

# Training the DoD Software Acquisition Professional

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**Abstract.** Defense Acquisition University (DAU) is the department's premier software acquisition training institution. Software applications are now the primary method of providing warfighter capability in all of our programs. Education about how to do software acquisition management of the requirements, design, development, deployment, operations, maintenance and disposal of software applications is a key factor to providing operationally effective, efficient and timely capabilities for our warfighters. DAU educates our DoD Acquisition professionals with the evidence-based best practices, lessons learned and DoD policy mandates that allow our warfighters to receive highly capable and reliable software-based capabilities. This article describes where DAU is at with software acquisition training, where we are headed in the next couple of years and the long term realization that software now impacts all systems and all career fields. This article will help the reader understand the current DAU training model and how DAU is working with the IT Functional Leader to identify ways to train all of DoD as needed to ensure we deliver software acquisition management training that improves the IT acquisition outcomes for our warfighters.

## Introduction

Software applications have become the primary method to provide warfighter capability for most of DoD's systems. DAU is the department's premier software acquisition training institution. This article describes where DAU is at with software acquisition training and where it is headed. Because of the growth of software acquisition, all systems and all career fields need to know some aspect of software acquisition. DAU's goal is to ensure successful software acquisitions across the department for all DoD stakeholders. DAU is working with the IT Functional Leader to identify ways to train all of DoD as needed to ensure we deliver the proper Software Acquisition Management (SAM) training to the DoD workforce. DAU's goal is to improve IT acquisition outcomes for our warfighters.

## Background

IT acquisition management training includes hardware and software acquisition. Software acquisition education includes how to manage the requirements, design, development, deployment, operations, maintenance and disposal of software applications. Proper IT (software) acquisition management is a key factor to providing operationally effective, efficient and timely capabilities for our warfighters.

The mission of DAU is to provide a global learning environment to develop qualified acquisition, requirements and contingency professionals who deliver and sustain effective and affordable warfighting capabilities. DAU's vision is to enable the entire Defense Acquisition Workforce to achieve better acquisition outcomes for our warfighters.

The DAU IT career field includes Program Managers, Project Managers, IT Specialists in Policy and Planning, Enterprise Architects, Cybersecurity Specialists, Systems Analysts, Application Software Developers, Operating Systems administrators, Network Services Technicians, Data Managers, Internet/Web Managers, System Administrators and Customer Support personnel.

Currently, DAU's IT portfolio includes mandatory Defense Acquisition Workforce Improvement Act (DAWIA) training, Continuous Learning Modules (CLMs), Mission Assistance and Knowledge Sharing via the Acquisition Community Connection (ACC) Communities of Practice (COP) for IT and Software Acquisition Management (SAM).

## Training Courses

Today, IT acquisition management training is primarily focused on four DAWIA courses:

1. Basic Information Systems Acquisition (Information Resource Management (IRM)), IRM101 (Level 1). This is a distance learning course (online course). This course focuses on describing and defining the basic terms of IT. All types of students take this course from the IT career field to other career fields like the Program Management (PM) career field. This course is scheduled to be completed within 60 days.

2. Intermediate Systems Acquisition, IRM202 (Level 2). This is a hands-on classroom experience. This course focuses on a working level experience in the typical acquisition environment, a DoD program office. This is the foundation course for the IT curriculum. This course helps the IT decision-makers identify the evidence-based best practices, lessons learned, rules of thumb and use them via classroom exercises and practicums (role playing in the program office environment). All IT career field supervisors and practitioners must take this course to achieve Level 2 education requirements. This is a two week or 10 day classroom experience.

3. Advanced Systems Acquisition, IRM304 (Level 3 First Course). This is a classroom graduate-level experience. This course focuses on the IRM type experience including CIO, PEO level, and Milestone Decision Authority (MDA) IT level decision-making experience. This course uses cases studies and some subject matter expert guest speakers to help the students understand the decisions needed to be made to ensure the enterprise IT decisions are being made correctly and why they were made for each program. This course is focused on the IT career field supervisors and PEO/MDA level practitioners. All IT career field personnel must take this course to achieve Level 3 education requirements.

4. Advanced Software Acquisition Management, SAM301 (Level 3 Final Course). This is a classroom graduate-level experience. This course focuses on the SAM type experience (PM and PMO software design and development decision-making experience). Using a sound problem-solving model, students practice making management decisions that a typical software program office has to make to be successful. This course includes a balanced number of subject matter expert guest speakers to help keep pace with the ever-changing software acquisition environment. This course is focused on the IT career field supervisors and program level practitioners. All IT career

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field personnel must take this course to achieve Level 3 education requirements. SAM101 has been retired since the content from SAM101 was merged with IRM101 a few years ago. The basics of DoD acquisition courses (ACQ101, ACQ201A and ACQ201B) are pre-requisites for all IT courses.

### Why IRM and SAM?

Years ago, there were separate SAM and IRM courses at each level. However, with the Services request to decrease training time and increase work time, the level 1 courses of SAM101 and IRM101 were merged into IRM101 and level 2 courses of SAM201 and IRM201 have been merged into one course called IRM202.

The accepted difference between IRM and SAM courses is that IRM is focused on the strategic planning and managing of the acquisition of IT at the system-of-systems level, enterprise IT Policy management issues and Enterprise Architecture levels. These are things that the MDA manages. Whereas, SAM is focused on the detailed planning, managing, designing, developing, deploying, operating and maintaining of the software products being acquired. SAM is tactically focused on the solution architecture, the software architecture being used between and by all five domains of DoD software systems (Weapons, C4ISR, Defense Business Systems, Modeling and Simulation, Infrastructure Systems and Services). These are the software applications and interfaces that DoD program managers manage.

Current IRM curriculum is based on the Clinger-Cohen Act (CCA), Title 40, Subtitle III, 1996 plus the latest NDAA IT management initiatives from 2011 (TITLE VIII on Acquisition Process for IT), DoDI 5000.02, Operation of the Defense Acquisition System, Defense Acquisition Guidebook, Chapter 7 (not updated yet with the latest DoDI 5000.02), DoDI 8500.01, Cybersecurity and DoDI 8510.01, Risk Management Framework for DoD Information Technology (IT), which explains how to certify and accredit IT Systems for authority to operate.

Current SAM curriculum is based on NDAA software initiatives from 2003 (Section 804 SW Improvements), 2007 (Section 853 SW Development emphasis for PMs), 2009 (Section 144 Open Arch, Section 803 SW Reuse), 2011 (Section 241 Software Assurance), DoDI 5000.02, Operation of the Defense Acquisition System, Defense Acquisition Guidebook, Chapter 4 (not updated yet with the latest DoDI 5000.02), and DoDI 8510.01, Risk Management Framework for DoD IT, which describes how to identify the software controls required to be designed in to secure software applications.

DAU also produces online CLM courses that specialize in one functional area. Continuous Learning modules for Engineering (CLE) are where most of the IT CLMs exist. The current IT CLM portfolio includes: CLE010 on Privacy Protection, CLE012 on Open Systems Architecture (OSA), CLE016 on Outcome-based Performance Measures, CLE022 on Anti-Tamper, CLE041 on Software Reuse, CLE060 on Software Measurement, CLE063 on CMMI, CLE068 on Intellectual Property Rights (Data Rights for commercial built software applications), CLE074 on Cybersecurity (March 2015 deployment), and CLL (Logistics)056 on Software Sustainment. Some of these courses are pre-requisites for our DAWIA courses.

### Mission Assistance

DAU provides program office mission assistance to help DoD programs at their point of need. If you have current acquisition challenges, DAU can provide assistance. DAU has regional Associate Deans for Outreach and Mission Assistance (ADOMA) that lead the mission assistance efforts across the country.

### Knowledge Sharing

DAU has established an ACC website including Communities of Practice (COP). Information Technology has two COPs based on the definitions above. The IRM COP is called the IT COP. The IRM or IT COP focuses on the CIO/PEO/MDA level of knowledge. This is the enterprise IT level of knowledge topics. The SAM COP is called the Software Acquisition Management COP. The SAM COP is the software architecture, software design, software development and management level of knowledge topics.

### Organization

DAU has placed software acquisition training within the Engineering and Technology departments across the five DAU campuses (located in five regions: West, South, Midwest, Capital and Northeast and Mid-Atlantic campuses). The Learning Capabilities Integration Center, oversees the curriculum development for all DoD career fields.

### Upcoming Changes in IT Curriculum

IT technology is changing at a very fast rate compared to DoD's ability to field programs. Law and policy changes are occurring annually as the federal government learns more about how best to manage IT. Basic IT (Software) acquisition management now touches just about every DoD career field from Program Management to Systems Engineering, to Logistics, to Contracting, to Test and Evaluation, to Science and Technology, etc... Software applications are now the primary method of providing warfighter capability in all of our programs.

Currently, DAU has just updated all of the IT DAWIA training courses with the latest DoDI 5000.02 (Operation of the Defense Acquisition System) and DoDI 8510.01 (Risk Management Framework for DoD IT).

The DoD IT Functional Leader has identified 41 IT competencies which need to be trained to the IT career field workforce. DAU is in the process of fully understanding what needs to be trained within each competency. DAU is establishing the "to be" IT training architecture. DAU will then update the DAWIA training courses with the applicable content from the 41 IT competencies.

### Looking to the Future

Because software has taken over the functionality of most of our DoD systems, it is vital that all career fields have an understanding about how best to manage IT within their functional area. In addition, continued software technology advancements are causing the IT content to increase. For example, with the adoption of the DoD Cloud, we are now able to share information across domains anywhere in the world securely (Cybersecurity). The IT content footprint continues to increase but our current DAU courseware and time to cover the topics has stayed constant. DAU, under the direction of the IT Functional Leader, is re-thinking how to get the increased IT acquisition

content out to our IT career field students and how to better insert IT acquisition management across all career fields.

### Conclusion

In conclusion, DAU provides the basic evidence-based best practices, lessons learned and DoD Policies/Guidance IT training for all IT career field positions (IT PMs, IT Specialists). Under the direction of the IT Functional Leader, DAU is looking at providing IT training to the other career fields like Program Managers, Systems Engineers, Contracting, Logistics, Business/Cost Estimating/Financial, Test & Evaluation, Production Quality Manufacturing and Joint and Service Program Management Offices. This training will help all DoD stakeholders to understand what it takes to acquire software-based products in the most efficient way providing reliable, quality IT capability for our warfighters! Come to DAU to learn more. ❖



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## ABOUT THE AUTHOR



**Professor Skertic** is the Performance Learning Director for Information Technology for the Defense Acquisition University. He has held this role since April 2014. Prior to taking this position, Professor Skertic was the Acting Department Chair for the Capital and Northeast Region's Technology and Engineering Division (NE-ET). From 2011 to 2012, Professor Skertic served as the Deputy, NE-ET. From 2002 to 2011, Professor Skertic was the Software and Information Technology functional lead for the Defense Acquisition University (DAU). In this role, he worked with his peers in attempting to keep up to date with the latest trends and DoD initiatives involving architecture and software acquisition management while teaching DAWIA and Mission Assistance courses on IT and Systems Engineering.

Professor Skertic is a retired Army Lieutenant Colonel. Professor Skertic was commissioned in the Field Artillery. While on active duty, Professor Skertic served as a Product Manager (PM) of the Army's first database on fitness and the establishment of the Army physical fitness standards from 1982 to 2001. He then became the PM for the automation of the separation and bonus systems (finance). From there he became the Technical Director for the Army's Global Command and Control System

(GCCS) program and ended his career on the Army Staff as the Army's Software Architect for Task Force XXI and the digitization of the 4th Infantry Division, Ft Hood, TX (i.e., Blue Force Tracking). He was a member of the Army's Acquisition Corps. He was the Army's representative to establishment of DISA's Common Operational Environment (COE) and the creation of the Global Command and Control System (GCCS).

Upon retiring in 1999, Professor Skertic went to work for INRI (eventually bought by Logicon and Northrop Grumman Information Technology) where he served as the contractor Deputy Program Manager for the Marine Corps Systems Command's Systems Engineering and Integration (SEI) Division. During this timeframe he helped the Marine's better understand the Army's tactical and theater software command and control architectures.

Professor Skertic holds a Bachelors of Science Degree in Engineering from the United States Military Academy at West Point and a Masters of Science Degree in Computer Science from the University of Southern California.

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