Diminishing Manufacturing Sources and Material Shortages Executive Course

This one-hour course provides concise DMSMS information for executives or program managers requiring an understanding of how DMSMS impacts their operations in terms of reliability, maintainability, supply chain efficiency, funding, policy, procedure, and staffing. The course is tailored to offer the executive a perspective of management/supervisory actions necessary to enable effective DMSMS mitigation, thereby enhancing mission readiness, efficiency, and cost effectiveness; and to understand the challenges and options to ensure proper establishment of an optimum proactive DMSMS team. Upon completion of this module, students will receive one continuous learning point.

CLL 203 - Diminishing Manufacturing Sources and Material Shortages Essentials

While not mandatory, students may have previously taken either the DMSMS Fundamentals or the DMSMS Executive Overview modules, both of which provide the fundamentals of proactive DMSMS management and cover regulations and policies, how to set up a DMSMS program, applicable metrics, and other issues. It is assumed that CLL 203 students have a working knowledge of these topics. As with the other modules, this module will center on electronics because it remains one of the primary problem areas. However, mechanical and materials DMSMS initiatives will also be covered. This module contains more technical content than the other modules. It will introduce students to DLA's DMSMS programs and capabilities and will review basic techniques for component research. The module will take approximately two hours to complete. Students receive two continuous learning points upon completion of this module.

CLL 204 Diminishing Manufacturing Sources and Material Shortages Case Studies

Though not mandatory, it would be helpful if students have completed the CLL 201, CLL 202, and CLL 203. While the other modules gave students the basic concepts, tools information, and skills, this course ties it all together. In this module, students will have an opportunity to review a few DMSMS program scenarios and evaluate the program's level of proactivity. Students will also make simple DMSMS management decisions for a real world DMSMS scenario, learning that in DMSMS, there is no single best way to do anything. One group's decision may not be the same as that of another group, but

both may be equally effective. This module will take students approximately two hours to complete. Upon completion of this module students receive two continuous learning points.

Tailored classroom versions of these courses can also be arranged and presented to your organization by a DLA or Service instructor by contacting dksp@dmsms.org.

Revised Web-based LOG 204 Released

In addition, DAU recently deployed a newly revised Web-based LOG 204–Configuration Management course, which includes a module on DMSMS as part of a larger lesson on issues and initiatives impacting configuration management. LOG 235–Performance Based Logistics also discusses the importance of DMSMS and obsolescence planning and the use of continuous modernization as a mitigation strategy.

Under the broader umbrella of "Aging Systems" at <https://acc.dau.mil/simplify/ev.php?ID=11656_201&ID2=DO_TOPIC> on the DAU Logistics Community of Practice Sustainment site <https://acc.dau.mil/log>, the university also maintains individual sites on the five topics listed below. Visited more than 23,000 times over the last two years alone, these sites contain extensive materials and resources related to:

- **Obsolescence**—the process or condition by which a piece of equipment becomes no longer useful, or a form and function no longer current or available for production or repair.
- **Diminishing Manufacturing Sources and Material Shortages**—the loss or impending loss of the last known manufacturer or supplier of raw material, production parts, or repair parts.
- **Continuous Modernization**—a process by which state-of-the-art technologies are inserted continuously into weapon systems to increase reliability, lower sustainment costs, and increase the warfighting capability of a system to meet evolving customer requirements throughout an indefinite service life.
- **Technology Insertion (sometimes also referred to as Technology Transition)**—the process of applying critical technology in military systems to provide an effective weapons and support system in the quantity and quality needed by the warfighter to carry out assigned missions and at the "best value" as measured by the warfighter.
- **Lead-Free Electronics/ Solder**—an issue that has arisen in large part as a result of a European Union directive which, among other things, results in the elimination of the use of lead in electronic components. This environmental initiative raises some very real concerns related to reliability and maintainability of high-tech weapon systems, as well as potential logistics issues related to configuration management, parts management, and cataloging.

The DMSMS site at <https://acc.dau.mil/simplify/ev.php?ID=11666_201&ID2=DO_TOPIC> contains dozens of DMSMS links, documents, and policy memos, from across DoD and the military services, including the *DoD Diminishing Manufacturing Sources and Material Shortages (DMSMS) Guidebook* (Version 1.1), a compilation of the best proactive practices from across DoD Services and agencies for managing the risk of obsolescence. With material extracted from various DoD DMSMS management documents, this DoD DMSMS Guidebook provides the DMSMS program manager with a central repository of best practices. Additionally, it identifies assorted measurement tools that may be useful in analyzing and tracking the effectiveness of DMSMS Programs.

Complementing the DMSMS resources available through the DMSMS Knowledge Sharing Portal at <http://www.dmsms.org>, the OSD Defense Microelectronics Activity at <http://www.dmea.osd.mil/>, the Government-Industry Data Exchange Program at <http://www.gidep.org/>, and a number of individual Service Web sites, DAU is an integral part of an aggressive DoD effort to help programs proactively manage and mitigate their DMSMS problem.

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NAVY NEWSSTAND (JULY 21, 2006)
PEO IWS, DAU RELEASE NAVAL OPEN ARCHITECTURE ONLINE LEARNING MODULE

WASHINGTON—The Program Executive Office, Integrated Warfare Systems (PEO IWS), chair of the Open Architecture Enterprise Team (OAET), and the Defense Acquisition University (DAU) released the Naval Open Architecture Continuous Learning Module (CLM) July 19.

CLM is an online learning course that has been developed to introduce Navy and Marine Corps acquisition professionals, sponsors, and fleet requirements officers to OA principles, and how to implement OA across the naval enterprise.

"We have long needed an introduction to Open Architecture that can be used by all hands to get a basic understanding of what it's all about, why we do it, and what it does for us," said Bill Johnson, director of Naval Open Architecture. "The continuous learning module we're fielding now meets that need. I'd encourage individuals interested to log in and take the course."

The CLM introduces the student to OA technical and business principles, including modular design and design disclosure, reusable application software, interoperable joint warfighting applications and secure information exchange, life cycle affordability, and encouraging competition and collaboration.

In addition, the course discusses best practices in OA contracting, ways to properly incentivize contractors, OA-related intellectual property rights issues, and some examples of the successful implementation of OA in the ARCI (Acoustic Rapid COTS Insertion) and E-2 Hawkeye programs.

This CLM is available on the DAU Continuous Learning Center (CLC) Web site at <https://learn.dau.mil/html/clc/clc.jsp>, which is a Department of Defense resource dedicated to the delivery of continuous learning opportunities in support of the acquisition workforce. The CLC is a publicly accessible Web site, and anyone can take the courses it offers. Navy and Marine Corps personnel, however, will receive credit for successfully completing the two-hour course.

More information about naval OA is available from the Naval Open Architecture Special Interest Area on the Defense Acquisition University's Acquisition Community Connection Web site at <https://acc.dau.mil/oa>.

Released by the Program Executive Office, Integrated Warfare Systems Public Affairs.

DAU CONTINUOUS LEARNING CENTER MODULES ADDED

The following new online learning modules are available on the DAU Continuous Learning Center Web site at <http://clc.dau.mil> through both "browse" and "register" options:

New Modules

- Contingency Contracting Officer Refresher – (CLC 114)
- Procedures, Guidance, and Information (PGI) – (CLC 113)
- Utilities Privatization Contract Administration – (CLC 120)

Harvard ManageMentor Modules

In order to access the Harvard ManageMentor Modules you must register for the module. Proprietary considerations prevent the modules from being available in browse mode. Register using the Continuous Learning Module registration process and select the "Harvard Business Management Modules" radio button in the Training Category section.

Coming Soon ...

The following continuous learning modules are in development and will go live during August – September 2006.

- Berry Amendment
- Evolutionary Acquisition
- Independent Logistics Assessment
- Information Assurance (update)
- Modular Open System Architecture
- Quality Assurance Auditing
- Software Anti-Tamper
- Software Protection
- Structuring Contracts for Emerging DoD Requirements
- Fundamentals of Technical Transfer and Pricing Controls
- Outcome Performance Measures
- Technical Planning
- Technical Readiness Assessments

DAU MIDWEST REGION PARTNERS WITH DEFENSE CONTRACT MANAGEMENT AGENCY (DCMA) DETROIT

Travis Stewart, dean, DAU Midwest Region in Kettering, Ohio, and Army Colonel Susan K. Grubb, commander, Defense Contract Management Agency (DCMA) Detroit, Mich., signed a Learning Organization Agreement on Aug. 9, 2006. Under the terms of the Learning Organization Agreement, the Midwest Region and DCMA Detroit will partner to provide professional education and training opportunities across the acquisition, logistics, and technical disciplines to DCMA Detroit offices.

DCMA Detroit works directly with defense suppliers to ensure that DoD, federal, and allied government supplies and services are delivered on time, at projected cost, and meet all performance requirements. DCMA directly contributes to the military readiness of the United States and its allies, and helps preserve the nation's freedom. DCMA-Detroit has several offices throughout the

state of Michigan. Their mission is to provide customer-focused acquisition life cycle and combat support to ensure readiness worldwide, 24/7.

DAU Midwest Region, Kettering, Ohio, serves the 12 surrounding Midwest states and has Learning Organization Agreements within the academic community, as well as with a number of DoD acquisition organizations/federal agencies:

- Headquarters Air Mobility Command
- U.S. Transportation Command
- Defense Contract Management Agency (DCMA) St. Louis
- Defense Contract Management Agency (DCMA) Boeing
- National Geospatial-Intelligence Agency
- U.S. Army Program Manager, Future Combat Systems (Brigade Combat Team)
- Defense Information Systems Agency (DISA),
- U.S. Army Logistics Systems Support Office, Communications Electronics Command
- United States Department Of Treasury, FedSource
- Department of Energy (DoE)
- Environmental Management Consolidated Business Center.

For further information on DAU Midwest Region's learning organization agreements, contact Stephanie France (937) 781-1063, e-mail Stephanie.France@dau.mil.

COURSES EQUIVALENT TO MANDATORY DOD ACQUISITION COURSES

Ever wonder if your previous private-sector training and education, or training and education you may be contemplating for the future, would meet the statutory requirements for DoD acquisition certification? Find out today by checking the matrix compiled by the Defense Acquisition University at <http://www.dau.mil/learning/appg.aspx> for a summary of equivalent credit authorization for DAU courses. (Course equivalencies are renewed annually and are effective only as indicated.) The matrix is an extensive list of academic courses—classroom only—offered by various training providers that have been certified as equivalent to mandatory acquisition courses provided by DAU.

To date, no provision for computer-based technologies such as computer conferencing or Internet delivery has been identified. Individuals seeking credit for equivalency courses should provide a copy of their college transcript to their servicing personnel office.

DAU 2007 CATALOG

The 2007 DAU Catalog has been posted at <www.dau.mil/catalog>. The version on the Web site is configured as traditional .PDF files broken down by chapter and appendix as well as the Catalog in its entirety. You may request a Catalog on CD or in hardcopy (one hardcopy per request) by contacting DAU's Student Services Office at student.services@dau.mil. Please be sure to specify CD or hardcopy. Currency of information should always be confirmed online.

DAU AND U.S. MARINE CORPS SIGN MEMORANDUM OF AGREEMENT FOR CONTINGENCY CONTRACT TRAINING

On Aug. 1, 2006, the Defense Acquisition University and the U.S. Marine Corps established a new program of instruction to deliver contingency contract training to Marines. Tim Shannon, dean of DAU's Capital and Northeast Region, and Mike Mutty, the Marine Corps acting deputy assistant commandant for installations and logistics (contracting), signed the five-year Memorandum of Agreement, marking a clear shift to mission-focused training that supports Marines in worldwide contingencies such as Afghanistan and Iraq.

For the past few decades, Marine officers attended the Naval Postgraduate School's 18-month master's degree program. The master's degree provided a suitable education base for acquisition professionals working on major weapon system programs. Under the new agreement, Marines will complete a five-month program of instruction focusing on contracting on the battlefield. This practitioner-based training will develop the practical skills that the Marine Corps' leadership desires for contingency contracting officers supporting deployed units.

For the past several months, DAU Capital and Northeast Region professors Bob Spangler, Lenny Manning, Dave Fowler, Army Lt. Col. Raleigh Jimenez, and Mike Wooten have been planning and developing the program of instruction with Maj. Sean Hayes, Maj. Chad Dean, and Cmdr. Drew Mullins for the Marine Corps. A pilot program began in October 2006 at Camp Lejeune, N.C.