



# THE NEW DEFENSE ACQUISITION WORKFORCE AWARDS Recognizing the Importance of Software

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*U.S. national security increasingly relies on software to execute missions, integrate and collaborate with allies, and manage the defense enterprise. The ability to develop, procure, assure, deploy, and continuously improve software is thus central to national defense. At the same time, the threats that the United States faces are changing at an ever-increasing pace, and the Department of Defense's ability to adapt and respond, is now determined by its ability to develop and deploy software to the field rapidly.*

—Defense Innovation Board, “Software Is Never Done: Refactoring the Acquisition Code for Competitive Advantage,” (Washington, DC: Department of Defense, 2019).

**S**FTWARE IS A CRITICAL AND ENDURING capability, but is the Department of Defense (DoD) acting quickly enough to embrace this reality? Software is a major component of business systems and weapons systems; in fact, software is an inescapable part of the daily lives of the entire defense workforce. Consequently, the development and deployment of modern software rapidly and securely to the field and across the DoD-wide enterprise is a key enabler for the United States to maintain the defense technological advantage over its adversaries. As announced in the January-February issue of *Defense Acquisition* (Page 44), Ellen Lord, Under Secretary of Defense for Acquisition and Sustainment, recently added “soft-

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ware" as a new category in the 2019 Defense Acquisition Workforce Awards. The category was added to recognize individuals and teams who are adopting modern software development approaches to meet the growing and ever-changing digital challenges.

The inclusion of software in the Defense Acquisition Workforce Awards does more than acknowledge individuals who are developing and delivering software capability to the Warfighter; the new awards also aim to encourage and energize the workforce to retain its internal software capability, including Service members. The new awards also provide recognition to the DoD's lethality-essential software workforce and their innovative accomplishments in improving software development and software acquisition vital to military systems supporting the Warfighter. Ultimately, only an informed and cohesive software workforce can work together to effectively change the culture around software.

As reported in the previous issue of *Defense Acquisition*, Kessel Run, an Air Force software factory, was awarded the Software Innovation Team Award. Kessel Run implements a DevSecOps culture (see <https://software.af.mil/training/devops/>). The team fielded 18 capabilities, including a tanker planning tool, by adopting an Agile software development approach, user-centered design, and lean startup methodologies. But let's share the love and take a closer look at the other worthy contenders for this award.

The Army nominated the Heads Up Display User Experience Team for their efforts in executing the Integrated Visual Augmentation System program, a 5-year program to integrate state-of-the-art night vision sensors with edge computing processors and myriad wireless network functionality. The team, in collaboration with non-traditional contractor Microsoft, used innovative collaboration tools and adopted an iterative software development approach to rapidly execute the first Soldier test within 4 months from contract award. The team's understanding of the Soldier threat environment and knowledge of emerging situational awareness technologies were also

instrumental in properly articulating system requirements to Microsoft.

The Navy nominated the Naval Air Warfare Center Aircraft Division (NAWCAD) Software Engineering Department for supporting all NAVAIR (Naval Air Systems Command) programs, including the CH-53K helicopter. The team supports these programs using a very lean workforce of 135 civilian software engineers, staffing their programs quickly, at an affordable cost, and coordinating among team members and managers efficiently to ensure all software needs are met without disruption. NAWCAD was nominated for this horizontal sharing of its in-house expertise and processes across NAVAIR, which has greatly contributed to producing overall quality products to the fleet.

The Navy also nominated the U.S. Marine Corps' Combined Arms Command and Control Trainer Upgrade System (CACCTUS) Acquisition Team. CACCTUS is a simulation training system; the scenario driven, simulated environment allows Marines to practice the teamwork required to command, control, and coordinate the use of supporting arms. The CACCTUS Acquisition Team was nominated for adopting agile development processes over a 5-year period to acquire the technology needed to change the traditional hardware architecture (desktops) to a thin client design.

The Missile Defense Agency (MDA) nominated the Aegis Ballistic Missile Defense Baseline 6.0 Team for leading a joint team consisting of members from two program offices to oversee the development of an intricate and complicated computer program to deliver a layered defense against advanced missile threats. This team successfully integrated a solid state radar and a shipboard computer program from competing industry partners to deliver a program that will be fielded on the Navy's Flight III AEGIS Destroyers.

The U.S. Special Operations Command (USSOCOM) nominated the Modi Software Convergence and Refactoring Team for merging multiple software code bases

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used by USSOCOM, the Army, Marine Corps, and other government agencies. This monumental task was completed after the team successfully awarded a 24-month, \$8 million contract to the prime vendor to refactor and re-architecture the entire Modi code base.

The Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) nominated the BEES Joint Capability Technology Demonstration (JCTD) Integrated Management Team (IMT) for defining an autonomous architecture comprised of 22 specific system interfaces that flow from mission planning to mission execution. The most significant software innovation, which was flight demonstrated, is the Systems Intelligence Manager (SIGMA) collection management software. It was demonstrated while running with the Tasking, Positioning, and Orientation (TOP) autonomous system piloting software on flight compatible hardware. SIGMA was developed by Naval Research Laboratory; TOP is Georgia Technical Research Institute software that is foundational to several other DoD autonomy programs.

The High-altitude Attributable Link Offset (HALO) JCTD IMT was nominated by OUSD(R&E) for developing high-altitude communication relays on very low-cost balloon-platforms using small, attributable, ultrahigh frequency communication payloads (essentially low-cost, disposable balloons carrying low-cost transponders), with no sensitive data onboard, to mitigate adversary communications jamming in a contested environment. This solution is of tremendous benefit to the Warfighter, which merited the HALO JCTD IMT a nomination.

Software engineers on the Semi-Automated Counter Propaganda (SCP) JCTD IMTs were nominated by OUSD(R&E) for developing new software capabilities to enable SCP to operate undetected and allow the joint Warfighter to employ multiple social media entities in the information environment to disrupt and counter narratives posed by threat organizations. The capabilities delivered to USSOCOM for military information support operations directly supports the requirement to become more adept at parrying narratives aimed at undermining U.S. military power and disrupting U.S., allied, and partner, operations.

George Senger, a lead engineer supporting Project Manager Tactical Radios under the Army's Program Executive Office for Command, Control Communications-Tactical, was awarded the Individual Software Achievement Award for his efforts in leading a team that developed an application that revolutionizes the Soldiers Unit Task Reorganization process. But who were the other estimable nominees?

David Gay, the Test and Evaluation (T&E) Lead for the Navy's Strike Planning and Execution Program Office (PMA-281), was also nominated for the Individual Software Achievement Award. He has consistently conceived and implemented innovative software T&E strategies in support of accelerated acquisition efforts, reducing cost and schedule while exceeding expectations. His leadership and advocacy of automated software testing at the Naval Aviation Enterprise level has saved more than \$2 million that he continues to apply to other programs.

The Navy also nominated Timothy Bergland for leading a cross-competency team that spanned two program management offices within Marine Corps Systems Command, as well as NAWCAD and Training and Education Command. Under his leadership, the team moved the Marine Corps Distance Learning Program from a larger server platform maintained at NAWCAD to the Amazon Web Service Cloud, reducing costs and risk of catastrophic failure due to site loss from natural or manmade causes.

Air Force Materiel Command nominated Col Enrique Oti for his leadership of Kessel Run. He was nominated for revolutionizing how the Air Force develops and delivers software solutions. He transformed a traditional program office into a highly effective team of technologist and acquisition professionals that demonstrated the ability to continuously deliver valuable software to the Warfighter across multiple weapons systems.

We congratulate and recognize all the individuals and teams for being nominated for the 2019 Defense Acquisition Workforce Awards. By sharing their achievements and best practices, we will leverage proven successes for greater research, engineering, acquisition, and sustainment in support of the National Defense Strategy and the Warfighter.

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