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WINTER 2022

ALTERNATIVE ACQUISITION

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KEEPING PACE, CUTTING COSTS

New business model for satellite communications may bundle equipment and services

AIM-ING HIGH

Agile acquisition gets technology to troops—fast.

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ARMY AL&T

WINTER 2022

FROM THE AAE

ALTERNATIVE ACQUISITION

ON THE COVER

In this issue, we explore the use of middle-tier acquisition, other-transaction authority and other pathways to modernization that speed the acquisition process by simplifying policy, empowering program managers, using data-driven analysis and managing risk.

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ARMY AL&T

WINTER 2022

FEATURE ARTICLES

WORKFORCE

From the Editor-in-Chief

"The definition of insanity is doing the same thing over and over again and expecting a different result."

—Anonymous

Usually, the "insanity" quote is wrongly attributed to Albert Einstein, but it is thought to have originated one of the 12-step communities by an anonymous member. Yes, people misattribute the quote over and over thinking maybe, someday, Einstein will have actually said it. But he didn't, and he won't.

The connection to this issue's theme of Alternative Acquisition and the quote is specifically how the Army conducts acquisition. The processes are, well, just that—processes that have been created over time and produce results. However, rigidity is the enemy of flexibility, and with the historically rapid pace of technological change as just one factor, something's got to give in order to meet the demanding need of modern warfare.

Alternative acquisition is about how the Army Acquisition Workforce is breaking the cycle of insanity by stepping outside of the "normal" Federal Acquisition Regulation (FAR)-based process and actively seeking ways to disrupt the cycle through the use of such methods. What are they? Such methods are those procurement or funding options that are in the regulations, but not part of the normal acquisition process. For instance, there are other-transaction authority agreements, Simplified Acquisition Procedures, both contracting methods designed to streamline the acquisition process. With the revision of the DOD 5000 series of instructions, we now have the Adaptive Acquisition Framework and its acquisition pathways, which are FAR-based, but they're tailored to the military's six primary categories of acquisitions. The middle-tier pathway of the Adaptive Acquisition Framework is intended for rapid prototyping using innovative technology to develop "fieldable" prototypes in an operational environment within five years of the requirement. Or, rapid fielding can be used where proven technologies are used to field new or upgraded products, with production beginning within six months, and complete fielding of the system within five years.

So, if you're like me, you must be wondering: Why are we performing alternative acquisition? If it's better, faster and gets the Soldiers what they need, why isn't this standard acquisition? Instead of "alternative," why don't we just call it acquisition?

The short answer is a long one; it's called the FAR. Spanning 37 chapters and thousands of pages, the FAR provides the guidelines by which procurements must be made. Born from the Armed Services Procurement Regulation established in 1947, it was codified in Title 48 of the Code of Federal Regulations (CFR) in 1984 to create a uniform structure for many federal agencies.

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Nevertheless, since its streamlining reform in the 1990s, the FAR has added back almost 200 government-unique clauses for buying commercial items and services. To speed up the process, and as early as the National Defense Authorization Act for Fiscal Year 2016, Congress opened up other-transaction authority and mid-tier acquisition options. These processes provide relatively uninhibited access to commercial technology, services and products. It seems that, the more the FAR restricts, the more alternatives have to be created to get around its limitations.

To ensure that our Soldiers have what they need when they need it, Army Acquisition Workforce members employ standard and alternative acquisition methods on a daily basis. For example, in "Double Time," on Page 18, we learn how the U.S. Army Medical Research and Development Command is using a consortium with other-transaction authority to increase not only the speed of acquisitions but also the innovation behind them. We also see inventive minds at work at the Program Executive Office for Command, Control, Communications – Tactical in "Keeping Pace, Cutting Costs," on Page 24. The command is looking at doing business in an entirely new way by leveraging the tactical network's two-year capability-set cycle to bundle and lease rather than own satellite communications capabilities that will enable the Army to more affordably keep up with the accelerating speed of technology. In "FAR/Not FAR," on page 8, learn about how alternative acquisition is working, according to experts, and where we need to go from here.

As always, if you have comments, critique or an article you would like to share, we would love to hear about it. Please contact us at **armyalt@mail.mil**. We look forward to hearing from you.

Nelson McCouch III
Editor-in-Chief

ON THE RIGHT TRACK

Col. Gavin Gardner, left, commander of Joint Munitions Command, rode the rails with Capt. Danielle Chavarria, center, and Col. Stephen Dondero, right, commander of Crane Army Ammunition Activity in Indiana, during a visit to the installation's new shipping and receiving facility. (Photo by Lindsay Grant, Crane Army Ammunition Activity)

A TAILORED APPROACH

New Adaptive Acquisition Framework provides pathways to simplify and expedite capability requirements.

It is often said that modernization is a team sport because it takes the entire team to succeed—communicating, collaborating, integrating and synchronizing all of the moving parts. That's what we call the materiel enterprise—from science and technology to prototyping and experimentation, from requirements generation and refinement to materiel development and production, fielding and, ultimately, sustainment and divestiture.

Our roles are distinct but complementary ways to achieve the Army's modernization while providing our joint warfighters with the best equipment possible in the event our Army, on behalf of the nation, has to go to war.

As Secretary of the Army Christine Wormuth noted in her opening remarks at the Association of the United States Army Annual Meeting and Exposition in October, "We have substantially transformed how the Army modernizes and develops new weapons systems." And we, the acquisition community, partnering with Army Futures Command, Army Materiel Command and industry, do this by leveraging new authorities and policies as well as implementing transformative business practices.

The Army Acquisition, Logistics and Technology team comprises more than 42,000 professionals within the Army Acquisition Corps and the greater Army Acquisition Workforce. We develop, acquire and DELIVER materiel solutions that meet the operational requirements defined for the joint warfighter. As the Army's acquisition decision authority, I am focused on the practical and successful EXECUTION of more than 500 programs throughout the acquisition life cycle. Further, as the Army's modernization priorities evolve into programs, the Army acquisition community will continue its vital life cycle management role.

Over the past several years, DOD acquisition has gone through a significant overhaul. We have seen transformational change in the department's acquisition authorities and policies, which will have enduring positive effects on acquiring and sustaining warfighter capabilities.

The goal of the Defense Acquisition System is to afford program teams the flexibility to tailor approaches based on the capability being acquired—this empowers critical thinking and commonsense decision-making and, most importantly, accelerates delivery timelines to move with speed and relevancy.

A FRAMEWORK FOR SUCCESS

Thanks to a thorough revamp of the DOD 5000 series of instructions, this new, flexible and tailored approach has been instantiated in the new Adaptive Acquisition Framework (AAF).

By design, this framework provides six pathways that simplify policy, tailor approaches, empower program managers, facilitate data-driven analysis, actively manage risk and emphasize sustainment.

We are taking advantage of each of the AAF pathways today. For example, with the middle tier of acquisition (MTA), the focus is on speed: authority for requirements and acquisition oversights are pushed down, and funding is provided for smaller capability increments.

As a result, programs rapidly develop fieldable prototypes to demonstrate new capabilities or rapidly field production quantities of systems with proven technology requiring minimum development within five years.

This fall, we approach the five-year mark of initiating MTA programs in the Army. Currently, we have 19 efforts leveraging the MTA pathway to rapidly prototype or rapidly field mature technology: 15 programs are in rapid prototyping and four are in rapid fielding—and we see good results.

In addition to MTA, we are finding increased value in the new software acquisition pathway, already initiating six new programs—three in the planning phase and three in the execution phase.

Recognizing that modern software development is a continuum of development, production, operations and sustainment, the software acquisition pathway is built upon industry best practices. This pathway

INVESTING IN MSV

Alexander Pillot, a new equipment trainer assigned to the Program Executive Office (PEO) for Soldier, hands a second-generation Modular Scalable Vest (MSV) to a Soldier during a fielding event at Fort Bragg, North Carolina. The 82nd Airborne Division is the first to receive all eight sizes of the second-generation MSV. (Photo by Jason Amadi, PEO Soldier)

SPECIAL DELIVERY

The first prototype hypersonic hardware was delivered to Soldiers of the 5th Battalion, 3rd Field Artillery Regiment, 17th Field Artillery Brigade in October. Hypersonics is part of the Army's No.1 modernization priority of long-range precision fires, and is one of the highest priority modernization areas DOD is pursuing. (Photo by Spc. Karleshia Gater, I Corps (photo edited))

TECHNOLOGY IS A TEAM EFFORT

The Army's Rapid Capabilities and Critical Technologies Office held its Army Strategic Rapid Acquisition competition in June, inviting companies and academic institutions to share their best ideas for emerging military technology. (Photo by John Higgins, PEO for Intelligence, Electronic Warfare and Sensors)

enables innovation and swift delivery in response to conditions of uncertainty, such as rapidly changing user needs, disruptive technologies and evolving threats.

With both the MTA and software pathways, program teams are empowered to start quickly and iterate on requirements and subsequent delivery. By doing so, we are getting capability into our Soldiers' hands as soon as possible and receiving feedback. This allows us to make the best possible decisions with as much information as possible instead of locking ourselves into strategies early in the life cycle, impacting our costs, schedules and performance.

In addition to AAF and its supporting policies, we have also significantly increased efficiency and acquisition speed through a number of contracting reforms.

Along with reducing Defense Federal Acquisition Regulation Supplement regulations from OSD, we have also benefitted from contracting flexibilities with permanent authority to award other-transaction authority agreements for research, prototyping and production purposes.

Other-transaction authority gives the Army the flexibility necessary to incorporate standards and best practices from commercial industry into our award instruments. Exercising this authority speeds prototyping to production and fosters increased collaboration with our industry partners earlier in the process than when using more traditional acquisition approaches.

The new acquisition and procurement authorities being implemented today by the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology support the modernization priorities and the 31 + 4 signature efforts and their enablers. They also support new business processes and enhance our focused partnerships with Army Futures Command to ensure strong connections between our operators and our acquisition professionals to place Soldier-centered design at the heart of the modernization process.

Acquisition and sustainment are equally important in providing the required warfighting capability when and where needed—and product support bridges the gap between these two critical functionalities.

CONCLUSION

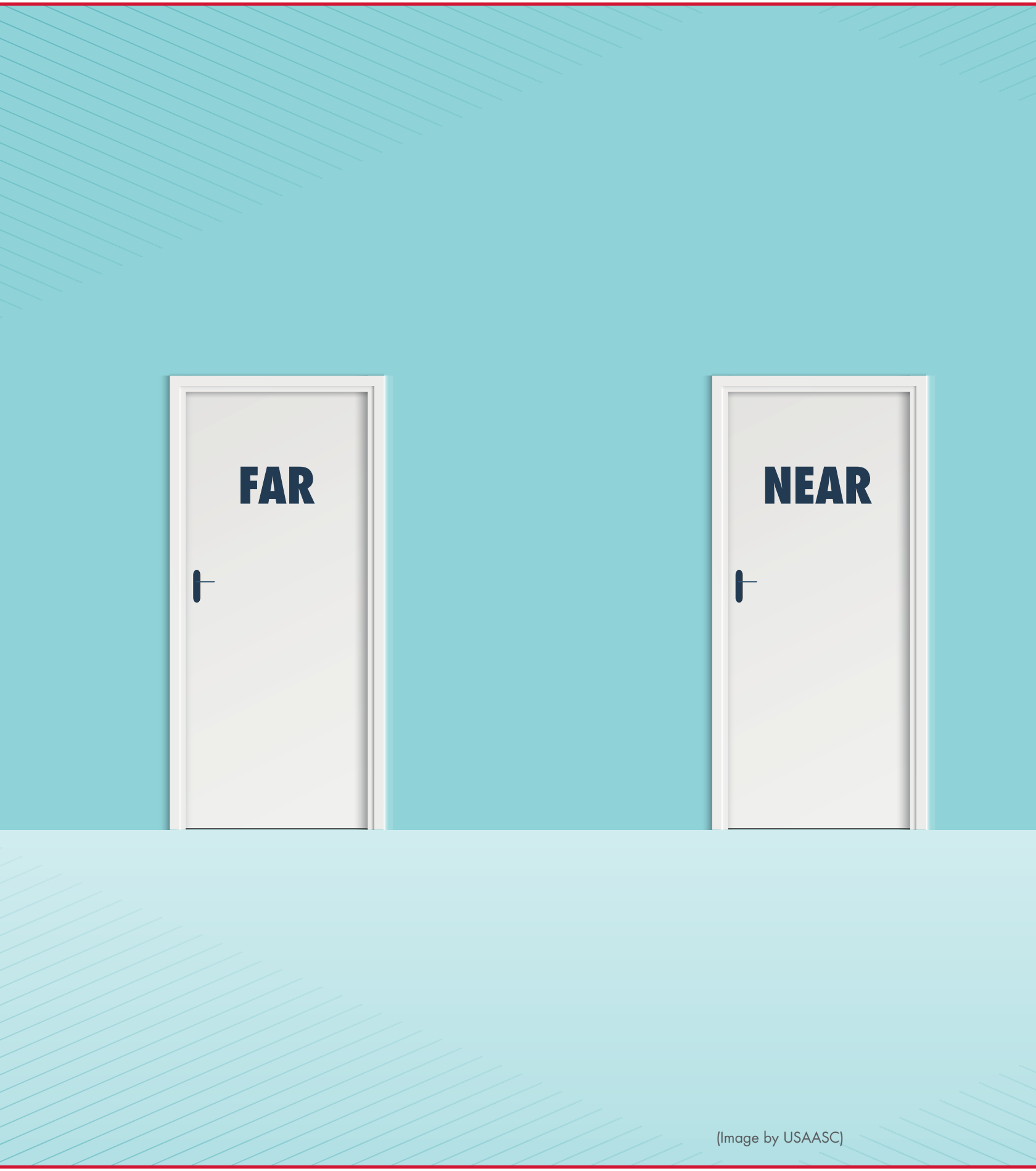
On average, over the life cycle of a program, 70 cents on the dollar will be spent on sustainment and operations.

With this in mind, we must continue to emphasize the importance of designing for sustainment to reduce the demand for logistics support and maximize the availability of systems over their long life cycles.

In other words, sustainment requirements must be "baked in" to the design of a materiel solution to deliver long-term operational availability and to better support warfighter requirements. Our partnership with Army Materiel Command is paramount early in design and development, as they are responsible for the sustainment and eventual disposal.

The acquisition community also works very closely with industry to develop capability. We value the partnership, innovative development processes, and research and development investments to move us forward in the life cycle continuum to ensure the Army succeeds.

Through our distinct yet complementary roles and functions, and new authorities, policies and processes, we are postured as the Army materiel enterprise to modernize the Army to win the great power competition.



(Image by USAASC)

FAR/NOT FAR

Optimism about Army modernization just might be reasonable, thanks to alternatives to old school FAR-based acquisition.

by Steve Stark

Army acquisition seems to have changed a great deal since Congress passed the National Defense Authorization Act (NDAA) for fiscal year 2016, when all the talk in acquisition was about reform. That funding bill fundamentally changed things in defense acquisition. It authorized DOD to develop prototype projects that would enhance mission effectiveness and opened the door for the use of other-transaction authority. In that NDAA's Section 804, it called for middle-tier acquisition and spelled out other acquisition pathways. Overall, the funding measure set in motion many of the trends in alternative acquisition we see today.

Now, the prevailing conversation within Army acquisition is not about reform but about much-needed modernization and innovation. It's about changes in Army acquisition and process improvements that are starting to show results. It's about alternative acquisition—or acquisition that doesn't take half a decade or more for programs to come to fruition. In other words, acquisitions that skip the Federal Acquisition Regulation (FAR), or minimize its involvement.

Among the experts Army AL&T interviewed for this article, some showed genuine optimism about the state of Army acquisition and defense acquisition in general. Others were more cautious. For anyone who's spent more than a few years working in or around defense acquisition, optimism, cautious or otherwise, is cause to take note.

At the Association of the United States Army's (AUSA) 2021 Annual Meeting and Exposition in October, on a panel discussion on full life cycle acquisition, Mackenzie Eaglen, a senior fellow at the American Enterprise Institute, said, "I always say to people, you know, you might be surprised. Actually, the Army is doing a lot of great work and innovating." The optimism feels as though the Army's acquisition enterprise, after a string of losing seasons, is a home team that's started to win again. One of the brightest—or at least busiest—spots in alternative acquisition is other-transaction authority. The majority of those deals and dollars—the Army

OPTIMISTIC
After nearly three decades in government, Bob Tuohy, the chief operating officer emeritus of Advanced Technologies International—a consortium management firm—is bullish on the benefits that the consortium model brings to acquisition.

was expected to surpass $12 billion by the end of the 2021 fiscal year—are consortium based, according to the December 2020 report, "Department of Defense Other-Transaction Authority Trends: A New R&D Funding Paradigm?" from the Center for Strategic and International Studies.

THE CONSORTIUM KUMBAYA

Other-transaction authority, which has existed in the shadows of defense acquisition since the late 1950s, enables DOD, for purposes of prototyping and rapid acquisition, to engage in agreements other than traditional contracts. In theory, any small or nontraditional defense contractor could respond to a solicitation for this kind of agreement and win it. Most often, though, a consortium or consortium management company facilitates because it has the expertise in working with the government and has access to that work.

Bob Tuohy, the chief operating officer emeritus of Advanced Technologies International (ATI), a consortium management company that facilitates other-transaction agreements, said that other transactions "are contracts that don't fall within the normal procurement rules, so they call them agreements so that people don't get confused. In the commercial world, these would be contracts just like any other contract."

The defense acquisition system has unfortunate logical calisthenics built into it—legally mandatory but needlessly complex processes that are confusing, time-consuming and expensive. Tuohy, who worked for the government for nearly three decades, pointed to the government's cost-accounting standards.

Unlike traditional contractual transactions, other transactions don't carry with them a need for "any special accounting capabilities," he said. "The government's acquisition processes and the DOD's cost-accounting system is not your normal accounting system and, therefore, organizations [must] create whole new accounting systems in order to comply." That bureaucracy is, he said, "one of the things that runs off organizations that are very innovative." When they have a commercial market, they don't need to work under those conditions with the government.

That's a problem. Unlike 50 or 60 years ago, the government is no longer funding most of the research and development that's happening in this country—these innovative technology firms often are. Other transactions and their minimized bureaucracy help make the government a more attractive client.

NEVERTHELESS, ISSUES PERSIST

While other-transaction authority can speed up the acquisition of prototypes and bring nontraditional players into the fold, the Army uses vastly more than prototypes. Other-transaction efforts can only go so far, and the contracting personnel who write up the agreements don't always get it right. In fact, Tuohy said, there are few incentives for contracting personnel to be inventive or visionary. "The FAR offers a lot of safety for these poor contracting officers who have to be very concerned about sticking their necks out," he said.

The DOD Inspector General released in April an audit of "a non-statistical sample of 13 base OT [other-transaction] awards, valued at $24.6 billion that were active in [fiscal years] 2018-2019." While it didn't find evidence of waste, fraud or abuse, it did find some issues. Some of these were probably related to the relative newness of widespread use of

"A major near-peer competition is in full swing. The DOD must act immediately to implement a true innovation strategy."

other-transaction authority. For example, "the Federal Procurement Data System Next Generation was not set up to track consortium OTs or individual consortium projects and there was no guidance on how to award the projects to a consortium."

NEAR TO FAR

Where other-transaction authority ends is where FAR-based contracts have to begin. That's where the revision of the DOD 5000 Instruction series, pushed by Ellen Lord, then the undersecretary of defense for acquisition and sustainment (USD A&S), and the Adaptive Acquisition Framework (AAF) come in. That framework outlines six "pathways" for acquisition. One of those is the middle tier of acquisition, which, like other transactions, is also intended for prototyping and quick reaction.

According to Dan Ward, outcome lead for defense acceleration at MITRE Corp.'s Innovation Toolkit team and an acquisition expert who helped develop the framework, "These are all behaviors that reflect a deeper shift in the larger acquisition culture, and that is a shift towards speed, thrift and simplicity."

In talking about alternative acquisition, Ward said, "The basic premise behind the AAF is there's more than one way to do acquisitions. And we're just getting that concept out into the acquisition ecosystem. I think it is a tremendous step forward."

The shift toward alternative acquisition, he said, won't happen overnight. "Change is hard and change takes time." Instead of just doing things one way, "being in a situation where you have to choose between alternatives, and then you have to learn from those experiences, and use that to inform your next set of decisions," leads to real culture change.

According to Ward, the framework tailors contracting to fit six well-known "pathways" to help contracting officers model contracts for a given type of acquisition—from urgent to major acquisition on the materiel side, a software path, a business system path and a path for services.

BOTH SIDES

An author who retired from the Air Force and now works on the industry side of acquisition, Dan Ward was among those who assisted in the overhaul and streamlining of the DOD 5000 series of instructions and development of the Adaptive Acquisition Framework.

The old model of tailoring was, Ward said, like making a list of 100 things you have to do, then, "What two or three things are you going to remove? And nobody wants to take their straw off the camel's back." In the more adaptive world of the framework, "with middle tier," Ward said, "it's very explicitly adopted a tailor-in process."

Still, other transactions and the AAF are not cures for what ails defense acquisition. That's a far thornier question.

EVENTUALLY, ALL ROADS LEAD TO THE FAR

In many cases, the flaws in the defense acquisition system are features, not bugs. They are intentional. For Jon Etherton, a former Senate staffer and an expert on defense acquisition, those flaws are "boundary conditions," a term that appeared in the 2014 National Defense Industrial Association (NDIA) report, "Pathway to Transformation," which Etherton co-authored.

The Army's acquisition enterprise, after a string of losing seasons, is a home team that's started to win again.

When we think of alternative acquisition, that tends to be other-transaction authority and middle-tier acquisition.

For Etherton, these prototyping mechanisms amount to a "lot of really cool fun stuff," but it's all weighted toward the beginning of the process. "Move. Do it quick, and all this kind of thing. But when you talk about doing something to scale, where it becomes a major capability, [it] looks to me a lot like the old system." Because of the program focus of planning, programming, budgeting and execution (PPBE), everything that gets funded as an official, enduring program has to be a program of record. So, sooner or later, everything has to turn to the FAR.

REFORM STILL NEEDED

With the current optimism, is this a pivotal moment in Army acquisition history?

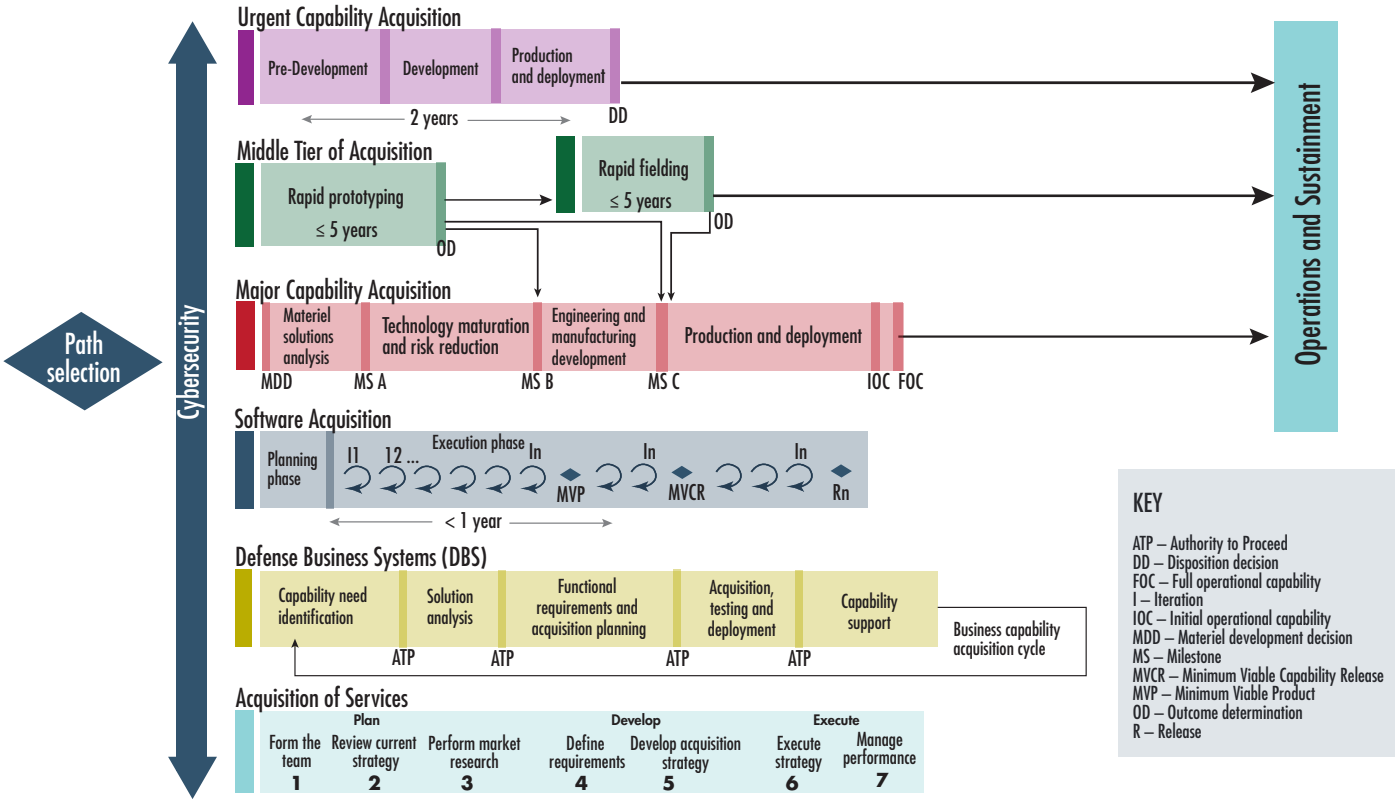
For Eric Lofgren, a senior research fellow at the George Mason University Center for Government Contracting, the answer could be no. We are, he said, at the maximum swing of the pendulum of "that decentralized delegation, speed kind of aspect of the pendulum, and we're just going to swing right back. That's the most likely answer." Which means that, while

BOUNDARY CONDITIONS

According to Jon Etherton, an acquisition expert and former Senate staffer, defense acquisition is beset by unfortunate conditions that it can do very little to change and must work around. (Photo by U.S. Marine Corps Systems Command Office of Public Affairs and Communication)

SAME OLD

For acquisition expert Eric Lofgren, until the Soviet-style PPBE system goes away, defense acquisition is not going to be as conducive to innovation as the acquisition system needs to be. (Photo by Stephen Gosling)



PATHWAYS TO PROGRESS

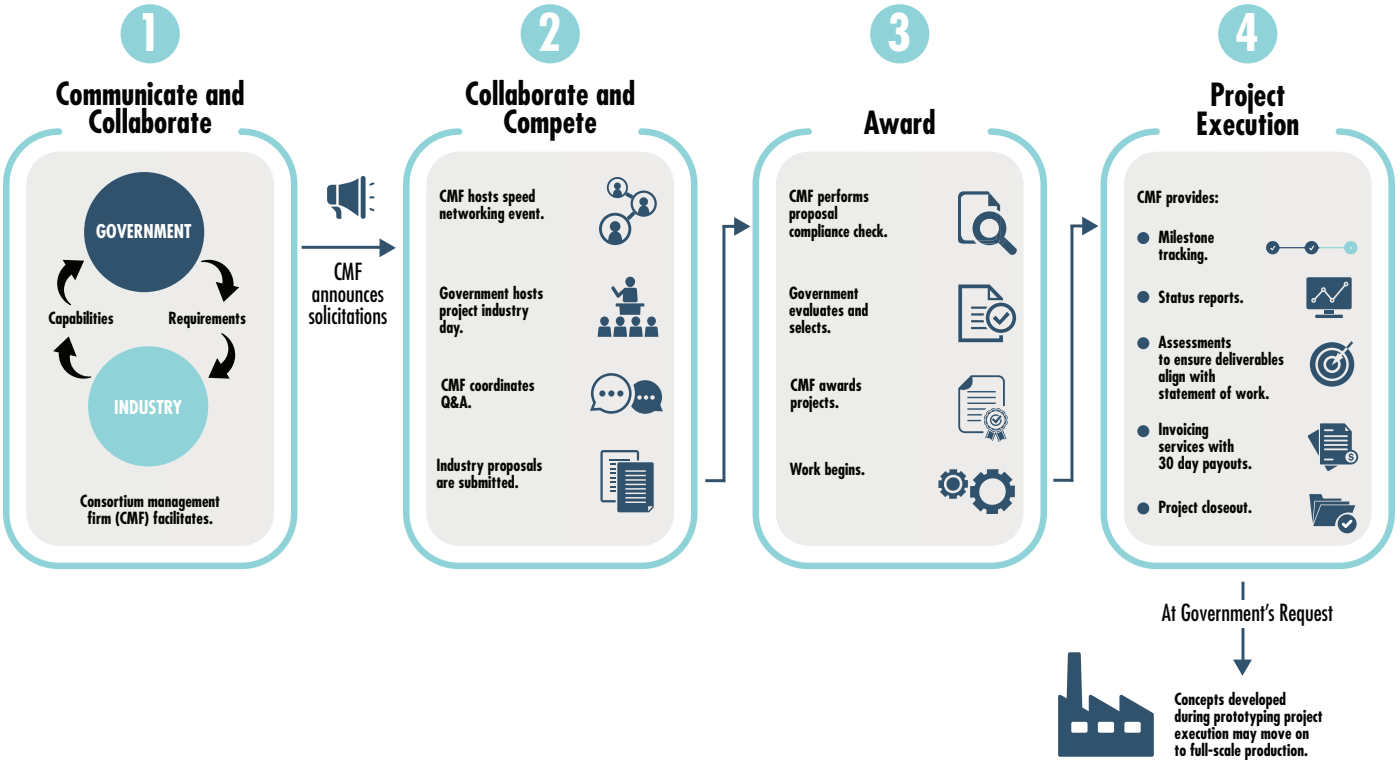
The Adaptive Acquisition Framework outlines six "pathways" for acquisition. (Graphic by Defense Acquisition University)

things seem optimistic at the moment, the system desperately needs a fundamental overhaul.

PPBE, Lofgren said, doesn't support well the kind of innovation that's needed today. "Fast-paced innovation requires a focus on training and culture, better supported by organizational budgets" and not program budgets, he wrote in "The DOD Budget Process: The Next Frontier of Acquisition Reform." Innovation is at the heart of both middle-tier acquisition (MTA) and other-transaction authority (OTA), but in particular, mid-tier doesn't help a great deal, he said. "There are many issues with MTA and OTA, but the important one here is that they don't accelerate funding. For example, MTA was passed in the [fiscal year] 2016 NDAA along with a Rapid Prototyping Fund that was supposed to provide a ready pool of funding—but the fund no longer exists. So even if you can get an MTA-to-requirement lineup within a few months and move to an OTA contract, you still have to wait three to five years after an approved requirement to work money into the president's budget."

In a July policy brief from the Center for Security and Emergency Technology, "Ending Innovation Tourism," authors Melissa Flagg and Jack Corrigan took DOD to task for acting like "innovation tourists" rather than having a coherent, overarching innovation strategy. "Solving the military's technology-adoption problem is impossible without an overhaul of its acquisition process," they wrote, "and the realities of our present political and national

"Change is hard and change takes time."



SINGLE POINT OF COORDINATION

The consortium management firm facilitates interaction between industry and government, which in turn generates competition and collaboration. During all of this, the consortium management firm conducts the back-office functions for its member businesses. (Graphic by Advanced Technologies International)

security environment will likely prevent lawmakers from enacting such broad-based reforms in the near term. In the meantime, a major near-peer competition is in full swing. The DOD must act immediately to implement a true innovation strategy using the authorities it currently has at its disposal."

In discussions at the AUSA meeting in October, that phrase, "innovation tourism," came up more than once, with panel members disagreeing that it was accurate.

But it is unarguably the case that PPBE is not built to facilitate innovation, at least not technological innovation at the speed that needs to happen today. That system was supposed to go into place in about 1950, Lofgren noted in an October interview with Army AL&T, but the Korean War put that plan on hold. When he became defense secretary in 1961, Robert McNamara adopted program budgeting. For Lofgren, the PPBE system represented "a radical break from your liberal [democratic] traditions, and it was actually an instantiation of Soviet planning methodologies. And now we just take that for granted. We don't realize how antithetical" that is to the traditional American way of doing business, he said.

PATHWAY LESS TRAVELED

In his writing, Lofgren is advocating not for improving PPBE, but for seeking an alternative for resource allocation that is informed by commercial practices, international norms and the traditions of financial management in the United States. So many of the ills that afflict acquisition, he said, stem from the system being centered not on funding the organization developing the program, but on the program itself. Doing away with that program-focused system would do away with a great deal that's familiar to most

"Fast-paced innovation requires a focus on training and culture, better supported by organizational budgets and not program budgets."

in acquisition, starting with requirements, the program objective memorandum, and much more. Indeed, dropping the program focus would very dramatically change the face of acquisition as we know it.

Too often, Eaglen observed at that AUSA forum, the services spend years developing new operating concepts and then going to industry to look for technology to support their ideas, rather than looking at existing technology and developing operational concepts around that. She cited as exemplary the development of the Integrated Visual Augmentation System (IVAS), with the Army using middle-tier acquisition and working directly with the contractor—with Soldiers and coders working side by side.

"What innovation means and what it can do is often misunderstood," Eaglen said. "Uber … there were already drivers and there were already cars and there were already taxis, they just had to get the technology to totally upend a traditional system."

With most traditional prime contractors structured around the incentives created by PPBE, it is unlikely that they will eagerly support its demise. But Lofgren isn't advocating for its wholesale ouster. Instead, he's arguing, that "any change should move deliberately." One of the first steps to increasing budget flexibility, he said in a November email exchange, "is to improve program reporting and analysis so that the department can build trust with its stakeholders."

Lofgren is not alone. Both armed services committees, in their versions of the National Defense Authorization Act for the 2022 fiscal year, have earmarked funding for a commission to study the PPBE system, Lofgren said.

CONCLUSION

In the end, optimism about Army acquisition comes from the Army's own determination to do a better job of solving difficult problems. It stood up Army Futures Command, the biggest change in Army structure since the 1970s. It argued for Congress to push OSD to delegate decision-making downward to the lowest level practical. With the new authorities in contracting that Congress has given DOD, the revision of the 5000 series by OUSD (A&S) and creation of a concretely tailored middle tier of acquisition—all of this has converged to create a sense of strong forward motion.

For those accustomed to the Army forever talking about innovating but still flying helicopters and driving tanks designed in a different century, it may seem surprising that there is real innovation going on. The Army's xTechSearch program, developed by the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology, is actively helping nontraditional contractors work with the Army. Through that program, and with the help of creative thinking, the Army has uncovered some highly useful technologies. It's a savvy way to find innovation, but it remains at the small scale.

The next few years will begin to see either the fielding of the Army's priority programs or their cancellation. No one expects everything to go perfectly. But nonetheless, expectations are high.

For more information on how defense acquisition works, go to ***https://tinyurl.com/km4kpt2s.***

STEVE STARK is senior editor of Army AL&T magazine. He holds an M.A. in creative writing from Hollins University and a B.A. in English from George Mason University. In addition to more than two decades of editing and writing about the military, science and technology, he is, as Stephen Stark, the best-selling ghostwriter of several consumer health-oriented books and an award-winning novelist.

NOT FAR AT ALL

Consortia make prototyping work

The consortium model is one of the ways that the government has found to work more simply with innovative companies.

“Let me take you through the scenario,” Bob Tuohy, chief operating officer emeritus of consortium management company Advanced Technology International (ATI), said in a September interview with Army AL&T. The Navy “put out a solicitation saying that they wanted a company, a consortium management firm, to create a consortium for them using other-transaction authority so that they could get access to the latest and greatest innovators” to help do the work on the Navy's information warfare research and development (R&D) project.

“ATI won the contract, the other-transaction agreement," he said. "We went out and recruited hundreds and hundreds of companies to join this consortium, whose purpose is to respond to the Navy's information warfare R&D requirements. When you say R&D requirements, you're talking about, ‘Go out and build a prototype of a new capability.’ ”

ATI's emphasis in recruiting was "what is called nontraditional defense contractors,” Touhy said. “There's a definition in the law that basically says, if you're a small business, a nonprofit, or you haven't done business with the government that required the cost-accounting standards for over a year, you count as a nontraditional."

PROBLEM DESCRIBED

When the government needs to develop a capability that’s within the consortium’s scope, it works with the consortium manager, ATI, and its constituents. ATI has a regular online forum for its participants, and member companies send representatives to discuss issues with the government and potential teammates to understand what the government is looking for. Tuohy said the government describes the problem sets that need to be solved, and can collaborate with consortium members.

"This is a very, very important part of it because this is something that is enabled by the fact that it’s an other transaction,” he said. Though not technically impossible with the Federal Acquisition Regulation (FAR), it’s very difficult. “You actually have these companies that know what the art of the possible is [who are] helping the government and the government’s telling them what problems need to be solved. And together they essentially write the solicitation."

There are 31 consortia that work with DOD, one with the Department of Homeland Security and another for the National Geospatial-Intelligence Agency. Of those, ATI manages 12.

“The government hands us, essentially, a book of technology problem statements, and we manage the consortium's response to those, and help the government start getting those problems solved.”

It costs money to make those connections and provide services to the consortia that it manages. In addition to regular meetings, ATI provides an infrastructure that consists of things like a members-only website and secure communications capability. All of ATI’s services are paid for with consortium dues.

WORK IN PROGRESS

There isn't, according to Tuohy, a single standard for how a consortium is supposed to work. “In each case,” he said, “the contracting organization of the government sets out what it wants as its requirements, if you will, for how it operates. Now, because [of] the advantage of other-transaction authority, it's an open book; the government can decide how much or how little it wants to direct the construct and the activities of the consortium.”

That said, he continued, what the government “tends to do is be very specific, although in a collaborative fashion, with how the competitive process is designed. They're all a little different. For instance, one consortium may only ask for initial white papers of 10 pages, then the merit is understood.” Then the government will downselect and ask for cost proposals. All that is directed after collaboration with the government. “So the government sets a lot of standards for process, but not necessarily for the construct of the consortium. That sort of happens by these executive committees, with the understanding that it has to meet what the government's desires are.”

SPEED BY CONSORTIUM

Using consortia, the government can more quickly and simply access innovative, nontraditional defense contractors, something that's much more difficult outside of the consortium other-transaction authority model. (Graphic by USAASC)

TECH TEAM

What often happens with discussions among consortium companies are teaming arrangements, Tuohy said. ATI holds collaborative meetings and facilitates conversations among businesses with different capabilities so that they can leverage each other's strengths. As a service to consortium members, ATI "will hold something akin to speed dating" to pair up companies. During these sessions, "big integrating contractors get to listen to the smaller, innovative contractors and decide who they can team up with to solve the problem." That's a benefit for the contractors and for the government.

When agreements are made, Tuohy said, another part of ATI's work on behalf of its client businesses is to provide back-office functions. "Once the award is made, ATI does the accounting, they receive the payments from the government, [and] they pay the bills that are presented by the teams." ATI has the skills and knowledge to handle government systems so that the "nontraditionals don't have to worry about that. They just bill us the normal way they bill anybody, and we keep track of deliverables, milestones, we do reporting."

That reporting is every bit as exhaustive and transparent as with any other kind of contracting. "There is every bit as much transparency in [other-transaction] contracts as there is in any other contract, it's just that the government hasn't quite figured out how to disseminate that information amongst themselves," Tuohy said.

At the end of an other-transaction contract, Tuohy said, the government closes them out just like any other. ATI's services to its consortia include making sure everything—paperwork, deliverables—gets where it's supposed to be and making sure that, if there's classified or sensitive work, it gets handled properly.

—STEVE STARK

DOUBLE TIME

OTAs power USAMRDC with speed, options.

by Ramin A. Khalili and Sally Robey

As the nation's military medical apparatus prepares for a future battlefield that will look markedly different than in previous conflicts, it also must develop the products required to sustain warfighter resilience in these emerging combat zones. In short, multidomain operations—the ability to defeat near-peer adversaries capable of contesting U.S. power across air, land, maritime, space and cyberspace—will be the key driver of medical innovation. It is here that the U.S. Army Medical Research and Development Command (USAMRDC) shines, as its unique set of acquisition capabilities allows the command to find, fund and—if need be—accelerate the development of products needed for the fight.

The foundation of USAMRDC's success is its collaborative work with a number of partners across both industry and academia. For years, as part of the standard, tailored acquisition pathway, bilateral contracts have been the command's primary means to get products to the warfighter. But there are notable exceptions. Specifically, the use of a special contracting tool called a consortium other-transaction authority (OTA) agreement helps USAMRDC move more quickly and nimbly through that pathway, increasing the speed at which Soldiers receive innovative medical technology. For that reason, the OTA has become a valuable player both inside and outside the command.

"We need to place cutting-edge technology quickly into the hands of the warfighter," said Sara Langdon, USAMRDC's program manager for other-transaction authority with the Medical Technology Enterprise Consortium (MTEC). "It is vital that we partner in order to fill our medical capability gaps, and OTAs help us to accomplish this."

A NEW WAY OF DOING BUSINESS

USAMRDC received congressional authority to begin using the OTA in 2014 to facilitate the delivery of advanced technology and therapeutic prototypes for a wide array of military-relevant medical and health conditions. What separates the OTA from other standard contracting mechanisms—and what has become one of its defining characteristics—is that it allows for increased speed and flexibility for both parties. Notably, it aims to set chosen projects in motion in mere months and allows for complex collaborations. This is made possible by the OTA mechanism's reliance on nontraditional defense contractors and a built-in flexibility in data rights and regulatory terms. Additionally, other-transaction agreements allow for more conversation between DOD and the performer, as compared with traditional Federal Acquisition Regulation-based contracts.

Within USAMRDC, most of the other-transaction agreements focusing on prototypes are currently awarded through the Medical Technology Enterprise Consortium (MTEC) program, which is a 501(c)(3) nonprofit corporation consisting of more than 540 industry and academic member organizations. MTEC members are committed to developing medical tools that better manage, prevent, diagnose, treat and rehabilitate a wide range of injuries. This kind of consortium-based approach facilitates an environment for frequent interaction among military sponsors, academic institutions, nontraditional defense contractors and large businesses to communicate what

SUCCESSFUL DEMONSTRATION

Soldiers participate in the Army Expeditionary Warrior Experiment at Fort Benning, Georgia, in March. During this exercise, LifeLens Technologies successfully demonstrated the Ascent Platform as part of a fielding exercise. (Photo by William Norris, U.S. Army Training Support Center)

the military is looking for in any particular product. Combining such a large cadre of experts with the enhanced transparency offered by the OTA has, by design, made for a substantial impact.

"The consortium concept is where we gain so much value. MTEC brings key medical development components together with various vendors, industry partners and academia to help us get to that end goal without having to piece those puzzle pieces together and hope for the best," said Dawn Rosarius, USAMRDC's principal assistant for acquisition, regarding the transparency offered by the process. "It actually does that up front and helps coordinate the outcome with all the right components, right from the beginning."

"The [consortium] mechanism is supportive to our partners and awardees, in that MTEC engages with foundations and venture capitalists to support the MTEC members by bringing additional expertise and funding to the table," said Langdon. "This is important because the military can't benefit from a technology they need if the company that owns the research or technology goes under or is not viable."

When dealing with nontraditional defense contractors, employing an OTA agreement can reduce some regulatory burdens so that small and emerging technology providers can work with the government. Access to nontraditional defense contractors through MTEC—especially small businesses that may not have the

manufacturing capabilities or the regulatory experience of larger, more traditional contractors—can help widen what MTEC calls the "aperture of innovation," which is typically not available under standard FAR-based contracting. Such outreach takes place in a variety of settings: scientific meetings, military meetings like the annual Military Health System Research Symposium, investor pitch sessions, and even via partners in the venture capital world, among others.

Further, OTA agreements give companies the opportunity to team with one another to provide more complete proposals that better meet the government's technical requirements. To that end, MTEC facilitates virtual or in-person meetings between both parties to help members develop a proposal that brings together complementary capabilities to meet the sponsor's technical needs.

MTEC IN ACTION

An example of the OTA in action can be seen in the development of the Ascent Platform, a wearable sensor technology from LifeLens Technologies that's designed to enable Army leaders to monitor the health status of Soldiers. Supported by the Warfighter Health, Performance and Evacuation Project Management Office within the U.S. Army Medical Materiel Development Activity (a subordinate unit of USAMRDC), and funded through MTEC, LifeLens Technologies successfully demonstrated the Ascent Platform during the Army Expeditionary Warrior Experiment at Fort Benning, Georgia, in early 2021. The platform was used to capture data from 48 missions over the course of the event, reporting zero field failures in the process. As it stands now, the LifeLens Technologies team will use the data gathered from the event to plan for subsequent fielding with the project management office.

"Using the OTA for wearable sensors has been extremely successful for our teams," said Rosarius. "We are seeing the value of this tool in the sensor and other areas for both our researchers and [program managers] to assist in avoiding injuries and ultimately saving lives."

Since MTEC became fully operational in January 2016, USAMRDC has awarded more than 160 different prototyping projects through it with more than $550 million in government funding. With such an established record of success, the command now focuses on the next step, the next hurdle to clear. How does USAMRDC keep pace with not only changing military landscapes on one side of the equation, but also near-constant technological improvements on the other? For Rosarius, the answer is constant innovation.

"I think we can go forward much faster," she said. "I think technologically, there's so many opportunities out there; a lot of it is going to be IT-, network-, tele-driven in the future. There's so much technology from industry, academia and our own expertise to piggyback on."

What separates the OTA from other standard contracting mechanisms is that it allows for increased speed and flexibility for both parties.

QUICK TURNAROUND
Critical Innovations LLC, the company behind the prototype Fast Onset Abdominal Management (F.O.A.M.) hemorrhage control application tool, was able to begin work on prototype delivery in just three to four months using $600,000 in base OTA funding through MTEC. (Photo by Critical Innovations LLC)

Langdon notes that, just this year, MTEC developed a unique commercialization program that provides outreach, education, mentoring, networking services and investment support to MTEC members; all of which will likely be integral to a sustained environment of innovation.

"With these service offerings, MTEC aims to help align innovators with military

LEADING THE WAY
OTA agreements issued through MTEC allowed RoosterBio Inc. to enter into collaborative efforts with the U.S. Army Institute of Surgical Research and others to produce the assays and large-scale bioreactor system designed to deliver clinic-ready mesenchymal stem cells derived from human bone marrow. (Photo by RoosterBio Inc.)

priorities and capabilities to ensure the success of their products into the commercial arena and provide or support good health and wellness to the warfighter," Langdon said.

CONCLUSION

That is, of course, the ultimate focal point—the sustained health and resilience of the warfighter. For USAMRDC, the future of contracting is a constant and consistent opportunity to benefit DOD as a whole—a future informed by previous success and the potential for greater accomplishments in the coming years.

"I think the opportunity for us—because we all tailor to what is needed with our programs—is to think about how we can get solutions to the field faster," said Rosarius. "Don't get hung up in all the ways we used to do business, think about the ways we can do business better."

For more information about USAMRDC go to ***https://mrdc.amedd.army.mil/****. For more information about MTEC go to* ***https://www.mtec-sc.org/****.*

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SALLY ROBEY is the Medical Technology Support Center program analyst for the USAMRDC OTA with MTEC. Previously, she spent five years as business development analyst in MRDC's Outreach and Partnerships Office, where she identified and facilitated opportunities to promote the command's research programs, points of entry and engagement processes. Her experience extends to private industry, for-profit, nonprofit and government clients supporting public-private partnerships. She received her B.S. in business administration, strategic management, from Towson University.

MAJ. MICHAEL SIDMAN

COMMAND/ORGANIZATION: Joint Program Executive Office for Armaments and Ammunition

TITLE: Assistant product manager

YEARS OF SERVICE IN WORKFORCE: 2

YEARS OF MILITARY SERVICE: 12

DAWIA CERTIFICATIONS: Level II in program management

EDUCATION: B.S. in business administration, University of New Hampshire

AWARDS: Bronze Star Medal, Meritorious Service Medal, Army Commendation Medal (2nd award), Army Achievement Medal (2nd award), Meritorious Unit Citation, Afghanistan Campaign Medal (3rd award), Special Forces Tab, Ranger Tab, Parachutist Badge, Expert Infantryman Badge and Combat Infantryman Badge.

NOTHING TO PROVE

Maj. Michael Sidman was just a kid when he decided that he wanted to be a Green Beret. "I knew when I was in high school that I wanted to be an American *warrior*," he said. "I wanted to prove myself in combat. I wanted to be tested. I wanted to be validated in that way, I guess. Ever since I chose to go into the Army, I decided that if I was going do it, I wanted to go all in. And in my opinion, that was special forces." He completed the Army Reserve Officer Training Corps program at the University of New Hampshire and earned his commission as an infantry officer. Sidman was on his way.

When he was selected for the Army Special Forces Qualification Course as a young officer, all was right with the world. "I was on a high, feeling wonderful," he said. "I had just married the girl of my dreams, moved to Fort Bragg [North Carolina], started the [qualification] course, bought a house," and he felt like nothing could stand in his way. "I was cocky," he said. The training was difficult, but he made it through "with a lot of grace and a lot of help from friends and peers." He moved on to his first operational assignment in the U.S. Army Special Forces, and that's when humility came knocking.

"For me, that was the first time in my Army career that I was a little fish in a giant pond. I was humbled over and over again, and consistently inspired by the people I worked with," he said. "I got my ego checked in a big way, and it forced me to focus on what really matters. What makes you successful as a leader in the Army? Without a doubt, I've come to realize people are what matter most. Building up your people—each individual and as a team—really is what helps you be successful as a leader and as a manager."

And with that approach, Sidman found success in the special forces, taking on a series of increasingly competitive and demanding assignments. But his family suffered in his absence, and the strain of the job became too much. He was gearing up for a Tier One special mission unit selection when he could no longer deny the issue. "I realized I had found my identity as a Green Beret, being the operations guy, being the 'hammer,' if you will. All I thought about was the next deployment, getting my guys home, getting myself home—it's a primal existence and it wears on you, over time."

Sidman knew he had to make a change. He applied to transition out of special forces and into acquisition, and it has been everything he hoped for. "I feel like a normal guy again," he said.

Today, Sidman is living his best life. As the assistant product manager for Precision Fires and Mortars, Project Manager Combat Ammunition Systems at the Joint Program Executive Office for Armaments and Ammunition, he brings a depth of operational experience to his work. "We focus heavily on artillery munitions and mortar weapons and fire control. Right now, I'm primarily working the next-generation high explosive rocket-assisted 155 mm artillery projectile, the

YOUNG OPERATOR
Sidman on a special forces tour in Africa, as a young officer. (Photo courtesy of Maj. Michael Sidman)

XM1113 ER," he said. "The number one modernization priority for the Army right now is long-range precision fires, so we're a piece of that pie."

Because of his experience as a Green Beret, he can offer insights about the importance of acquisition in the grand scheme of the Army mission. "I work with amazing Army civilians who have poured 30 or 40 years into [research, development, testing and evaluation], and program management, and giving us the best equipment in the world as America's Soldiers," he said. "I tell them, 'You may not hear this every day, but I'll tell you, as a former pipe hitter [a term for an elite operator] who got all the best equipment—I didn't realize all the work that went into it—but what you do matters. It all matters.' "

He shares two pieces of wisdom that he has learned during his Army career. First is a saying he picked up in special forces training. "Humans are more important than hardware." Second, relationships are the foundation of effective teams. "Relationships are the most important focus I have when I'm trying to accomplish work with my teams," he said. "I focus on communication,

> "I got my ego checked in a big way, and it forced me to focus on what really matters."

empathy, humility, trust and integrity more than anything else. If the relationships are good and teams are functioning well, I believe that acquisition professionals and industry leaders can do amazing things for America's military."

Recently, Sidman has applied those skills to the Army's Nickel Rotating Band effort, which is a crucial step to enable testing for the new Extended Range Cannon Artillery (ERCA). "Most artillery shells throughout the Army's history have had a copper rotating band. That band is an alloy that's welded onto the outside of the shell, and it basically bites into the spiral inside of the cannon, and it kind of melts and conforms to that spiral and allows the shell to get the spin and muzzle velocity required when it comes out of the cannon during a fire mission," Sidman explained. "With the new ERCA tube and the new propellants, the environment is much more violent than the older self-propelled howitzers, so we needed to figure out a new alloy *and* figure out how to weld that alloy onto existing shells, so we could continue testing. We had huge success with that, it was really about stakeholder management and leadership."

The best part of his job, according to Sidman, is the team. "I love working with Army civilians and contractors. I spoke at a team member's retirement recently, and I told them, 'I don't see any difference between your service and mine.' Not everyone can be active duty, whether because of the physical demands or anything else, but these civilians and contractors are all still serving the nation, and it's an incredible honor to work with them," he said. "I just really appreciate this side of the Army and I feel so honored to be a part of it. Ever since getting here, I've loved it."

What comes next for Sidman? He has a few more professional and educational goals in mind, but one thing is for sure—he has nothing left to prove.

— ELLEN SUMMEY

INDUSTRY PROTOTYPE
Tyler Cook, right, and Capt. Dallas Balaban, assistant product managers for Product Lead Unified Capabilities and Integration, work with an industry-provided multi-orbit satellite communications aggregation gateway prototype during an assessment in March at Aberdeen Proving Ground, Maryland. (Photo by Amy Walker, PEO C3T)

KEEPING PACE, CUTTING COSTS

The Army is looking at a new business model for satellite communications that could bundle equipment and services.

by Lt. Col. Natashia Coleman, Tyler J. Cook and Amy Walker

As the Army faces potential great power threats, retaining decision dominance in multidomain operations—over sea, land, space, cyber and air—will require continual network modernization to keep up with the rapid pace of technology. That comes at great cost.

A new business model for the acquisition of satellite communications could help mitigate some of this expense. In line with the Army's recently released Unified Network Plan, the Army is looking at a satellite-communications-as-a-managed-service (SAAMS) model to more affordably keep up with the accelerating speed of technology advancement, while reducing resource and budget burdens, equipment obsolescence and other sustainment challenges.

Similar to the way a commercial cellphone provider bundles a cellphone together with a data service plan, the Army is looking at various degrees of commercially managed service plans to support the acquisition of satellite communications in a multidomain battlespace.

Traditionally, to deliver robust satellite communications to Soldiers in the fight, the Army would procure each component separately. Hardware; software; commercial satellite constellation bandwidth; network traffic aggregation and management; maintenance and sustainment support; and the numerous other services required to make the network work—each element is often put on a separate stand-alone contract. Conversely, in one example of a potential SAAMS business model, some or all of the equipment could be provided on a leased basis, with a monthly service fee. The fee could be dependent on location, number of users, length of needed service, data rates and other factors, as defined in a service-level agreement.

RELEVANT CAPABILITY

Instead of the Army having to upgrade systems, often as soon as they hit the field, the provider would be responsible for continually modernizing, updating and even replacing capability in a services construct. Provider system updates and technology refresh would enable capability to remain current over time at an affordable cost.

SAAMS would not be a one-size-fits-all model, but a modular, scalable and flexible approach that could support a wide variety of different missions. Different threats may require different solutions. The Army would capitalize on the strengths of numerous evolving satellite capabilities and designs, such as those in different orbits or coverage areas, to provide commanders and signal officers with multiple network communication capabilities and signal path options to optimally support their mission sets and increase network resiliency.

Although the Army is not totally convinced yet that the SAAMS business model is the right way to go, the service is currently looking to industry partners to provide innovation, to unveil how they envision this model working and how they could continually arm U.S. forces with relevant capability using a SAAMS approach that the Army budget could support.

It must be noted, however, that with every step the Army takes with its industry partners toward modernizing satellite communications, continual Soldier experimentation and feedback will be critical to shaping unified network capability and designs to ensure Soldiers' needs and requirements are met.

HOW CAN INDUSTRY HELP?

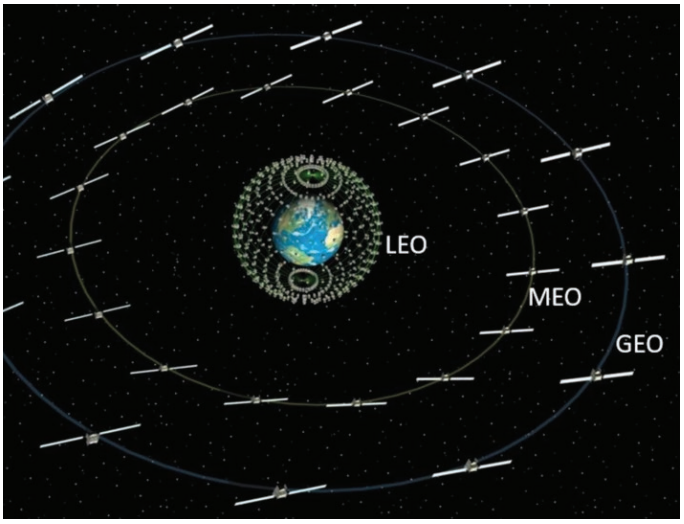
Future multidomain operations will require resilient robust *global* satellite communication coverage that enables units to exchange information from the foxhole to the Pentagon and to conduct remote mission command, cyber warfare and defense, and network management from home station. As noted in the Army's Unified Network Plan, network speed, range and convergence, the marrying of tactical and enterprise capabilities, will be key enablers to achieving decision dominance.

ASSESSING OPTIONS

Industry-provided MEO and GEO ground satellite prototype terminals are seen here during an early Army assessment of managed multi-orbit satellite communications capabilities and services, in March at the Joint SATCOM Engineering Center, at Aberdeen Proving Ground, Maryland. (Photo by Amy Walker, PEO C3T)

The Army is looking to industry to help support these goals and continues to assess both mature and emerging commercial satellite technology, including low Earth orbit (LEO) mega-constellations, medium Earth orbit (MEO) and geosynchronous Earth orbit (GEO) high-throughput satellites. The service anticipates the proliferation of LEO and MEO and high-throughput GEO satellite capabilities to deliver expeditionary, mobile, beyond-line-of-sight communications with increased bandwidth and low latency, to better enable resilient robust data exchange and future network modernization efforts. Commercial LEO and MEO satellite constellations, ground terminals and services are in various stages of maturity, as are joint protected high-throughput GEO military capabilities. With this in mind, the Army is working closely with industry to carefully lay a strong foundation to enable the secure integration of the right solutions into its unified network design at the right time and cost.

As U.S. forces face sophisticated near-peer threats in congested and contested environments, signal path diversity will be critical to units' network communication primary, alternate, contingency, emergency (PACE) planning to increase network resiliency. This will include leveraging multi-orbit satellite communications from both commercial and military satellite constellations to ensure global coverage with multipath diversity extending beyond current commercial satellite frequency bands and GEO constellations. To support these efforts, the Army encourages teaming within industry to ensure worldwide coverage and signal path options, especially as multi-orbit capabilities mature.



IN ORBIT
The Army's continuing market research to inform the potential use of a new satellite-communications-as-a-managed-service business model includes leveraging emerging multi-orbit satellite constellations in the geosynchronous Earth orbit (GEO), medium Earth orbit (MEO) and low Earth orbit (LEO). (Graphic courtesy of PEO C3T)

SEEKING FEEDBACK
PEO C3T, in coordination with the Network Cross-Functional Team and Combat Capabilities Development Command C5ISR Center, conduct a Soldier assessment to obtain early feedback on industry-provided prototypes, in March at the Joint SATCOM Engineering Center, at Aberdeen Proving Ground, Maryland. (Photo by Amy Walker, PEO C3T)

In addition, with today's PACE plans, when one satellite signal option isn't working optimally, Soldiers have to manually switch network equipment to leverage different satellite signal path options, such as using different constellations or frequency bands. The Army is also leaning on industry to provide automated software-based solutions that can seamlessly switch between signal paths in different constellations and self-heal broken links, without Soldiers having to switch equipment or even notice any disruption in network service. New solutions would enable the switch to happen automatically, enhancing network resiliency and enabling Soldiers to concentrate on the fight instead of the network.

The Army is determined to choose easy-to-use, Soldier-centric designs that will simplify operations for non-signal Soldiers and reduce physical footprint—size, weight and power requirements. Open architectures and standards will be key to ensuring continual market competition, modernized capabilities and a unified network. The Army also needs to understand how quickly and effectively industry partners' SAAMS solutions could scale up or down as missions shift. Additionally, with the possible use of a commercial network, the service wants to ensure that SAAMS service providers can meet current and evolving cyber and transmission security requirements as new threats are identified.

So what else is the Army looking for? It needs industry's help in identifying other considerations to keep in mind while exploring a possible network in a SAAMS construct, in effect, to identify what it doesn't already know.

WHAT HAVE WE DONE?

The Army is leveraging multifaceted acquisition processes to inform future SAAMS fielding and acquisition decisions. It is working across its acquisition, modernization, and research and development communities, with joint partners and industry, to experiment with evolving multiple Earth-orbit satellite communications technologies and better understand how they could drive the network of the future. The Program Executive Office for Command, Control, Communications – Tactical (PEO C3T); the Network Cross-Functional Team; and the Combat Capabilities Development Command C5ISR Center are working closely with industry to build a focused road map and test plan to allow emerging satellite communications capabilities to be tested in training and capability exercises over the next couple of years.

Provider system updates and technology refresh would enable capability to remain current over time at an affordable cost.

These events will inform Army decisions on how innovative technologies and varying degrees of a SAAMS business model could best integrate into the greater network.

By falling in line with its two-year interval capability set acquisition and fielding process, the Army can piggyback on new system and capability design development efforts, such as logistics network modernization and emerging multiple Earth-orbit capabilities, to home in on how different SAAMS efforts could best support the evolving unified network. As part of the capability set process, the Army is leveraging technical exchange meetings to further SAAMS market research, with follow-on requests for white papers and "Shark Tank" demonstrations. The service entwines these efforts with network modernization lab-based experimentations, Soldier-led assessments and pilots, and network modernization field exercises such as NetModX and Project Convergence.

The Army recognizes industry's experience, and that it is technically capable of achieving Army goals. That being said, deliberate planning, security and logistics considerations, and architecture development within the service's unified network are required to realize the true benefits of a SAAMS construct. Frequent information sharing and communication throughout this process will keep both parties aligned with current and future unified network needs versus focusing on the acquisition of specific systems to support short-term goals.

As the Army modernizes and unifies its tactical and enterprise networks, lessons learned from continual market research and experimentation with the SAAMS business model can be shared across the joint services to reduce duplication of efforts and evolve U.S. satellite communications capability more expeditiously.

CONCLUSION

The Army's Unified Network Plan is a strategic framework to guide the development of a unified network that can enable a multidomain-capable force by 2028. The goal is to enable Army, joint and coalition forces to seamlessly share information across the entire force, from the tactical user through the enterprise, to achieve decision dominance.

As the Army looks for better ways to acquire and modernize satellite communications capability in support of these goals, it will continue to leverage commercial competition to deliver the right Soldier-centric solutions at an affordable price. Partnering with industry in a SAAMS business model may prove to be a viable option in continual battle to keep the edge on near peer threats.

*For more information, contact the PEO C3T Public Affairs Office at 443-395-6489 or **usarmy.APG.peo-c3t.mbx.pao-peoc3t@mail.mil**. Go to **https://go.usa.gov/xMSNz** for the 2021 Army Unified Network Plan or follow PEO C3T at **http://peoc3t.army.mil/c3t/** and **https://www.facebook.com/peoc3t**.*

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AMY WALKER has been the public affairs lead at Project Manager Tactical Network for over 10 years and was the public affairs lead at PEO C3T for the previous two. She has covered a majority of the Army's major tactical network transport modernization efforts, including Army, joint and coalition fielding and training events worldwide. She holds a B.A. in psychology with emphasis in marketing and English, from the College of New Jersey.

CAPABILITY SETS INFORM A NEW BUSINESS MODEL

The two-year interval capability-set acquisition and fielding process allows the Army to piggyback on new system and capability design developments. These can home in on how different business models for satellite communications as a managed service (SAAMS) could best support the evolving unified network.

The Army has put the mechanisms and processes in place to continuously innovate and improve the network through two-year capability sets. In this end-to-end tactical network approach, each capability set builds off the previous and is infused with commercial solutions informed by synchronized assessments, experimentations, evaluations, and developmental and operational tests. The Army is using industry standards to conduct Soldier-driven experimentation to inform network design. This approach puts the warfighter at the center of the process, informs less prescriptive requirements and allows for incremental insertion of capabilities that keep pace with emerging threats and information technology trends.

The Army released the first SAAMS request for information to industry in October 2020 to better understand how commercially managed satellite communication services might support its logistics network modernization efforts, known as Sustainment Tactical Network. The request provided Army decision-makers with a better understanding of industry best practices, technological advances and business models that could enable the replacement of the current logistics network operating design. The request included materiel solutions, satellite coverage, security, logistics and training, as well as what corresponding leasing-cost models could look like, to enable the Army to maximize capabilities while balancing long-term affordability.

Following the information request, Project Manager Tactical Network, at the Program Executive Office for Command, Control, Communications – Tactical (PEO C3T), hosted a virtual Sustainment Tactical Network SAAMS industry event in February 2021. The organization's leadership provided an overview of the Sustainment Tactical Network effort and discussed findings and lessons learned from the request for information. Then the team hosted a week of virtual one-on-one sessions with individual vendors to continue the market research efforts. In June, the Army released a follow-on request for SAAMS capability demonstrations at no cost to the government.

Previous discussions with industry had focused on how a SAAMS model could support the Army's Sustainment Tactical Network efforts to modernize its logistics network. However, while this logistics network mission was still relevant, the Army expanded the scope of its market research to understand how an end-to-end SAAMS model could support the Army's tactical unified network as a whole. Project Manager Tactical Network received 25 industry responses, and the industry demonstrations were conducted beginning the fourth quarter of fiscal year 2021 through the first quarter of the 2022 fiscal year.

In another example, the Army assessed commercial prototype systems that may be able to integrate satellite communication links from various satellite constellations into a single commercial "box," to enhance pathway diversity, with the potential to leverage the increased throughput from the blended and combined multiple transport links.

The effort also leveraged a SAAMS model with the prime contractor coordinating all equipment and satellite airtime. Other satellite communication modernization efforts were discussed as part of the Technical Exchange Meeting 6 in June, in support of Capability Set 25 and beyond.

With the conclusion of the demonstration phase of its initial SAAMS market research efforts in December, Project Manager Tactical Network will share its lessons learned with industry, discuss how the intent and approach may or may not have shifted, and explain the next steps. This will be done in second quarter of the 2022 fiscal year, either through an information paper to industry or a possible return to the stage for a second SAAMS industry event. The Army will leverage all of the market research to date to inform potential future SAAMS pilot efforts and specific use cases that could support network modernization capability set efforts.

—LT. COL. NATASHIA COLEMAN, TYLER COOK AND AMY WALKER

(Photo by Master Sgt. Joy Dulen, 7th Mission Support Command)

AIM-ING HIGH

Agile acquisition accelerates emerging technology transition to warfighters.

by Dr. Brian B. Feeney

National security in the 21st century is a race to outpace our adversaries. That means good ideas must be rapidly transformed into innovative technologies and placed in the hands of warfighters. Digital technologies can change every three months, and near-peer military powers have proven quick to militarize the very latest technological advances.

In the case of chemical, biological, radiological and nuclear (CBRN) threats, the need to find and field new technology is especially pressing, to afford the best available protection for U.S. forces.

In 2018, a group of defense agencies came together to fill that need. The U.S. Army Combat Capabilities Development Command Chemical Biological Center (DEVCOM CBC) teamed up with U.S. Special Operations Command (SOCOM) and the Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND) to establish a faster, more agile and enduring process for developing and fielding technologies to protect against CBRN threats. It's called Accelerator for Innovative Minds (AIM), and it was designed to apply dual-use technologies to warfighter needs.

THE POWER OF PARTNERSHIP

AIM uses the power of partnership intermediary agreements (PIAs) to address the needs of organizations across the federal government. PIAs and other similar technology transition mechanisms are frequently used to help technology startup companies grow while they are maturing a new technology and establishing a market presence. AIM fully uses those advantages and adds to that model.

"In the AIM acquisition model, the Department of Defense, Department of Homeland Security and other partner agencies establish

problem statements and invite nontraditional companies, acquisition subject matter experts, other government agency subject matter experts, academic experts and—most importantly—warfighters and operators to use that problem statement as the starting point for a dialogue that spans all phases of the technology development process," said Michael R. Guinn, SOCOM AIM program manager and one of the founders of AIM.

As the dialogue progresses, the participants work together collaboratively. The nontraditional companies and academics contribute their knowledge of rapid technology evolution. The warfighters and operators contribute their insights into the real-world demands and challenges of using CBRN technologies in the field. The participants are encouraged to share their knowledge, negotiate technology solution requirements and, when appropriate, build relationships to share costs. For example, when two or more government agencies have requirements that may be met under a single solution, it could be advantageous for them to share costs toward a single solution, rather than pursuing separate ones.

ACROSS THE SERVICES
AIM helps companies like KEF Robotics find more customers in the Air Force, Marine Corps, and other DOD branches. (Photo by Cpl. Jackson Ricker, U.S. Marine Corps)

"AIM was our first contract with the DOD, and it helped focus our company direction by providing a specific application for the new technology we were developing."

"AIM filled a gap in acquisition. It allows for a more rapid cycle of identifying the best technologies and an agile way to establish contracts," said Jonathan Bartel, JPEO-CBRND joint product leader for CBRN Information Systems. "The subject matter experts from nontraditional small businesses, startups and academia generally know very little about what we do, but at the same time, they possess tremendous knowledge of the technologies we need to meet our CBRN challenges in the field."

THE CORE TEAM

The core of this initiative is a partnership between SOCOM, JPEO-CBRND and DEVCOM CBC. SOCOM takes the lead role in most acquisitions because it has the experience and personnel to conduct complex acquisitions. JPEO-CBRND functions as the program office because its structure overseeing its subordinate joint project managers makes it well suited to coordinate the activities between the three partners. DEVCOM CBC serves as the technical hub because of its ability to allow technology developers to access its own workforce of scientists and engineers spanning many disciplines. It also has a unique testing and experimentation infrastructure.

A new kind of platform for engaging nontraditional technology developers was

In some cases, two separate submitters joined forces to advance a single technology solution by combining their respective strengths.

instrumental in making AIM possible. The platform is called SOFWERX, and SOCOM created it by establishing a PIA with DEFENSEWERX, a nonprofit organization that stands up innovation hubs. SOFWERX, in Ybor City, Florida, is one of DEFENSEWERX's five innovation hubs, each of which accelerates the development and fielding of new defense technologies by following a collaboration model similar to AIM.

SOFWERX's mission is to create and maintain a platform to accelerate delivery of innovative capabilities to SOCOM and to facilitate defense technology advances through exploration, experimentation and assessment of promising technologies. "What is crucial is the collaboration among government agencies and nontraditional partners from industry and academia—so that's what we set out to do," said Guinn. "For this particular effort, we developed a tailored five-phase acquisition strategy for the specific problem sets on behalf of our collaborating government agencies."

FIVE PHASES TO SUCCESS

The first of the five phases occurred in January 2019, when all of the government participants met at the SOFWERX facility. In their first meeting, the AIM team members on the government side established problem statements for the AIM initiative and envisioned their desired outcomes. In addition to members of the DEVCOM CBC, SOCOM and JPEO-CBRND, representatives from the Department of Homeland Security Countering Weapons of Mass Destruction Office, the Defense Threat Reduction Agency and the Defense Advanced Research Projects Agency also attended.

Phase 2 occurred in February 2019. The interagency government team invited nontraditional contractors to an interactive industry day at SOFWERX, where they discussed the government's CBRN problem statements, met SOCOM and Army warfighters and began a dialogue with the almost 400 people in attendance. "AIM is delivering on the concept of Soldier touch points, which is a priority of the DOD, by incorporating warfighter and operator input throughout the process," said Guinn.

"We established a forum to have a conversation with these nontraditional technology developers, that was non-bureaucratic and focused around the warfighter perspective," said Kevin Wallace, a senior mechanical engineer at DEVCOM CBC and one of AIM's founders. "We also used the opportunity to learn how meeting CBRN defense needs through technology development could be accomplished at the pace at which these startup companies operate."

The partners in this initiative saw their mission as establishing a new enduring cadre of commercial and academic partners that could provide unique CBRN defense solutions. "The nontraditional technology developers we reached out to presented either novel concepts or novel applications of existing technology and they were excited to respond to the new solutions we generated

CONTINUOUS FEEDBACK
Soldier touch points are a main priority of AIM—warfighter and operator feedback is incorporated throughout the process. (Photo by Staff Sgt. Alan Brutus, 3rd Infantry Brigade, 25th Infantry Division)

ARTFUL DODGER

A government-built unmanned aerial vehicle traverses an obstacle course using a small business technology developer's software. AIM made it possible for emerging technology developers to pursue rapid, needs-based technology progression from the laboratory to demonstrations for government customers. (Photo courtesy of Combat Capabilities Development Command)

together," said Wallace. "The Chemical Biological Center can also offer our industry and academic collaborators access to world-class advanced manufacturing, laboratory live agent testing and large-scale experimentation capabilities."

A SIMPLIFIED PROCESS

The industry attendees were invited to submit a two-page white paper and a quad chart on the CBRN defense solution they could provide. The government received 192 submissions. From there, a diverse evaluation panel of government agency partners narrowed the submissions down to 44 that showed exceptional promise.

"It was one of the most straightforward processes my company has ever participated in," said one of the participants, James Kehaya, director of the products business unit at Two Six Technologies, a 400-person company headquartered in Arlington, Virginia. "Formal requests for proposal tend to be very rigid, and it can cost a small business a lot of money to generate the proposal. With AIM, we simply put together a quad chart in PowerPoint and wrote a two-page concept paper. That was a really good format for us."

In early May, the government invited the submitters of those 44 proposals to return to SOFWERX to pitch their proposed solutions in person. They were each given 45 minutes and were allowed to discuss their proposed technology with government subject matter and acquisition experts.

By the end of May, the government had whittled the number of submissions down to eight. In some cases, two separate submitters joined forces to advance a single technology solution by combining their respective strengths. The eight finalists submitted a range of innovative technology approaches. Among the standouts were:

- A team of robots that autonomously conduct safety surveys. The proposal combines unmanned aerial vehicles with

waterborne autonomous vehicles that would communicate with each other and work in concert using onboard sensors to identify and then sample areas suspected of chemical or biological contamination.

- An automated digital tool that surveils a global range of publicly available social media and dark web sites in all source languages using advanced analytics, natural language processing and machine learning to detect near-term CBRN threats.
- A lightweight, throwable or droppable mesh-networked sensor called a G-ball, designed to detect CBRN threats and convey the information back to a graphical user interface. Warfighters and operators could determine if an area were safe by simply throwing the ball from a vehicle window or dropping it from a drone at an altitude of up to 30 feet.

ADJUSTING TO THE PANDEMIC

At the beginning of June, SOCOM made its contract awards through SOFWERX and each of the winners was given, on average, six months to develop its technology to the point it could be demonstrated in a two-day showcase orchestrated by the DEVCOM Chemical Biological Center at Aberdeen Proving Ground, Maryland. Then the COVID-19 pandemic hit and AIM went virtual, just like the rest of the world.

Instead of a live demonstration, in the fall of 2020 each of the seven remaining technology companies had its own demonstration videotaped by AIM at various locations nationwide. In November, AIM organizers collected those demonstration videos and held a teleconference for the technology companies and 85 government partners. The technology companies virtually presented their videos and took questions from the government participants. The event gave the technology developers and the government partners a virtual forum in which they could refine concepts, reinforce existing collaborative relationships and in some cases start new ones.

AIM CONCEPT PROVEN

Now in its third year, AIM has proven its ability to open up new business opportunities for the participating technology developers, and to fully collaborate with government stakeholders and warfighters.

"AIM was our first contract with the DOD, and it helped focus our company direction by providing a specific application for the new technology we were developing, an autonomous unmanned aerial vehicle for CBRN surveillance. This kick-start helped us find more customers in the Air Force and other DOD branches," said Fraser Kitchell, co-founder and CEO of KEF Robotics. "They are as much partner as customer, giving us insights into how to make our product better."

"AIM filled a gap in acquisition. It allows for a more rapid cycle of identifying the best technologies and an agile way to establish contracts."

According to the Defense Threat Reduction Agency (DTRA), the AIM acquisition model enabled the agency to find KEF Robotics, a company with the innovation needed for a project. KEF Robotics' software represents a big step forward in countering weapons of mass destruction. It also may prove to be a real boon for the warfighter because it is autonomous and leaves the operator's hands free. In the past, it would have been much more difficult for DTRA to find a company with this type of innovation.

The next round of technology development events will begin in late 2021 or early 2022, when participating technology companies will once again respond to problem sets and develop solutions to CBRN challenges. The cycle of deep industry and government collaboration facilitated by the AIM business model will thus be renewed and expanded.

For more information about the DEVCOM Chemical Biological Center, go to ***https://cbc.devcom.army.mil.***

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COMMS CHECK
A Soldier assigned to the 3rd Infantry Brigade Combat Team, 25th Infantry Division checks a Manpack radio for an exercise on Aug. 22. The TSM waveform enables multiband and multimode operations. (Photo by Kathryn Bailey, PEO C3T)

WAVES ACROSS SPACE

Modern waveforms will enhance secure communications in future conflicts.

by Dr. Sayeed Hasan, Herald Beljour and Kathryn Bailey

One of the most critical weapons in today's military arsenal is invisible, silent and operates in the air above the battlefield. This critical capability is the military waveform, which is the software that carries clear, uninterrupted voice and data transmissions across the force. Unfortunately, waveforms are vulnerable to multiple impediments vying to degrade their performance when traveling from Point A to Point B.

Currently, congested and contested waveform pathways are one of the most troublesome conditions facing commanders and military planners. Transmissions, which are the broadcasting of electromagnetic waves from one location to another, must fight for space within a crowded electromagnetic spectrum while also evading sophisticated adversarial signal interference. Even unintentional, non-adversarial interference is becoming increasingly prevalent, as signals must extend further than ever before to prepare for multinational, multidomain operations.

To respond to these electromagnetic challenges, the Army is reaching out to commercial organizations using multiple contracting methods and incentives—and even prize money—to give a modern twist to its go-to waveforms.

FLEXIBLE WAVES

Government-developed waveforms are derived from military requirements, where the government can be the designer and developer of the product, or can provide the requirements to vendors to port onto their radios. A commercial waveform is developed by a commercial company, which owns the intellectual property associated with the waveform, and that company is responsible for software updates, bug fixes and initial testing.

To ensure commercial waveforms meet its stringent security protocols, the Army frequently partners with industry to integrate National Security Agency (NSA)-approved encryption into commercial waveforms and radios.

One of the Army's current government waveforms is the legacy Single Channel Ground and Airborne Radio System (SINCGARS) waveform. The SINCGARS waveform provides secure line-of-sight transmissions and runs on multiple hardware radio platforms, such as the single-channel RT-1523 VHF SINCGARs radio, which is currently undergoing a modernization effort called the Combat Net Radio. It also runs on the more modern two-channel, software-defined radio variants such as the AN/PRC-148D and the AN/PRC 163 Leader radios and the AN/PRC-158 and AN/PRC-162 Manpack Radios. The benefit to two-channel, software-defined radios is twofold: They can run SINCGARS on one channel and a different waveform on another, depending on the mission.

To support the NSA and DOD's cryptographic modernization effort, which is modernizing and transforming U.S. information assurance capabilities to prepare for mid- to long-term threats, the Army is currently looking to modernize the legacy SINCGARS waveform.

"We foster open communications to provide the vendor with feedback to help them refine their capabilities and stay relevant in the Army's push for modernization."

LEADING THE FIELD
Soldiers assigned to 3rd Infantry Brigade Combat Team, 25th Infantry Division (3/25 ID) operate two-channel leader radios at Kahuku Training Area, Hawaii, on Aug. 22. (Photo by Staff Sgt. Alan Brutus, 3/25 ID)

Improvements include enhancements to both electronic warfare protection and voice quality. To identify all requirements for a modernized SINCGARS waveform, Product Manager Waveforms is collaborating with multiple Army organizations, including the U.S. Army Combat Capabilities Development Command's C5ISR Center, the Army's Network Cross-Functional Team, and the intelligence community to solidify requirements before reaching out to industry to innovate the best solution for this mission-critical waveform.

"Modernization is the key to our mission success and our ability to defeat threats from near-peer adversaries," said Lt. Col. Sherida Whindleton, the Waveforms product manager for Project Manager Tactical Radios (PM TR), within the Program Executive Office for Command, Control, Communications – Tactical (PEO C3T).

EXPANDING WAVEFORM CAPABILITIES

Commercial waveforms may not start out with obvious applications for military operations, but they provide capabilities the Army needs, and fast. As an example, when the Army was looking for scalability and range for radio communications, it identified the commercial TSM waveform as a potential candidate instead of the government's older, non-scalable Soldier Radio Waveform, to meet the Army's network modernization initiative. As of this writing, the Army procures TSM (tactical scalable MANET [mobile ad hoc networking]) through radio manufacturers. TSM is a modernized mesh

LOW PROBABILITY, HIGH PRIORITY

Engineers with Project Manager Tactical Radios evaluate a commercial waveform that assesses low probability of intercept, low probability of detection and electronic warfare in a congested and contested waveform environment at Yuma Proving Ground, Arizona, in April. (Photo by Dr. Sayeed Hasan, PEO C3T)

networking waveform, i.e., comprising a group of devices that act as a single Wi-Fi network, that supports Internet Protocol data and voice simultaneously. It runs on the Manpack and Leader Radio two-channel variants, so it can operate in multiple bands, allowing the user to switch frequencies, and multiple channel bandwidth modes, allowing the user to switch from 1.2 MHz up to as much as 10NHz, with support for up to 32 voice groups. Even though TSM is a line-of-sight terrestrial waveform, it allows every node to transmit, receive and relay data and location information simultaneously. For example, Soldier A positioned in a valley can connect to Soldier B on a mountaintop, who from the mountaintop can connect to Soldier C on the other side of the mountain. These capabilities have provided an integral capability within the Integrated Tactical Network (ITN) Capability Set 21, which is now fielded to four infantry brigade combat teams and partially fielded to one Stryker brigade combat team.

"I'm a huge fan of the ITN network, specifically the TSM waveform," said Lt. Col. Andy Harris, commander for 1st Battalion, 504 Parachute Infantry Regiment, part of the 1st Brigade Combat Team, 82nd Airborne Division. "The clarity of the communication, … that is just an outstanding capability that allows [me] at the battalion command level to speak at echelon, to speak with echelons at the brigade and divisional level, and then …. my companies have that capability as well."

For transmissions classified Secret or below, Soldiers are using the Warrior Robust Enhanced Network (WREN) TSM waveform, which provides all of the same functions of TSM but is security hardened with NSA Type 1 cryptography for government use. Porting WREN TSM's advanced commercial waveform into the Army's tactical radios gives Soldiers the option to run both sensitive but unclassified (SBU) and secret

communications on different channels, or one at a time, while maintaining complete data and voice isolation among the different security classification levels.

During the Handheld, Manpack Small Form-Fit operational test at Fort Bragg, North Carolina, and the Joint Readiness Test Command rotation in Fort Polk, Louisiana, both in 2021, Soldiers with the 1st Brigade Combat Team, 82nd Airborne Division successfully experimented with WREN TSM on Manpacks as part of the Integrated Tactical Network. By having WREN TSM integrated with the Android tactical assault kit device, Soldiers could transport critical location information and voice and free text on either classification level, all to enhance situational awareness. The Army plans to field WREN TSM with Capability Set 23.

"The critical need for SBU [transmission] cannot be overemphasized because it provides Soldiers with a secure form of communicating data in an unclassified environment," said Lt. Col. Raymond Yu, product manager for the Handheld, Manpack Small Form-Fit. "Coupling secret-and-below and SBU enables support for secure data transmission to U.S. and coalition forces at both classification levels."

The newest WREN capability, called the WREN-Narrowband (NB), goes a step further. It adds extended communications, including air-to-ground, air-to-air and electronic warfare resiliency protection, and supports anti-jamming and low probability of intercept capabilities. WREN-NB is planned to field with Capability Set 25.

DESIGNED FOR FUTURE CONFLICTS

The Army's greatest challenges to waveform enhancement and integration lie in the areas of low probability of detection (LPD), low probability of intercept (LPI), low probability of geolocation (LPG), and anti-jam capabilities that can outpace adversary threat capabilities.

LEADER RADIOS, LEAD THE WAY
A Soldier with the 1st Brigade, 82nd Airborne Division conducts radio operations using a two-channel leader radio on March 8 at Fort Polk, Louisiana. Leader radios, a critical component to the Capability Set 21 Integrated Tactical Network, enable multipath communications for Soldiers in all environments across all echelons. (Photo by 82nd Airborne Division)

Anti-jam capabilities either evade interference using frequency-hopping technologies or by using spread-spectrum technologies to reduce the effects of interference. LPI and LPD capabilities minimize the spectral presence of the waveform to avoid detection and interference, while balancing throughput and range.

To equip the Army with LPI-, LPD- and LPG-capable waveforms, Product Manager Waveforms is currently working with DOD research and development agencies, the Office of the Undersecretary of Defense, Army test centers and commercial industry. The team is assessing and evaluating state-of-the-art waveforms and advanced capabilities that have uninterrupted, nondegradable networks in a congested and contested electromagnetic environment. The team conducted an initial evaluation of candidate commercial waveforms that assess LPI, LPD and electronic warfare in a congested and contested electromagnetic environment. Following that, Product Manager Waveforms developed large-scale radio network capability, which addressed congested electromagnetic environment under sophisticated threat scenarios anticipated from near-peer adversaries.

Evaluation of electronic warfare resiliency, range, scalability and bandwidth

with respect to LPI/LPD are in line with Network Cross-Functional Team's Capability Set 27 goals.

PRIZE MONEY OPENS THE GATE

While partnerships with traditional radio waveform vendors are accelerating modernization, the Army also must consider how it can expedite the process for porting new waveform technologies into radios. One main deterrent to timely integration is the restriction created by industry using their proprietary waveforms. To help identify a solution, PEO C3T turned to the Assistant Secretary of the Army for Acquisition, Logistics and Technology xTechSearch competition, which targets nontraditional, nondefense-related small businesses to create innovative solutions for the Army's most critical modernization challenges. From within this program, Product Manager Waveforms established the xTech Small Business Innovation Research (SBIR) Waveform Challenge.

The competition required small businesses to identify hardware, software or a combination of the two, to provide an open architecture to enable third-party, or non-original equipment, manufacturers, to easily develop and integrate new waveforms onto software-defined radios. Out of the original 32 white paper submissions, 10 companies received prize money and an opportunity to pitch their technologies to the Army. The resulting five winners received additional prize money and will receive direct Phase II SBIR contracts to mature their proposed solutions into prototype capabilities that potentially could be integrated into program of record systems.

"XTech with SBIR competitions are invaluable to the Army discovering innovative and niche technologies," Whindleton said. "My hope is identifying these unique technological solutions will aid in the advancement in our waveform capabilities. These competitions also open opportunities for small businesses to collaborate and potentially partner with traditional defense industries to offer innovative products."

Commercial waveforms may not start out with obvious applications for military operations, but they provide capabilities the Army needs, and fast.

CONCLUSION

Future battles will rely on a multitude of sophisticated weapons, yet with the lives of U.S. forces at risk, none will be as critical as the waveforms transmitting mission-critical communications across the battlefield. The race to ensure military waveforms respond to contested and congested waveform interference is on.

To keep a pulse on up-and-coming technologies, the Waveforms team consistently monitors nondevelopmental items, which are products developed exclusively for governmental purposes, and commercial off-the-shelf products. From requests for information, to vendor demonstrations at government facilities, small business opportunities like xTech with SBIR competitions, and Soldier experimentation and feedback, the Army's industry partnerships will help drive innovation to meet emerging threats to the electromagnetic spectrum.

Industry partners must do their part by staying engaged and communicating regularly with the Army Futures Command and PEO C3T to understand operational and technical requirements, so they can leverage their state-of-the-art technologies to advance tactical Army communications systems.

"We foster open communications to provide the vendor with feedback to help them refine their capabilities and stay relevant in the Army's push for modernization," Whindleton said.

For more information contact ***pao-peoc3t@army.mil*** or refer to ***www.peoc3t.army.mil***.

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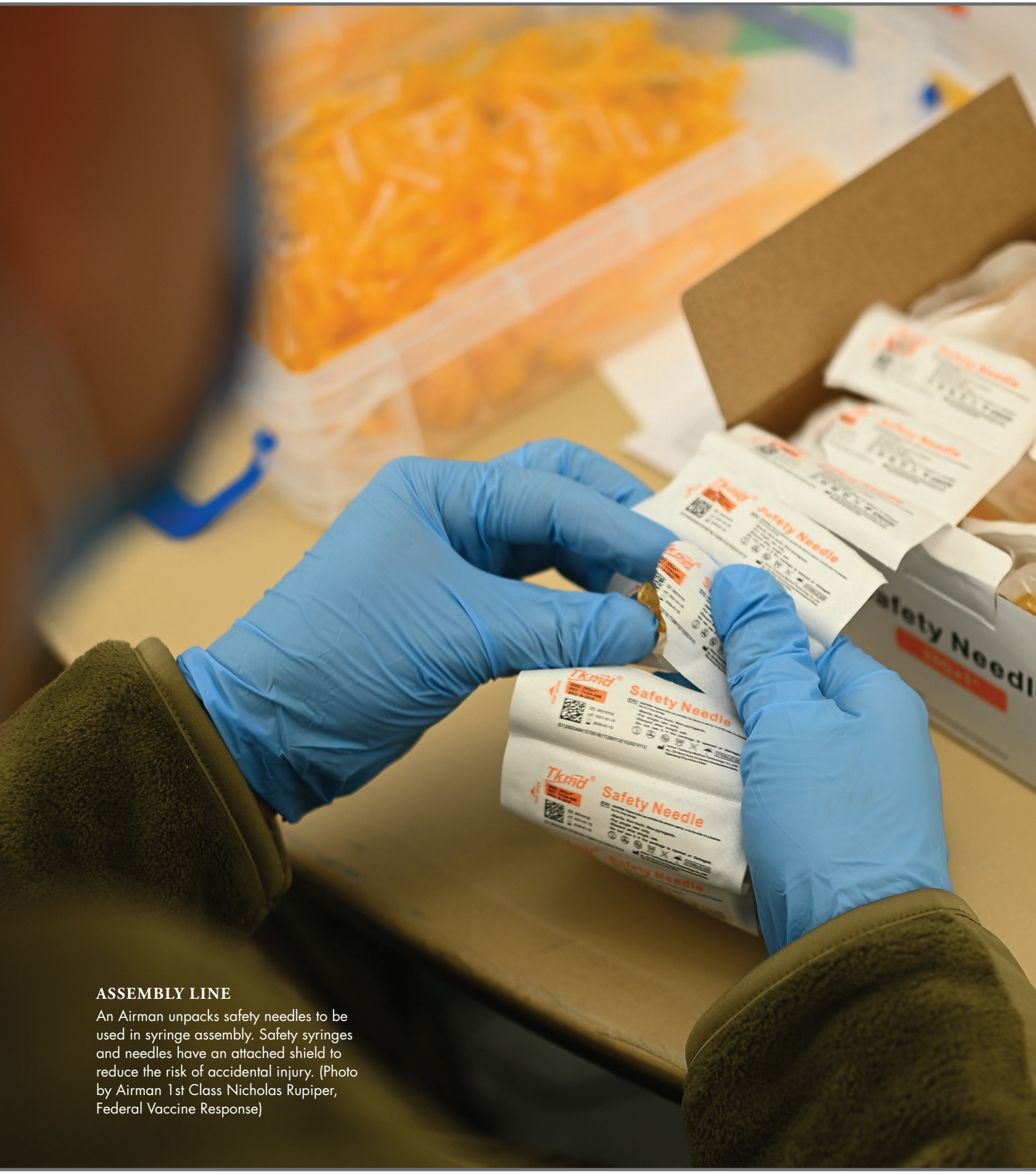

ASSEMBLY LINE
An Airman unpacks safety needles to be used in syringe assembly. Safety syringes and needles have an attached shield to reduce the risk of accidental injury. (Photo by Airman 1st Class Nicholas Rupiper, Federal Vaccine Response)

TIP OF THE NEEDLE

U.S. Army medical acquisition team supplies DOD, nation with syringes for COVID-19 vaccinations.

by Erik Heine

A modern syringe is a fairly commonplace item. This small instrument is a simple mechanism that has provided great benefit to mankind. The U.S. military has used it to protect warfighters against biological threats for more than 100 years. However, because of the impact of the coronavirus pandemic, the U.S. Army has had to respond rapidly to worldwide demand for this tool in unprecedented ways.

In early 2020, a small team of highly trained medical acquisition professionals—whose motto is "Nevertheless, we deliver!"—was working within the Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND). It was preparing to supplement the U.S. Army supply of safety needles and syringes to administer COVID-19 vaccinations to Soldiers, once the vaccine was authorized and ready for use. However, a greater challenge loomed on the horizon: ensuring that the necessary needles and syringes would be available to vaccinate the entire nation. While most of the media focused on the efforts necessary to create the vaccines, the underlying goal has always been to deliver those vaccines into the arms of an anxiously waiting public. To do so, the nation needed plenty of safe and effective needles and syringes.

"When the coronavirus hit, we were one of the few who had ever prepared for this type of nightmare," said Charles Paschal, assistant program manager for JPEO-CBRND's Joint Project Manager for Chemical, Biological, Radiological and Nuclear Medical (JPM CBRN Medical). "It became clear that the world would be scrambling for needles and syringes on a much larger scale as soon as the vaccines were discussed."

PARTNERSHIPS AND A WHOLE-OF-GOVERNMENT APPROACH

Although the team had never prepared to gather more supplies than DOD needed, it was able to leverage ongoing interagency partnerships in a whole-of-government solution to accelerate the national vaccination campaign, and to rapidly acquire more than 1 billion safety needles and syringes for use throughout the United States. The

ORGANIZATION STATION

U.S. Air Force Senior Airman Deja Cole, medical technician with the 412th Operational Medical Squadron, 412th Air Base Wing, prepares her station in April by making a box to hold bandages at the state-led, federally supported Ford Field Community Vaccination Center in Detroit. (Photo by Airman 1st Class Nicholas Rupiper, Federal Vaccine Response)

safety syringes and needles, which feature an attached shield to reduce the risk of accidental injury to health care workers, would be critical to the nation's COVID-19 vaccination strategy; a challenge of providing a total of over 1 billion safety syringes, across nine contracts, over a 12-month period, with over 88 million planned to be delivered by the end of 2020.

Leading the $310 million effort to ensure that the needles and syringes would be available for the COVID-19 vaccine, was U.S. Army Maj. Andrea Mountney, deputy joint product manager for Chemical Defense Pharmaceuticals at JPM CBRN Medical. (See "Why Ask Why," on Page 48.) "Interagency coordination is critical to successfully executing a mission of this scale with so many moving parts," said Mountney. "JPM CBRN Medical has operated in the joint space for years, so we were uniquely positioned to leverage those existing relationships and develop new ones. It was a natural extension of what we do every day."

Mountney led the interagency assisted acquisition to procure and deliver more than 70 percent of the nation's supply of syringes and safety needles to support the nationwide administration of the COVID-19 vaccine. The national COVID-19 vaccination campaign represented an unprecedented public-private partnership in which development and fielding activities were conducted in parallel, to significantly truncate the schedule. The compressed timeline for vaccine development, as well as additional pressures on an already taxed global medical supply chain, intensified the need for coordination across the government.

As part of the whole-of-government response, the team participated in weekly interagency meetings among representatives from DOD, the Department of Health and Human Services (HHS), the Department of State and the Department of Homeland Security. The meetings served as the primary platform to coordinate product shipment, to expedite international and domestic import

PACK OUT
Defense Logistics Agency supply technician Brandon Gerber packs Moderna vaccine ancillary kits—which typically contain needles, syringes, vaccine cards and other essential items for 100 vaccines—to be shipped overseas. (Photo by Nutan Chada, Defense Logistics Agency)

and export activities, and to synchronize allocation of products across distribution sites for ancillary kit building and nationwide distribution. Ancillary kits typically contain needles, syringes, alcohol pads, vaccination cards and protective equipment for medical professionals to support approximately 100 vaccinations per kit.

As vaccine candidates emerged and raced toward U.S. Food and Drug Administration (FDA) emergency use authorization, the team proactively pivoted to focus on and prioritize acquiring the low dead space (LDS) syringes that were necessary to draw the maximum number of doses per vial. These syringes were field tested to support drawing six doses from the Pfizer vaccine and

The underlying goal has always been to deliver those vaccines into the arms of an anxiously waiting public.

supported a 20 percent increase in the number of U.S. vaccinations, providing over 31 percent of the U.S. government's LDS syringe procurement goal.

ACCELERATING VACCINE ROLLOUT

To support an accelerated vaccine rollout of needle and syringe deliveries for ancillary kits, the team turned to the U.S. Transportation Command (USTRANSCOM), DOD's premier provider of full-spectrum global mobility solutions. The team modified its transportation requirements across all contracts to accelerate delivery and provide 35 percent more product over the first three months, in support of the emergency use authorization and advanced distribution of the COVID-19 vaccines. While commercial air transportation availability was critically short because of the pandemic, JPM CBRN Medical's cooperative efforts with USTRANSCOM led to a successful international airlift of approximately 200 million needles and syringes.

Subsequent to the initial COVID-19 vaccination campaign, Mountney and the team worked with counterparts in HHS and supported the U.S. government acquisition strategy for expanded needle and syringe procurements to support four follow-on missions:

- COVID-19 vaccination humanitarian assistance.
- Annual COVID-19 booster shots.
- Support for vaccinations against new COVID variants.
- Replenishment and expansion of the strategic national stockpile inventory.

Together, they helped to develop a multifaceted strategy that leveraged inventory surplus with carefully planned potential new procurement actions in order to maximize product deliveries to meet requirements, while reducing the risk of medical supply chain disruption. Mountney briefed HHS and DOD senior leaders, as well as the White House COVID-19 supply chain coordinator, on the current status of needles and syringes

SWIFT RESPONSE

JPEO CBRN Medical provided over 1 billion safety syringes over a 12-month period. (Photo by Wesley Farnsworth, 8th Air Base Wing Public Affairs)

PREPARED FOR THE WORST

"When the coronavirus hit, we were one of the few who had ever prepared for this type of nightmare," said Charles Paschal, assistant program manager for JPM CBRN Medical. The team's efforts helped get vaccines delivered fast to people in need. (Photo by Staff Sgt. Desmond Cassell, Combined Joint Task Force – Operation Inherent Resolve)

for the COVID-19 vaccination campaign, with focus on the on-hand inventory of ancillary kits and contracted quantities of domestic and foreign needles and syringes.

"On a daily basis, you just focus on the mission to get the job done," said Dr. Jason Roos, joint program executive officer for Chemical, Biological, Radiological and Nuclear Defense. "We worked hand-in-glove with several government entities, companies and educational institutions we hadn't worked with previously, or in a long time. This effort required a lot of teamwork, a lot of hustle, and in many instances, a lot of hours."

With nearly 150 years of combined professional experience, JPM CBRN Medical experts are the tip of the spear, facilitating the advanced development and acquisition of medical solutions to combat chemical, biological, radiological, nuclear and emerging threats.

"This team's track record speaks for itself," said Col. Ryan Eckmeier, joint project manager for CBRN Medical. "We take pride in our people and the expert knowledge they bring to the table. Time and time again, they have proven that they are the right team to handle something like this monumental task."

For more information, go to ***https://www.jpeocbrnd.osd.mil/coronavirus****.*

ERIK HEINE supports the Joint Project Manager for Chemical, Biological, Radiological and Nuclear Medical (JPM CBRN Medical) at Fort Detrick, Maryland. He is certified as a Project Management Professional and holds a bachelor's degree in business administration from James Madison University.

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ARMY AL&T

MAJ. ANDREA MOUNTNEY

COMMAND/ORGANIZATION: U.S. Army Medical Center of Excellence, Training and Doctrine Command, Joint Base San Antonio – Fort Sam Houston, Texas

TITLE: Fellow, U.S. Food and Drug Administration

YEARS OF SERVICE IN WORKFORCE: 8

YEARS OF MILITARY SERVICE: 8

AAW/DAWIA CERTIFICATIONS: Level III in program management, Level III in science and technology management

EDUCATION: Ph.D. in pharmacology and molecular sciences, the Johns Hopkins School of Medicine; B.S. in biochemistry and molecular biology and B.S. in Spanish, both from Ursinus College; Project Management Professional (PMP) from Project Management Institute

AWARDS: Defense Meritorious Service Medal; Meritorious Service Medal (2nd award); Joint Service Commendation Medal; Army Commendation Medal (2nd award); Joint Service Achievement Medal; Army Achievement Medal; Army Superior Unit Award; Korea Defense Service Medal; Armed Forces Service Medal; Expert Field Medical Badge; 2019 Edison Award (Gold) for Applied Technology, Lessons Learned; Alan Faden Award of Excellence, National Neurotrauma Society Symposium

WHY ASK WHY?

Some kids are just born with the need to know *why.* Why is the sky blue? Why do birds fly? Why is thunder so loud? For Maj. Andrea Mountney, that's a very familiar story. "I was always very curious, always into science, whether it was biology or physics. My son is two and a half now, and my mother reminds me that when I was *his* age, my favorite word was 'why.' Everything was 'Why? Why? Why?' " And so far, she hasn't stopped asking.

Mountney did not follow the most common path to her Army commission as a research psychologist and medical acquisition professional. She already had earned a Ph.D. in pharmacology and molecular sciences from the Johns Hopkins School of Medicine, and was working as a research scientist at the Walter Reed Army Institute of Research, when an active-duty colleague asked her if she'd ever consider commissioning as an Army research scientist. "All credit to Lt. Col. Kara Schmid," she said. Schmid, an Army neuroscientist, had planted the seed in Mountney's mind, and the idea was too intriguing to pass up—even when she was offered a direct-hire government civilian position.

"I took quite a bit of time reflecting on the decision, because turning down a direct-hire position in the D.C. area was not insignificant," she recalled. "Ultimately, I joined the Army because of the challenge. It was a nontraditional career path, but the opportunity to serve as an Army officer, particularly as a research scientist, was a once-in-a-lifetime decision, and I didn't want to look back with regret—so I submitted my packet for consideration." She was drawn to the idea of conducting research that might enable better outcomes following traumatic brain injury (TBI) and help improve the lives of service members bearing the "invisible wounds" of combat. And though her work has taken on a different focus, she said she knows she was right to join the Army. "I know it's one of the best decisions I've made."

Mountney has taken to acquisition like a duck to water, a transition she credits to the similarities between the profession and her earlier studies—and the encouragement of Schmid and her broader professional network. "The day I came back from [the Basic Officer Leader Course in] San Antonio, [Schmid] said, 'Great, you're here. You can do Acquisition 101, and get started on it right away.' Researchers, especially in the medical domain, are inherently acquisition professionals, yet we need help seeing the broader role we play executing full-spectrum operations as military officers. My graduate degree set the stage while [Defense Acquisition University] classes, my assignments and my mentors helped to translate critical thinking into tangible problem solving and solutions for the DOD and broader U.S. population."

Mountney spent the last year and half working as the program lead for the Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense's (JPEO-CBRND) Joint Project Manager for CBRN Medical assisted acquisition for needles and syringes program in support of the national COVID-19 vaccination campaign (See "Tip of the Needle," Page 42). "We worked alongside the Department of Health and Human Services [HHS] to provide vaccination materials as part of the 'whole of government' effort in response to the global pandemic and COVID-19 public health crisis," she said. She had previously served as the deputy joint product manager within Chemical Defense

Pharmaceuticals, "leading the alternative autoinjector portfolio and life cycle management of chemical defense products." In that role, Mountney and her team received U.S. Food and Drug Administration (FDA) approval for an autoinjector to counteract chemical warfare agents, "the first approved chemical defense autoinjector by the DOD in 16 years," she said.

She has encountered many things that surprised her since commissioning eight years ago, including the scale and scope of responsibilities given to Soldiers, even relatively early in their military careers. "In terms of personnel development, one area where the Army truly excels is that it gives a high level of responsibility to a junior officer who might not necessarily have that same opportunity in the private sector," she said. "I've been in the Army for eight years and, the last year that I was working at the JPEO, my budget was approximately $350 million. With that responsibility, you're also accountable. The Army is very good at developing leaders. While it feels like 'sink or swim,' where your leadership gives you challenging, high-profile, high-impact programs, they help prepare you to execute them appropriately. Those who take the opportunity and trust in the system and their network are set up with the tools for success. The COVID-19 pandemic highlighted the importance of that leader development and investing in acquisition professionals—particularly medical—in order to respond to the current crisis and prepare for future pandemics and similar biodefense-related threats."

IN GOOD COMPANY
Maj. Andrea Mountney (center) with two of her Army mentors, Lt. Col. Kara Schmid, joint product manager, and Col. Ryan Eckmeier, the joint project manager for Chemical, Biological, Radiological and Nuclear Medical. (Photo by JPEO-CBRND)

The scale of the effort is also something that surprised Mountney's friends and family when she started on the needles and syringes project. "We had to secure 1.03 billion needles and syringes on contract," she said. "The complexity of the procurement and distribution processes are immense—the team worked, and is still working, to ensure that products are manufactured, shipped and tracked to support kitting activities with the HHS Strategic National Stockpile for distribution to states across the country and potential international support, if directed. This challenge also involved regulatory engagements, so in addition to acquisition expertise and leadership, technical and regulatory expertise for medical products were critical for our success."

The key, she said, is integrating all the various skills needed in the day to day while focusing on effective communication and stakeholder management. "Understanding logistics, program management, how to build a portfolio, risk recognition and mitigation, proactive planning, how to appropriately engage with national senior leaders, and how the joint services work, along with prior project experiences I had, where we worked with the [Centers for Disease Control and Prevention], the Strategic National Stockpile and the FDA, all helped with skill development. Building relationships was a critically important factor in the last year because it truly was a 'whole of government' effort. There are so many entities involved." She was in regular communication with leaders of Army Contracting Command, Operation Warp Speed, the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology, the Department of State, the Department of Homeland Security, and others. "Failure wasn't an option, and this was truly was a capstone effort that capitalized on everything I had learned over the previous eight years."

What's next for Mountney? She's still asking questions. Since this writing, she has officially transitioned out of JPEO-CBRND and began a fellowship with the FDA, through the Army Medical Department's Long-Term Health Education Training program, which is similar to the Army's Training with Industry developmental opportunities. "The goal is to gain a better understanding of the FDA's regulatory approval process, which will allow me to be a more effective leader in highly regulated and technical medical research, development and acquisition that can only help in serving the Army and joint force in future programs and assignments. Ideally, I should be better at knowing how to accelerate schedule, in order to deliver medical products through the process faster, and at lower cost while sustaining the high quality required of all medical acquisitions."

Ultimately, she is driven by the knowledge that her work directly impacts the wellbeing of others. "My greatest satisfaction as a member of the Army Acquisition Workforce is working to provide tangible medical products to the field in real time that are critical to saving lives. It's a humbling experience and I am grateful to be part of the team."

— ELLEN SUMMEY

VIRTUALLY EVERYWHERE

Defense Acquisition University has made drastic changes to its offerings in the face of COVID-19, to better support Army acquisition professionals around the world.

by Shannon Seay and Matthew Sablan

Along with the rest of the world, Defense Acquisition University (DAU) was hit with the full force of the COVID-19 pandemic in early 2020. As Fort Belvoir, Virginia, and the regional headquarters moved to virtual environments, DAU never lost sight that the Defense Acquisition Workforce was relying on faculty and staff to help them achieve their career milestones and deliver vital support to the warfighter.

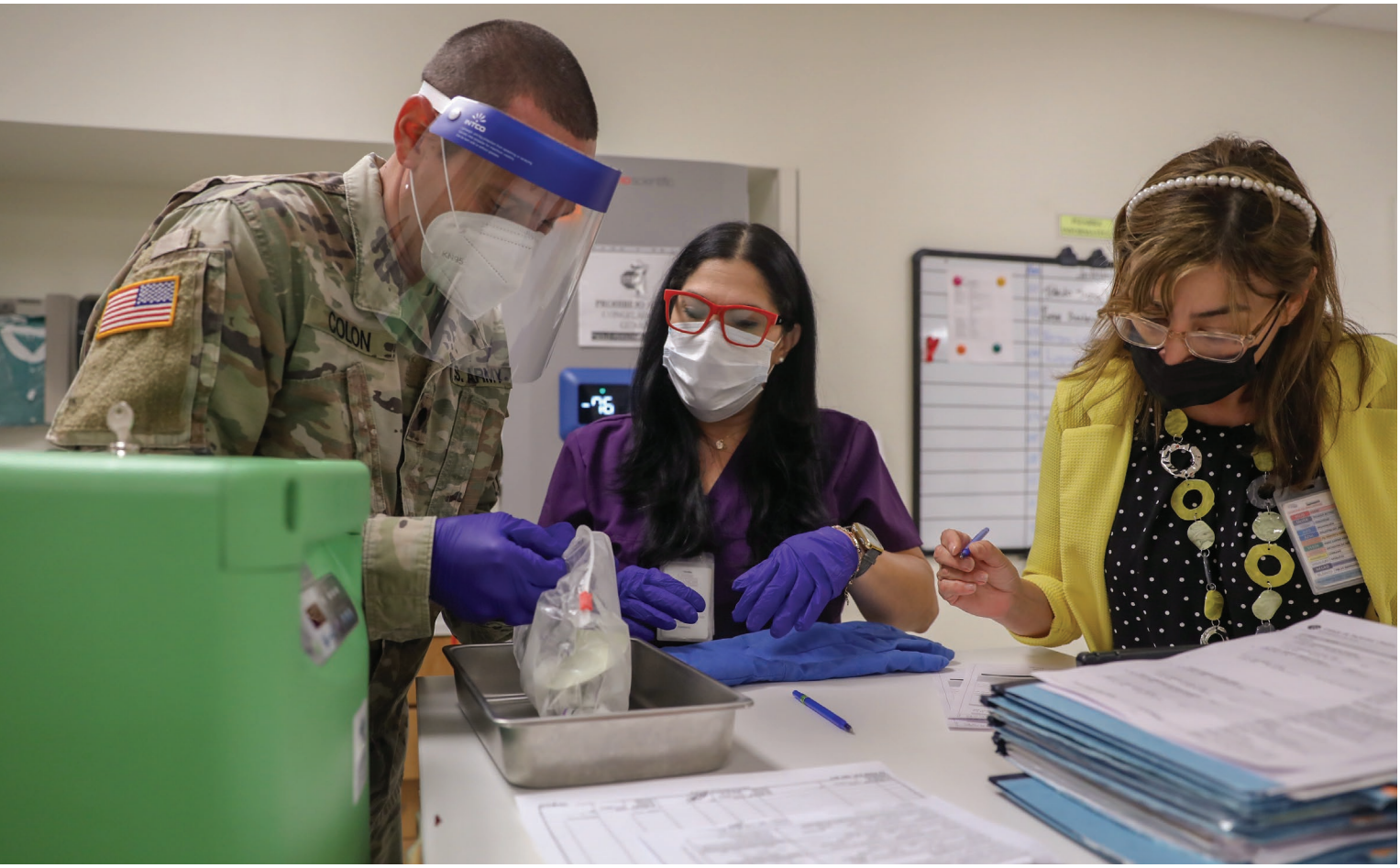
THE MODERN LEARNING PLATFORM

"Nothing demonstrates that DAU [is the learning platform of the future] better than the instant responsiveness faculty and staff had when the pandemic forced us to close physical classrooms and convert all courses and support to virtual offerings," said DAU President Jim Woolsey.

When the pandemic hit, many academic institutions and DOD organizations were left scrambling to modify practices and establish virtual environments. DAU, however, already had a significant online presence with its robust set of acquisition guides and tools, communities of practice, ACQuipedia, the Defense Acquisition Guidebook and more. "DAU is forward leaning and pushing the boundaries of what we can do with our technology, and we'll continue to push those boundaries looking for continuous improvement," said Tim Hamm, DAU's chief information officer.

As a result of this presence, DAU was able to convert 99 of 126 classroom courses to online learning assets—approximately 85 percent of scheduled courses—within three weeks of closing physical campuses while faculty worked remotely. "We continued to deliver classes," DAU professor Amy Timmermann said, "but we were delivering material that was not meant to be conveyed in this virtual forum. We had material designed for a traditional classroom learning to deliver that as we best saw fit."

Beyond leveraging the virtual classroom, DAU launched several new learning opportunities. In total, it ensured that 23,000 students were able to continue their mission-critical learning by doubling the number of webcasts (more than triple the webcasts offered in



COUNT DAU IN

Spc. Juan Colón Otero helps count COVID-19 vaccines May 21, at the Comprehensive Cancer Research Center in Rio Piedras, Puerto Rico. DAU provided a fully embedded cross-functional team to support DOD during the COVID crisis. (Photo by Spc. Hassani Ribera, U.S. Army National Guard)

fiscal year 2019). "We had to quickly scale up, and from a technology standpoint, we were lucky to have been staged to get everyone remote without any impact to their capabilities, out of the gate," Hamm said.

Overall, DAU delivered 1 million hours of classroom training and 4.3 million hours of online training during fiscal year 2020. "We knew we still had to deliver quality," Timmermann said. "It's been all hands on deck."

This increased operational tempo required staff to be collaborative and to maintain flexibility and adaptability in the face of the growing crisis. Timmermann explained that staff needed to do things in a way they had not previously done. Older course material that had not been developed for online or virtual means needed to be adapted, and students also had to adapt to the new environment.

DAU also generated new support and training assets informed by the realities created by COVID-19. While working through the early pandemic response, DAU provided targeted training to U.S. Special Operations Command, Army Futures Command and the Program Executive Office for Enterprise Information Systems, using adaptive acquisition workshops. DAU also provided support to the Army Medical Research and Development Command via a series of workshops to establish and build relationships with

new stakeholders as part of the command's realignment. Writing workshops also expanded under COVID-19, with the Professional Writing Workshop moving to a virtual environment to accommodate 220 learners from the F-35 Joint Program Office, shifting from quarterly offerings to six weekly courses to meet the new demand.

FEDERAL RESPONSE TO COVID-19 PANDEMIC

DAU faculty provided assisted acquisition support to Operation Warp Speed, now known as the Countermeasures Acceleration Group, and the Office of the Undersecretary of Defense for Acquisition and Sustainment's Joint Rapid Acquisition Cell.

DAU faculty were embedded within the Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense's (JPEO-CBRND) Joint Assisted Acquisition (JA2) team to provide program management, logistics and contracting expertise. The DAU team worked within JPEO-CBRND to support Department of Health and Human Services (HHS) requirements to expedite the acquisitions for COVID-19 vaccines, therapeutics, enablers (syringes, needles, vials and swabs) and to expand domestic manufacturing to ensure the nation has a robust supply chain for medical countermeasures to battle future pandemics.

DAU provided virtual support in two phases. The first was supporting JPEO-CBRND in leading a broad range of rapid assisted acquisition efforts in support of the interagency COVID-19 response—one of the largest DOD efforts in 2020. As the pandemic wore on, HHS identified requirements to support the urgent response as well as longer-term preparedness and resilience. In March, JPEO-CBRND requested further DAU assistance, and a new set of faculty experts was rapidly integrated into the JA2 team to address the emerging needs of the second phase.

DAU demonstrated flexibility in mission assistance by providing a fully embedded cross-functional team to support DOD during a national crisis.

JPEO-CBRND and Army Contracting Command used existing authorities and innovative contacting approaches to accelerate access to nontraditional defense contracting for the federal COVID-19 response. "Within the JPEO, we quickly evaluated and leveraged the best acquisition strategy to accelerate the U.S. government's ongoing COVID-19 response and pandemic preparedness," said Gary Wright, the assistant joint program executive officer for assisted acquisition.

As part of this partnership, DAU operated under a support agreement with JPEO-CBRND. Under the leadership of the U.S. Army, DAU provided direct support as cross-functional experts.

As staff augmentees, DAU representatives provided critical bridge support to JPEO-CBRND and partner DOD agencies as their assisted-acquisition team transitioned to a more enduring capability. These actions continue to solidify DAU's role in the DOD acquisition community and may help define new ways DAU can support DOD in the future.

In partnering with the JPEO-CBRND, DAU gained valuable insights on the current climate for rapid acquisitions and the training needs of today's acquisition workforce. This will allow DAU to infuse new topics and continue to improve existing learning assets. A great example was the recent successful award of a $3.5 billion procurement and distribution contract within 37 days, to meet the presidential requirement to provide half a billion Pfizer vaccines to low-income nations around the world. The DAU team was instrumental to the accomplishment by supporting an interagency team under a new requirement owner, the U.S. Agency for International Development.

DAU demonstrated flexibility in mission assistance by providing a fully embedded cross-functional team to support DOD during a national crisis. A typical embed mission assistance provides subject matter expertise support and consulting to a DOD acquisition program. This mission assistance is one of the many ways that DAU is changing its approach to supporting DOD. The team was not only able to get contracts awarded for vaccine activities, it also established repeatable processes for rapid acquisition and trained incoming personnel, ensuring JPEO-CBRND's excellence in execution will endure.

AFTERMATH

"Everyone came together to find out what we needed to change, and we all did our part," Timmermann said. "We spent time every week delivering information on what courses were now available, what was canceled and—looking at the numbers—DAU excelled."

READY FOR DELIVERY
Items provided with COVID-19 vaccines at Operation Warp Speed headquarters in Washington D.C. on November 13, 2020. DAU generated new support and training assets to help battle COVID-19. (Photo by EJ Hersom, Defense.gov)

"Back then, a lot of student feedback was 'thank yous' for getting them the classes they needed," Timmermann said of the early period of COVID. "DAU is working to become a frictionless, user-friendly and adaptable platform. The faculty is willing to change and adapt to this new environment, and I think this willingness to transform ourselves leads to less friction for students."

During 2020 and 2021, DAU has continued to expand virtual instructor-led training support and support staff. DAU's expanded technology capabilities have also been used for events, webinars and even DAU's flagship event of 2021—TEDxDAU Platforms of the Future—to a virtual-only audience of approximately 3,600.

"The technology and support piece has been critical to our success," Hamm said. "We're continuing to scale up our support and implement technology that can be accessed from anywhere to deliver more than just training. We didn't let it slow our work down at all."

Because of these successes, DAU is not going to go back to how things were before. Hamm highlighted several of the advancements, including the permanent shift from a .mil to a .edu website and expanding remote work solutions, as examples of how DAU's focus on virtual learning is already helping customers and students.

"We've built this new reality into our work processes and leveraged our skilled staff to keep things running," he said. "We did these things faster, in part thanks to the great support we received from Washington Headquarters Services. Getting licenses, hardware and awarding the work helped remove any barriers that we might have had to our success."

CONCLUSION

DAU's continued expansion of online learning has demonstrated DAU can deliver quality learning in the virtual environment at scale. DAU will continue to increase flexibility and expand digital offerings, while ensuring the workforce can complete the training with less time away from their jobs and families.

For more information about DAU's COVID-19 response and other achievements, refer to the 2020 DAU Annual Report at ***https://go.usa.gov/xeqBT****.*

SHANNON SEAY is a DAU professor of acquisition and program management. He holds an M.S. in management of information systems from Florida Institute of Technology and a B.S. in industrial design from Auburn University. He is Level III certified in program management.

MATTHEW SABLAN supports the DAU communications team. He has a B.A. in history and English from Marymount University and previously wrote for the Defense Contract Management Agency and the U.S. Army Combat Capabilities Development Command Ground Vehicle Systems Center (formerly the Tank and Automotive Research and Development Center).

LIDS TAKES OFF
Commercial off-the-shelf drones have already been deployed to deadly effect in combat, which explains why so many international allies and partners have shown interest in LIDS. (U.S. Army Photo)

INNOVATION DRAWS INTERNATIONAL INTEREST

A demonstration of counter-unmanned aircraft systems solutions generates interest from 16 foreign partners.

by Meghan E. Hall

When a Soldier encounters an adversary's unmanned aircraft system, hovering just outside her foxhole, she can either hope she wasn't seen, or she can deploy LIDS to incapacitate it—disabling the electronics and even shooting it right out of the sky—and not have to worry. The combat successes of the Low-Slow-Small Unmanned Aircraft System (UAS) Integrated Defeat System (LIDS) have generated international interest in the system as a deterrent to small UAS outside of traditional air defense system capabilities. LIDS was developed by Integrated Fires/Rapid Capabilities Office (IF/RCO) in the Program Executive Office (PEO) for Missiles and Space. To showcase the system capabilities, IF/RCO hosted an International Demonstration Day on Aug. 18 during routine testing at Yuma Proving Ground, Arizona.

SYSTEM COMPONENTS

The demonstration featured fixed-site LIDS (FS-LIDS), which includes the Forward Area Air Defense Command and Control, counter unmanned aircraft electronic warfare system, electro-optical infrared camera, direction finding sensors, mesh-net Internet Protocol radios, and the AN/TPQ-50 Multi-mission Radar. For kinetic defeat, FS-LIDS employs a Ku Band Multifunction Radio Frequency System Radar and Coyote Block 2 Interceptor. The U.S. Government also exhibited Mobile LIDS (M-LIDS), which is equipped with all five LIDS capabilities, plus a 30 mm chain gun that are all integrated into mine resistant ambush protected all-terrain vehicles.

The LIDS family of systems uses a modular framework with a cutting-edge capability, overlaid on existing programs of record, to create a mechanism to defeat UAS from the smallest systems to Group 3 unmanned aircraft capable of carrying large explosives or sophisticated observation payloads. These aircraft typically weigh more than 55 pounds, but less than 1,320 pounds and operate below 18,000 feet at speeds of slower than 250 knots—like the Shadow and the Integrator.

THE DEMONSTRATION

To demonstrate the full range of the system, the Army conducted eight scenarios: three used the Counter Unmanned Aircraft Electronic Warfare System, two used the XM914 30 mm cannon with proximity

fused ammunition, and three used the Coyote Block 2 Interceptor. Threats included single flights and swarms in multiple configurations. All of these scenarios used Forward Area Air Defense Command and Control to provide command and control, engagement operations, situational awareness and automated air-track information to support multiple simultaneous missions with electro-optical infrared sense support from the Nighthawk camera.

Foreign partners noted the Coyote's automatic re-attack capability, which enhances "probability of kill" for each round fired. The detonation associated with the terminal engagement of the kinetic kills, while impressive, is only part of the capabilities available for the LIDS family of systems. The counter unmanned aircraft electronic warfare system provides an extra layer of defense for integrated kinetic weapon systems and has the ability to mitigate swarms of UAS in multiple configurations.

IN MODERN WARFARE

The number of commercial off-the-shelf drones and the availability of kits and online tutorials to build drones out of easy-to-find items, means that counter unmanned aircraft systems (C-UAS)

THE PERFECT OPPORTUNITY

Adversaries will use swarms of small, cheap, scalable and disposable unmanned systems both offensively and defensively, creating targeting dilemmas for C-UAS. This creates the perfect opportunity to employ a UAS solution—like LIDS. (Photo by Spc. Destiny Jones, U.S. Army)

HOW LIDS WORKS

The Low-Slow-Small Unmanned Aircraft System (UAS) Integrated Defeat System (LIDS) detects, tracks, identifies and defeats hostile Group 1, Group 2 and Group 3 drones. Group 1 drones typically weigh less than 20 pounds, operate below 1,200 feet at speeds slower than 250 knots; Group 2 drones typically weigh 21–55 pounds and operate below 3,500 feet at speeds slower than 250 knots; and Group 3 drones weigh 55–1,320 pounds and operate below 18,000 feet at speeds slower than 250 knots. LIDS accomplishes these tasks through the integration of systems selected from the best of tested technologies available.

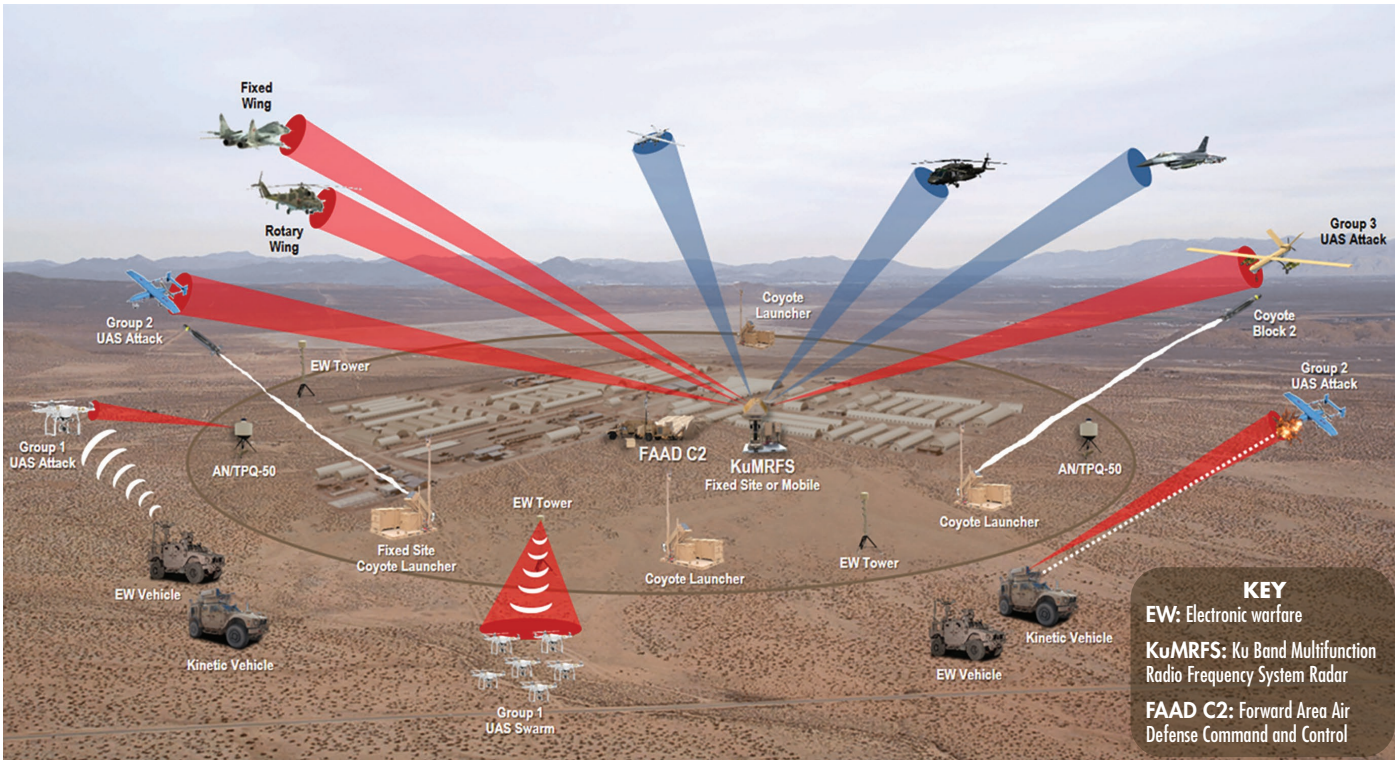
AN/TPQ-50 and Ku Band Multifunction Radio Frequency Systems (KuMRFS) detect and track threat drones. All Multimission Radars (MMR) support counter-battery target acquisition, counter-rocket, -artillery, -mortar and -air surveillance for UAS mission requirements. MMR perform multiple missions through the simultaneous search for artillery ballistic targets and air surveillance for detection of drones.

Passive detection relies on intercepting radio frequencies remotely guiding the drone with the direction-finding sensor and the electronic warfare module interpreting the signal. Correlation of all sensors and effectors with higher echelon through the Forward Area Air Defense Command and Control system provides an integrated air picture and avoids fratricide.

The warfighter uses the electro-optical/infrared (EO/IR) camera for visual identification, confirmation and classification up to 10 kilometers, depending on size of the drone. The operator then uses the electronic warfare system to compare radio-frequency reception of command or video up- and downlink signals against known systems to identify and classify the drone.

Defeat of hostile systems requires a defense-in-depth strategy employing interceptor, electronic warfare and gun technologies. The effective range of the Coyote Block 2 Interceptor is approximately 10 kilometers, followed by the electronic warfare system with effects ranging up to 8 kilometers. The XM-914 30 mm chain gun provides the final protective defense.

—MEGHAN E. HALL



LIDS CONCEPT

The LIDS family of systems uses a range of passive and active sensors to detect, track and identify UAS and non-hostile aircraft. LIDS uses a comprehensive network to communicate, allowing the operator to task appropriate mitigation techniques, ranging from electronic warfare to full physical intercepts. (Graphic by IF/RCO, U.S. Army)

must be modular, open architecture and scalable to evolve with the threat. Both terrorist organizations and nation states have used weaponized drones to inflict damage ranging from targeted attacks on individual tanks to broad scale attacks against strategic critical infrastructure.

In an August 2021 post on an industry website, GlobalData Thematic Research, part of a London-based data analytics and consulting company said, "C-UAS can employ several methods to detect the presence of hostile or unauthorized UAS. As new technologies such as artificial intelligence and drone swarms mature, unmanned aerial vehicles have the potential to revolutionize modern warfare. To counter this emerging threat, investment in cutting edge C-UAS is essential."

IF/RCO is excited to act as the lead system integrator within PEO Missiles and Space to provide a quick, affordable and innovative C-UAS solution that is readily exportable. For economies of scale and efficiency, IF/RCO will combine United States and foreign military sales requirements under the same contract whenever possible in accordance with PGI 225.7301(c)(ii), from PGI 225.73, "Acquisitions for Foreign Military Sales."

The Army initially deployed LIDS to U.S. Army Central Command's area of operations in 2017, and with the addition of the more recently deployed Coyote Block 2, provided the United States with an improved capability to defeat threat drones. There is an increase in the DOD down-selection of "best of breed" systems to counter small drones as a first step in a longer-range plan to streamline programs and capabilities across services, according to PEO Missiles and Space. The Joint C-UAS Office selected the FS-LIDS and Coyote Block 2 Interceptor as the best initial DOD solution based on capability and performance. With this selection, the Army has drafted a capability-development

Counter-unmanned aircraft systems must be modular, open architecture and scalable to evolve with the threat.

document to transition C-UAS fixed site and semi-fixed site from a quick-reaction capability to a program of record.

CONCLUSION

The international demonstration was largely successful. Sixteen countries attended and witnessed eight effective scenarios employing the LIDS family of systems. Scenarios included electronic warfare kills and kinetic kills from both fixed site and M-LIDS configurations. Modern warfare is leading to an increasing urgency for C-UAS solutions and IF/RCO estimates significant demand for procurement of C-UAS leading to an increasing number of foreign military sales cases and foreign military funding cases in the next 10 years.

For more information, go to ***www.msl.army.mil*** *or contact the PEO MSLS Headquarters Strategic Initiatives Group at 256-876-0714.*

MEGHAN E. HALL is a contracts analyst providing PEO MS contract support for C-UAS security cooperation efforts on behalf of Axient LLC. She has a B.A. in classical culture from the University of Georgia.

KEY

A: AN/TPQ-50 Radar
B: Counter unmanned aircraft electronic warfare system-direction finding
C: Forward Area Air Defense Command and Control
D: Electro-optical infrared camera
E: Wireless encrypted communications
F: Fixed-site Coyote Block 2 launcher
G: Fixed-site Ku Band Multifunction Radio Frequency System Radar
H: M-LIDS electronic warfare vehicle
I: M-LIDS kinetic defeat vehicle
J: Coyote Block 2 Interceptor

ALL IN THE FAMILY

During the International Demonstration Day in August, PEO Missiles and Space tested the LIDS family of systems. (Graphic by IF/RCO, U.S. Army)

MOBILE SOLUTIONS

Mobile LIDS (M-LIDS) provides Soldiers the mobility, firepower and protection required to detect, identify, track and defeat unmanned aircraft system (UAS) threats. With fully integrated and mature technologies, the two-vehicle solution provides options for commanders to employ near fixed sites or protect unit formations from current and emerging drone threats; the modular system allows users to improve capability as future technologies are developed. Using the integrated network, threat information passes quickly across all employed systems, providing leaders defense in depth. The current M-LIDS capability also allows easy system improvement as new technologies develop in the future. Through rigorous Army testing, M-LIDS is a low-risk mobile counter-UAS capability that is available today.

Electronic Warfare Vehicle

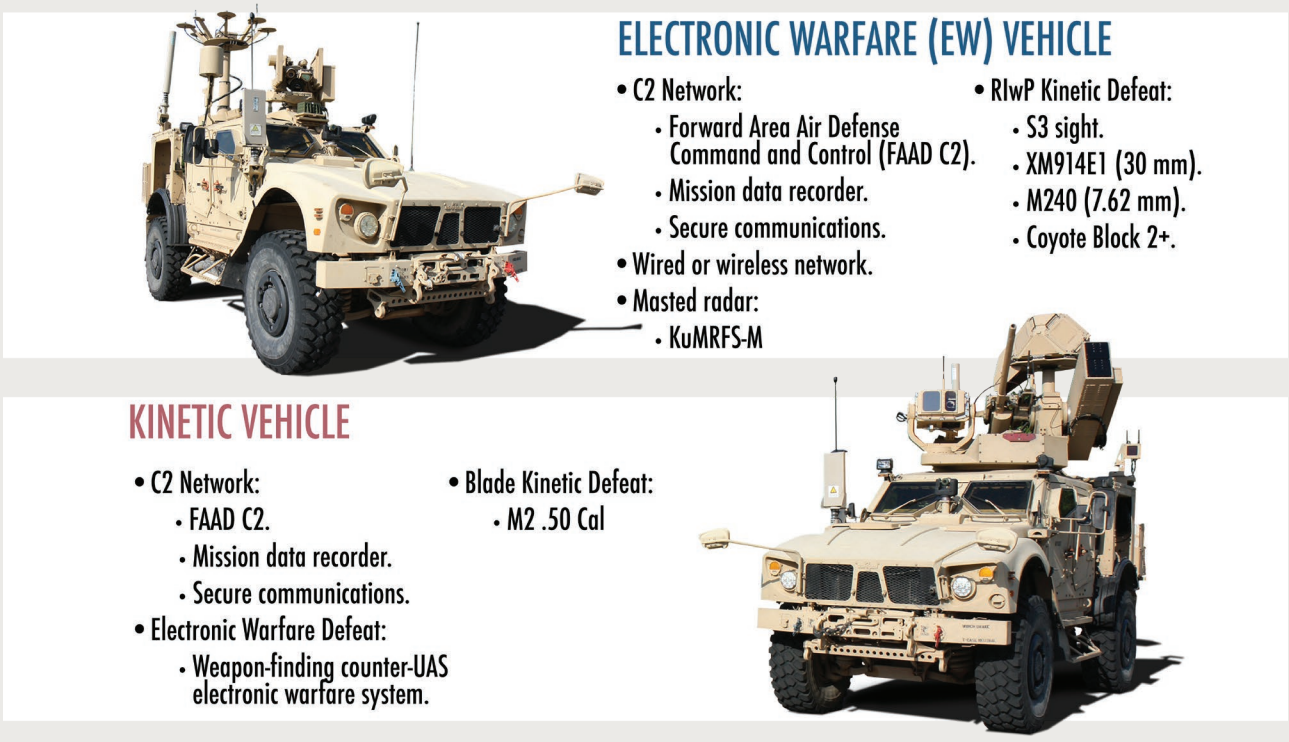
- The electronic warfare vehicle incorporates fixed-site LIDS components (slight decrease in effective detection and defeat range) with C-UAS detection, tracking, identification and defeat capabilities (non-kinetic).
- Electro-optical/infrared (EO/IR) camera gun system with a target acquisition range of greater than 2 kilometers.
- Incorporates .50-caliber machine gun for personnel protection.

Kinetic Defeat Vehicle

- Provides C-UAS detection and tracking with identification and defeat capabilities (kinetic).
- Incorporates the Coyote Block 2 Interceptor, XM914 30 mm chain gun and M240 antipersonnel weapons.
- EO/IR gun system with a target acquisition range of greater than 2 kilometers.
- Ku Band Multifunction Radio Frequency System Mobile (KuMRFS-M) provides air surveillance and fire control at the short halt (not an on-the-move capability).

—MEGHAN E. HALL

TWO-VEHICLE M-LIDS CAPABILITIES



(Graphic by IF/RCO, U.S. Army)

(Photo by Staff Sgt. Austin Berner, U.S. Army Reserve)

THE HERO PRIMER

A new tank cartridge primer reduces manufacturing time and critical defects, improving overall ammunition safety for Soldiers.

by Hjalmar "Jay" Canela

For today's Soldiers, maintaining tactical proficiency on the M1 Abrams tank requires tactical and training rounds that are safe and perform as intended. Tactical cartridges for the M1 Abrams must create maximum impact with minimal use of ammunition. Compared with the wide array of ammunition being used and developed by the U.S. Army, tank cartridges stand out as complicated and require extensive focus on quality and safety assurance. Primers are key components in tank cartridges—ensuring they function reliably is critical, as they are the primary ignition element in the cartridge ignition sequence. The Joint Program Executive Office for Armaments and Ammunition's Project Manager for Maneuver Systems (PM MAS) manages the life cycle of small-, medium- and large-caliber ammunition, including tank cartridges.

In 2021, the PM MAS tank ammunition team incorporated an improved primer into the Kinetic Energy Tank Training M865A1 and the XM1147 Advanced Multipurpose cartridges. The primer qualified during the M865A1 cartridge qualification, saving the government considerable time and money by combining test requirements and engineering efforts. The new primer improves manufacturability, decreases susceptibility to electromagnetic safety hazards and reduces manufacturing costs. It is known as the Hazards of Electromagnetic Radiation to Ordnance (HERO) primer.

PRIMER DESIGN HISTORY

The initial 120 mm family of tank cartridges qualified with the M125 "thin-walled body" primer in 1984 (Figure 1). Engineers at Picatinny Arsenal, New Jersey, later determined through internal testing that the thin wall could conduct enough heat to the propellant to ignite it in the event that a just-fired primer came in contact with another Abrams tank cartridge. The first redesign consisted of a rubber coating applied to the M125 thin-walled primer body to prevent heat transfer.

The next redesign occurred in 1998 with the M125 Electric Primer (Figure 2), which included a thick-wall body, replacing the rubber coated thin-walled primer. The thick wall provides enough thermal mass to delay heating of the primer body, preventing premature ignition of the propellant. These design changes only affected the body of the primer, not the interior. The ignition element assembly (IEA) (Figure 3) maintained the same configuration since the 1984 cartridge qualification, and it is the primary charge in the ignition train of the cartridge. The IEA is what initiates the propellant, expelling the cartridge out of the gun tube.

The manufacture of the legacy M125 electric primer provided its own share of manufacturing issues. Small, fragile parts made automation nearly impossible, and the numerous individual components increased the chances of manufacturing defects. Picatinny Arsenal's Combat Capabilities Development Command (DEVCOM) Armaments Center teams monitored the most critical aspects of the manufacturing process to ensure that a component failure would not risk life or limb. The quality assurance process inspected for 16 critical defects in the M125 electric primer. A critical defect is a production non-conformance that could

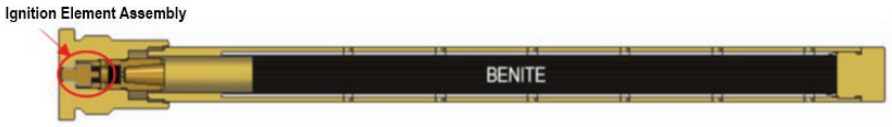
FIGURE 1

The first 120 mm cartridges qualified with the M125 thin-walled body primer in 1984. (Image courtesy of the author)

FIGURE 2

The addition of a thick-walled body to prevent heat transfer that could cause premature ignition. (Image courtesy of the author)

FIGURE 3



The ignition element assembly in the M125 electric primer hadn't changed for almost 40 years. (Image courtesy of the author)

The new primer improves manufacturability, decreases susceptibility to electromagnetic safety hazards and reduces manufacturing costs.

NECESSARY PREPARATIONS

A Soldier assigned to 1st Armored Brigade Combat Team, 1st Cavalry Division carries a 120 mm tank round in December 2020, in preparation for qualification at Grafenwoehr Training Area, Germany. (Photo by Sgt. Thomas Stubblefield, 241st Mobile Public Affairs Detachment)

have catastrophic results in the field if not caught during production. The high number of critical defects in the design contributed to manufacturing delays because of work stoppage, leading to additional costs and potential defects reaching the field.

Another persistent issue in the production assembly of the thick-walled primer was the application of the lacquer plug resin on the primer body. The lacquer material would plug the primer body holes (Figure 2), creating a seal and preventing moisture from accumulating inside the primer body to protect the benite (Figure 3). Benite is a black powder substitute that's also widely used in wood conditioners. Moisture in the primer body would adversely affect the performance of the primers. The lacquer came off the body holes during handling or transportation many times during primer production, making lacquer inspections a critical inspection item during lot acceptance.

To fix the lacquer issue, the Picatinny engineering team recommended adding a plastic liner design into the HERO primer configuration. The plastic liner is a tube inserted in the primer body that provides a more effective moisture seal for the benite. Picatinny engineers developed an engineering change proposal to incorporate the plastic tube into tank cartridge primers in 2011 as a superior design to the lacquer paint.

PREVENTING HAZARDS

In addition to the improvements above, an investigation of a 2002 tank fire at Fort Hood, Texas, led Picatinny engineers to discover that tank cartridges were very susceptible to initiation by radio frequencies if the primer was in contact with any of the electrodes of the electronics in the tank. This discovery necessitated the Army to require primers to be HERO compliant. The radio frequency signals were not the cause of the tank fire, but the radio frequency susceptibility needed correction.

Picatinny engineers, with help from the Navy Support Facility Dahlgren, Virginia, which had conducted testing for the investigation, confirmed that the primers were susceptible to radio frequency signals and provided the basis for the Army to issue a safety-of-use message in 2004, titled SOUM-04-020, "Operational, Use of Standard and COTS/NDI UHF Radios." The safety message said that standard and commercial off-the-shelf UHF radios operating in the range of 200-280 MHz have enough energy to initiate the cartridge primer if the center electrode is touched by either a person or object when within 30 meters of unpackaged tank ammunition. Engineers determined that a primer designed to fire only when exposed to a current of 1.3 amperes or greater would solve the safety problem. This value became the threshold requirement for future primers.

The Picatinny engineers and Dahlgren test results provided the basis for the U.S. Army's HERO military standard (MIL-STD), DOD MIL-STD-464, which provides guidance for making all

Primers are key components in tank cartridges—ensuring they function reliably is critical.

ammunition and systems HERO-compliant. On Dec. 1, 2010, DOD released the latest version of the standard, MIL-STD-464C, "Department of Defense Interface Standard: Electromagnetic Environmental Effects Requirements for Systems," that "establishes electromagnetic environmental effects (E3) requirements and verification criteria for airborne, sea, space, and ground systems, including associated ordnance." The intent was to ensure that all systems and ordnance for those systems could be "sufficiently shielded or otherwise so protected that all electrically initiated devices contained by the item are immune to adverse safety or reliability effects when the item is employed in the radio frequency environment delineated in the standard." The objective for PM MAS then became to develop a HERO-safe primer for all large caliber (120 mm and 105 mm) tank cartridges.

THE HERO PRIMER

After much work between Picatinny engineer design teams and industry partners, there are now two acceptable configurations of the HERO primer—the one-piece and two-piece designs (Figures 4 and 5).

Table 1 identifies the differences between the legacy thick-wall, one-piece and two-piece primers. The manufacturing process of both variants of HERO primer reduces the level of hands-on assembly required, thereby reducing production costs. The HERO configurations also eliminate the need for lacquer plugs and black powder.

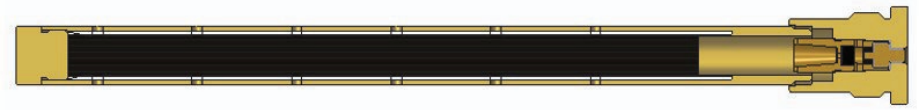
The comparison table shows the reduction in the number of critical defects from the

TEST ROUND
Soldiers assigned to 4th Infantry Division test the XM-1147 Advanced Multipurpose round in September at Yuma Proving Grounds, Arizona. (U.S. Army photo illustration courtesy of Maj. Michael Brabner)

FIGURE 4

The one-piece design is one of only two acceptable configurations of the HERO primer. (Image courtesy of the author)

FIGURE 5



The two-piece HERO primer reduces the level of hands-on assembly required, thereby reducing production costs. (Image courtesy of the author)

TABLE 1

		Legacy thick wall primer	2-piece HERO primer	1-piece HERO primer
Key design features	**Total number of Primer Critical Defects**	16	14	7
	Number of body segments	3	3	1
	Paper liner	Yes	No	No
	Lacquer plugs	Yes	No	No
	Plastic liner	No	Yes	Yes
	Black powder	Yes	No	No
	HERO ignition element	No	Yes	Yes
	Non-HERO ignition element	Yes	No	No
	Benite	Yes	Yes	Yes

legacy electric primer from 14 to seven for the one-piece HERO primer variant.

Since the issuance of DOD MIL-STD-464, all new lots of tank ammunition required a waiver for not meeting the HERO requirement. In 2015, the HERO ignition element assembly qualified on the M1002 and M865 cartridges, but due to extenuating circumstances, there were issues in incorporating the HERO primer into tank cartridges at that time.

In 2016, PM MAS stopped waiving the requirement. Subsequently, the XM1147 Advanced Multipurpose and the M865A1 cartridge programs both qualified with HERO primers. Both programs conducted life-cycle testing to ensure reliability and survivability of the cartridge systems and became the first lots with HERO primers in tank ammunition inventory. Additionally, the new M865A1 kinetic energy tank training cartridge qualified in 2021 with the one-piece HERO primer (Figure 5). This will allow the incorporation of the same primer into the M1002 High Explosive Anti-Tank trainer tank cartridge.

CONCLUSION

PM MAS strives to enhance the lethality, reliability and performance of tank cartridges. Individual component improvements can be a major step forward in performance, and the HERO primer is an example of that. The legacy tank ammunition primer had been in production for many years with relatively little advancement and an archaic manufacturing process. The HERO primer reduces manufacturing time, number of parts, critical defects and overall production costs. Most importantly, the HERO primer improves the safety of our 120 mm Abrams tank ammunition for our Soldiers.

For more information on MIL-STD-464C, go to: ***https://tinyurl.com/5zbsr83z.***

HJALMAR "JAY" CANELA is the item manager for the 120 mm Tank Training Ammunition at the Joint Program Executive Office for Armaments and Ammunition, PM MAS. He holds an M.S. in mechanical engineering from Stevens Institute of Technology, and is Level III certified in engineering.

An investigation of a 2002 tank fire at Fort Hood, Texas, led Picatinny engineers to discover that tank cartridges were very susceptible to initiation by radio frequencies if the primer was in contact with any of the electrodes of the electronics in the tank.

KAITLYN TANI

COMMAND/ORGANIZATION: Joint Program Executive Office for Armaments and Ammunition, Program Manager Maneuver Ammunition Systems

TITLE: Medium cannon caliber research, development, test and evaluation lead

YEARS OF SERVICE IN WORKFORCE: 11

DAWIA CERTIFICATIONS: Level III in engineering, Level III in program management, Level II in science and technology

EDUCATION: Master of Engineering in mechanical engineering, Stevens Institute of Technology; B.S. in chemical engineering, Rowan University

AWARDS: 2020 Project Manager Maneuver Acquisition Systems Project Officer of the Year

FOCUSED ON IMPACT

In everything she does, Kaitlyn Tani tries to give 100 percent. She works a demanding job as an Army civilian and is a devoted mom to her three young daughters—sometimes there just aren't enough hours in the day. "Often, friends and family ask how I fit all that I do within a day, or if I sleep," she said. For Tani, the effort is not because she's a workaholic, or because she's trying to prove anything—it's because she wants to make every moment count. "I pride myself on committing to my work and making sure that if I have downtime, I am doing something productive. I focus on my work, nine hours a day, so that when it's family time, I can be fully there for my family. I'm fully there for work, and I'm fully there for the family."

And she certainly has a lot to focus on, professionally. An engineer by training, Tani now develops new types of ammunition for the Army. "Most people find it interesting when I say I develop ammunition, not only because I am a female in a male-dominated field, but also because they just aren't aware of the complexity or the types of munitions within the medium caliber category." Tani and the team at the Joint Program Executive Office for Armaments and Ammunition (JPEO A&A) are developing munitions that use advanced electronics, sensors and materials to defend against threats like moving targets, unmanned aerial systems and specialized armor.

"As the cannon caliber [research, development, test and evaluation] lead, I manage all development programs for cannon caliber ammunition (20 mm, 25 mm, 30 mm and lightweight 30 mm) to support enduring platforms and platforms being developed under the cross-functional teams for air and missile defense, the Next Generation Combat Vehicle, and Future Vertical Lift," she said. "I ensure that the new munitions are being designed to address current and future threats, while maintaining ammunition safety standards and compatibility with the weapon and platforms."

Tani encourages junior engineers to learn precisely how their work contributes to the success of the mission, something she said creates greater motivation and job satisfaction in the workforce. "We can become so focused on the task in front of us—the widget or component—that we forget why we're doing what we're doing. Take a component of training ammunition, which uses specialized material that provides visual signature when fired at the target. We know it has to make a flash, and that light has to last a certain amount of time, and we get focused on that. But it's important to take a step back and say, 'Wait a minute, why am I doing this?' I'm doing this so that a Soldier can see where their round goes when they train at night. Why is that important? Because they need to train as if they're in the field, and in the field, they would see the flash on target from their ammunition, and that visual is important to replicate conditions in the field." She said she has always felt more connected to her work when she understood how she was contributing, and she encourages her teammates to share that knowledge with others. "It's often

A REWARDING EXPERIENCE

Tani completed the four-week Civilian Education System Advanced course in January 2020, and said she was "energized and excited to make a difference," afterward. (Photo courtesy of Tani)

faster just to say, 'Fill out this spreadsheet,' but it's a lot more meaningful if I take the time to explain what the data will be used for and why it's important," she said.

Last year, Tani completed the four-week Civilian Education System (CES) Advanced course, which she said was greatly influential for her personally and professionally. "Although the course was focused on leadership, it provided immense personal growth, showed me how to be a better team member, and gave me insight on how my work makes a difference. It was the most influential training and it still plays a role in how I operate every day. I came out of the course reenergized and excited to make a difference. Each day, I learned something new that would allow me to do better in each role I serve in: leader, subordinate, teammate, mother, wife. I absolutely recommend the course to others—no matter the person's area of expertise or background, the value added is guaranteed. The more workforce members that have the opportunity to take this course, the stronger and more efficient the Army Acquisition Workforce will become."

One of the most important events in her career was an assignment within the Combat Capabilities Development Command (DEVCOM) Armaments Center's science and technology office. "This position provided me with knowledge and insights on user requirement generation, the emerging technologies across engineering centers and labs, potential transitions for PEOs' programs of record and mentorship. Understanding each of these gave me the acumen to propose program objective memorandum (POM) investments for the Armaments Center," she explained. "This role afforded me the opportunity to not only engage with various senior leaders, organizations and groups, but also to build a strong foundation for my Army acquisition career."

Ultimately, Tani said she wants to feel like everything she does is for the "right reason." What is the right reason in her career? "I know it's said so often, but supporting the warfighter, making sure we're good stewards of our taxpayer dollars, making sure our Soldiers come home safely to their families—sometimes I just get chills," she said. "That's why I'm so conscious of how I spend my time, both at home and at work, and I always try to make the most of every opportunity. I am focused on the *impact* that I can make, whether through my words, my time, or my efforts."

"There's no bigger win than hearing from Soldiers who appreciate the munitions we develop, or who offer their valuable advice and feedback to us," she said. "I'm glad I get to be a part of something that helps our community and keeps our nation secure."

—ELLEN SUMMEY

"I focus on my work, nine hours a day, so that when it's family time, I can be fully there for my family. I'm fully there for work, and I'm fully there for the family."

BETTER SOLUTIONS FASTER

MTA and OTA speed the process of getting the best equipment into the hands of our Soldiers.

Seven years.

That's how long it used to take to go from a materiel development decision—the point at which a capability gap has been identified and a decision has been made to find a materiel solution—to milestone C—the time when a decision must be made to enter the materiel solution into production and deployment. Over the years, we've seen programs that met every requirement, only to be canceled or restructured when they got into operational testing because they were too expensive or weren't what the users wanted. We would go forward chasing a requirement that drove cost, complexity, time and schedule. Everyone had a say and anyone could slow you down. Acquisition was viewed by many in the operational force as a monolithic, bureaucratic and slow-rolling process that *maybe* would give our warfighters what they need.

Seven years…Maybe.

I believe that no American Soldier should ever be in a fair fight, anywhere—they should always have the advantage. The best way to equip our Soldiers with the latest technology and game-changing capability today is through an iterative process that gives us the ability to look left and right—to expand our aperture, rather than moving forward with our heads down.

Alternative acquisitions give us that ability. The Adaptive Acquisition Framework (AAF) includes a variety of pathways that enable us to deliver effective, suitable, survivable, sustainable and affordable solutions to users in a timely manner. For example, the middle tier of acquisition (MTA) is one pathway within the framework that can be used to rapidly develop fieldable prototypes. There is also a full spectrum of available contract strategies and tools that can be leveraged based on environment, constraints and desired outcomes. Other-transaction authority (OTA) is one such tool that allows us to accelerate delivery of that capability to the force and better enable the Army to have access to cutting-edge technologies.

Two years.

TAKE NOTES
Soldier-centered design led to simple adjustments of the IVAS throughout its development, helping mitigate technical risk and ensuring the end product was what Soldiers wanted. (Photo by Courtney Bacon, PEO Soldier)

DOUBLE TIME
The IVAS program went from a concept to a rapid fielding decision in two years thanks to iterative, Soldier-focused design, alternative acquisition methods and innovations that leveraged existing technology. (Photo by Sgt. Robert Whitlow, 49th Public Affairs Detachment)

ALTERNATIVES AT WORK

In my time working at the Program Executive Office (PEO) for Soldier, I saw the Integrated Visual Augmentation System (IVAS) program go from a concept to a rapid fielding decision in two years, thanks to the rapid-prototyping cycle leveraged through the use of MTA. The project manager was able to get started on the program right away, and worked closely with the Lethality Cross-Functional Team to iterate on the program through multiple Soldier touch points. This collaboration allowed them to simultaneously refine the requirements and the product, rapidly move into production, and ultimately field a product that was built with Soldier feedback every step of the way.

That Soldier-centered design led to simple adjustments along the way that helped mitigate technical risk and ensured the end product would be precisely what the users wanted. The use of other-transaction authority connected us with nontraditional defense manufacturers who were right in the field with the program, hearing Soldier feedback directly, and quickly implementing changes. The program wasn't tied to a specific design from the outset, and was therefore able to fail early, make adjustments, leverage the trade space, and ultimately get out a really good product in an incredibly short period of time.

Looking ahead, we should see shorter time between program increments as well. Evolving technologies and ongoing Soldier touch points will drive more frequent updates to program requirements. We'll be able to turn those requirements faster through rapid acquisition pathways, getting the latest equipment into the hands of Soldiers faster. Our approach to fleet management and how we manage capability sets will be especially important. That is where we'll see real change in our ability to accelerate the delivery of capability to the force.

It's important to me, as an Army acquisition professional, that I'm able to see a way to the end—to develop and have a good product in the hands of Soldiers in a few years. Alternative acquisition pathways are tools that help us do that. But, maybe most importantly, it allows us to focus on product development instead of document development. We will be able to accelerate the pace of programs, while also mitigating cost and performance risks, and leaders will be able to make timely decisions based on good information. Then we will truly be in position to deliver significant overmatch to the force.

CONCLUSION

The Army Acquisition Workforce is made up of experts and big thinkers. Alternative acquisition pathways empower us to think outside the box and have a real say in the process. I saw that firsthand with the IVAS program. People were lining up to work at PEO Soldier and be part of that team. We saw successes and people were genuinely excited.

We're now seeing those successes leveraged across other programs. MTAs and OTAs are firmly in our dialogue, and our workforce is experiencing intense satisfaction from working with our users and the requirements community in a meaningful and collaborative way. This is a really rewarding time to be part of the acquisition workforce. I challenge you to work within the Adaptive Acquisition Framework to tailor strategies to deliver better solutions to our Soldiers faster.

For more information about the Adaptive Acquisition Framework, go to ***https://aaf.dau.edu/.***

(Photo by Getty Images)

FUTURE OF WORK—PRESENT TENSE

Jamie Mukopf, DSW

How the Army's leaders can shape the workplace of tomorrow, starting today.

by Ellen Summey

The 40-hour work week is a relatively new concept in the history of labor and employment, dating back to only 1940. In fact, when the federal government started to study workers' hours in 1890, the average work week was closer to 100 hours for full-time manufacturing employees. In about 1906, things started to change. First, a few companies in the printing industry instituted eight-hour work days. By 1926, Henry Ford announced a five-day work week for his employees, arguing essentially that workers would spend more money if they just had time to go shopping. When Congress passed the Fair Labor Standards Act in 1938, it was all over but the shouting.

It's important to keep this history in mind when discussing the so-called "future of work," a term used to describe how workplaces and the workforce will change over the next several years because of technological, generational and societal shifts. What seems unthinkable today—government agencies getting rid of their cubicles, federal jobs with no "core" work hours, or even having remote access to classified systems for the rank and file—could be the 40-hour work week of tomorrow. The COVID-19 pandemic has dramatically increased the speed at which some of these changes are taking shape, but experts believe that telework and distributed teams are all but certain, regardless.

LOOKING FORWARD

Jamie Muskopf is an entrepreneur, mentor, podcaster, military spouse, innovation consultant and doctor of social work. She is also a faculty associate at Columbia University, where she co-teaches a graduate class called "Navigating the Future of Work." Having previously worked as a knowledge management officer for the United States Pacific Fleet, a project manager at Microsoft Military Affairs and a program manager at Defense

Acquisition University, she has a firm grasp on the military workforce and culture, as well. In an interview with Army AL&T, she spoke about how the Army can take advantage of its pandemic-related shift to telework, and the leadership skills needed for managing remote teams.

"It's really interesting, because all the things we talk about in this class are things that actually had to happen because of COVID—the remote teaming, fully virtual companies with employees in different countries, all working on specific tasks together," she said. The key, she said, is that leaders must be willing to ask questions. A *lot* of questions.

"Proximity, especially in the military, is where control happens," she said. "The military is a command-and-control organization, so how do we pivot to what is now this very dispersed workforce, if we are going to be working with people remotely? What does leadership look like in a remote workforce? What do meetings look like? Do we have meetings? What do efficiencies look like and what are the focus points? How do you measure what's getting done? And how do you measure people, when it comes time to evaluate them? And what's worth measuring, anyway?" Don't worry. Muskopf said that the emphasis should be on *asking* the questions—no one expects you to have all of those answers today.

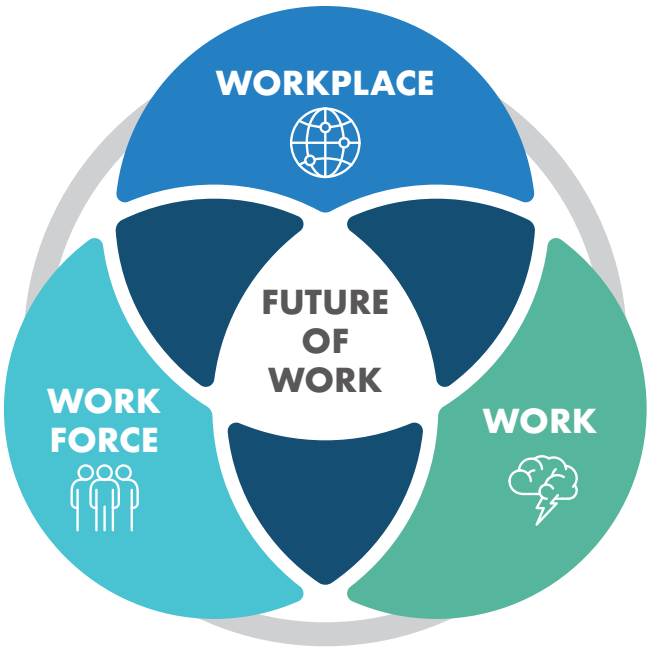
LEADING THE CHARGE

For Army leaders, there is much to consider. Muskopf said the starting point should be focusing on the mission first. "The number one thing is obviously the mission at hand. What is it that you need to accomplish? And then thinking, how can you leverage this new opportunity, and you *should* see it as an opportunity, to have people working flexibly to support that mission," she said.

"I think most people had a bit of a panic once they realized, 'Now I have to work remotely. I have to figure out this Teams thing.' So far so good, right? I mean, things weren't perfect, but they went pretty well. So now that we have some basic capabilities installed, and we've learned some things from the pandemic, including what went right. How do we take those lessons learned and make this even better?"

The next step, Muskopf said, is for leaders to check in with their people. "We can talk about the processes and infrastructures and technologies we need to keep doing our work, but I don't think enough people are talking about *how* people are doing with regard to COVID. It's a stressful time for everyone, but certainly for people in the military environment."

ALWAYS A STUDENT
In April 2017, Muskopf was enrolled in the Columbia University M.S. in information and knowledge strategy program where she now teaches. (Photo courtesy of Jamie Muskopf)



FUTURE OVERLAP
When studying the future of work, it's important to consider how people, work and technology intersect—changes in the workplace reflect changes in the people, the technology and the work itself. (Graphic by National Institute for Occupational Safety and Health)

CHECK IN
Leaders need to ask how their teams are doing with remote work consistently—and really listen to their answers. (Photo by Getty Images)

What would she ask? "The first question is 'How are you all doing?' And genuinely caring about and listening to what they say, not needing to respond or fix. Just listen. And then, 'How do you think *we* are doing right now as an organization?' Whether it's a small organization that you're leading or any part of the larger whole that you want to learn more about. To me, those are the first questions to be asked, and those aren't always simple questions to answer."

It can be hard enough to truly understand how your teammates are feeling when you see each other in person on a regular basis. Add to that the complexities of telework, and it would be easy to miss signs of trouble if you didn't have an established baseline, Muskopf said. That's why it's important for leaders to check in with the teams regularly and consistently. "You start to see patterns in your people," she said. "It's not about making things better for them, because sometimes you can't. It's just about recognizing that they're human, and that what's going on in their life is impacting what's happening at work, and you do your best to make sure that the work environment is a place where they want and feel safe to be."

A SAFE ENVIRONMENT

Even if leaders ask all the right questions, there is no guarantee that people will be willing to answer them candidly. "It is important for leaders to create an environment where people feel safe to respond to that question with honesty," she said. There is a long history of stigma associated with mental health or even just stating that there is a problem, she said. "Progress has been made, but that culture goes a long way back. So to me, as a leader, you must create an environment of psychological safety," she said. "Everyone recognizes that the military operates in ranks and hierarchy, but when it comes time to innovate, when it comes time to really get things done and move the needle, that requires conversations that are more free-flowing, that aren't organized in order of who is sitting closest to whom in the horseshoe."

Creating that sense of safety requires a certain amount of vulnerability on the part of leaders, Muskopf said. "As a senior leader in any branch of the military, everybody is looking to you for the answers. But most great leaders are really looking at the people who work for them and relying on the information they provide to make sure that they are making the right decisions." She said

that the best leaders are decisive, able to approach issues collaboratively and understand how to ask the right questions.

"You know, instead of taking a basic answer for 'Why are we doing things this way?' they were able to ask why and then *continue* to ask why, until they really got to the root of the problem." She said that things will likely be messy as the Army is planning for the future of work, and that's just part of the process. "Now is not the time for people to be standing on the sidelines criticizing the mess—now is the time for everyone to be in the mess with one another and figuring out together, so that we can move forward in a better way."

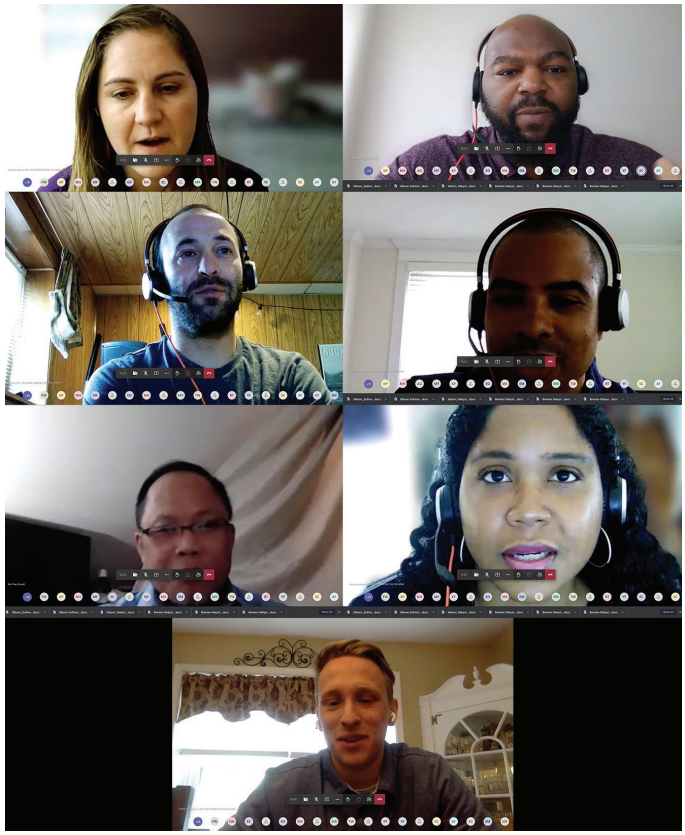
THE SQUAD MENTALITY

For a case study on the importance of effective teamwork and communication, look no further than one of the Army's smallest and most storied unit types—the special forces team. Soldiers in those units, particularly in combat situations, have to be able to communicate effectively with every other member of the unit, no matter their rank, position or title. If the radios are down and the chopper is not coming, the alternative is not to just sit there and wait. Soldiers have to think on their feet and they must be empowered to create mission success.

So, what is the thing that allows a unit to operate that way? "They have a level of trust that is unmatched. They are vulnerable with one another. They are capable of saying to one another, 'This isn't working for me. I can't do this. I need you to help me. We need to do this together,' without fear of judgment, and with the expectation that we all need to be honest with one another—or face potentially dire consequences," she said. Of course, most of the Army's work doesn't take place in that extreme environment, but Muskopf said Soldiers and civilians alike can aim to be just as cohesive and effective.

"That takes a lot of self-awareness and self-accountability, and—how many times have you seen the 'martyr on the mountain,' you know, that person who will never accept help? 'I've got it.' But in reality, and in those kinds of teams, you can't afford to do that. There will be negative repercussions. You have to really know, 'Here's what I need help with. Can we do this together? Yes, great, let's go.' "

"So, it's not the proximity that matters," Muskopf said. "What are we doing to build the cohesion on teams? Are we looking at team members as people who bring skills, values, ideals, personality traits, into the environment that make the team better? Maybe there's one person on the team who's always the comedian, and



REAL, VIRTUAL WORK

Elyse Merkel, Dion Collins, Ed Carter, Alaina Farooq. Matt Fohner, Kim Yee and Eric Mscicz, clockwise from top left, participated in the Naval Surface Warfare Center, Philadelphia Division virtual event, "Collaboration in a Remote Environment," on May 25. Panelists shared their experiences with telework, and spoke about collaborating, building and managing teams virtually, communication techniques, virtual meetings, mentorship, technical development and more. (Photo by Brentan Debysingh, Naval Surface Warfare Center Philadelphia Division)

can make everything light when it needs to be, and maybe there's one person who's excellent at organization and keeping everything moving and timely. How do we figure those things out? How can we do that more purposefully? Let's look at the teams we're a part of, whether we get to choose the members or not, and figure out those strengths that add value to the team."

CONCLUSION

Ultimately, Muskopf believes that the COVID-19 pandemic has created unique opportunities for growth in the federal government and private industry alike. "I used to work with a Navy

SQUAD GOALS
The ideal remote team would have many of the same traits as a special forces unit with the ability to communicate effectively no matter a person's rank, position or title. (Photo by Pfc. Thoman Johnson, 1st Special Forces Group)

commander who would say, 'I really wish we did have an all-stop button that we could press,' so everything would stop for one day and we could look at what's going wrong and then figure it out. I feel like COVID, in some respects, was an 'all-stop' button."

"I think most economists and people who study the future of work are sitting back and observing what the chain reaction is going to be, because we still haven't fully felt the effects of COVID yet, when it comes to all of this," Muskopf said. "What are remote work and hybrid work doing to us? The good and the bad. I think it will be a very interesting challenge for the Army."

For more information, go to the Office of Personnel Management's Future of Work resource page: ***https://go.usa.gov/xej5A****.*

Read more about telework in the Summer 2021 Career Navigator article by Jacqueline M. Hames at ***https://go.usa.gov/xeje4*** *and learn tips for effective telework at* ***https://go.usa.gov/xejeT****.*

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THE WAR FOR TALENT

"The Army is at war. It is a war for our greatest strength and most important weapon system, and the outcome will determine our ability to win all future wars. It is a war for talent," said Gen. Ed Daly, commanding general of U.S. Army Materiel Command. He's not alone in that assessment. Chief of Staff of the Army Gen. James C. McConville, Secretary of the Army Christine Wormuth, Training and Doctrine Command's commanding general, Gen. Paul E. Funk II, and many other senior leaders have echoed those same words about the challenge of recruiting and retaining the Soldiers and civilians who make up the Army's workforce.

"We have to think anew about how we bring people into the Army," Wormuth said. "Certainly, part of that is making sure we're giving them the opportunities they want, taking care of them the way they want."

"We need the best and brightest men and women to come into the United States Army, who represent the diversity of the nation," McConville said.

"We have the opportunity to better develop the next generation of talented leaders," Daly said. "Because in the end, it is talent that will win this war. And winning matters."

To that end, the Army and other federal organizations are getting a boost from the Office of Personnel Management (OPM), which is working to improve recruitment

TALENT, TODAY AND TOMORROW

Secretary of the Army Christine Wormuth visited Fort Bragg, N.C., on July 19, where she met with Soldiers from the 82nd Airborne Division. Wormuth said the Army must change the way it recruits and retains its military and civilian workforce members, in order to win the war for talent. (Photo by Spc. Jacob Ward, 49th Public Affairs Detachment)

and retention across the federal workforce. OPM's new director, Kiran Ahuja, has said that the federal government lost talent in recent years, and she is focused on rebuilding. "What I consider incredibly important from my role is that every single day when I wake up, I am thinking about the morale of this workforce, and I am putting that front and center," she said. Part of the equation must be enhanced telework and remote work flexibility, Ahuja said.

OPM's latest guidance and policy changes bear that out. In June, OPM finalized a new rule on promotion and internal placement to allow agencies to rehire former employees at a higher paygrade than when they left the government service—something that was previously very difficult. In July, Ahuja released a memo with thorough guidance on telework and remote work, including the often-sticky question of locality pay for employees who do not reside in the immediate area of the agency or office by which they are employed.

In October, it temporarily removed all geographic restrictions from the Military Spouse Non-Competitive Appointment Authority, making it easier for government agencies to offer non-competitive appointments to active-duty spouses, as well as certain groups of veteran spouses. OPM's associate director of employee services, Rob Shriver, said in a September blog post that this initiative is well-timed for maximum impact. "Employers across sectors and around the world rely heavily on telework and remote work as a result of the pandemic, and the federal government is no exception," he said. "This creates a unique opportunity for military spouses—while military families often have to move frequently, they can access their work remotely and remain in their federal jobs."

In November, OPM also released its comprehensive 2021 Guide to Telework and Remote Work in the Federal Government, which replaces the agency's 2011 guide and includes advice for agencies making the shift to telework, remote work and hybrid variations. "We have a real opportunity in this moment of sorting ourselves through the pandemic in so many different ways to really show up as a model employer for the federal government," she said. "Being the largest employer in this country, we have an opportunity to really set the tone."

The agency offers a number of tools and resources on its website for government leaders seeking to prepare for the future of work. Learn more about the OPM "Workforce Reshaping" initiative at **https://go.usa.gov/xebJV**.

—ELLEN SUMMEY

DEVCOM FORGES AHEAD

The U.S. Army Combat Capabilities Development Command (DEVCOM) is one of the first DOD organizations to release an official plan for its workforce regarding the future of work. DEVCOM's "Future of Work Concept" outlines the organization's framework for allowing work flexibility across its workforce of approximately 25,000 civilians, Soldiers and contractors. DEVCOM is a major subordinate command of U.S. Army Futures Command.

"We want to provide the flexibility to our workforce to work where and when they're most productive," said John Willison, DEVCOM's deputy to the commanding general. He said DEVCOM's focus is on taking care of its existing workforce and creating the conditions to recruit and retain the workforce of tomorrow. "While we are a research and engineering center, in the end, it really is a people business, and so we've been mindful about making sure we're doing everything we can to attract the talent that we need and retain the talent that we have."

"We know people are most productive when they're happy with their life, and for a lot of people that's location based, that's family based," Willison said. The goal is to be disciplined in the implementation of this workplace transformation, but not prescriptive, he said. "We want to make sure we're providing our employees the flexibility they want and they deserve to be the most productive. That's really the determination by managers and leaders with the input from the employees."

Willison said that DEVCOM leaders collaborated with their Air Force, Navy and Coast Guard counterparts when developing this plan, as well as with partners in industry and academia. He hopes the plan can serve as an example for other military components or federal agencies, as more organizations begin planning for an increasingly flexible workplace. "We believe that we can be a model," he said. "In doing the research that we do, we want the best ideas for wherever they are. And so we're excited about and counting on the fact that this extends to other people because, by doing that, we hope to not be defined by our physical space, but by our ability to reach people no matter where they are. We've seen a lot of excitement and a lot of interest from our own workforce, thinking about their own ability to get involved in projects that aren't limited to a geographical location."

REMOTE, NOT DISTANT

John Willison, DEVCOM deputy to the commanding general, participated in the "Managing a Remote Workforce" panel on May 25 during the Association for Talent Development government workforce conference. He spoke about how federal agencies responded to an immediate shift to remote work at the start of the pandemic, understanding the needs of a remote workforce, leading by example, and where federal agencies go from here. (Photo by DEVCOM)

For more information about DEVCOM's future of work concept, go to: **https://go.usa.gov/xebGP.**

—ELLEN SUMMEY

MAJ. MEGAN M. PEKOL-EVANS

COMMAND/ORGANIZATION: Program Executive Office for Soldier, Soldier Lethality Project Office, Next Generation Squad Weapon

TITLE: Assistant product manager

YEARS OF SERVICE IN WORKFORCE: 1.5

YEARS OF MILITARY SERVICE: 16

DAWIA CERTIFICATIONS: Level I in Program Management

EDUCATION: MBA with a concentration in strategic leadership, Trident University; B.S. in administration of justice, Penn State University

AWARDS: Bronze Star Medal, Meritorious Service Medal (3rd award), Army Commendation Medal (4th award), Army Achievement Medal (2nd award), Meritorious Unit Commendation, National Defense Service Medal, Afghanistan Campaign Medal, Global War on Terrorism Expeditionary Medal, Global War on Terrorism Service Medal, Military Outstanding Volunteer Service Medal, Army Service Ribbon, NATO Medal, Combat Action Badge, Parachutist Badge

BALANCE IN FOCUS

When Maj. Megan Pekol-Evans started working on her MBA in 2010, she was planning to separate from the Army and start her civilian career as soon as possible. One thing changed her perspective entirely—the Army Acquisition Workforce. "I really love my job now. Acquisition is absolutely the best career decision I ever made." Though she had enjoyed her time as a battery commander from 2015 to 2017, command can be quite difficult for families, and she wanted to find work that would offer more stability and a better work-life balance. It was in her next assignment that she first became acquainted with acquisition. "I met several acquisition officers, and started learning more about the career field. I thought it sounded like a good decision for me, so I jumped in and I just fell in love with it," Evans said. "It's exactly what I would want to do *outside* the military, but I still get to be with Soldiers and work in project management and organizational leadership."

In her current role as assistant product manager for the Next Generation Squad Weapon (NGSW), within the Program Executive Office for Soldier (PEO Soldier), Evans leads a team that is planning, managing and executing an exciting middle tier of acquisition program. The NGSW will replace the M4 carbine, the M16 and the M249 squad automatic weapon. "I love working with people, working toward a goal, and it's great when it's a goal you're passionate about, like supporting Soldiers," she said. "It's the best when you really feel like you're working toward something bigger than yourself."

But it's not just the mission that has changed her mind about her Army career—she said it's the leadership, too. "I truly have been so lucky to have some great bosses. They set out goals clearly and give you a good compass and a direction for how to get there, but they let you go do it your way," she said. "They are open for discussion, and you do not see that often as a young officer, where you can just go to the colonel or the general and just have a good candid conversation with them, and you don't feel like you were bothering them, or that it wasn't your place to say something." Evans said she feels fortunate to have worked with leaders, from the O-5 level to the program executive officer, who have been open to discussion on recommendations and ideas, whether or not they directly aligned with the original plan. "They're open for conversation and you don't feel intimidated to do that. I really love that."

Evans said she has always been a curious and inquisitive person. "My dad would probably say, 'Meg, you are always asking all these questions and trying to solve people's problems. You can't solve everybody's problems all the time.' " But it does serve a purpose in acquisition, she said. In fact, she wrote a white paper about obsolescence strategy in acquisition, which she started during her first acquisition job, stemming entirely from her desire to understand why things are the way they are. "This is something that I started in my former APM [assistant

LAUNCH IS A GO
An M142 High Mobility Artillery Rocket System launches a Precision Strike Missile (PRSM) in December 2019 at White Sands Missile Range, New Mexico. Evans is assistant product manager for the PRSM. (Photo by White Sands Missile Range)

project manager] position in PAC-3 MSE [PATRIOT Advanced Capability – 3 Missile Segment Enhancement], and that team supported me in writing," she said. "I highly suggest any young APM who asks the question that I did once, 'This shouldn't be so hard, so why is it?' to follow that question down all the roads required to answer it." She said she learned that the answers were often very complex, and that she gained valuable insights from the engineers, functional experts and industry partners during those conversations.

"I work with some of the greatest 'rocket scientists' and now 'gun gurus' in the world, which is often one of the most interesting parts of my day," she said. "It is humbling to be on these teams that include some of the smartest people in the nation, and it is eye opening to supervise the periodic assessments of our product's progress, learning about system integration and seeing modular open systems architecture happen in real time." On a daily basis, her teams manage warhead and rocket motor performance, keeping a focus on future growth, conducting assessments of survivability, cyber and software integration, and so much more. "It is complex and it goes without saying that none of these are easy tasks," she said. "The products we work on will be touched and held by Soldiers in combat. I take that responsibility seriously."

And speaking of managing complex priorities, Evans learned an important lesson early in her Army career. "The most important thing I've learned is about balance," she said. "As a young lieutenant, I worked for a general officer who was an amazing leader, and he expressed just how important balance would be for me as I developed." He saw her commitment to the mission and told her the importance of taking care of her relationships with her family as well. "I will never forget how he would make sure I put his children's engagements on his calendar, and how he made me 'kick him out' for important events." As any Soldier will understand, there are always going to be times when the mission has to come first, so Evans follows the advice she was given, to prioritize her family whenever possible. "The Army will be fine without me, just as it was before I joined—but my family will not," she explained. "Today, I make sure that my children's activities make it onto my calendar [they rate their own color, in her color-coding system], and their mom is in the stands as much as she can be."

She also makes a concerted effort to stay in touch with her extended family and friends in her hometown of Wilkes-Barre Township, Pennsylvania. She credits her success to their influence, saying they raised her to be the person she is today. "I try my best to stay connected to my roots, and it is very important to me that my children maintain relationships with their family from back home," she emphasized. She has built the career—and the life—that work best for herself and her family, by pursuing her passion for service, prioritizing her relationships, and keeping balance in focus.

—ELLEN SUMMEY

CAREER NAVIGATOR

POWER TO THE PEOPLE

Back-to-Basics puts the power of training in the hands of the employee.

by Jacqueline M. Hames

Change is coming.

Since September 2020, when the Hon. Ellen M. Lord, former undersecretary of defense for acquisition and sustainment, issued the memorandum " 'Back-to-Basics' for the Defense Acquisition Workforce," we've been hearing about the Back-to-Basics program. Its goal is to create streamlined training requirements and increased opportunity for workforce members to receive targeted career development and job-relevant training when they need it. In other words, Back-to-Basics will create a modern continuous learning environment and empower employees to craft their careers.

The program's mission is "to undertake the first major overhaul of the Defense Acquisition Workforce Improvement Act since its inception and re-scope the definition of the coded acquisition workforce," said Scott Greene, strategy and communications division chief in the Director of Acquisition Career Management (DACM) Office. The program takes a hard look at acquisition positions across OSD and streamlines the 14 career fields into six functional areas: Business Financial Management/Cost Estimating, Contracting, Engineering and Technical Management, Life Cycle Logistics, Program Management, and Test and Evaluation. Back-to-Basics implementation is expected Feb. 1.

Rob Richardson Jr., the Army's director of acquisition career management, said that the program is focusing more on experiential training, "which is the piece that I think has always been missing. Folks have the certification, but really no experience." In the past,

OPENING REMARKS

The Hon. Ellen Lord, then undersecretary of defense for acquisition and sustainment, records opening remarks for the TEDxDAU virtual event Sept. 8, 2020, in the Pentagon briefing room. The event was designed to inspire the workforce through a sharing of ideas and best practices to accelerate innovation across the federal government, DOD, industry and academia. (Photo by Marvin Lynchard, Office of the Secretary of Defense Public Affairs)

employees could be Level III certified and never have been in a program office. "I'm not sure how you learn to manage without being there, going through the process and getting those bumps and bruises along the way, which are important to develop as an Army Acquisition Workforce professional," he said.

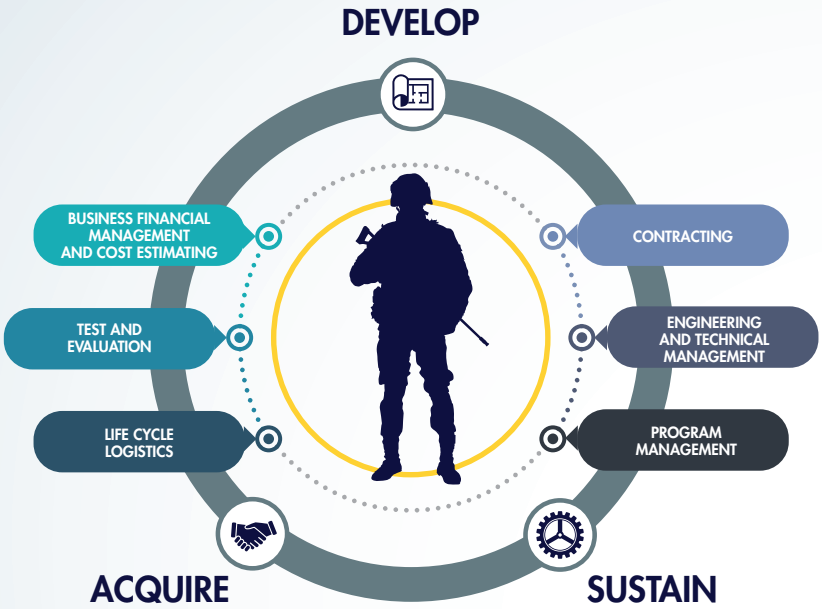
"In essence, [Back-to-Basics is] reducing the amount of training, but in a good way," Greene said. "It's reducing [required training] to make it more focused on what individuals need at the fundamental requirement level and then adding… credentialing." Defense Acquisition University's (DAU) website for Back-to-Basics notes that the difference between certifications and credentials is that "certifications address statutory education, training, and experience requirements. Credentials address assignment specific, job-relevant needs." Defense Acquisition Credentials are highly focused blocks of training that require students to demonstrate mastery of the topic in order to pass. They are separate from and not required for functional area certifications—they are driven by the type of work being done and the needs of the employee, and they are recommended additions for individual development plans. Both the supervisor and the employee can add credentials to an employee's individual development plan.

Streamlined training does away with "scrap learning," Greene explained. It eliminates extraneous courses that not everyone in a functional area may need.

Back-to-Basics
Empowering the Defense Acquisition Workforce

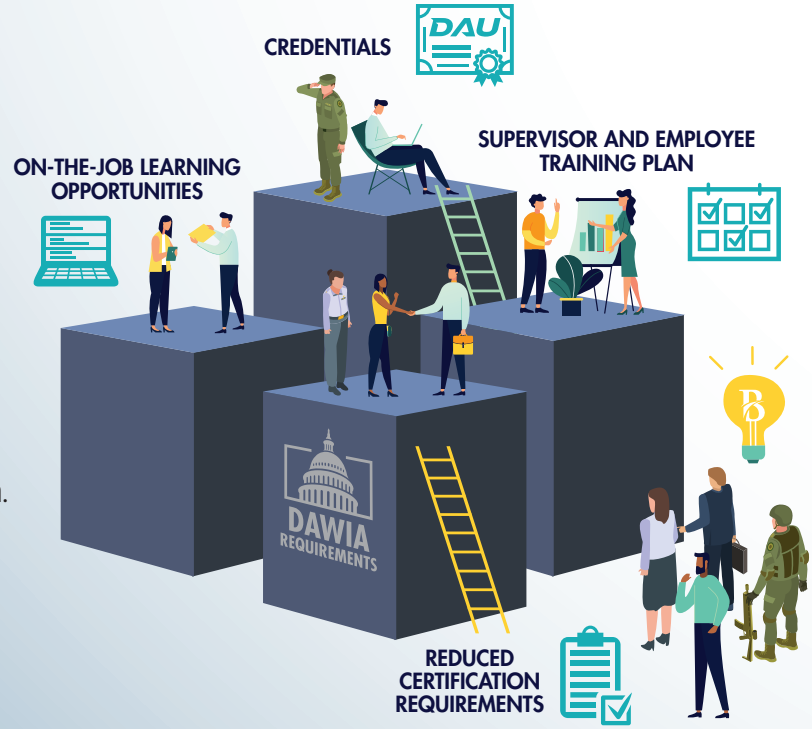
What is Back-to-Basics?

- New certification and training framework further empowers the acquisition workforce for success.
- Supports customized training plans, including targeted baseline certification training supported through credentialing.



What does Back-to-Basics mean for me?

- Leaner certification structure.
- Tailored, individually focused credentials based on job needs.
- Empowerment over individual training and development plan.
- Targeted training, freeing up more time for on-the-job experience.



https://asc.army.mil/web/dacm-office/back-to-basics/

Back-to-Basics will create a modern continuous learning environment and empower employees to craft their careers.

"A lot of that scrap learning has become credentials, where you would take it *if* you need it," he said.

Back-to-Basics will give employees the power to choose the credentials they need to fit their jobs, Greene said, and it is the responsibility of the employee—and their supervisor—to keep up with the required courses for the employee's functional area, as well as any extra credentials. "This is a big paradigm shift," he said. "It's going to be a challenge but also a benefit. The workforce—supervisors and employees—have been used to very prescriptive [training]."

According to Aaron Hutson, strategy and policy branch chief, currently the culture for acquisition training is to complete all certifications as soon as possible—sometimes even up to Level III certifications—but the DACM and DAU have learned through student feedback that the training was too front-loaded in this model. The Back-to-Basics program is moving toward a "train, apply, train, apply" model, where the learner is given more flexibility. "It empowers the learner to work with their supervisor … to determine the specialty training credentials that are needed," he said.

"This framework will give some time back to the organization and the employee," Hutson said. "There's a reduction in prescriptive training across all functional areas and levels, some more than others, but that's required training that's been given back to the employee, local organization and supervisor." That extra time can be used for on-the-job training and credentialing. While workforce members have always been able to cross-train over different functional areas, this "time back" will enable them to do it more readily than in the past, Greene explained.

DAU is complementing the Back-to-Basics goal of streamlining training by changing its curriculum, Hutson said. According to DAU, its transformation will include high-quality content that is more relevant to the learners' needs, shorter courses, more variety in course offerings, more online courses, more learning resources available at the moment of need and, of course, credentialing.

And in an interesting twist, COVID-19 restrictions have helped get this new training culture started. "COVID allowed DAU, I think somewhat unintentionally, but DAU capitalized on it to refine and improve their online learning platform," Greene said.

"They are positioned very well to have a reduction in … in-person training. They are still going to have some of that, but bottom line, we're going to see a lot more of what they are calling VILT—virtual instructor-led training," he added.

Of course, the implementation of Back-to-Basics is not going to be a "one and done" situation, Richardson cautioned. It will be rolled out in phases so adjustments can be made to the program as necessary, to better serve the workforce.

Ultimately, individuals will have the freedom and responsibility to keep up with their required trainings and any additional training they want to have—something that is completely within the spirit of a continuous learning environment, Greene said.

"At the end of the day, this will be a much better process, much less time away from the job doing unproductive training," Richardson said. "[It will] provide more opportunities that are productive, like going to [Naval Postgraduate School] or leveraging some of the DACM programs to improve your capabilities."

"Change is hard," he added. "Pack your patience. Expect some growing pains. We will get through it."

For more information on Back-to-Basics, go to: ***https://go.usa.gov/xeaVp****. Burning questions? Check out the frequently asked questions at:* ***https://asc.army.mil/web/topics/btb/****.*

JACQUELINE M. HAMES is an editor with Army AL&T magazine. She holds a B.A. in creative writing from Christopher Newport University. She has more than 10 years of experience writing and editing news and feature articles for publication.

ON THE MOVE

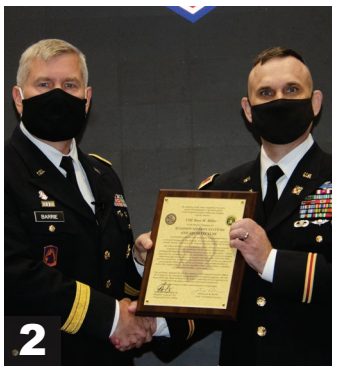
PROGRAM EXECUTIVE OFFICE FOR AVIATION

1: EUAS CHANGES HANDS

Lt. Col. Chris Getter, right, accepted the charter for the Endurance Unmanned Aircraft Systems (EUAS) product office from **Col. Scott Anderson**, left, project manager for Unmanned Aircraft Systems, during an outdoor ceremony Aug. 27 at Redstone Arsenal, Alabama. Getter previously served as the career manager for the Acquisition Management Branch of Human Resources Command. He assumed responsibility following the retirement of the former product manager **Lt. Col. David Benjamin**. EUAS manages Gray Eagle, Warrior, Hunter and ground support equipment programs for PEO Aviation. (Photo by Elizabeth Graham, PEO Aviation)

2: CHANGE OF CHARTER AT AMSA

Col. Burr Miller, right, accepted the Aviation Mission Systems and Architecture project office charter from Program Executive Officer **Brig. Gen. Rob Barrie**, left, during a change of charter ceremony Sept. 8 at Redstone Arsenal, following the retirement of the former project manager, **Col. Johnathan Frasier**. (Photo by Michelle Miller, PEO Aviation)



3: RETIREMENT CAPS 26-YEAR CAREER

Col. Johnathan Frasier, right, accepts his certificate of retirement from the Program Executive Officer for Soldier, **Maj. Gen. Anthony Potts**, during his retirement ceremony Sept. 8 at Redstone Arsenal. Frasier, who served in the military for 26 years, received the Legion of Merit Award and the Army Aviation Association of America's Order of St. Michael Silver Award during the ceremony. Prior to his retirement, Frasier relinquished responsibility of the Aviation Mission Systems and Architecture project office. (Photo by Michelle Miller, PEO Aviation)

4: ASSUMPTION OF CHARTER

Col. Gregory S. Fortier, left, project manager for the Future Attack Reconnaissance Aircraft (FARA), officiated an assumption of charter ceremony welcoming a new product manager, **Lt. Col. Michael J. Rigney**, right, on July 15 at Redstone Arsenal. Rigney is the inaugural product manager for FARA - Capability Set 1. Prior to joining the FARA project office, Rigney served as a Training With Industry fellow and was previously the executive officer to the PEO. (Photo by David Hylton, PEO Aviation)

5: PM HONORED AT RETIREMENT

Lt. Col. David Benjamin, right, retired from the U.S. Army on Aug. 20 during a ceremony at Redstone Arsenal. **Darryl Colvin**, left, the deputy for acquisition and systems management at the PEO for Missiles and Space, presented Benjamin with his retirement certificate as well as a Legion of Merit Award and the Army Aviation Association of America's Knight of the Order of Saint Michael award. In advance of the retirement, Benjamin relinquished his role as product manager for the Endurance Unmanned Aircraft Systems product office. He served in the military for 24 years. (Photo by David Hylton, PEO Aviation)

PROGRAM EXECUTIVE OFFICE FOR COMMAND, CONTROL, COMMUNICATIONS-TACTICAL

6: NEW PRODUCT MANAGER WELCOMED

Lt. Col. Jonathan Judy, right, assumed responsibility for Product Manager Capability Set Development (CSD) in a ceremony Sept. 7 at Aberdeen Proving Ground, Maryland. The ceremony was hosted by **Matt Maier**, left, project manager for Interoperability, Integration and Services (PM I2S), within the Program Executive Office for Command, Control, Communications-Tactical (PEO C3T). In partnership with the Army Network Cross-Functional Team, CSD works across the PEO's project management offices and network community stakeholders to promote synergy in planning, execution and risk management, and serves as a touch point for systems engineering, design and testing.

Also during the ceremony, Maier, left, presented **Lisa Bell**, right, with the Department of the Army Civilian Service Commendation Medal for her outstanding service as acting CSD product lead from June to September. During this time, Bell spearheaded major initiatives for meeting cost, schedule and performance goals for the Army's capability sets, including engaging key stakeholders to draft the test and evaluation strategy for Capability Set 23. Bell will now support Judy as deputy product manager. (Photos by PEO C3T Public Affairs)

PROGRAM EXECUTIVE OFFICE FOR ENTERPRISE INFORMATION SYSTEMS

1: NEW CHIEF OF STAFF WELCOMED

Martin Zybura was officially named chief of staff for the Program Executive Office for Enterprise Information Systems (PEO EIS) in August, after serving in an acting capacity for several months. He had previously served as deputy project manager for Defense Integrated Business Systems.

2: LEADERSHIP CHANGE AT HQ

Aric Sherwood assumed the role of director of Acquisition and Systems Management, Strategic Initiatives Group, after completing a developmental assignment as acting assistant program executive officer for Networks, Cyber and Services in PEO EIS. Previously, Sherwood served from June 2020 to June 2021 as acting project manager for PEO EIS's Defense Communications and Army Transmission Systems.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3: CHANGE OF CHARTER AT AHRS

Michael Payne, left, assumed the charter for Army Human Resource Systems (AHRS) from Program Executive Officer **Ross Guckert**, right, during a change of charter ceremony Aug. 28 at Fort Belvoir, Virginia. As the new AHRS product director, Payne replaced **Kevin Curry**, who is attending the Enhanced Command Preparation program. Payne most recently served as deputy project manager for Enterprise Services at PEO EIS. (Photo by Laura Edwards, PEO EIS)

4: NEW NAME AND NEW PRODUCT MANAGER

Lt. Col. Xkhosan Arnold, right, received the charter for PEO EIS's newly named Global Enterprise Network Modernization – Americas (GENM-A) product office from Defense Communications and Army Transmission Systems (DCATS) project manager **Col. Jay Shell**, left, in a change of charter and renaming ceremony at Fort Belvoir on Sept. 30. Arnold recently completed a Training With Industry assignment and previously held positions with the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology and PEO EIS's General Fund Enterprise Business System. GENM-A will incorporate the former Installation Information Infrastructure Modernization Program's domestic U.S. military installation IT modernization program, voice services and the Enterprise IT as a Service program. (Photo by Cecilia Tueros, PEO EIS)

PROGRAM EXECUTIVE OFFICE FOR MISSILES AND SPACE

5: CHANGE OF CHARTER FOR JTAGS

Col. Phil Rottenborn, left, Integrated Fires Mission Command project manager, presented the charter for Product Director Joint Tactical Ground Station (JTAGS) to **Dr. Everett Roper**, right, during a change of charter ceremony July 26 at Redstone Arsenal, Alabama. Roper accepted responsibility for JTAGS, following the departure of outgoing Product Director **J.D. Webster**. (Photo by Integrated Fires Mission Command Project Office)

6: IFPC INC. 2 WELCOMES NEW PM

Lt. Col. Edgar Lopez, right, accepted the charter for Product Manager Indirect Fire Protection Capability (IFPC) Increment 2. **Col. Charles Worshim III**, left, project manager for Short and Intermediate Effectors for Layered Defense (SHIELD), presided over the June 18 ceremony. Lopez accepted the responsibility of providing the Army with an interim and enduring cruise missile defense capability, following the departure of outgoing Product Manager **Lt. Col. Juan R. Santiago Jr.** (Photo by Henry Norton, SHIELD Project Office)

7: IF/RCO HOSTS CHARTER CEREMONY

Jeffrey M. Stevens, right, accepted the charter as the incoming project manager for the Integrated Fires/Rapid Capabilities Office (IF/RCO). **Maj. Gen. Robert A. Rasch**, left, the program executive officer for Missiles and Space, presided over the ceremony at the command's Redstone Arsenal headquarters on June 8. The IF/RCO is responsible for delivering integrated fires capability to the U.S. Army and joint warfighting community. (Photo by Darrell Ames, PEO Missiles and Space)

8: NEW PM AT SHIELD

Col. Andrew Lunoff, left, accepted the charter for the project manager of the Short and Intermediate Effectors for a Layered Defense (SHIELD) Project Office on July 29 from **Maj. Gen. Robert A. Rasch**, right, program executive officer for Missiles and Space. Lunoff is responsible for developing, testing, acquiring, fielding and sustaining modernized kinetic and directed-energy integrated air and missile defense capabilities to U.S. and allied forces, enabling the Army to compete, penetrate, disintegrate and exploit in multidomain operations. He assumed the position after the departure of outgoing Project Manager **Col. Charles Worshim III**. (Photo by Henry Norton, SHIELD Project Office)

9: CHANGE OF CHARTER AT ARSGM

Col. Christopher Snipes, right, Tactical Aviation and Ground Munitions (TAGM) project manager, presented the charter for Product Manager Aviation Rocket and Small Guided Munitions to **Misty N. Glover**, left, during a ceremony held July 1 at Redstone Arsenal. Glover assumed the responsibilities of the position after the departure of outgoing Product Manager **Lt. Col. Jennifer L. Newsome**. (Photo by TAGM Project Office)

1: PM LTI CHANGES HANDS

Craig Riedel, left, accepted the charter to officially become the product manager for the Lower Tier Interceptors Product Office from **Col. Charles Worshim III**, right, the project manager for Short and Intermediate Effectors for Layered Defense (SHIELD), who presided over the July 16 ceremony. In his new role, Riedel's responsibilities include providing defense of U.S. and coalition critical assets from air attack by employing a number of platforms, and through development, integration, test, production, fielding and sustainment of the Patriot Advanced Capability-2 (PAC-2) and PAC-3 family of interceptors, launchers and fire control. He assumed the position previously held by **Lt. Col. Kyle Davidson**, the outgoing project manager. (Photo by Henry Norton, SHIELD Project Office)

2: JAVELIN WELCOMES PD

Col. Christopher Snipes, left, the project manager for Tactical Aviation and Ground Munitions (TAGM), presented the charter for Javelin Product Director to **Adekunle O. Famodu**, right, during a change of charter ceremony held on July 1 at Redstone Arsenal. Famodu assumed the responsibilities of the role previously filled by outgoing Product Director **Robyn G. Litle**. (Photo by TAGM Project Office)

3: NEW PD FOR FIELD ARTILLERY LAUNCHERS

The Strategic and Operational Rockets and Missiles (STORM) Project Office hosted an assumption of charter ceremony for the Field Artillery Launchers (FAL) product director on June 10 at Redstone Arsenal. **Col. Guy Yelverton III**, right, STORM project manager, officiated the ceremony for **Patrick V. Miller**, left, incoming FAL product director. Miller assumes the role previously filled by **William Daniel Folk Jr.**, who served in an acting capacity while the position was vacant. Yelverton and the STORM Project Office appreciate Folk's dedicated service and leadership during the FAL vacancy. He will continue his previous role as the FAL deputy product director. (Photo by STORM Project Office)

4: OUTGOING PM HONORED AT RETIREMENT

Lt. Gen. Neil L. Thurgood, left, presented the Legion of Merit Award to **Lt. Col. Kyle Davidson**, right, during his retirement ceremony July 16 at Redstone Arsenal. The ceremony, which was hosted by Thurgood, capped an honorable career of service for Davidson, the former project manager for Short and Intermediate Effectors for Layered Defense (SHIELD). (Photo by Henry Norton, SHIELD Project Office)

U.S. ARMY MEDICAL LOGISTICS COMMAND

5: AMLC WELCOMES NEW COMMANDER

U.S. Army Medical Logistics Command (AMLC), headquartered at Fort Detrick, Maryland, held its first change of command ceremony on July 1 with **Col. Anthony "Tony" Nesbitt**, left, taking command. Nesbitt is only the second commander of the Army's premier medical logistics organization, succeeding AMLC's first commander, **Brig. Gen. Michael Lalor**, far right, who will now serve as commandant of the U.S. Army Ordnance Corps and School at Fort Lee, Virginia. **Sgt. Maj. Danyell Walters**, center right, participated in the ceremony and received the command's colors from Nesbitt. AMLC was formed in 2019 through an Army restructuring to serve as the Army's life cycle management command for medical materiel under Army Communications-Electronics Command and Army Materiel Command. (Photo by C.J. Lovelace, AMLC Public Affairs)

6: COMMANDER HOSTS PROMOTION

Col. Deon Maxwell Sr., right, received his current rank during a ceremony Sept. 2 at Fort Detrick. Maxwell serves as support operations officer at U.S. Army Medical Logistics Command (AMLC). **Col. Anthony "Tony" Nesbitt**, left, AMLC commander, administered the oath of office during the event, which was presided over by **Brig. Gen. Paula C. Lodi**. (Photo by C.J. Lovelace, AMLC Public Affairs)

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"I believe that no American Soldier should ever be in a fair fight, anywhere—they should always have the advantage. The best way to equip our Soldiers with the latest technology and game-changing capability today is through an iterative process that gives us the ability to look left and right—to expand our aperture, rather than moving forward with our head down."

Ronald R. Richardson Jr.
Director, U.S. Army Acquisition Support Center
and Director of Acquisition Career Management

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